Assessment and Participant Feedback of Sandpoint Archaeology Project Teaching Kits in Idaho Elementary Classrooms

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Authorization to Submit Thesis

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Abstract

Teaching kits for elementary classrooms can be useful tools to facilitate an easy integration of archaeological education curriculum and materials into schools in order to explore regional history. How these kits impact student and teacher attitudes towards archaeology and how likely teachers are to use kits in the classroom are instrumental questions when considering these types of public learning tools. This thesis presents an assessment of an archaeology kit prototype that incorporates hands-on lessons modeled on data gathered from archaeological excavations conducted during the Sand Creek Byway mitigation project in Sandpoint, Idaho.

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Chapter 1: Introduction

For several decades, archaeologists have striven to develop educational materials and build mutually beneficial relationships with communities (Cotter 1979, Davis 2005, Ellick 1991, Jameson and Baugher 2008, Little and Shackel 2007, McManamon 1991, Moe 2002, Murphy 1998, Rogge and Bell 1989, Smith 1998, Solórzano 2011, Williams 2000, Zimmerman 2003). In the past ten years or so, considerable research has been conducted regarding public outreach and engagement throughout the United States and published in edited volumes by such archaeologists and anthropologists as Barbara Little, Paul Shackel, John Jameson and Erve Chambers (Jameson and Baugher 2008, Little 2002, Little and Shackel 2007, Merriman 2004b, Shackel and Chambers 2004). Public involvement has expanded beyond the informative and stewardship goals emphasized in the late 20th century to include such approaches as collaborative community-based archaeology as well as archaeology education that penetrates the complexities of cultural understanding over time (Atalay 2012, Jameson and Baugher 2008, Levstik, Henderson, and Schlarb 2008, McManamon 1991, McDavid 2002, 2004, Moe 2011, Smardz and Smith 2000).

Development of archaeology curriculum for K-12 classrooms, such as teaching kits or teaching trunks, has been part of the public outreach and education process. What has not been reported in as much detail are formal evaluations of the efficacy of such programs. Educational resources, particularly archaeology curricula that were products of cultural resources management projects, need to be assessed for their effectiveness as instructional aids for teaching history and prehistory (Anderson 1981, Davis 2005, Moe 2011, Solórzano 2011).

Portable teaching kits and curriculum for elementary classrooms can be useful tools to facilitate the integration of archaeological education materials into schools (Baumler 2002). How these kits impact students and teachers, how well they align with state curriculum and the Common Core, and how likely teachers are to use kits in the classroom are instrumental questions when considering this type of public learning (Davis 2000, 2005, Eisenwine 2000, Frost 2000, National Governors Association Center for Best Practices and Council of Chief State School Officers 2010, Education 2014, Levstik and Barton 2011, Moe 2011). This thesis presents an assessment of an archaeology kit prototype that incorporates culled historical artifacts recovered from Sand Creek Byway excavations in Sandpoint, Idaho. Prior to collection accessioning, duplicate and non-provenience artifacts were incorporated as hands-on materials for classroom lessons.

Historic Sandpoint, Idaho, was commercially developed by railroads, mining, lumber companies, and incoming settlers, beginning around 1882 (Gaston 1991, Weaver, Bard, and Sharpe 2006). It grew through the turn of the century to become a transportation hub of relative urbanism and industry in the remote and resource rich Inland Northwest. Today, Sandpoint offers both manufacturing and recreation industries (City of Sandpoint 2014). The pedestrian-friendly town draws Idahoans and tourists, who traverse U.S. Route 95 (N-S) for winter sports on Schweitzer Mountain, water sports on Lake Pend d'Oreille, as well as hunting, hiking, arts, and summer festivals.

In the late 1990s, Idaho Transportation Department (ITD) decided to build the I-95 Sand Creek Byway around Sandpoint in order to improve traffic and safety conditions. The route selected went through some of the town's earliest districts of commerce and industry. As part of construction mitigation, the archaeological testing and mitigation investigations

were conducted from 2006-2008 (Gaston 1991, Swords 2014, Weaver, Bard, and Sharpe 2006). This multi-site and multi-stage data recovery investigation was conducted as the Sandpoint Archaeology Project, which hereafter is also referred to as the *Sandpoint Project* or the *Project* (Swords 2014).

The Sand Creek byway is a four lane road designed to ease decades of traffic problems in the town, and was constructed over the former location of a great deal of Sandpoint's first commercial district and one of the most productive lumber mills in the area, Humbird Lumber Company. Compared to the strong historical knowledge shared by much of the contemporary Sandpoint community, relatively little was known of the businesses, dwellings, and inhabitants nestled between Sand Creek and the historic Northern Pacific Railroad tracks (Gaston 1991, Weaver, Bard, and Sharpe 2006). Given the scope of the Project – the largest excavation in the state's history – Idaho Transportation Department felt it was important to have a significant public component to the Project. Archaeologists engaged the Sandpoint community in several ways throughout the extent of the Project. During archaeological investigations and the following analysis and reporting phases, archaeologists and community members specializing in local history participated in education and outreach events, including open houses, public and professional lectures, a permanent museum exhibit, a volume of historical research on the Humbird Mill (Renk 2014), a volume of the excavation report written largely for the general public, and presentations of data at professional conferences (City of Sandpoint 2014, Weaver 2014). In addition to the mentioned activities, teaching kits were developed and tested during the reporting phase of the Project.

Historical research and artifacts recovered from the excavation of Sandpoint's Humbird Lumber Company blacksmith and machine shop, the Pend d'Oreille Hotel, a Chinese residence/business, the Nesbit boarding house, worker housing, Sandpoint's first jail, the Owl Dancehall and Saloon, Marie Henderson's brothel, and Willa Herman's bordello provide a foundation of clues to previously obscure histories of the Inland Northwest and early town life of Sandpoint. The knowledge accumulated about early Sandpoint provides plenty of materials with which to engage communities at a variety of scales.

Cultural Resource Management, Public Relevance, Archaeology and Education

What is Cultural Resource Management?

Cultural Resource Management (CRM) has been shaped by an amalgamation of federal and state laws enacted and executive orders issued relating to cultural and environmental resources developed since the Antiquities Act of 1906. This legislation reflects the complex nature of culture and environment as they relate to public values (Lipe 2009). Thomas King and William Lipe, who have commented on and helped inform the field of CRM over the years, describe the field broadly. King explains, " 'Cultural resources' should be understood as those aspects of the environment – both physical and intangible, both natural and built – that have cultural value of some kind to a group of people" (King 2008, 3). Lipe outlines categories of cultural resource values contained in the National Register of Historic Places criteria: heritage, research, aesthetics, and education (Lipe 2009). CRM is no one thing, but key elements include the human element, identity (in the sense that identity is essential for culture or heritage) and interaction. In the stewardship-focused

pedagogy of contemporary CRM, it is rare to have such extensive excavations as were conducted in the Sandpoint Project or opportunities for substantial public components. Developing pathways to avoid impacts to or disturbance of archaeological sites is a long-standing approach to CRM and preservation as it precludes the loss of integrity (completeness or quality) of cultural resources or the need for potentially large-scale mitigation.

One continuing challenge symptomatic of CRM archaeology is that the results of research are commonly available only to archaeologists through a technical report, which is generally neither widely distributed nor published. Cultural resource laws, including the Historic Sites Act of 1935 (16 USC 461-467), the National Historic Preservation Act of 1966 as amended through 2006 (16 USC 470), and the Archaeological Resources Protection Act as amended in 1988 (16 USC 470aa-mm) mandate public education. However, public education is rarely included among the expenses of archaeological mitigation. Despite the wide-ranging knowledge of the past that may be generated, the public is frequently left with not much more than informative brochures once an archaeological project is complete (Ellick 1998). The bulk of CRM archaeology reports are written as part of the Section 106 process or Section 110 identification, evaluation, and protection efforts. Most of the time, by law, such reports are not available to the public.

Within these gaps between project-based research and public dissemination, public archaeology groups have formed. In the United States, collaborative projects are inspiring interpretation and outreach efforts by archaeologists, from public archaeology days at sites to regional education networks like Project Archaeology and the Florida Public Archaeology Network. By comparison, many outreach efforts fly under the radar in the Inland Northwest,

particularly in regards to historical archaeology and CRM. Prior to and since the Sandpoint Project, associated archaeologists have pursued public outreach, education, and engagement strategies throughout Idaho, Oregon, and Washington (Webb 2014, Butler 2014, Kelly and Diedrich 2014, Rowland 2014, Burke Museum of Natural History and Culture and West Point Tribal Oversight Committee 2003). A notable program is the Fort Vancouver Public Archaeology Field School, out of which has come a study of interpretive models and methods archaeology that archaeology students used with site visitors in 2011 (Marks 2011, 2014)

Relevance

CRM practitioners are often asked, "Why?" Why should monies be spent to conduct archaeological investigations? How is archaeology relevant to modern society (Rockman and Flatman 2012, vii)? Archaeologists often must contextualize cultural resources, such as archaeological sites, in terms of value. As Lipe explains, "The starting point for thinking about how to manage archaeological sites as cultural resources is to consider what resource values these sites might have and how management can enable these values to be realized as public benefits" (Lipe 2009, 41). Besides economics, research, and aesthetics, Lipe cites cultural heritage and education as public benefits (Lipe 2009, 41). The latter two benefits are the focus of the following discussion.

CRM is rooted the Antiquities Act (43 CFR 3.17) and the National Historic Preservation Act (NHPA) (16 U.S.C. 470), among other defining laws. These laws establish and detail the necessity for archaeology to remain relevant to the public by requiring the sharing of information (Lipe 1984). In the NHPA, congress declared,

> …the preservation of this irreplaceable heritage [in the United States] is in the public interest so that its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans… (16 U.S.C. 470 (b) (4)).

And the NHPA itself was created to help "insure future generations a genuine opportunity to appreciate and enjoy the rich heritage of our Nation" (16 U.S.C. 470 (b) (5)).

Frequently funded by public sector monies, CRM often conducts archaeological research in an effort to record cultural heritage sites and knowledge about these sites prior to impacts that affects these sites. A key component to continuation of this knowledge is community outreach and engagement. However, despite public funding, making connections with the public can be difficult due to both the brief and small-scale nature of many CRM projects and the technical jargon that is embedded in the archaeological reports. While statewide programs, such as the Florida Public Archaeology Network, strive to translate reports for public consumption, independent projects in the Inland Northwest may find this challenging. In similar approaches, project archaeologists often partner or work with museums, historic preservation offices, and state archaeology month organizers to develop public outreach and education materials or programming.

Nearly twenty years ago, Nancy Whiting pointed out that archaeologists have "an ethical imperative to make the past accessible to the public and empower the people to participate in a critical evaluation of the pasts that are presented to them" (1998, 255). Her point continues to be relevant today. Archaeologists must be aware that practicing archaeology is accompanied by this social responsibility (White 2000, 329).

Given the prominence of archaeological support through the public sector, it stands

to reason that there are ties between archaeology and the public at large. In some areas the accessibility of archaeology to the public has been extensive (McManamon and Hatton 2000, 13). This can be due to site location, such as in urban or tourist centers such as Annapolis or Virginia City, or it can be due to planning by archaeologists. Contemporary archaeologists, such as Jameson (1997) and McDavid (2002), find it important to engage communities associated with archaeological sites; however, not all archaeologists manage to do so. The particular challenge with outreach lies with CRM-driven projects.

Archaeology Societies and Ethics

Outlined as principles in the societies' ethics statements, the Society for American Archaeology (SAA), the Archaeological Institute of America (AIA), and the Society for Historical Archaeology (SHA) all detail the responsibility of archaeologists to reach out to, collaborate with, and share research results with the public when possible (Archaeological Institute of America 1994, Society for American Archaeology 1996, Society for Historical Archaeology 2015).

Since the researcher's archaeological field school in 2005, which focused on site stewardship and preservation, the relationship between archaeological sites and contemporary communities has been of interest. This thesis represents an opportunity for the researcher to explore this interest and attempt to both effectively relate archaeological findings and concepts to interested contemporary communities, and to measure the attitudinal impact of information incorporated into archaeology teaching kits.

Chapter 2: Background and Context

Public Archaeology and Outreach

Archaeologists, anthropologists, historians, and educators strive to engage students in the diversity of cultures and history. With the flourishing concern to ensure archaeology remains relevant to the broader public, many professionals work to make sure the discipline is accessible, multi-vocal, and collaborative, both in the United States and globally (Okamura and Matsuda 2011, Scott-Ireton and Gaimster 2012). Several factors contribute to this development, although it appears to be mainly driven by the desire for archaeology to be a relevant pursuit. As CRM in the United States became professionalized in the twentieth century, the role of the public was emphasized as that of the future benefactor of stewardship efforts rather than as partners (Merriman 2004a). A factor in the growth of public engagement is the concern for developing social capitol, where attempts are made to ensure reciprocal partnerships as well as benefits for future publics (Little 2007). As Barbara Little explains, "Social capital is a term that describes good will, fellowship, and the social interactions that count in the daily lives of people who make up a social unit. Social capital gives rise to connections of trust, reciprocity, shared values, and networks among individuals" (2007, 2). The concern stems from the urge to ensure the discipline's relevance in the bigger picture (Rockman and Flatman 2012). Thus, in some ways, archaeology becomes a vessel to facilitate discussion, focusing on personal experience, making visible and empowering the disenfranchised, viewing a broader and more inclusive perspective, and conceptualizing connections (Colwell-Chanthaphonh 2007, Gallivan and Moretti-Langholtz 2007, Mullins 2007).

Archaeologists use a variety of strategies to engage the public with archaeology in a host of settings; including, but not limited to institutions such as museums, sites open to the public, collaborations with communities, websites, and social media (Stranahan et al. 2008, McDavid 1998, Webb 2014). All over the United States, the breadth of organizations engaging the public runs the gamut of federal, state, or local programs to universities, firms, non-profits and individuals. Archaeologists establish and continue education strategies through such programs and sites as Archaeology in Annapolis, Maryland, and Fort Vancouver National Historic Site, Washington; federal organizations such as the National Park Service or the United States Forest Service's Passport in Time program; research hubs like Crow Canyon Archaeological Center, Colorado; networks as the Florida Public Archaeology Network (FPAN); curriculum development and teacher training provided by such organizations as Project Archaeology (partner program of Montana State University and the Bureau of Land Management); and such websites and CRM programs as established by the Anthropological Studies Center (ASC) at Sonoma State, California, the SRI Foundation out of New Mexico, and Applied Preservation Technologies (APT) of Eppard Vision in Bellingham, Washington (Shackel, Warner, and Mullins 1998).

Some of these groups make archaeology accessible to the public by either utilizing established archaeological sites that become well-known and well visited through years of promotion and outreach or through limited site visits during field research. Others, such as the ASC, created publications and websites for archaeological sites disturbed by large scale infrastructure construction or repairs, such as the Cyprus Freeway. In the case of the Cyprus Freeway, their outreach helped make accessible the findings that are often inaccessible to the public (Anthropological Studies Center 2008, 2005). Such CRM project exceptions in

the Northwest United States include collaborations by APT and educational materials developed from the West Point Project in Seattle, excavations during construction of the Vancouver Convention Center and Hilton Hotel in Vancouver, Washington, and the Sandpoint Archaeology Project in North Idaho (Burke Museum of Natural History and Culture 2014, Burke Museum of Natural History and Culture and West Point Tribal Oversight Committee 2003, Eppard Vision 2014). Both Vancouver and Sandpoint were predominantly historical sites (Clark County Historical Museum 2013, Idaho Archaeological Society 2011, SWCA Environmental Consultants 2014). By the very nature of mitigation of the sites due to adverse impacts from development, the projects faced the inability to retain site integrity after construction. Recurring site visitation to observe or participate in ongoing research was not possible and as project-based mitigation, the project would face the challenge of providing continued public access to said research. One method of addressing this challenge is the use of archaeological research to create avenues for sharing findings through curricula.

Public education is an important component of historical archaeology; borne from the belief that archaeological interpretations should incorporate collaboration between contemporary communities and archaeologists (Jameson 1997, Jameson and Baugher 2008, Little and Shackel 2007, McDavid 1998, 2004). The principle to share results of research with and educate many publics is a tenet present in all of the major professional archaeological societies (Archaeological Institute of America 1994, Society for American Archaeology 1996, Society for Historical Archaeology 2015). In the United States, archaeologists and interested citizens inspire each other to incorporate interpretation and outreach efforts into both archaeological projects and sustained archaeological education

programs, from public archaeology days at sites to public archaeology field schools to regional education networks like Project Archaeology and the Florida Public Archaeology Network. The Sandpoint Project provides archaeologists with an opportunity to use archaeology to educate children about regional history in the Inland Northwest through elementary school teaching kits. In the case of the Sandpoint Project, the Idaho Transportation Department archaeologists planned education and outreach as a component of the mitigation prior to excavations.

Emphasis on education and public engagement has been transforming approaches to historical archaeology practice since at least the last quarter of the twentieth century (Cotter 1979). Such engagement is commonly expressed through the incorporation of site tours and museum exhibits either along with ongoing archaeological projects or interpreting archaeological sites (Hurry 2008, Moyer 2004, Potter 1994, Schwartz 2014, Stranahan et al. 2008, Swords 2013, Webb 2014, Warner et al. 2014). For decades, archaeologists have incorporated site tours and exhibits as a means to teach the public (Potter 1994). As public education has become an ethical tenet, archaeologists have employed an assortment of approaches and mediums to present their work, such as through the web, special events, museums, 3D digitization, social media, and collaboration with the public (Anthropological Studies Center 2008, Butler 2014, Champion 2011, Chinese Railroad Workers in North America Project 2014, Lewis 2008, McDavid 1998, Parker-McGlynn 2014, Rowland 2014, Zimmerman 2003).

Though the term "public archaeology" is broad and encompasses all types of archaeology done with all sorts of publics in mind or as management of public resources, the type of public archaeology that involves the interaction of people outside of the fields of

archaeology and cultural resources management can be categorized into three layers of interaction. These layers, propelled by the concern that archaeology remains relevant, inclusive, and accountable to the greater public and contemporary issues, include outreach, education, and engagement (Figure 1) (Little and Shackel 2007, Sabloff 2008, Zimmerman 2003). Participants and proponents of these approaches to public interaction discuss them extensively, but do not always make the distinction between these types of interaction.

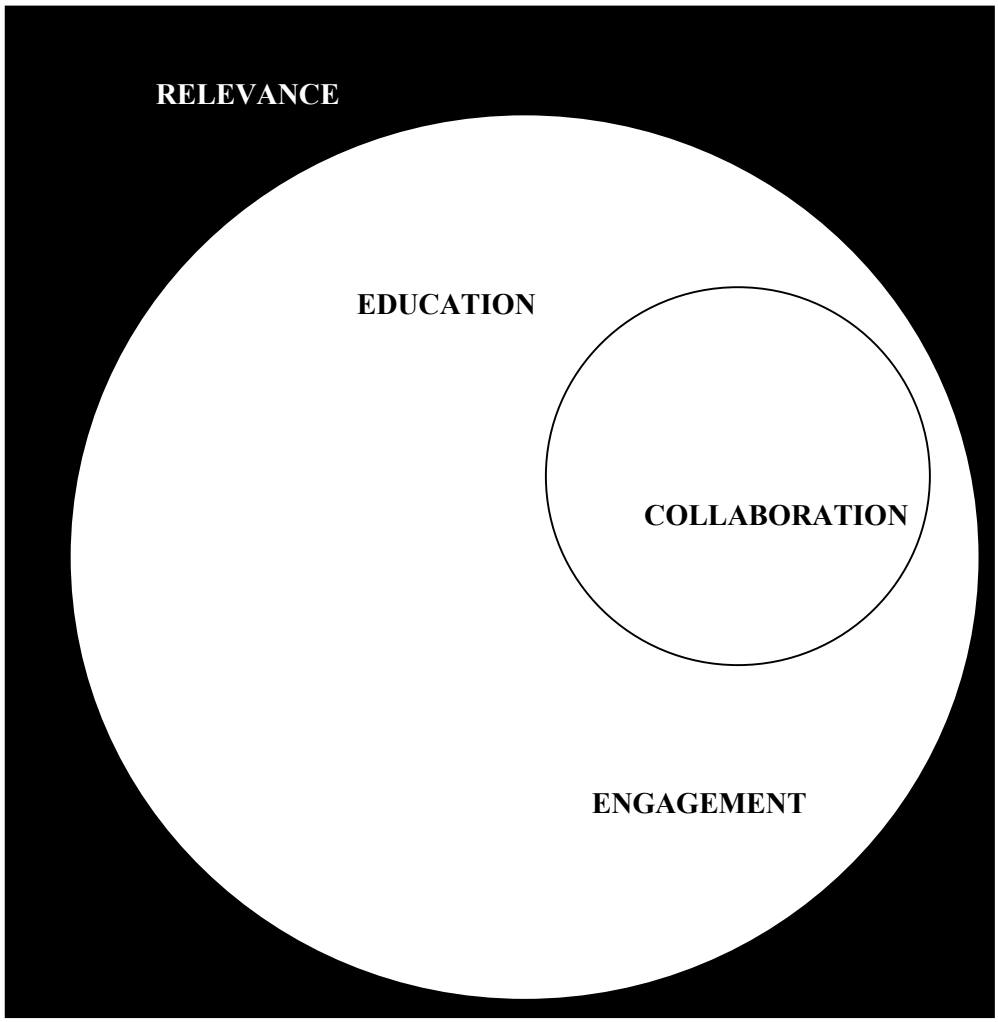


Figure 1: Layers of Public Interaction

For the purposes of this discussion, the distinction between outreach, education, and engagement relates to the degree of participation of the public. Outreach can be an overarching category that includes education and engagement. The distinction between education and engagement relates to the involvement of the participants. Education tends to encompass the generation of information for consumption, whereas engagement requires the participation of the public in the formation of knowledge. Barbara Little (2008) uses a framework constructed by Musil (2003) to describe and outline educational phases developing into civic engagement. This spectrum ranges from a narrow view with one vantage point and little public benefit to an interconnected community with civic prosperity, interlocking systems, and benefits for everyone, now and in the future (Little 2007).

Archaeologists continue to approach working with communities with this range in mind. Such work includes partnering with communities and educators in developing classroom activities (Solórzano 2011) as well as including children in outreach efforts as part of developing community relationships (Britt 2007). Presenters at the 2003 International Council on Monuments and Sites conference attested to children acting as both members of and links to larger communities (Britt 2007). Particularly noted was children's' tendency to bring home discussions of their experiences with public outreach programming, thus motivating family members to participate in projects (Britt 2007).

Schools provide a traditional avenue for archaeology education. Archaeologists recognize the benefits of archaeology's interdisciplinary approaches for curricula and inquiry (Murphy 1998, Smith, McManamon, and United States. National Park Service. Archeological Assistance Division. 1991, Smith 1998). Archaeology can be an excellent learning tool for a student. To date, only a small body of available literature investigates the

use and effects of archaeology teaching curriculum and objects in pre-collegiate classrooms. What follows is a brief overview of the complimentary relationship between educational and archaeological pedagogy and a few examples of existing research of archaeology curriculum in a variety of contexts.

Models of Teaching, Archaeology, and Discourse

Models utilized in teaching archaeological concepts and cultural histories should be appropriate for the classroom, subjects, lesson plans and interactive kit materials, and provide fodder for discourse between research and classroom communities. Inductive thinking and inquiry are teaching models used in both archaeology and the classroom. Support for these models must be provided to teachers or else they may become weak tools, rather than approaches to learning.

Inductive thinking allows people to "generate their own information, organize that information, make sense of what they have collected, and communicate their understanding to others" (Dell'Olio and Donk 2007, 146). The inductive model was developed by Hilda Taba in the 1960s as a way to contextualize the names and dates taught in social studies classrooms so that "key concepts and generalizations" would help students' understanding better in the long-run (Dell'Olio and Donk 2007, 167-168). Unfortunately, research on the effectiveness of the inductive model is lacking compared to the body of research on other teaching methods (Dell'Olio and Donk 2007, 168).

Similar to inductive reasoning, inquiry-based learning positions students to tackle a question or problem, systematically solve the problem, and then share what they learn (Dell'Olio and Donk 2007, 320). Inquiry-based learning began to be used to teach social

studies in classrooms in the 1880s and since then the United States has periodically promoted this approach (Dell'Olio and Donk 2007, 345); Jerome Bruner even created the inquiry-based *Man: A Course of Study* (1965), an approach that mimicked the work of anthropologists in the classroom (Dell'Olio and Donk 2007, 347). Even though inquiry-based learning is nothing new, Owens et al. explain, the "doing something with [inquiry-based learning]" is the most challenging part of inquiry-based learning practices (2002, 617).

Archaeology, too, uses inductive thinking and inquiry even after excavations are complete. In fact, excavations potentially uncover tons of data (literally, in the case of the Sandpoint collection) in need of interpretation. Though interpretation by hundreds of young burgeoning archaeologists isn't a solution to the labor necessary to produce comprehensive professional interpretations, archaeology in the classroom can straddle the line between inquiry-based models and teaching from themes (Owens, Hester, and Teale 2002). It can easily become theme-based if a teacher feeds the inquiry model to students; alternatively, it may provide an answer to "doing something with" student research. If students undertake legitimate research and construct their own interpretations rather than archaeologists spoon-feeding stories of the past, the thematic tool becomes an inquiry model. Though students will be utilizing artifacts collected by archaeologists, students may create their own data by categorizing objects in their own way.

A social science, sometimes referred to as a "soft science," archaeology utilizes the "ten rational powers" espoused by the Education Policy Commission in 1961 (Krajcik, Mamlok, and Hug 2001): recalling, imagining, classifying, generalizing, comparing, evaluating, analyzing, synthesizing, deducing, and inferring (Dell'Olio and Donk 2007, 349).

By practicing archaeological methods of inquiry in the classroom, students may learn these skills as well as scientific, cultural, and historical content. Archaeological inquiry implements these rational powers through processes of questioning, testing, analyzing, and discourse. Impetus for including archaeology in the classroom includes applying the whole process to the classroom experience, particularly steps utilizing powers such as analyzing, synthesizing, deducing, and inferring. In fulfillment of these powers in an inquiry-based model, a challenge then arises for students to share their findings with archaeologists as a means of joining archaeological discourse.

Archaeology can be a tool for both teaching social sciences and engaging communities with local history. This inquiry-based tool can help in the understanding of history and our surroundings as constructions of our inquiry and inductive reason. Archaeology projects are a great opportunity for students to both use reason and inquire into the (often) previously unknown or overlooked history of their community and help archaeologists to (re)construct the past. The effectiveness of teaching kits as both an instructional approach to and aid for teaching history, math, science, writing, and even art, through research conducted via CRM projects should be assessed.

Access to sites is often restricted during CRM projects for various reasons including safety concerns at archaeology sites that are also construction sites, remote site locations, fear of site looting, and a general wariness to involve the public in budget- and time-sensitive projects. Based on a CRM project, an archaeology teaching kit brings archaeology into the classroom, thus bringing a compromise to a lack of site access.

A great deal of scholarship in recent years reports on public outreach and engagement in historical archaeology (Little 2002, Jameson and Baugher 2008, Little and

Shackel 2007, Shackel and Chambers 2004, Warner et al. 2014); however, the effects of these outreach and engagement efforts are difficult to quantify or compare, though assessment and feedback are helpful, if not essential, for identifying successful programs. One reason for this difficulty is that assessment of programs is rarely reported in structured, accessible formats. This is not necessarily a bad thing as assessment and feedback are helpful, but not essential, for identifying successful programs. However, accessible feedback would be helpful for the adaptive longevity of reflexive archaeology education programming. As Nan McNutt put it, "If archaeology is more than a dig, then education is more than an activity or a lecture" (2000, 194). Sometimes, feedback takes the form of informal observations or suggestions from participants. More and more, institutions, organizations, and archaeologists are looking to formal assessments in order to explore the impacts of materials.

Structured feedback is important to better understand the impacts of outreach and attempt to assess successes and opportunities for revision. Even then, what constitutes success should be explored. School educators, archaeologists, and historians do not always conceptualize the same success or what it means. Sometimes, excitement can be interpreted as success; McNutt cautions that assessment is essential to evaluate the actual impacts of curriculum and materials (2000). Feedback is necessary to identify true successes, identify areas of improvement, and conceptualize understanding and attitudes.

Diamond et al. (2009) also point out that evaluation of learning settings, such as museums, provide lateral frames of reference for impacts of informal learning settings, which is particularly useful when reporting on projects or exhibits to granting agencies. Beyond conceptualizing success, consider viewing feedback as an open door to the

discussion of archaeology between publics and professionals as a give and take of opinion and inquiry. Asking questions may assist continuation of education outreach as an iterative process, encouraging re-thinking of content and methods of delivery. In particular, asking for participants' questions about a topic provides an avenue to perpetuate conversations.

Archaeology Education and Program Assessment

The publication of more evaluations of archaeology outreach and education programs would be helpful references for understanding participants' conceptualizations of or attitudes towards archaeology. Studies vary from educational exhibits to classroom education programs or archaeology site visits by the public. Researchers such as Mercer (2005), Eisenwine (2000), Davis (2005), Moe (2011), and Higgins et al. (2014) have assessed displays, programs, curriculum, conceptual understandings, and knowledge.

Kristen Mercer (2005) assessed the power of a portable exhibit as a means to inform local communities in North Idaho about historical context and excavation of a Swedish family homestead. The feedback gathered attempted to provide information about local peoples' archaeological knowledge and attitudes as well as evaluated the exhibit. Her work demonstrated that a portable exhibit can lead to more accurate knowledge of archaeological concepts as well as a more detailed retention of specific information learned through archaeology (Mercer 2005, 29). The exhibit informed the community about the family as well as the archaeological process. Participants made suggestions for the format to be utilized at more community locations, to include objects as part of the interpretive experience, and commented on the "positive community building awareness effect" (Mercer 2005, 33). In addition, evaluation of the exhibit identified areas of improvement

and possible changes to methods of conveying archaeological knowledge in ways that stick.

Marilyn Eisenwine, Elaine Davis, and Jeanne Moe all evaluated archaeology education programs for pre-university students. Eisenwine's study (2000) evaluated junior high teachers' and 120 students' understanding of, attitudes towards, and learning through an interdisciplinary unit centered around archaeology. Her findings support that students particularly enjoyed guest speakers – professional archaeologists – who came and talked with classes. This finding is similar to other projects where legitimacy and "real" inquiry-based learning experiences are important to student and teacher alike (Jacobsen, Lock, and Friesen 2013). Eisenwine explored whether interdisciplinary units based on archaeology would be mutually beneficial to future education and archaeology endeavors. Her questions asked how teachers would integrate archaeology concepts into the classroom and how students would respond (Eisenwine 2000, 31-32). She found that teachers became more enthused about the project over time. Students also gave positive responses, particularly as they felt they were participating in "authentic learning," whereas worksheet-based activities received more negative responses (Eisenwine 2000, 140). Eisenwine found that participants retained knowledge from the unit, particularly information relating to archaeology.

Davis (2000) looked at fourth grade students' constructed understandings, basing the study on the concepts of multiple realities and knowledge as a social construction. The study group participated in a week long unit on archaeology in conjunction with a visit to Crow Canyon Archaeological Center. She asked students from two communities in southwest Colorado to map their understandings of past cultures and share accounts about cultural groups and archaeology. In her efforts to identify how students grasp the idea of

past cultures, she compared the ways in which students think when posing questions to how they impart descriptions. She found that questions students asked were far more abstract in comparison to historical or cultural concepts related through stories about objects. Davis argues that though Montangero (1996) proposed children in fifth grade are not yet able to think diachronically, she found that students made causal links and demonstrated a more complex conceptualization of the human past through questioning (2005). She also found that what could initially be considered misconceptions about past peoples may have been, in some cases, instances in which students applied situational knowledge and logic. Students did not always tap into constructed linear distinctions of cultural identities and ways of living.

Moe's qualitative study (2011) addressed the use of archaeological inquiry as a scientific lens through which to learn American history, particularly through concepts of observation, inferences, classification, context and evidence. Moe argued in favor of archaeological inquiry as an effective interdisciplinary and scientific inquiry teaching tool. During the study, in which fifth grade students participated in Project Archaeology's *Investigating Shelters* archaeology curriculum, she observed both successes and misconceptions. She then traced the origins of misconceptions. Students had difficulty understanding inference as well as some confusion distinguishing between classification and context. Students demonstrated an understanding of similarities between investigative and testing processes. In assessing the Project Archaeology curricula she identified conceptual misunderstandings and other issues; consequently, she was able to identify ways to improve the curricula (Moe 2011).

Scholars such as Roderick Sprague, Pricilla Wegars, Mary Anne Davis, Mark

Warner, Lee Sappington, Leah Evans-Janke, Stacey Camp, and the Idaho Archaeological Society have been perpetuating opportunities for public outreach and education with historical archaeology in Idaho for the past several decades. Recently, Swords et al. (2014) gathered feedback from visitors during interpretive site tours of historical archaeology excavations in Moscow and Boise, Idaho. In addition to an increase in archaeological knowledge, Higgins et al. (2014) found that visitors to a site on the University of Idaho campus shared knowledge of the site with others in the community. Many dedicated repeat visitors would return to the site each day, tracking the progress and findings of the excavations (Molly Swords, personal comm. 2014) despite the excavations taking place during the summer term when fewer students were on campus.

The variety of premises under which archaeology education has been evaluated showcases its utility as an interdisciplinary teaching vehicle. Each study found successes as well as areas of potential improvement by taking feedback and applying it in future education outreach opportunities. This researcher proposes that questioning is an essential component of sustained discourse. Therefore, we must consider evaluating the effects of public archaeology and outreach education as a part of a conversation. The key to assessment as discourse is the continual gathering and implementation of feedback.

Chapter 3: Teaching Kit Project

Study

A broader goal of this research is to encourage community discussion and participation in understanding regional history based on materials from a CRM project. It is work that would provide an engaging tool through which teachers can teach regional history and add to the growing foundation of archaeology education feedback and program assessment. In the United States, archaeologists document the development processes of archaeology teaching kits and teachers have utilized teaching materials created from archaeological projects (Solórzano 2011, Clark County Historical Museum 2010). McNutt called for recognition of the importance of assessing archaeological education programming in 2000; Solórzano reiterated the need to assess teaching kit impacts (Solórzano 2011). As a collaborative development and evaluation, this project will address the need for assessment, and respond to feedback as a method of addressing issues of relevance for contemporary Idaho publics.

Reports on collaborative development of archaeological and cultural teaching materials tend to focus on the front end of the process and discussions of resulting materials, such as the project discussed by Marisa Solórzano (2011). While both Solórzano's and Rebecca Simon's curriculum development found their beginnings in CRM projects, Solórzano's work emphasized the process of developing materials in collaboration with a local community, whereas Simon's project, with contents modeled after Project Archaeology curriculum development principles, included an evaluative component (Simon 2013). Educators also piloted and offered feedback on Clark County Historical Museum's

Historical Artifact Education Kit, which resulted from a cultural resource mitigation of construction of the downtown Vancouver Convention Center and Hilton Hotel in Washington state (Clark County Historical Museum 2013). Tyler Morgan piloted kit curriculum at the high school level and offered feedback, finding that the kits worked well for small group work with hands-on student-centered learning (2010).

Evaluations of education projects take place, but a need exists for more gathering and sharing of assessed impacts. In 2014, Project Archaeology, a leader in archaeology curriculum development for elementary classrooms, broadened the scope of their educator's conference to explore many archaeology education approaches, settings, and resources with a broader network of educators. This reconceptualization of their annual archaeology educators meeting, the National Archaeology Educator's Conference, had a theme of *Best Practices in Archaeology Education* (Project Archaeology 2014d). They led several sessions during which educators repeatedly discussed the need for education approaches to be relevant to the public (Project Archaeology 2014c, b, a). Another concern for the future of archaeology education was the relative dearth of known or accessible publications exploring the effects of archaeology education materials (Project Archaeology 2014b). As a result, the organization, along with educators from a variety of other organizations, plan to compile a bibliography of known and reported results (Project Archaeology 2014a). Another goal resulting from the conference is to encourage educators to contribute to this body of work as a means to explore effects of archaeology as a path towards a more comprehensive understanding of the social and intellectual relevance of archaeology as both teaching tool and taught subject.

Goals and Objectives

Many archaeologists propose public education and outreach be incorporated into projects as a matter of social relevance, yet few formally share participant feedback of evaluated effects or of education and outreach efforts. This study seeks to explore the educational and attitudinal effects of a CRM outreach and education tool in order to better understand the effects of archaeology public outreach and education in Idaho. A collaborative, portable archaeological teaching trunk prototype was designed, evaluated, and revised as a teaching tool; simultaneously, contemporary understandings of local history, prehistory, and the perceived relevance of archaeology and CRM were explored in order to:

I. Create an engaging tool with which to teach primary content in social studies, science, and geography in the elementary classroom.
II. Ensure that the included materials complement state content standards, goals, and objectives;
    a. Include teacher and administrator input and feedback in the final kit design.
III. Measure the attitudinal affect towards archaeology, social studies, science, and math that teaching kit materials have on students; and, possibly,
IV. Track the extent to which taught subjects extend from the classroom (ex: children) and into the community (ex: guardians).

Development and evaluation of archaeological teaching kits provides an opportunity to attempt to effectively relate archaeological findings and concepts to an interested community. The attitudinal affect and effectiveness of teaching kits as an instructional aid for teaching history through research conducted via CRM projects deserves systematic assessment. In turn, sharing the results of such studies can help educators and archaeologists

better understand impacts of programming as well as identify common issues and areas of improvement.

Formalized archaeology curriculum and the push to incorporate archaeology into secondary education settings has been going on for several decades; the Society for American Archaeology formed the Public Education Committee in 1990 and published, *Archaeology in the Classroom: Guidelines for Evaluation of Archaeology Education Materials,* ten years later (Smardz and Smith 2000). Since then, curriculum teaching kits are often designed and produced with communities in mind, but the effects of the materials need to be assessed (Solórzano 2011:95). This need for assessment begs questions of relevance: Are teaching kits effectively enriching cultural and historic legacies? If so, how will this archaeology kit manage to do so? And, how do teaching kit materials affect students' attitudes towards science, history, and social studies? In an attempt to answer these questions collaboration took place with Idaho cultural resources professionals, North Idaho educators, and the Bonner County historic preservation community to, first, identify how archaeology can effectively meet the needs of elementary school curricula on Idaho's history and, second, develop and evaluate a test model of an archaeology teaching kit for elementary educators. The long-term hope is to create an interactive and hands-on way of teaching both archaeology and the histories of Idaho to elementary age children.

Archaeologists strive to prioritize education and most professional societies include outreach and research dissemination as ethical tenets. Professionals periodically assess the state of archaeology outreach and engagement; one of the current issues under consideration is the effect of archaeology taught in the primary and secondary school classroom. The development of the common core, STEM initiatives, and interdisciplinary curricula sets an

evolving stage on which to examine archaeology curricula. With pressure on educators to engage students with science, technology, engineering, and mathematics comes the opportunity for the use of archaeology as teaching tool that can incorporate STEM as well as social sciences and history. According to Smith and Smardz, "… archaeology is a superb teaching subject – it's interdisciplinary, participatory, and perfect for developing both cognitive and affective skills in children" (Smardz and Smith 2000, 28).

Classification of learning objectives through what is commonly referred to as Bloom's taxonomy, is a major foundation of national and state education core and standards development (Bloom et al. 1984, Krathwohl, Bloom, and Masia 1999). Bloom identifies three domains of the taxonomy as cognitive, affective, and psychomotor. They are organized in a structure designed to build upon previous cognition, emotion, or skills (Table 1). Since the original organization, researchers have debated whether or not the levels are actually hierarchical and the taxonomy has seen some revisions, but continues to influence educational standards and curriculum development (Anderson and Krathwohl 2000).

Table 1: Levels of Bloom's Taxonomic Domains

Cognitive	**Affective**	**Psychomotor**
Knowledge	Receiving	Perception
Comprehension	Responding	Set
Application	Valuing	Guided Response
Analysis	Organizing	Mechanism
Evaluation	Characterizing	Complex Overt Response
Synthesis		Adaptation
		Origination

This study focuses on the cognitive and affective characteristics of the taxonomy when considering the efficacy of materials. Affective characteristics include the emotion that a person feels towards something.

As Anderson explains:

> … affective characteristics possess five critical features. First, they are *feelings*. This feature differentiates affective characteristics. Second, they are *typical* ways of feeling. This feature differentiates affective characteristics from affective reactions induced by certain situations. Third, they possess some degree of *intensity*. Fourth, they imply *direction*. Fifth, there is some *target* (either known or unknown) toward which the feelings are directed (1981, 5).

Since feelings can vary in a positive or negative way towards a variety of subjects under different circumstances, then it stands to reason that affective characteristics can be gauged. Both attitude and motivation can impact a person's inclination towards learning and affect, understanding, and tendencies towards an action can be predictive of behavior (Shih and Gamon 2001, Bagozzi and Burnkrant 1979).

Student behavior and what they share with or teach to their interpersonal networks outside of school is a fascinating topic. Britt briefly mentions that children talk about the archaeology in outreach programs with their families and suggests that, in turn, these discussions motivate other members to get involved with public archaeology projects (Britt 2007, 164). Beyond the possibility of students creating a link in the network of archaeology outreach, the exchange of ideas between children and their peers, family, or others beyond the classroom could indicate the synthesis of their knowledge and a whole suite of other cognitive and affective characteristics. One should consider whether child-initiated conversations about archaeology outside of the classroom shifts the role of the individual from student to teacher and the ways in which these encounters motivate additional publics to investigate or participate in archaeology. Both cognition and affect are factors in motivation, but how does the expression of these domains influence others? As a step in addressing this question, identifying actual exchanges (or lack thereof) can help paint a broader context for what Britt recounts.

Development and Design

The process of researching, developing, testing, and revising teaching kits for the Sandpoint Archaeology Project and the corresponding research for this thesis began in 2010 and wrapped up in 2014. Research and development of teaching kit prototypes spanned 2010-2011, followed by preparation for prototype testing and project research. Testing of the kits in classrooms and gathering participant feedback took place during the fall of 2012. Ensuing revisions were implemented in 2013. Revised kits were transferred to the Idaho Transportation Department and Bonner County Historical Museum at the end of 2013 and in early 2014. Early development stages were spent contacting regional organizations with teaching kits and archaeological teaching materials, including the Bonner County Historical Society; Idaho State Historic Preservation Office; USDA Forest Service offices in Idaho, Oregon, and Washington, Florida Public Archaeology Network, and Project Archaeology. Prior to and during ensuing prototype development, the researcher located and referred to existing regional organizations and archaeological teaching materials, particularly those available to elementary educators as free resources.

Construction and revision of the kit contents took place at the University of Idaho and was made possible by funding from the Idaho Transportation Department, SWCA Environmental Consultants, and the John Calhoun Smith Memorial Fund (University of Idaho). From 2007 through 2012, this researcher's participation in the Sandpoint Archaeology Project progressed from an archaeological field and laboratory technician, to Cultural Resources Specialist, and finally as a graduate research assistant at the University of Idaho (UI). In preparation for building and testing fourth and sixth grade classroom-based

archaeology teaching kit, this researcher took curriculum and evaluation education classes as well as anthropological research classes at UI from 2010-2011.

The testing of the prototype kits is the portion of the overall project that is discussed here. Prior to prototype testing, the researcher participated in the National Institute of Health's course, Protecting Human Research Participants (Appendix A), and submitted a protocol to the Institutional Review Board (IRB) at the University of Idaho (Appendix B). Consultation and research of a variety of heritage teaching kits took place early in the development stage and continued into 2013. Archaeologists, educators, and curators from the Lake Roosevelt National Recreation Area (Washington), Fort Clatsop National Historic Park (Oregon), Bonner County Historical Museum (Idaho), and Latah County Historical Society (Idaho) were particularly helpful in providing opportunities to review materials, discussing logistics and construction techniques, and offering suggestions for collaborators (Burke Museum of Natural History and Culture 2014). Each institution houses or has contributed to the construction of portable teaching materials or traveling trunks that pertain to the heritage and history of the Pacific and Inland Northwest.

In addition to consulting experienced developers of traveling education trunks, the researcher communicated with a group that influenced the approach to this study; that is Project Archaeology, a joint program of the U.S. Department of the Interior, Bureau of Land Management, and Montana State University, which aims to utilize, "archaeological inquiry to foster understanding of past and present cultures; improve social studies and science education; and enhance citizenship education to help preserve our archaeological legacy," (Project Archaeology 2010). Recently, the Idaho State Historical Society and the Idaho Bureau of Land Management (BLM) developed a student reader about Idaho archaeology

for use with Project Archaeology curriculum. The state organizers continue to work towards building a strong network of archaeology educators for pre-university classrooms. The *Old Sand Point* teaching kit prototype was created with Project Archaeology ideals in mind.

Rather than re-invent the wheel, available lesson plans describing basic archaeological concepts were adapted or updated to complement the archaeology project in local, state, and regional contexts where possible. Some organizations, such Florida Public Archaeology Network, shared materials and requested use feedback. Such lessons were also adapted through a revision process. Additional lessons were created to specifically apply to local, Idaho state, and regional history and culture. In particular, historical contexts and themed discussions accompanied materials recovered during the Sandpoint Project. Data for project-specific lessons were drawn from historical records and images, archaeological reports of Sandpoint excavations, cultural texts, and recovered material culture. Archaeological research resulting from Sandpoint Archaeology Project analysis and reporting phases were incorporated into curriculum design while the reporting phase of the Sandpoint Archaeology Project was ongoing.

Revised Sandpoint kits follow, to a large degree, the lead of many archaeology education curricula concepts and experiences; key aspects of the contents is to inform participants of both previously hidden evidence of regional historic lifeways and the Sandpoint Archaeology Project itself. Through these explorations, lessons aim to align with Idaho Content for Social Studies and they also compliment state science, math, writing, and geography standards (Table 2). Archaeology as a teaching tool acts as a critical thinking vehicle for interdisciplinary subjects including social studies, science, math, writing, and more (MacDonald 2014). Archaeological research and materials resulting from the

Table 2: Idaho Content Standards Addressed by Teaching Kit

Grade 4 Social Studies

Standard 3: Economics

Goal 3.1 Explain basic economic concepts

4.SS.3.1.1 Compare how American Indians and early settlers met their basic needs of food, shelter and water. (440.01a)

4.SS.3.1.3 Explain the concepts of specialization and division of labor. (440.01c)

4.SS.3.1.4 Identify goods and services in early Idaho settlements (440.01d)

Goal 3.2: Identify different influences on economic systems

4.SS.3.2.1 Describe examples of technological innovations in relation to economic growth in Idaho. (441.01a)

Standard 5: Global Perspectives

Goal 5.1 Build an understanding of multiple perspectives and global interdependence.

4.SS.5.1.1 Analyze the roles and relationships of diverse groups of people from various parts of the world who have contributed to Idaho's cultural heritage and impacted the state's history.

4.SS.5.1.2 Discuss the challenges experienced by people from various cultural, racial, and religious groups that settled in Idaho from various parts of the world. (443.01c)

4.SS.5.1.3 Identify Idaho's role in the global economy.

Grade 6-12 Social Studies: U.S. History I

Standard 1: History

Goal 1.2 Trace the role of migration and immigration of people in the development of the United States

6-12.USH1.1.1.5 Compare and contrast early cultures and settlements that existed in North America prior to European contact.

Goal 1.4: Analyze the political, social, and economic responses to industrialization and technological innovations in the development of the United States.

6-12.USH1.1.4.2 Explain how the development of various modes of transportation increased economic prosperity and promoted national unity. (477.01b)

Standard 2: Geography

Goal 2.1: Analyze the spatial organizations of people, places, and environment on the earth's surface.

6-12.USH1.2.1.1 Develop and interpret different kinds of maps, globes, graphs, charts, databases and models. (485.01a)

Grade 6-9 Social Studies: Geography-Western Hemisphere

Standard 2: Geography

Goal 2.1 Analyze the spatial organizations of people, places, and environment on the earth's surface

6-9.GWH.2.1.1 Explain and use the components of maps, compare different map projections, and explain the appropriate uses for each. (469.01b)

6-9.GWH.2.1.4 Analyze visual and mathematical data presented in charts, tables, graphs, maps, and other graphic organizers to assist in interpreting a historical event. (473.01a)

Standard 3: Economics

Goal 3.2 Identify different influences on economic systems

6-9.GWH.3.2.4 Identify economic connections between a local community and the countries of the Western Hemisphere.

Sandpoint Project provide content to compliment these standards at state, regional, and national levels. In the form of portable teaching kits, the content is accessible to teachers throughout Idaho.

Public learning through objects continues to receive positive responses from participants in a variety of contexts, including students learning through archaeology curricula (Debert 2014). An advantage of teaching kits is that they are a portable means to overcome several logistical barriers of education engagement through archaeology: not every classroom can visit an archaeological site, particularly if that site is no longer accessible to the public, in a remote location, a great distance from the school, or if funds and support are unavailable for such a field venture. These particular kits are meant to facilitate hands-on and engaged learning for the classroom through the study, analysis, and interpretation of historical material culture. Debert found that the use of objects fit well into inquiry-based learning contexts (2014). Though this resource is designed for use in north Idaho and the surrounding area, it has applications for teaching other aspects of state history, science, math, and writing in a variety of contexts.

Kit Contents

One consideration of kit construction was that the hands-on materials realistically relay the process of archaeology beyond excavation and exploration of identification and analysisi. Another was to provide an engaging interaction with history, culture, and scientific methods. The curriculum covers topics such as history, social studies, cultures, science, geography, math, and ethics. In particular, the kits set up and discuss introductory concepts of archaeology, prehistory, history, regional Idaho and Sandpoint history, mapping,

and laboratory methods in archaeology. Lesson plans are designed with Idaho curriculum content standards in mind.

Kits contain use instructions, lesson plans, books, field and laboratory archaeology tools, real and replicated historical artifacts, materials for supplemental science activities, and an inventory of kit contents (Appendix C). In total, eight lessons covering what is archaeology, chronology, maps and inquiry, excavation and coordinates (provenience), analysis, preservation, and ethics were included in the revised version (Appendix D), as well as an exercise in analyzing historic photographs (Appendix E). "Takeaway" discussions exploring the specific Sandpoint excavations fit to the lessons and resources elaborating upon history, culture, and archaeology in Idaho were also added (Appendix F). Background and activity books such as "Archaeology for Kids," "Motel of Mysteries," "The Industrial Revolution with 25 Projects," and the 1896 Sears Roebuck and Co. catalog reprint supplement the lesson plans, and an accompanying resource guide is being developed for online access. Artifacts recovered during 2005-2008 excavations of historic Sandpoint were incorporated in original learning activities and revised based on educator and archaeologist feedback.

Artifacts as tangible links to the past were provided for the most hands-on activities in the kit curriculum. As Davis explains, "It is through cultural materials that the realness of the past can be conveyed and from which stories about human life in the past can be constructed without the mediation of others" (2005, 149). The intent behind the inclusion of archaeological materials was three-fold. One, materials from the past should be accessible to the public; there is a time and place for preservation of materials, but the abundance of objects recovered from the Sandpoint excavations provide an opportunity for public use.

Two, objects that were duplicates, triplicates, quadruplicates and so on present a curatorial management challenge; part of this challenge could be met by incorporating unaccessioned objects into teaching materials. Three, learners construct their own meaning and, through examining objects from real historical sites within Idaho, students can connect with the past in a very immediate way that is also more "real," more tangible, and more complex.

Students were asked to observe objects and make inferences during the analysis of objects from Sandpoint Byway excavations. It was important that students take an active role in their learning. This use of the deaccessioned materials places students at the helm of their own learning and provides an opportunity for them to construct their knowledge as well as identify and deconstruct misconceptions about past life in north Idaho. The components of the kits that prompted students to construct meaning most often were found in the laboratory analysis lesson. Students would have to rely on their established understanding of objects and take the steps to analyze unrecognizable objects through comparison to lab resources and discussions with other students.

Artifacts from the Sandpoint Project were culled from the main collection after they were analyzed and data was recorded and prior to final collection accessioning. Artifacts culled from the collection for education and outreach in teaching kits had to meet certain requirements, such as being duplicates of artifacts retained in the collection or objects without provenience. An inventory of teaching kit artifacts, including photographs, was created to track kit contents and provide identification information provided by archaeologists. Artifacts in the kits are not identical, but similar. A check mark in the Kit A or Kit B column in the teaching kit artifact directory indicates in which kit the artifact is located. If neither column is indicated, then the inventoried artifact is intended as

replacement material. These items are held by the Bonner County Historical Museum as replacement pieces for kit contents that may break or become lost, etc., during use.
Two kits were created after testing of the prototype in Idaho classrooms:

Kit A, sent to Marc Munch at Idaho Transportation Department for use by the Department and in schools in southern Idaho.

Kit B, housed at the Bonner County Historical Museum in Sandpoint, Idaho, is available to Idaho schools for use in the classroom.

Visual documentation such as photographs are key materials when researching and analyzing the lives of past peoples. They have an immediate power to convey a sense of the past not necessarily always gleaned from text. Davis argues that images are necessary to carry students through a change in their (mis)conception of the past (2005). In the lecture introducing historical, anthropological, and archaeological concepts, students were asked to view and analyze a historic photograph of a Civil War battlefield, which was available through the Library of Congress. Students made observations about what was in the image, but were also asked to discuss the strengths and weaknesses of recording history through photographs and other images. What did the image convey and what information might be missing from the image? Throughout several other lessons, historical images of Sandpoint were included to assist students in conceptualizing the realities of the turn-of-the-century town and its inhabitants.

During both lessons and "takeaway" discussions, students were encouraged to observe a variety of visual and material evidence to make inferences about lifeways based on those clues recovered during Sandpoint excavations. "Takeaway" discussions about children in historic Sandpoint aim to use constructivist connections between contemporary

students' experiences and the daily lives of youngsters 100 years ago while another explores sourcing, manufacture, and trade in Indian lifeways (Appendix D).

Educator understanding of classroom materials facilitates their use as well as provides a critical foundation for accurate discussions of archaeology and its use as a teaching tool. An accredited professional development workshop to familiarize Idaho educators with Sandpoint archaeology education materials was taught at the University of Idaho during the 2012 Idaho Archaeological Society conference in Moscow, Idaho (Idaho Archaeological Society 2012) (See Appendix G for the course syllabus). In addition to an exploration of the Sandpoint teaching kit, the Bureau of Land Management and National Park Service brought portable heritage and natural science teaching resources pertaining to Idaho to share during the conference open house and display during the teacher training workshop. The thought behind this compiling of resources was to congregate portable and research-based teaching materials for Idaho educators to check out. One educator registered for the workshop and two more stopped by the workshop during the paper sessions. While these numbers were underwhelming, the Alfred W. Bowers Laboratory of Anthropology open house enticed more visitors, including educators and archaeologists. An additional benefit of the conference was the exposure of the teaching materials to Idaho archaeologists.

Chapter 4: Methods

Research Questions

This chapter includes a discussion of research design, sampling strategies and instruments, and analytical approaches used in the assessment of two historical archaeology teaching kit prototypes. The development, evaluation, and revision of kit prototypes took place over the course of 2010-2013. Combined anthropological and educational research approaches incorporated both qualitative and quantitative data gathering and assessment methodologies. This flexible, multi-method research was conducted with combined descriptive, correlational, and semi-experimental approaches. Data was gathered in order to assess the attitudes of participants before and after the use of prototype archaeology teaching kits, their conceived archaeological knowledge before and after their interaction with the prototype, the practicality of design and hands-on components, and participants' likelihood of conducting further investigations with the topic of archaeology. Goals were broken down into the development and testing phases of the Project:

Development goals:

I. To create an engaging tool with which to teach primary content in social studies, science, and geography in the classroom.
II. To ensure that the included materials complement state content standards, goals, and objectives;
III. And to include teacher and administrator input in the kit design, particularly feedback gathered during prototype testing.

Prototype evaluation goals:

IV. To measure the self-perceived knowledge of and attitudinal affect towards primarily archaeology; but also social studies, science, and math; that teaching kit materials have on students;

V. And, possibly, to track the extent to which taught subjects extend from the classroom (ex: students) and into the community (ex: guardians).

The evaluation of the prototype archaeology teaching kit is the focus of this case study and, hence, this methods section.

Participants in the prototype archaeology teaching kit evaluation and revision included Idaho educators, students, parents, archaeologists, and volunteers. Several Idaho primary public school classes participated in the study as a representative sample of Idaho students and teachers. Collaboration with educators to develop teaching kit curriculum took place during 2012; concurrently, and after formal feedback and assessments, Sandpoint excavation artifacts to be included in the kits were chosen.

Previous feedback

During a Sandpoint Archaeology Project open house in October 2007, students and educators offered enthusiastic comments and asked engaging questions. Students interacted with archaeologists and became absorbed in hands-on activities, including refitting ceramic vessels (containers) (Weaver 2014). Sandpoint teachers informed Project archaeologists that they would like to see archaeology and Project-specific curriculum and materials developed for use in Idaho's elementary classrooms (Münch, personal comm., 2009, 2011). Additionally, teachers would like a workshop designed for instruction in archaeological

concepts, Sandpoint Project history, and in the use of the kits. These requests reinforced ethical approaches for public outreach incorporated in the strategic plan of the Sandpoint Archaeology Project (Münch, personal comm., 2009, 2011).

Setting

During September and October 2012, two Idaho public elementary schools within the same district tested two archaeology teaching kit prototypes. Fewer than 450 students were enrolled in each school during the 2011-2012 school year (U.S. Department of Education 2011-2012). During 2012, the median income of the surrounding area was between $20,000 and $30,000 per capita and between $40,000 and $45,000 per household (Commerce 2014). In 2012, eighteen per cent of the population of the county in which the schools are located was below the poverty line (Indicators Idaho 2014). In 2007, eighty-four per cent of Idaho elementary teachers were white women (State of Idaho 2008). By 2011, the prevailing student population of both schools was white. Fewer than ten per cent of enrolled students were of American Indian/Alaskan, Asian/Pacific Islander, Black, Hispanic, or two or more ethnicities combined (U.S. Department of Education 2011-2012, National Forum on Education Statistics Race/Ethnicity Data Implementation Task Force 2008). School A is in a middle-class neighborhood of a remote urban cluster and School B is in a rural unincorporated community less than twenty-five miles away from School A (U.S. Department of Commerce 2013, Commerce 2014). As of 2006, of students tested on Idaho Assessments, seventy-three per cent of fourth graders were proficient and advanced in math, whereas fifty-four per cent of sixth graders were proficient and advanced in math. Under a new accountability system, Idaho's Five-Star Rating System, elementary schools are

evaluated on academic growth, proficiency, and participation (Idaho State Department of Education 2013). Both schools received four stars for 2012-2013, a transition year rated by both the new system as well as the previous one, which was based on student proficiency in the Idaho Standards Achievement Test (Idaho State Department of Education 2013).

In these two Idaho schools, teachers covered all required subject materials rather than specializing in one particular subject. Teachers' experience with archaeology varied and sixth grade students at these schools have exposure to archaeological concepts (traditionally scheduled for later in the school year). One teacher had participated in an archaeological dig during college education. Another had a particularly strong grasp of archaeological concepts, which she demonstrated during participant observations. The rest of the teachers had no prior formal training or experience outside the elementary classroom; however, one fourth grade teacher, in particular, watched history programs during her leisure time. A Scott Foresman social studies reader introducing archaeological concepts is utilized by sixth grade teachers in the district (Cutler 2006).

Participants

A number of educators, students, and non-educators participated in the development and evaluation of the archaeology teaching kits. Out of four invited Idaho school districts, one participated in the entirety of the study. In total, two fourth grade teachers, three sixth grade teachers, and 133 fourth and sixth grade students from two Idaho public schools accessed the kit during testing (Table 3). Three volunteers, one archaeologist and two interested parties, offered feedback and assisted during the kit revision process. Only the feedback offered by educators, students, and parents/guardians is discussed here. Not all

students who accessed the prototypes offered feedback. All students, teachers, schools, and districts participating in this study will remain anonymous. Pseudonyms are used for people and institutions. Schools participating in the study are known to district staff. This information may be shared by the district at their own discretion. See the table of nomenclature for corresponding pseudonyms (Table 3).

Table 3: Assigned Nomenclature for Schools, Grades, and Teachers

School	Grade and Teacher			
A	4a	4b	6a	6b
B			6c	

Fourth, fifth, and sixth grade classrooms were invited to participate in the study for two reasons. Most importantly, state curriculum for these grades aligned with the interdisciplinary nature of archaeology methods as well as the subjects being studied (i.e. Native Americans, settlement, historical industry, state history, scientific methods, prehistory, etc.). The kits would be designed with accessibility and relevance to Idaho curriculum, with those schools closest to Sandpoint particularly in mind. Second, previous studies of archaeology teaching kit curriculum could provide guidance for the development of the prototype as well as contexts of student and teacher feedback from use of classroom archaeology materials in other states (Eisenwine 2000, Moe 2011).

Procedures

During the development stage, school districts and educators interested in participating in the teaching kit development and evaluation were identified utilizing snowball sampling strategies. Idaho school districts and the respective curriculum

coordinators were contacted in autumn 2011. Formal invitations describing the project were sent to the directors via email and they forwarded the invitations to principals and teachers. Through both invitations and the snowball sampling approach (referrals), district curriculum directors suggested teacher participants for kit prototype feedback and teachers referred each other to the project. Teachers were asked the degree to which they would like to participate while district and state curricula were gathered for reference.

Written consent was received from the participating district superintendent and all principals of participating schools, and all participating teachers. These adult participants were notified in writing and in person about the details of the project. Students were informed in-person and in writing, and their parents/guardians were notified in writing. Both students and parent/guardians could opt out the students from participation in feedback. Student participation in classroom activities was at the discretion of the teacher, since these activities did not differ drastically from a typical school day.

During winter 2011, the researcher met with two district offices, one district superintendent, and a curriculum director. Prior to the in-classroom testing, one school district superintendent retired and another filled the position. The researcher presented the project to both superintendents, provided research protocol and documentation, and permission to conduct research was given by both persons. The school district superintendent reviewed the research proposal and protocol prior to giving consent to the implementation of this study. The superintendent was aware of all survey, inventory, and planned interview questions used in the study. The principal reviewed the study and gave permission for the study to be conducted in his/her school. He or she had a copy of the research protocol. Teachers reviewed and gave permission for the study to be conducted in

his/her classroom. He or she had a copy of the research protocol as well as a copy of all survey, inventory, and planned interview questions used in the study. Teachers could discontinue their own, their class', or any student in their class' participation in this study at any time without repercussions.

The researcher visited each classroom and presented the details of the project to students in person, informing them that their feedback and questions would be used in the making of the new kits as well as this thesis (Appendix H). The researcher gave students an opportunity to ask about the study, the Sandpoint Project, or archaeology, in general. Students and parents were also provided with written notification of the study (Appendix I). Parents/guardians and students who preferred to not to participate in the study notified the educators. These students could participate in the teaching kit lessons but did not participate in any surveys, inventories, or feedback. This researcher did not include these students in any observations.

Data gathering

Mixed quantitative and qualitative research approaches were utilized in order to efficiently gather comprehensive feedback in a relatively short period of time. Quantitative methods were necessary in order to assess the effects of the teaching kit curriculum, which call for the ability to gather comparative data before and after use of the kit prototypes. The qualitative approach was built upon confidence in educator experience and perspective. Anthropological queries sometimes vary from the practicalities and foci of educator concerns. Qualitative anthropological methodology was utilized to gather educational knowledge to provide context as well as opinion.

Several instruments were created for three participant groups: teachers, students, and parent/guardians. For the purposes of this discussion, the study is broken into three stages: pre-prototype (also referred to as the *pre-kit phase, pre-kit, or pre*), the period during prototype use in classrooms (also referred to as *during* or the *testing phase*, or *testing*), and post-prototype – after classroom use finished (also referred to as the *post-kit phase, post-kit,* or *post*). Participants engaged with these quantitative and qualitative media before the use of kits in the classroom, during their use, and after classroom testing finished. Instruments included pre- and post-kit inventories, interviews, a focus group, and participant observations (Table 4). Survey, multifocus affective inventory, and interview questions explored interviewees' attitudes towards and understanding of local history and archaeology before and after the use of CRM education and outreach resources, as well as the teaching trunk lesson plans, materials, and general experiences. Teachers and students utilized the archaeology teaching kit prototype curriculum and materials for most of October 2012.

Table 4: Phases of Participant Feedback by Instrument

Instrument		Teachers	Students	Parent/Guardians
Inventories				
	Survey	pre and post	pre and post	post
	MFAI		pre and post	
Focus group		post		
Interviews		pre, during, and post	during	
Participant Observation		during	during	

Note: MFAI is an abbreviation of Multifocus Affective Inventory

Fourth and sixth grade teachers participated in short, semi-structured focus group interviews, filled out surveys before and after kit use, were observed in classrooms, and logged an evaluative journal (Appendix J, Appendix K). All teachers taught to their particular class for at least part of the day0. Students completed either surveys or multifocus affective inventories before and after teaching kit use, and participated in interviews and were observed in classrooms during the prototype testing (Appendix L, Appendix M, Appendix N). All parents and guardians were invited to fill out anonymous surveys via paper letters taken home by students (Appendix O, Appendix P).

Qualitative data-gathering methodologies included interviews, a focus group, and participant observation, in addition to certain questions on student and teacher surveys. Passive observations and participant observations were conducted in two sixth-grade classrooms during the use of kit prototypes. Participant observation involved the researcher taking part in lesson plan activities as well as acting as a visiting archaeologist. Students asked questions of the researcher during participant observation activities as well as during a formal question and answer period at the end of a lesson unit. Intensive focus groups and interviews including structured questions, discussion between participants, and open comments were conducted with participating educators following the use of the prototypes in classrooms.

All teachers received surveys to fill out themselves before and after using the prototype archaeology teaching kit. Some teachers received surveys to administer to students and some teachers received multifocus affective inventories. Surveys and multifocus affective inventories were assigned at random with the caveat that each school and each grade would participate in one of each, if possible. Surveys were prioritized over

the multifocus affective inventories, since surveys possessed both attitudinal and knowledge measures. Surveys and multifocus affective inventories were gathered in-person or received by mail after the use of the kits.

Teacher Focus Groups and Interviews

The researcher met with teachers before and after the testing of the kits. For the purposes of prototype testing, the first feedback meetings took place after reviewing the project in person and informed consents were signed. Meetings were held at the respective schools of the teachers at times of their choosing. Focus groups and interviews taking place prior to testing the archaeology kit prototypes in the classroom provided a space for teachers to ask questions about the project; the kit; or archaeology, in general; and the Sandpoint Project, in particular. The researcher met with five participating teachers over the course of early- to mid- September 2012. These meetings were recorded.

Post-prototype testing focus groups and interviews took place after the testing of the prototype. Semi-structured questioning concentrated on teachers' experiences with the kit, what they liked or did not like, what worked or did not, their impressions of students' experiences, and what they would like to see from future versions of the curriculum and materials. Previous attitudinal and understanding studies and education projects helped shape both interview questions and inform study methodologies (Davis 2005, Eisenwine 2000, Ellick 2008, Lewis 2008, Moe 2011, Ramos and Duganne 2000, Solórzano 2011). A one-on-one debriefing interview and one debriefing focus group took place at the end of October 2012. Both the interview with one sixth grade teacher and the group meeting with two fourth grade teachers and two sixth grade teachers were recorded. These meetings

provided opportunities for teachers to collaboratively inform the researcher of the most prevailing impressions of their experiences as well as opened the floor for discussion of unanticipated issues and insights.

Surveys

Surveys constructed for students, teachers, and parents/guardians asked a series of questions as well as provided a space for participants to both ask questions of archaeologists and propose research questions as if they were an archaeologist. One way to test participants' concepts of and interests in archaeology is to have them imagine what they would want to know if they were an archaeologist. Self-assessed measures of knowledge, interest, and inquiry consisted of a second survey-format inventory. Teacher and student participants took surveys before and after testing the prototype teaching kit. In total, three sixth grade teachers, one fourth grade teacher, and fifty-five student respondents from School B Classes 4a (26) and 6b (29) filled out surveys.

In pre and post prototype curriculum surveys, participants provided self-assessed attitude and knowledge evaluations in the form of interval Likert-like scales, multiple-choice questions, yes or no questions, fill in the blank, and short answer questions (Appendix M, Appendix N). Originally developed nearly a century ago (Likert 1932), social researchers across disciplines continue to use the Likert scale method as an efficient technique to assess and compare attitudes. In order to evaluate the prototype, this concept was extended to questions of the survey in which participants rated their perceived knowledge of archaeology by answering Likert-like items.

While Likert-like scales are a useful mean of gathering attitudinal data, additional evaluative question formats were used to identify conceptions held correctly, misconceptions, lack of archaeological knowledge, and confusion. Student *Pre-kit* survey questions also composed the bulk of the *post-kit* questions in addition to several others. Questions in the *pre* and *post* surveys explored interest in (or value of) and knowledge of archaeology and related subjects. Additional questions explored general interests, assessed students' frequency of leisure and practical activities, and asked them to define archaeology in their own words. Teacher *pre* and *post* survey questions did not repeat as much as those on student surveys. *Pre* assessment focused on teachers' familiarity with archaeology and CRM; whereas, *post* assessment asked teachers to rate and comment on their experiences with the prototype, its effectiveness, whether they would consider using the archaeology curriculum in the future, and other insights.

In total, two parent/guardian respondents completed a feedback survey, which had been sent home with students. As an alternative to the paper survey, parent/guardians could complete a survey online through the service provided by SurveyGizmo (Widgix 2014). One respondent filled out a paper copy and one completed the survey online. Questions in this inventory attempted to assess whether an additional branch of students' social networks had previous knowledge of archaeology, how they learned about archaeology, their conceptions of archaeological relevance, and their thoughts on cultural resource protection law, whether they had heard of the Sandpoint Archaeology Project, and whether they discussed archaeology or the Project with students (Appendix P). Due to the relative lack of respondents (two out of 133 distributed surveys) the data from these surveys is summarized briefly in the following chapter.

Multifocus affective inventories

Post-experience attitudinal responses are subject to both pre-existing attitudes and the experience of participants between attitudinal assessments (Senf et al. 1989). A multi-focus affective inventory (MFAI) is a brief means of attempting to assess the "affective dispositions" of students (Popham 2011). Shorter than a traditional Likert inventory, a MFAI is a tool for measuring a group of students' interest in a variety of subjects (Popham 2011). For the purposes of this study, the inventory contained a mix of sixteen positive and negative statements relating to history, social studies, science, math, family history, archaeology, and school in general. Prior to and following the use of the archaeology teaching kit materials, students indicated whether they agree or disagree with the statements. By conducting the inventory before and after kit use, the study hoped to gauge the attitudinal effect of the kit lessons on multiple subjects, particularly those pertaining to the interdisciplinary nature of archaeological methods in research as well as two STEM tenets.

Multifocus affective inventories are similar to traditional Likert inventories, but differ in the depth and breadth of topics. Rather than indicating the *degree* to which one agrees or disagrees with a provided statement, as in a Likert inventory, the respondent chooses whether both positive and negative statements are true or not true for them (Popham 2011). Positive and negative statements are included for each topic in a MFAI. This dual statement structure allows for the comparison of each and contradicting answers may indicate whether or not the respondent clearly understands the statement, reads the statements critically, or answers truthfully (Popham 2011).

One sixth grade teacher received "SOCIAL STUDIES AND ME," (Appendix N), a multifocus affective inventory with sixteen questions. S/he administered it both prior to

beginning and after completing the teaching kit unit. Students could pick one of three answers for each positive or negative statement: “True for me,” “Not true for me,” or “I’m not sure.” Only students answered the inventory questions. In total, 28 sixth grade students filled out questionnaires, though only 27 completed both pre- and post-kit attitudinal inventories.

Classroom visits

The researcher visited four classrooms over the course of autumn 2012 for several purposes, including to explain the study to possible participants, answer questions in-person, and observe the implementation of the curriculum and materials during their use. Classroom visits scheduled during the use of the kit prototype were conducted in order to observe kit use in a practical context as well as interact with students, teachers, curriculum, and materials. Insights could be gained or questions answered during these tactile and interactive experiences. Two sessions, conducted on October 25th in two sixth grade classrooms, were taped. Semi-structured interview questions were utilized while initiating conversation with students; however, students often were the ones to ask questions or strike up conversations.

Timeline of classroom use and data gathering

During the testing phase in September and October of 2012, teachers and students utilized the archaeology teaching kit and curriculum prototypes in the classroom. Prior to their use, an archaeologist presented basic archaeology concepts, including ‘What is archaeology?’ in all three sixth grade and two fourth grade classrooms. Participant observations were conducted by this researcher in two of the sixth grade classrooms, who

clarified that both teacher and student feedback would be utilized in the continued development of the archaeology teaching kits. Responsive interviewing with teachers took place upon collection of the teaching kits after the completion of their testing (Rubin and Rubin 2005). Teachers took surveys pertaining to archaeological knowledge, the utility of the kits as teaching tools, and their likelihood of utilizing a kit in future. After kit prototype testing, the researcher processed the survey and participant observation feedback. Based on feedback, archaeologists and volunteers revised and reconstructed the curriculum and contents.

Data analysis

The pool of participating fourth and sixth grade students in North Idaho is small and, therefore, random error from sampling variability is quite possible. Analysis of the multi-methods data included both quantitative and qualitative data. Participant answers to assessment inventories were entered into a basic Microsoft Access 2013 database constructed by the researcher. From Access, quantitative data were analyzed through various analytical tools and visualizations. Bar charts and word clouds are used to represent qualitative data.

Individual Likert item responses were treated as ordinal data since, though the choices were interval, participants' perceptions of between levels may not have been equal (Kuzon, Urbanchek, and McCabe 1996). Some statistical analysis of Likert items was conducted from Access. Since responses were treated as ordinal data, central tendency is summarized by median, mode, range, and inter-quartile range, rather than mean.

Conclusion

In attempting to assess attitude, knowledge, and exchange of information by using a multi-methods approach, the researcher aimed to compile an assessment of attitudes, knowledge, practicality, utility, and interest, and effects through a comprehensive evaluation; however, each feedback tool had its limitations. This case-study is assessment conducted in a particular setting and the results are unlikely to be replicable. Structured surveys provided a baseline from which qualitative interviews and focus groups could elaborate and provide solutions. Inventories were self-assessments rather than tests of knowledge. Observations were made during a very concentrated time period and do not reflect the evolution of student or teacher development over the course of a full school year or even a full school term.

Students may have acted differently in the presence of the researcher and responded in different ways to surveys had the researchers' intent and participation been less apparent. The very act of informing students that their feedback would impact the design of the archaeology teaching kit, as well as repeatedly asking them to think about the questions asked in surveys, likely altered how they perceived and perhaps how often they thought of the prototype evaluation project and Sandpoint Archaeology Project, specifically, and archaeology, in general. Though these effects are likely, teachers did not comment on noticed impacts or behavioral changes; however, students' excitement at participating in archaeology focused lesson plans could also have been influenced by their knowledge that their feedback would be taken into consideration.

Chapter 5: Feedback

Feedback

To help develop the Sandpoint archaeology teaching kits, educators, students, and parents answered focused questions regarding their attitudes towards archaeology and history. Additionally, teachers offered feedback on the practicalities of use in the classroom. The questions, results, and discussions from surveys, inventories, observations, and focus group feedback are organized into the following categories:

1. *Attitude*: self-assessed measures of interest in, attitude towards, and value of archaeology;
2. *Understanding*: self-assessed measures of archaeological knowledge, including awareness of existing sites in Idaho; what is archaeology; and tools used by archaeologists;
3. *Inquiry*: whether students came into or left the experience with questions and to identify questions, misconceptions, or concerns not addressed in other sections;
4. *Design*: the ease of use, practicality, alignment, benefits, and drawbacks of the materials.

Educators and students took pre- and post- kit surveys and parents had the option to take surveys after testing the prototype in classrooms. Attitudinal responses were gathered in both a multi-focus affective inventory (MFAI) as well as in three questions on pre- and post-testing surveys. Pre- and post-kit testing responses from the MFAI are summarized in Table 5. An overview of attitudinal responses to Likert-type items exploring attitudes towards archaeology and local history are available in Table 6. Educators offered feedback

throughout the project and this information was incorporated in the analysis, but the majority of educator feedback presented in this section stems from input received during focus groups and interviews after the use of the kits.

Attitude

Multifocus Affective Inventory

As a general gauge of how students felt towards a variety of subjects as well as archaeology, twenty-eight sixth grade students were asked to indicate whether or not they agree with a series of statements (Table 5) before and after participating in the archaeology teaching kit prototype lessons. All twenty-eight students answered the first inventory, with the exception of two statements, while twenty-seven students responded to all but one statement ("I prefer not to read maps.") in the post-kit inventory. An overview of the response counts and percentages are provided in Table 5. An exception to attitudinal statements in this inventory is the self-assessment of students, with knowledge about family history, rather than attitude towards it, being collected. Other than family history and archaeology, students' overall positive and negative attitudes changed very little about the subjects under consideration, including science, social studies, history, and math. Of note, after the use of the archaeological teaching kit prototype, positive statements towards archaeology increased.

General attitudes towards each subject were favorable. Students indicated a positive attitude toward school (Table 5, Figure 2). This sentiment remained fairly consistent before and after participation in the teaching kit prototype testing. Some attitudinal uncertainty towards MFAI topics was greater after the kits, but students responded more decisively to

Table 5: Multifocus Affective Inventory Statements Count and Percent Response, Sixth Grade

Statements	Inventory I							
	True for me.		Not true for me.		I'm not sure.		Total answers	Contrary response
In general, I like school a lot.	20	71%	2	7%	6	21%	28	4
Overall, I don't enjoy school very much.	4	15%	19	70%	4	15%	27	
I don't like to learn about social studies.	7	25%	15	54%	6	21%	28	1
I like when we learn about social studies.	12	43%	6	21%	10	36%	28	
I like to learn about history.	11	39%	6	21%	11	39%	28	2
When we study history, I don't like it.	4	14%	14	50%	10	36%	28	
I know a lot about my family history.	11	41%	10	37%	6	22%	27	1
I do not know very much about my family history.	13	46%	13	46%	2	7%	28	
I like archaeology.	15	54%	3	11%	10	36%	28	5
I don't want to grow up to be an archaeologist.	10	36%	6	21%	12	43%	28	
I like to learn about scientific topics.	15	54%	3	11%	10	36%	28	1
I don't like to learn about scientific topics.	4	14%	16	57%	8	29%	28	
Math is my favorite subject.	12	43%	10	36%	6	21%	28	3
I do not like to do math.	6	21%	17	61%	5	18%	28	
I like to read maps.	10	36%	10	36%	8	29%	28	4
I prefer not to read maps.	6	21%	15	54%	7	25%	28	
	Inventory II							
In general, I like school a lot.	18	67%	1	4%	8	30%	27	2
Overall, I don't enjoy school very much.	3	11%	19	70%	5	19%	27	
I don't like to learn about social studies.	5	19%	15	56%	7	26%	27	5
I like when we learn about social studies.	13	48%	10	37%	4	15%	27	
I like to learn about history.	16	59%	5	19%	6	22%	27	2
When we study history, I don't like it.	5	19%	18	67%	4	15%	27	
I know a lot about my family history.	6	22%	13	48%	8	30%	27	2
I do not know very much about my family history.	14	52%	10	37%	3	11%	27	
I like archaeology.	19	70%	3	11%	5	19%	27	7
I don't want to grow up to be an archaeologist.	11	41%	7	26%	9	33%	27	
I like to learn about scientific topics.	15	56%	3	11%	9	33%	27	2
I don't like to learn about scientific topics.	3	11%	15	56%	9	33%	27	
Math is my favorite subject.	13	48%	9	33%	5	19%	27	3
I do not like to do math.	5	19%	19	70%	3	11%	27	
I like to read maps.	8	30%	13	48%	6	22%	27	1
I prefer not to read maps.	9	35%	9	35%	8	31%	26	

Note: The Contrary Response column indicates the responses to paired subject statements contradict on the same response sheet. For example, in the pre-kit inventory one student indicated that they both like and don't like to learn about scientific topics.

four sets of subject statements. Uncertainty of attitude increased towards topics of school and perceived knowledge of family history. More students chose the statement, “I’m not sure,” in response to their assessment of knowledge of family history and their attitude towards school, in general. Fewer students indicated uncertainty in whether or not they agreed with positive or negative statements towards specific subjects in the MFAI administered after the use of the kits than they did in the MFAI administered prior to the use of the kits in the classroom. In particular, fewer students chose the statement, “I’m not sure,” in response to positive and negative statements about social studies, history, archaeology, and math.

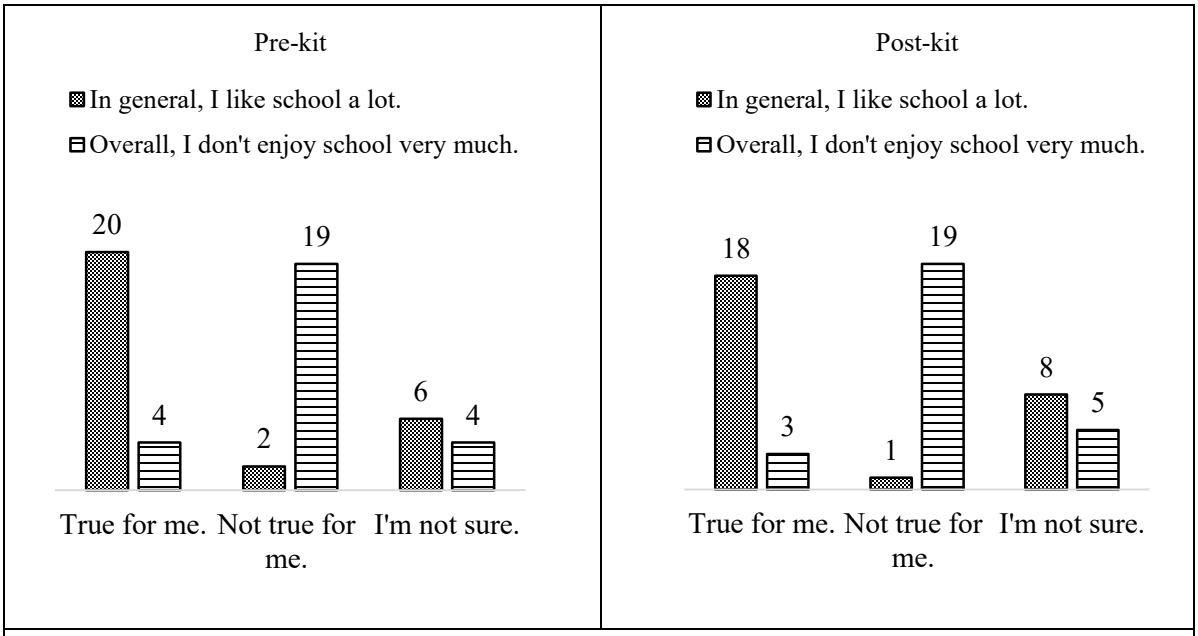


Figure 2. Fourth and sixth grade students’ attitudinal responses towards school, in general. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

Prior to the use of the kit, nearly half of the sixth grade class agreed that they, “… like when they learn about social studies.” More than half (15, 54%) of the class disagreed with the statement, “I don’t like to learn about social studies” (Table 5, Figure 3). In the

MFAI administered after the kits, fewer students were unsure (4, 15%) about the statement, "I like when we learn about social studies," than they were prior to the use of the kits in the classroom (10, 36%) (Table 5, Figure 3) Though the number of students who agreed that they like it when they learn about social studies (13, 48%) increased by one, the number of students who said the statement did not apply to them increased from six (21%) to ten (31%) (Table 5, Figure 3).

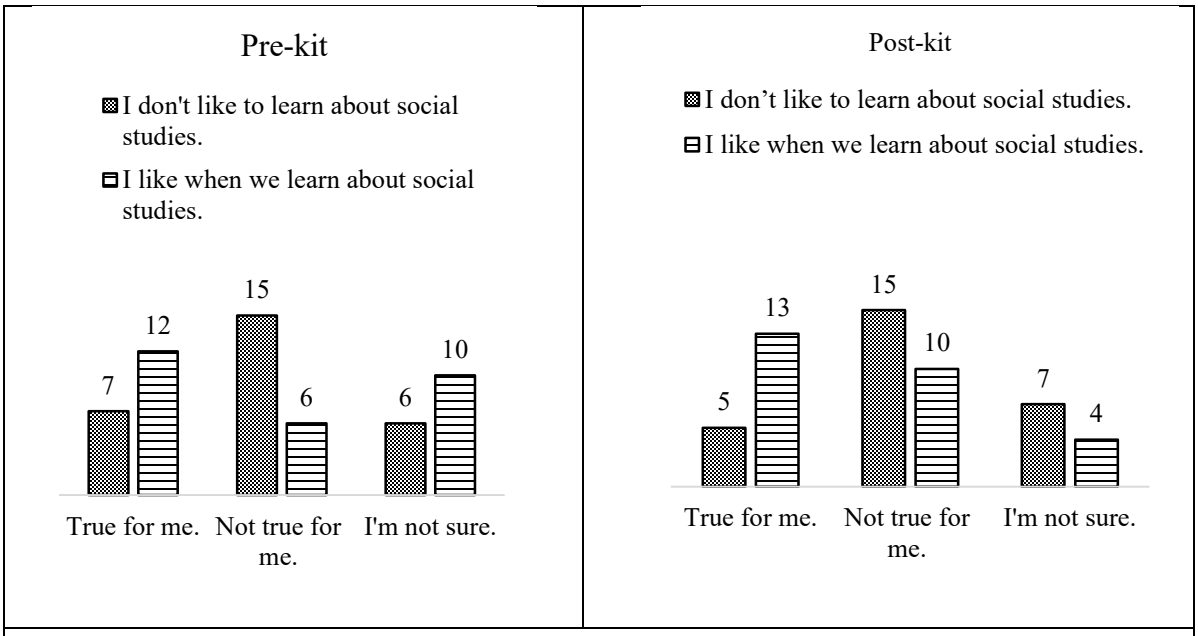


Figure 3. Sixth grade students' attitudinal responses toward social studies. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

Students' attitudes towards history were a mixture of positive and some uncertainty in Inventory I (Figure 4), in addition to six students (14, 21%) who indicated they do not like it when studying history in class (Table 5). By comparison, about half of students disagreed with the statement, "When we study history, I don't like it." Four students (14%) agreed with this negative statement and ten (36%) were unsure if it applied to them. After testing the historical archaeology lesson plans and contents, students indicated more

decisive attitudes toward history in Inventory II (Table 5). A smaller percentage of students chose “I’m not sure,” in response to attitudinal statements about history (11% and 10% before, 6% and 4% after) (Table 5). Upon reflection, the indecisiveness could relate to the early part of the school year. Students may have been uncertain about what learning in the relatively new classroom setting would entail. After the testing of the kit – as well as the passing of the school year – student choices indicated more positive attitudinal statements towards history.

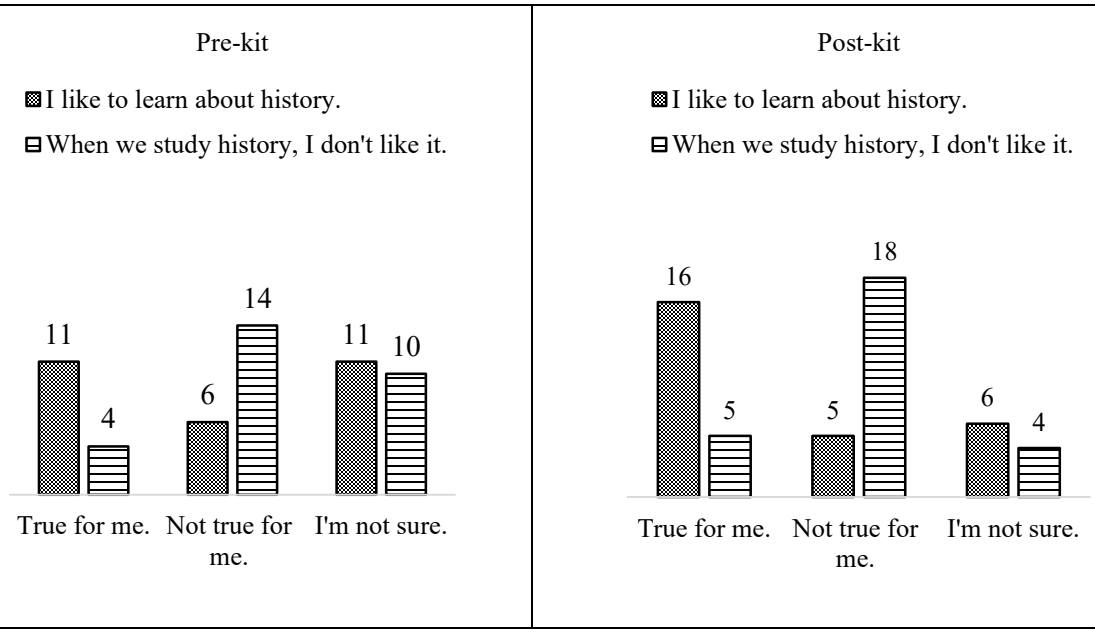


Figure 4. Sixth grade students’ attitudinal responses towards history. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

Statements about family history were more self-assessment of knowledge about a topic than attitudinal indicators. Fewer students indicated uncertainty towards the negative statement, “I do not know very much about my family history,” after testing the kit (Figure 5). On the other hand, fewer sixth grade students stated that they felt they knew less about their family history after the use of the teaching kits. While this could be interpreted as a

negative impact, interviews with teachers indicate that students became more aware of the complexities of their family, local, and global histories during the timeline lesson. Supporting this interpretation is the fact that, though fewer students indicated that they know a lot about their family history after the test, more students also acknowledged that it wasn't true that they did not know very much. The kit prototype, therefore, may have altered students' historical and world perspectives or the surveys may have been given at a time when students' historical perspectives cognitively shift (Davis 2005).

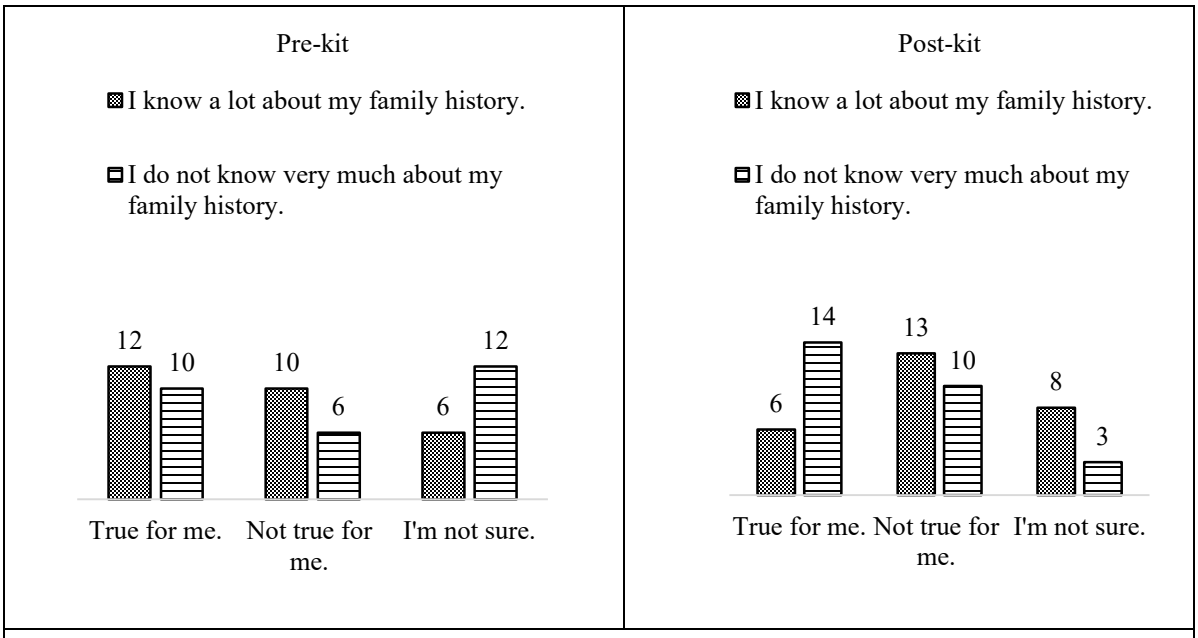


Figure 5. Sixth grade students' responses toward family history. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

Positive statements towards archaeology were greater after exposure to the teaching kit. The number of students who chose the statement, "I like archaeology," increased from fifteen (54%) to nineteen (74%). After participating in kit activities, more students were decisive about both whether or not they liked archaeology and whether or not they'd like to grow up to be an archaeologist (Table 5, Figure 6). In Survey II, one additional student did

not rule out the possibility of wanting to become an archaeologist, with seven total students choosing “Not true for me,” in response to, “I don’t want to grow up to be an archaeologist.”

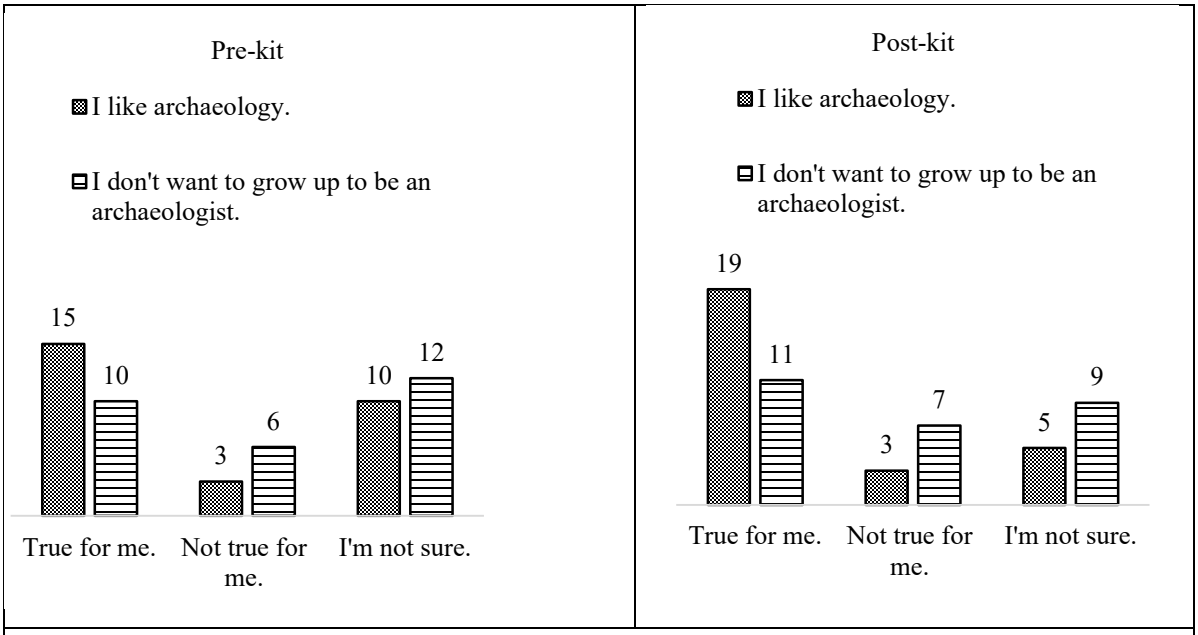


Figure 6. Sixth grade students’ attitudinal responses toward archaeology. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

As with responses towards social studies (Figure 3), attitudinal statement responses towards math remained relatively consistent before and after student interaction with the archaeology teaching kits (Figure *7*). Math was the favorite subject of about half the sixth grade students and the overall attitude towards math was positive both before and after the archaeology activities. Only about one in four students indicated a dislike for the subject.

One of the subjects that students chose the most positive and double negative statements towards pertained to science (i.e., the statement, “I like to learn about scientific topics,” is true for them and, “I don’t like to learn about scientific topics,” is not true for

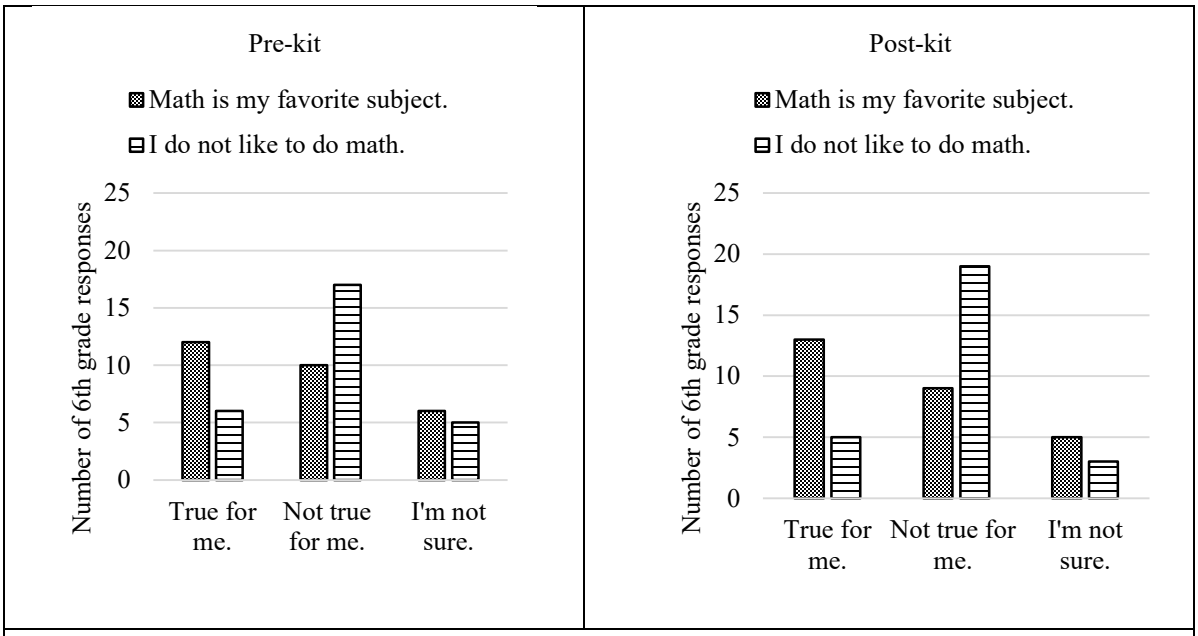


Figure 7. Sixth grade students' attitudinal responses toward math. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

them). A good portion of students shared a positive attitude towards learning about scientific topics, with 54% indicating a positive attitude towards learning science and less than 15% indicating they did not like to learn about scientific topics. More than 50% of students indicated that they liked to learn about scientific topics on both pre- and post-kit inventories (Table 5, Figure 8). About one third of the sixth grade class was consistently unsure whether they did or did not like to learn about scientific topics (Figure 8).

The percentage of students who responded negatively toward reading maps increased in the post-kit inventory (Figure 9), though the differences in preferences distributed across what is true and what is not indicate some confusion or uncertainty about their attitude toward reading maps.

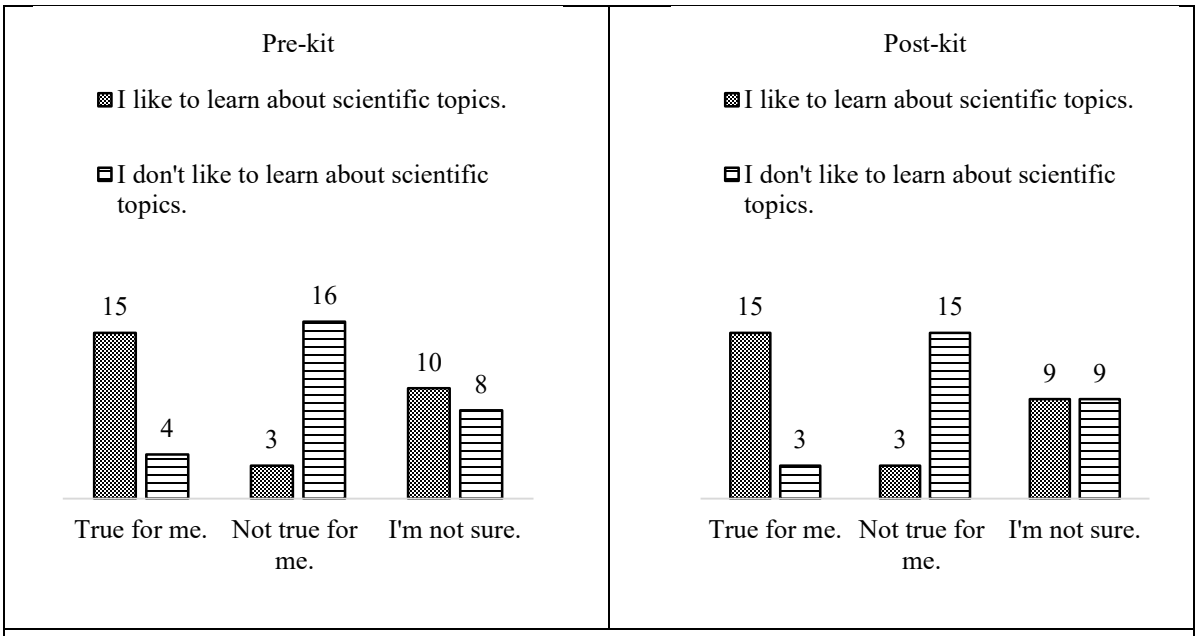


Figure 8. Sixth grade students' attitudinal responses toward science. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

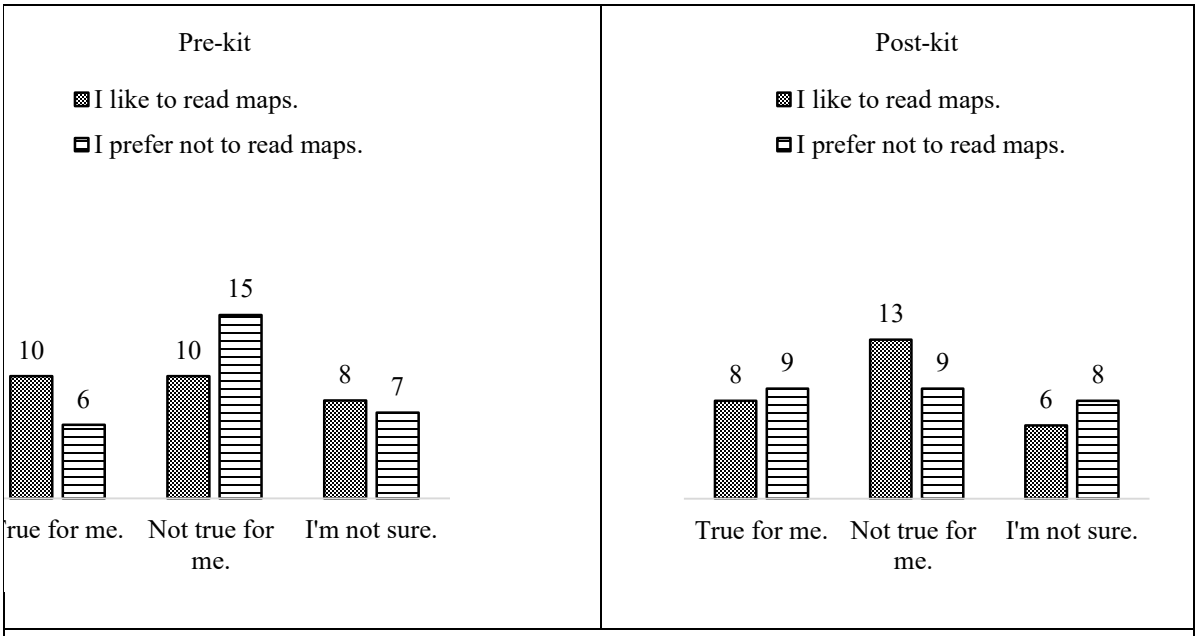


Figure 9. Sixth grade students' attitudinal responses toward maps. Responses from the Multifocus Affective Inventory administered before and after interaction with the archaeology teaching kits.

Surveys

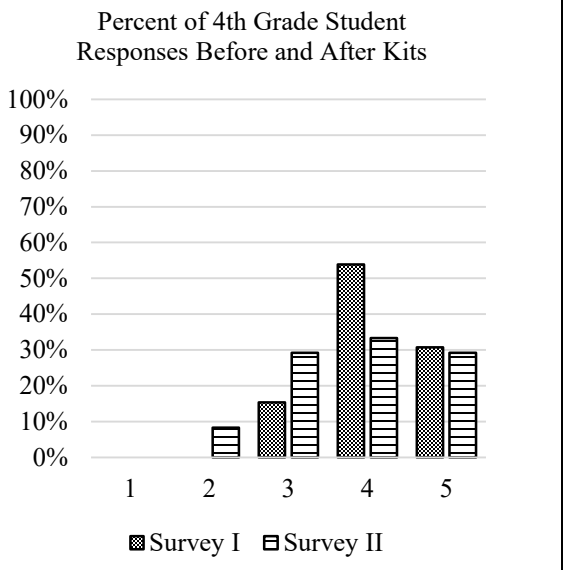
Two classes, one fourth grade (26 students) and one sixth grade (29 students) offered feedback in pre- and post-kit surveys that questioned participants' attitudes towards archaeology and history, their interest in related and unrelated subjects, and their self-assessed understanding of archaeology. The following descriptive analysis of responses explores similarities, differences, and trends of fourth and sixth grade student responses in pre- (Survey I) and post-kit (Survey II) surveys. The Likert-type scale provided five ranking options ranging from one (not important/interesting) to five (extremely important/interesting) (Table 6).

In answer to the question, "How important is archaeology?" fourth and sixth grade students rated archaeology towards the more important end of the scale (Table 6). Fourth grade student responses were more clustered in Survey I than Survey II. No fourth graders stated that archaeology is not important. Survey II responses may reveal actual fourth grade participants' attitudes towards the importance of archaeology. At least 84% of fourth grade student participants believed archaeology is very to extremely important, choosing four or five out of a one through five scale.

Sixth grade students tempered their positive responses a bit in the second survey. The mode of Survey I was five (extremely important), whereas the Survey II mode was four (Table 7). All sixth grade responses towards the importance of archaeology were three or above with 77% of students choosing four or five in the first survey and 85% of students choosing four or five in the post-kit survey; no students chose one or two in either of the pre- or post-kit surveys (Figure 10). Much like their fourth grade counterparts, no sixth grade survey participant felt that archaeology was not important. (Table 6, Figure 10).

Table 6: Overview of Attitudinal Responses from Surveys, Number and Percentage of Students

Scale		1 Not important/interesting			2			3			4			5 Very important/interesting			
		4th	6th	Aggregate	4th	6th	Aggregate	4th	6th	Aggregate	4th	6th	Aggregate	4th	6th	Aggregate	Total
								Survey I									
On a scale from 1 to 5, how *important* is it to know *local county history*?	#	0	0	0	0	0	0	10	5	15	12	18	20	3	6	9	54
	%	0	0	0	0	0	0	40	17	28	48	62	37	12	21	17	
On a scale from 1 to 5, how *important* is *archaeology?*	#	0	0	0	0	0	0	4	4	8	14	11	25	8	14	22	55
	%	0	0	0	0	0	0	15	14	15	54	38	46	31	4	40	
On a scale from 1 to 5, how *interesting* is *archaeology* to you?	#	0	1	1	1	4	5	7	9	16	10	10	20	8	5	13	55
	%	0	4	2	8	14	9	27	31	29	39	35	36	31	17	87	
								Survey II									
On a scale from 1 to 5, how *important* is it to know *local county history?*	#	0	0	0	0	0	0	4	11	15	10	11	21	10	4	14	50
	%	0	0	0	0	0	0	16	42	30	42	42	42	42	15	28	
On a scale from 1 to 5, how *important* is *archaeology?*	#	0	0	0	2	0	2	7	4	11	8	15	23	7	7	14	50
	%	0	0	0	8	0	10	29	15	22	33	58	46	29	27	28	
On a scale from 1 to 5, how *interesting* is *archaeology* to you?	#	1	2	3	2	4	6	11	9	20	2	7	9	8	4	12	50
	%	4	8	6	8	15	12	46	35	40	8	27	18	33	15	24	



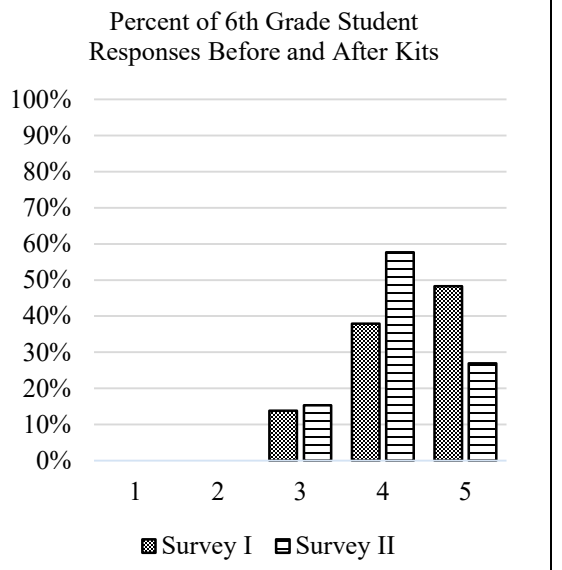


Figure 10. Fourth and sixth grade answers to surveys I and II question: On a scale from 1 to 5, how important is archaeology?

As with the previous question, students' responses to the question, "How interesting is archaeology to you?" varied between Surveys I and II (Figure 10), though the distribution was not clustered as intensely in the pre-kit choices. Originally 69% of fourth grade students rated their interest in archaeology as either four or five. One may speculate that this change relates to clarification about what is archaeology presented during the archaeology lesson plans and activities; however, fourth grade students did not participate in the hands-on laboratory analysis portion of the unit. Thus, as indicated by comments made by sixth graders during lab analysis lesson participant observations and educators during the focus group discussion, hands-on aspects were integral to the level of interest. Also, only one student expressed no interest during either survey response to this question. Sixth grade participants' responses remained more consistent between surveys, overall, than their

younger counterparts' answers; the major changes being three fewer sixth graders choosing an interest level of four out of five (Table 6, Figure 11).

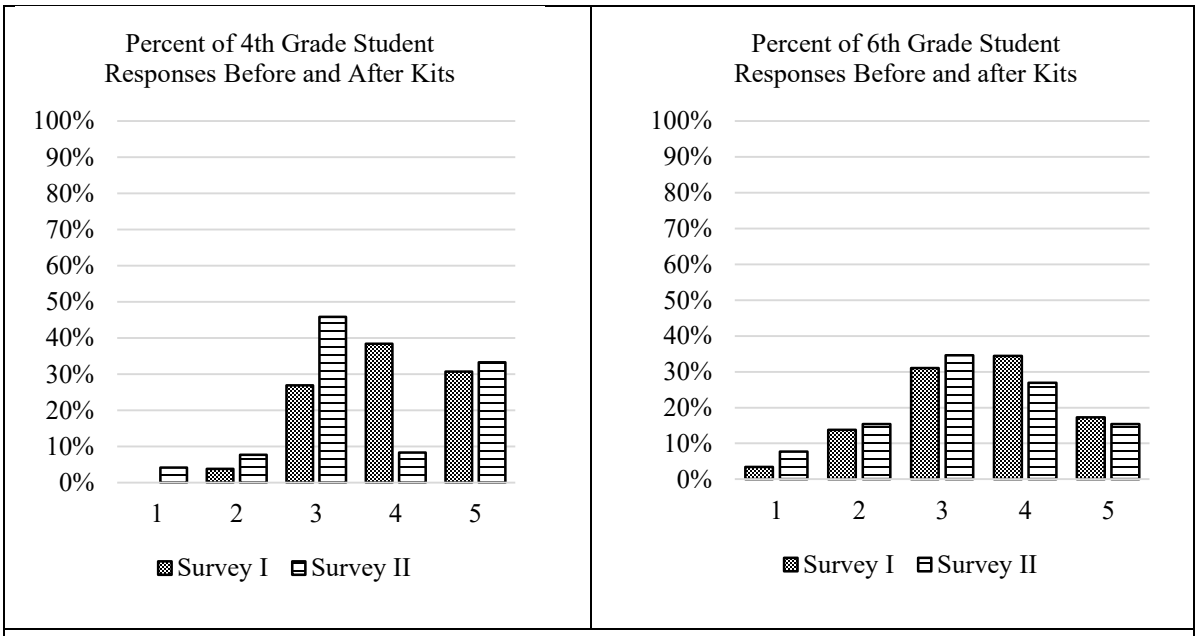


Figure 11. Fourth and sixth grade answers to surveys I and II question: On a scale from 1 to 5, how interesting is archaeology to you?

Sixth grade students were more conservative than their fourth grade counterparts when it came to indicating their conception of the importance of local history. Their choices clustered towards the important to extremely important end of the scale (Range 2, 2; Interquartile Range 0, 1) (Table 7), with more than 75% of the class choosing four or five during Survey I and over half choosing four or five during the second survey (Table 6, Figure 12). No student in either grade chose one (not important) or two. Fourth graders' perception of whether or not local county history is important also tended to cluster towards the important end of the scale, particularly during the post-kit survey (Survey II), with the median and mode both four out of five and 84% of students choosing to rate its importance at four or five (Table 6, Figure 10).

Students were also asked *which* topics they found interesting. In response to the question, "Which of the following interests you?" fourth and sixth grade participants could choose as many of the nine options as they liked, including "other" (Figure 13). This specific option provided an opportunity for the students to add their own interests. The eight primary choices pertained to archeology (prehistory and historical archaeology), the built environment (old buildings), cultural resources management (CRM), or sources of leisure or knowledge (video games and books), family, and history. Cultural Resource Management was purposefully given as an option in a case where several subjects fall under its purview.

Table 7: Central tendency of attitudinal aspects of surveys

	Median		Mode		Range		Inter-quartile Range	
	Fourth	Sixth	Fourth	Sixth	Fourth	Sixth	Fourth	Sixth
	Survey I							
On a scale from 1 to 5, how *important* is it to know *local county history*?	4	4	4	4	2	2	1	0
On a scale from 1 to 5, how *important* is *archaeology?*	4	4	4	5	2	3	1	1
On a scale from 1 to 5, how *interesting* is *archaeology* to you?	4	4	4	4	3	4	2	1
	Survey II							
On a scale from 1 to 5, how *important* is it to know *local county history?*	4	4	3.5	3.5	2	2	1	1
On a scale from 1 to 5, how *important* is *archaeology?*	4	4	4	4	3	2	2	1
On a scale from 1 to 5, how *interesting* is *archaeology* to you?	3	3	3	3	4	4	2	2

Fourth grade responses remained fairly consistent between pre-kit Survey I and post-kit Survey II. Nearly the same percent of fourth grade participants expressed interest in

prehistory in both surveys (61%, 58%) (Figure 13). Most changes of interest in topics remained fairly low (≤3). Four fewer fourth graders indicated interest in old buildings in Survey II. The greatest change in Survey II was that nineteen students, rather than ten, chose "Other" and elaborated upon additional interests outside of the specific named topics (Figure 13).

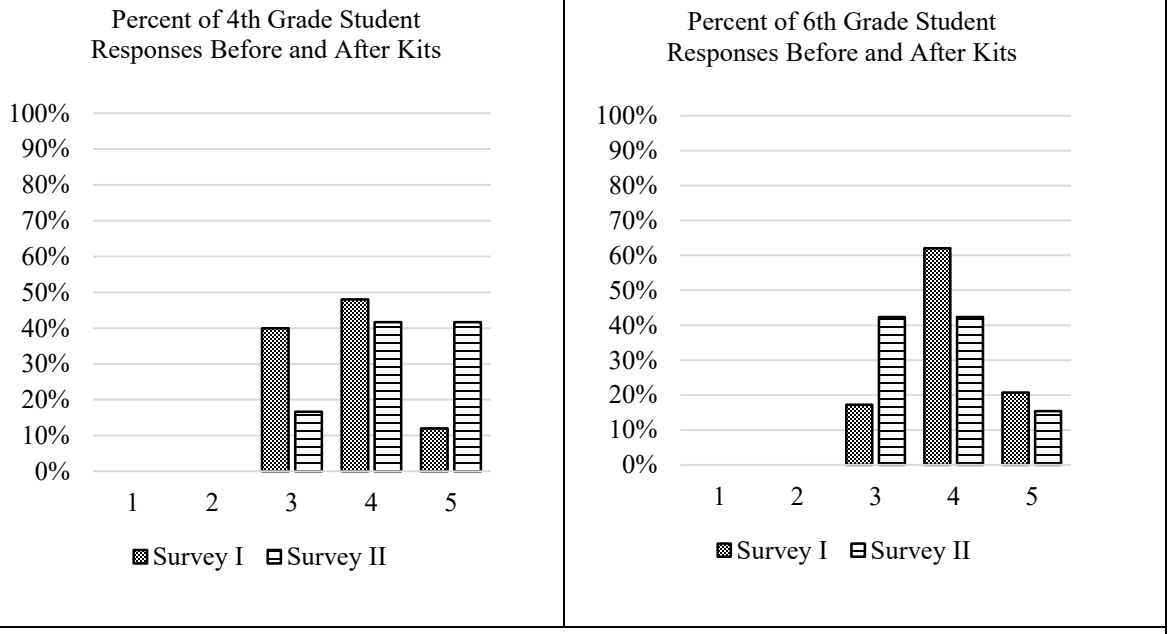
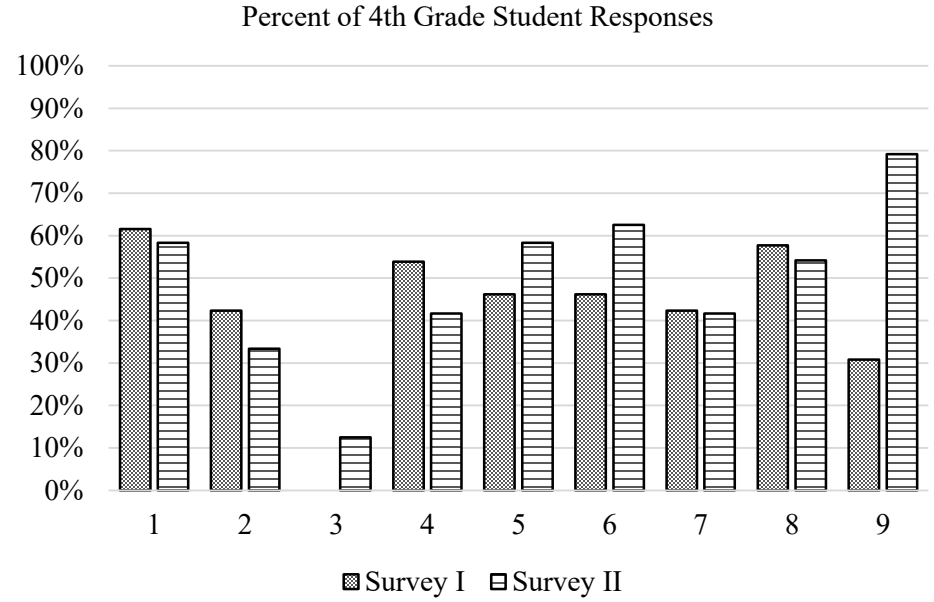


Figure 12. Fourth and sixth grade answers to surveys I and II question: On a scale from 1 to 5, how important is it to know local county history?

The top three choices made by fourth graders in Survey I were prehistory (16, 62%), history (15, 58%), and old buildings (14, 54%). No fourth grade student chose Cultural Resources Management in Survey I and it is unlikely that the students knew what it meant. Less than 40% of respondents volunteered another opinion in the "other" section of Survey I; however, in Survey II, this option received the most responses with approximately 80% of



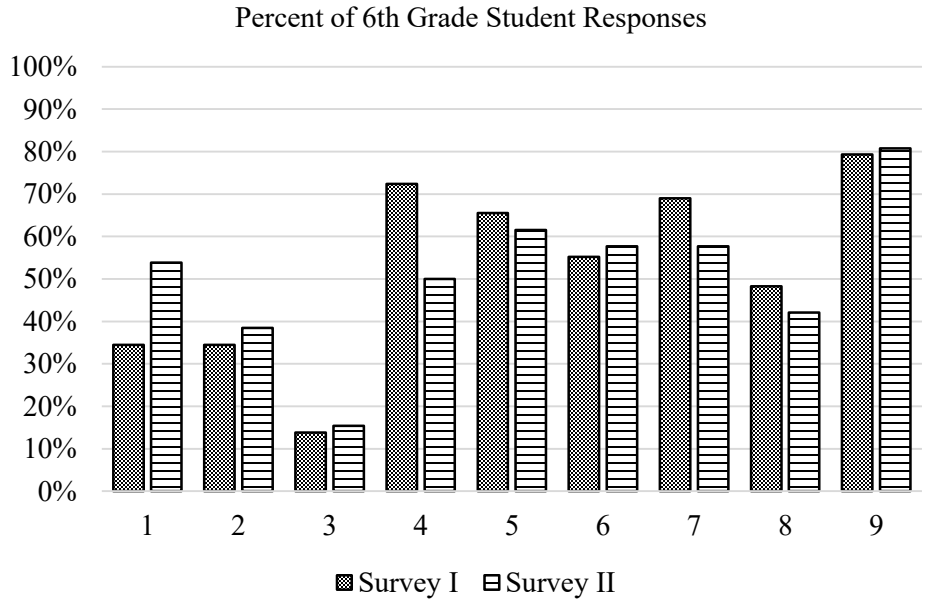


Figure 13. Fourth and sixth grade answers to surveys I and II question: Which of the following things interest you? Choices included: 1. Prehistory, 2. Historical Archaeology, 3. Cultural Resource Management, 4. Old Buildings, 5. Video Games, 6. Books, 7. Family, 8. History, 9. Other (fill in the blank).

students providing another interest. This is a dramatic increase from the 30% response rate of this option in Survey I.

After student engagement with curriculum, sixth grade participants' indications of interest was greater for prehistoric archaeology, in particular (from 34% to 54%); whereas, indicated interest in old buildings was not as great (Figure 13). However, the number indicating interest in this subject was still greater than historical archaeology and history. When given the option to share a totally different interest, it is perhaps unsurprising that "sports" was a common answer. Interestingly, one student indicated that s/he was interested in "how people lived long ago."

A greater percentage of sixth graders than fourth graders chose multiple interests. Fifty percent or more sixth grade respondents included old buildings, video games, books, and family as interests in both Surveys I and II. Approximately 80% of students offered up additional interests in both surveys. The least popular interests included CRM (<20%), historical archaeology (<40%), prehistory and history (<50%); though the percentage of students who indicated prehistory as an interest was greater in Survey II (increasing from 32% to approximately 52%). Interest expressed in family also changed between surveys, decreasing slightly from approximately 56% in Survey I to approximately 42% in Survey II.

In addition to student surveys, two parent/guardians (referred to here as parent or parents) returned surveys that explored the topic of archaeology and discussions with students. This was done as part of an effort to gather information on the exchanges between students and members of their household that focused on details learned in the classroom. Over 120 surveys were distributed in paper form and included an attachment with a web address that would enable the parent/guardian to take the survey online (SurveyGizmo). This

was done for three reasons – to allow for more than one parent to fill out the survey while keeping paper use low, to attempt to reduce the amount of paperwork that students would have to be returned to their teacher as well as the amount of paperwork that teachers would have to keep track of, and to allow parents to share the survey with other people. Folks who did not have students in classrooms could also share the survey, if they had access to the link through parents or students. Any additional sharing of the survey may have helped tap into networks of conversation taking place about the archaeology of Sandpoint. This attempt at tapping into the network of conversations about Sandpoint archaeology was made in hopes of understanding what kind of concepts Idahoans had about archaeology in their state. It was also a means of exploring the concept of children (students) as members of communities. How much did students impart of what they learned in the classroom at home?

Even with the combination of paper and web format surveys, the return rate was extremely low. One parent filled out a paper survey and one filled out a web survey. Both surveys posed the same questions. Several Likert-type questions probed for participants' familiarity with archaeology as well as their opinion of its relevance to contemporary society. On a scale of 1 through 5, both parents rated their familiarity with archaeology at a 3, "I am somewhat familiar with archaeology." One parent ranked the relevance of archaeology as 4, "Archaeology is relevant," while the other ranked it as 5, "Archaeology is very relevant." Parents were asked the identical question, but of history's relevance to contemporary society. Both parents raked history as 5, "History is very relevant." Both agreed that archaeological resources should be protected by state and federal laws, had discussed archaeology with their children, and had heard about the Sandpoint teaching kits. When asked to define archaeology in their own words, a parent described it as, "The

continuing study of artifacts, history of past civilizations." The other, "The study of history through found objects."

Sources of information for both parents were from the class use of the kits, as well as media and acquaintances. One parent's most recent source of information was from his or her daughter's experience in her class at school. Another source of archaeology information for the same parent was through movies. The other parent had a brother who studied archaeology in college and their roommate received her master's degree in archaeology. In addition to possible exchanges of information through these sources, the second parent exchanged emails about archaeology with one of the teachers while the kits were being used in the classroom. The second parent finished their survey with the statement, "I'm happy to see the project [go] to the elementary schools in Idaho! My favorite [archaeology study] – the pyramids in Egypt – the ruins in Mexico, Greece, Turkey. Fantastic to see the past world."

Understanding

Surveys

In evaluating the archaeological knowledge of students, a combination of self-assessment, yes or no, and short answer questions were provided in surveys. Questions pertained to students' overall understanding of archaeology, the existence of archaeology in Idaho, and what archaeologists do. For the purpose of discussion, this final question is broken down into categories of actions/ideas, tools used, and misconceptions.

First, what was the students' self-assessed knowledge of archaeology? Before the use of the kit, sixth grade students tended to believe that they understood archaeology fairly

well. After the kit, responses reflected higher self-assessment scoring for knowledge. Though fourth grade interest and relative value placed on archaeology trended toward the higher (very to extremely) end of the Likert-type scale, their confidence in their self-assessed knowledge or expertise in archaeology was somewhat muted. One student stated that they didn't know anything about archaeology in post-kit Survey II (Table 8, Figure 14).

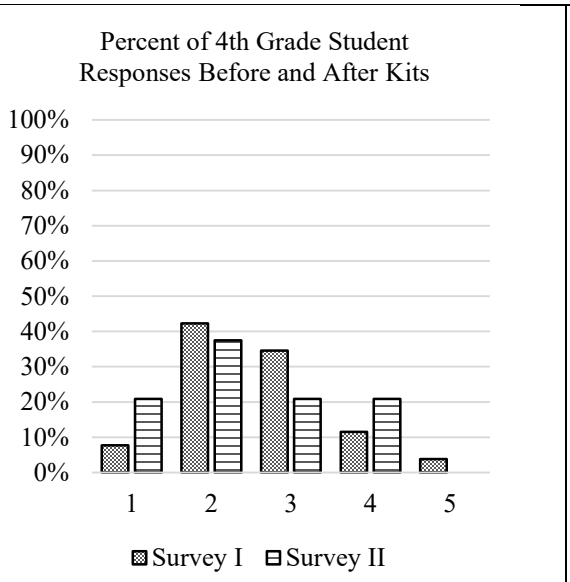
In Survey I, most fourth and sixth grade students assessed their knowledge as at least knowing a little about archaeology, though fourth graders seemed to be less confident in their knowledge of archaeology. In Survey I, eleven (42%) fourth graders and nine (31%) sixth graders said they didn't know very much about archaeology; nine (35%) fourth graders and twelve (41%) sixth graders said that they were at least somewhat familiar with archaeology. In the same survey, three (12%) fourth graders and three (10%) sixth graders believed they understood archaeology fairly well. Two fourth graders (8%) and four sixth graders (14%) ranked their understanding as not knowing anything about archaeology.

There were a few changes in the students' responses to the same question in Survey II. Most notable was the increase in number of fourth graders, from two (8%) to five (21%), who responded that they did not know anything about archaeology after the kits. On the other hand, fewer sixth grade students (2, 8%) responded that they didn't know anything about it. Also of note is that no student assessed his or herself as an archaeology expert after the use of the kits (Table 8). There are several explanations for this shift: perhaps prior to the lessons students misunderstood what was archaeology, they didn't understand the lessons or activities, their concepts of and "expert" changed, or they realized what they knew about archaeology was very little in comparison to all that there is to know about archaeology.

Table 8: Overview of self-assessed archaeological knowledge responses from surveys, number and percentage of students

		I don't know anything about archaeology.			I don't know very much about archaeology.			I am somewhat familiar with archaeology.			I understand archaeology fairly well.			I am an archaeology expert.			
Scale		1			2			3			4			5			
		Fourth	Sixth	Aggregate	Fourth	Sixth	Aggregate	Fourth	Sixth	Aggregate	Fourth	Sixth	Aggregate	Fourth	Sixth	Aggregate	Total
Which of the following sentences is most true for you?		Survey I															
	#	2	4	6	11	9	20	9	12	21	3	3	6	1	1	2	55
	%	7.69	13.79	10.91	42.31	31.03	36.36	34.62	41.38	38.18	11.54	10.34	10.91	3.85	3.45	3.64	
		Survey II															
	#	5	2	7	9	5	14	5	13	18	5	6	11	0	0	0	50
	%	0.83	7.69	14.0	37.5	19.23	28.00	20.83	50.00	36.00	20.83	23.08	22.00	0.00	0.00	0.00	

Note: A total of 26 fourth graders and 29 sixth graders took Survey I prior to participating in teaching kit activities; a total of 24 fourth graders and 26 sixth graders took Survey II after participating in teaching kit activities.



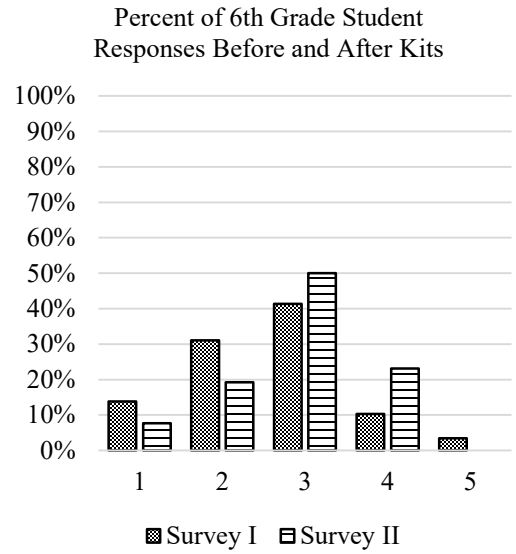


Figure 14. Fourth and sixth grade answers, Surveys I and II question: Which of the following sentences is most true for you? Choices included 1. I don't know anything about archaeology; 2. I don't know very much about archaeology; 3. I am somewhat familiar with archaeology; 4. I understand archaeology fairly well; 5. I am an archaeology expert.

Though no student assessed his or herself as an expert, more fourth (5, 21%) and sixth grade (6, 23%) students ranked themselves as understanding archaeology fairly well in the second survey. In Survey I, half (27, 49%) of all student responses to the survey indicated that participants considered themselves either somewhat familiar with or that they understood archaeology fairly well. Two more fourth and sixth grade students ranked their understanding in these same categories in Survey II (58% of total student responses).

When taking a look at the central tendency of the self-assessments for knowledge of archaeology, very little variation is evident between Surveys I and II (Table 9). The median of fourth grade responses is smaller by .50 and the range of response is smaller for both fourth and sixth grades, both ranges being four in Survey I and three in Survey II. Central tendency measures of median and mode indicate that fourth grade respondents rank

themselves lower in their knowledge of archaeology in comparison to sixth grade respondents. Fourth grade responses are lower than sixth grade responses by .50 in the median and by one point in the mode. However, both grades' responses range are identical at four in Survey I and three in Survey II. The smaller range hints at the possibility of students comparing their knowledge to a more standardized scale or that their knowledge is becoming more homogenous after the use of the kits.

Table 9: Central tendency of self-assessed knowledge of archaeology

Median		Mode		Range		Inter-quartile Range	
Fourth	Sixth	Fourth	Sixth	Fourth	Sixth	Fourth	Sixth
Survey I							
2.5	3	2	3	4	4	1	1
Survey II							
2	3	2	3	3	3	1	1

Note: A total of 26 fourth graders and 29 sixth graders took Survey I prior to participating in teaching kit activities; a total of 24 fourth graders and 26 sixth graders took Survey II after participating in teaching kit activities.

The next assessment gauged a basic awareness of existing archaeology sites in the state of Idaho with a simple yes, maybe, or no question. There is a drastic difference between fourth grade answers and a slight improvements in sixth grade answers to "Are there any archaeology sites in Idaho?" in Survey I vs. Survey II (). Though fourth grade students indicated uncertainty whether archaeological sites existed after participating in archaeology curriculum, teachers explained that many students asked whether an archaeological site is still a site after it had been excavated and a byway is constructed through it. This reflects a philosophical questioning of the concept of a site as well as a

practical indicator that what qualifies as an archaeological site needed clarification and more information about archaeology in Idaho should be included.

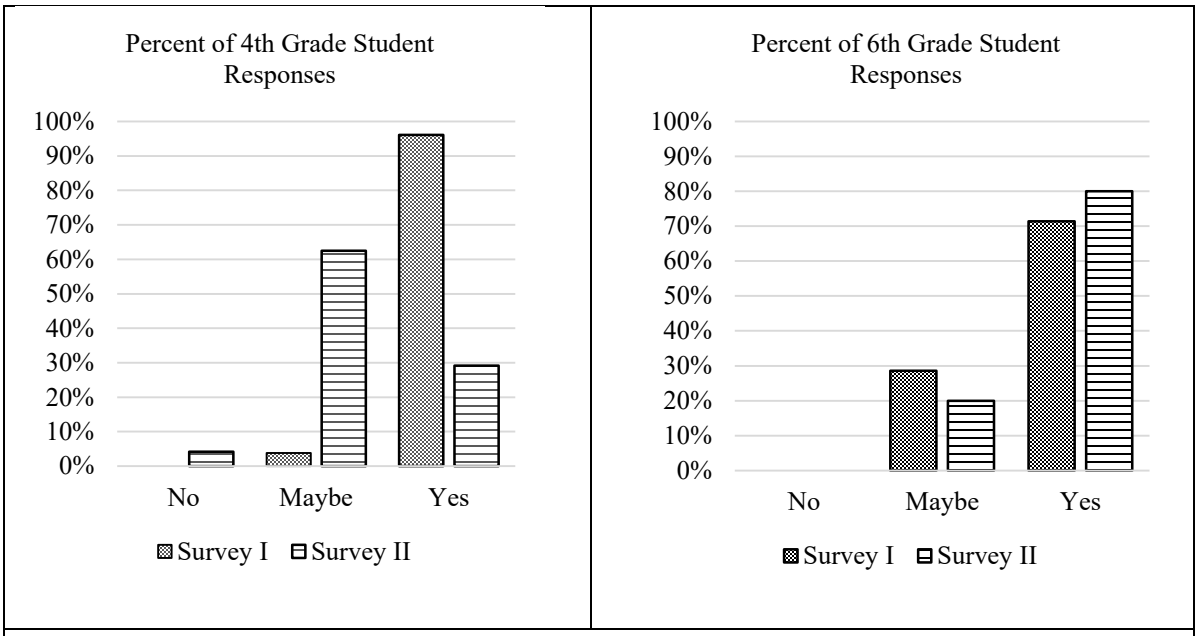


Figure 15. Fourth and sixth grade student responses to the question on Survey I and II: Are there any archaeology sites in Idaho?

Students were asked to identify what is involved in archaeology through the question, "What do archaeologists do?" Though the items in these categories were all presented as options under one question, the possible answers are organized for analysis and presentation into the categories of concept actions/ideas, concept tools, and misconceptions (Figure 16, Figure 17, Figure 18).

One part of the survey explored understandings of what archaeologists do and the underlying principles or methodologies. Concepts and actions of archaeology focused on areas of study and actions such as the study of the past, study of people, digging things up, and digging people up; whereas, concept ideas included such scientific foundations as testing ideas and asking questions (Figure 16). In Survey I, all concept options were indicated

by the fourth grade class participants, though to varying degrees. Most fourth grade respondents indicated that archaeologists study the past (23, 88%) and dig things up (24, 92%). Beyond those general concepts, responses were far fewer, with less than half of respondents choosing another option that ventures into the study of people or anything to do with ideas or questions. The number of responses to the people, question, and idea choices were fairly similar, with the exception that the number of fourth graders who indicated archaeologists explored these three concepts was smaller by nearly half in the second survey. Fewer students also indicated that archaeologists study the past (from 23, 89%, in Survey I to 14, 58%, in Survey II) or dig things up (from 24, 92%, in Survey I down to 7, 29%, in Survey II).

A large number of sixth grade participants also consistently indicated that archaeologists study the past and dig things up (Figure 16). Responses were also consistent for the choice, dig up people (10, 34%, in Survey I; 10, 39%, in Survey II). The greatest difference in responses again pertained to studying people, testing ideas, and asking questions; the choice of all three concepts higher in Survey II, similarly indicating a greater understanding among sixth graders of what archaeologists do after this test application.

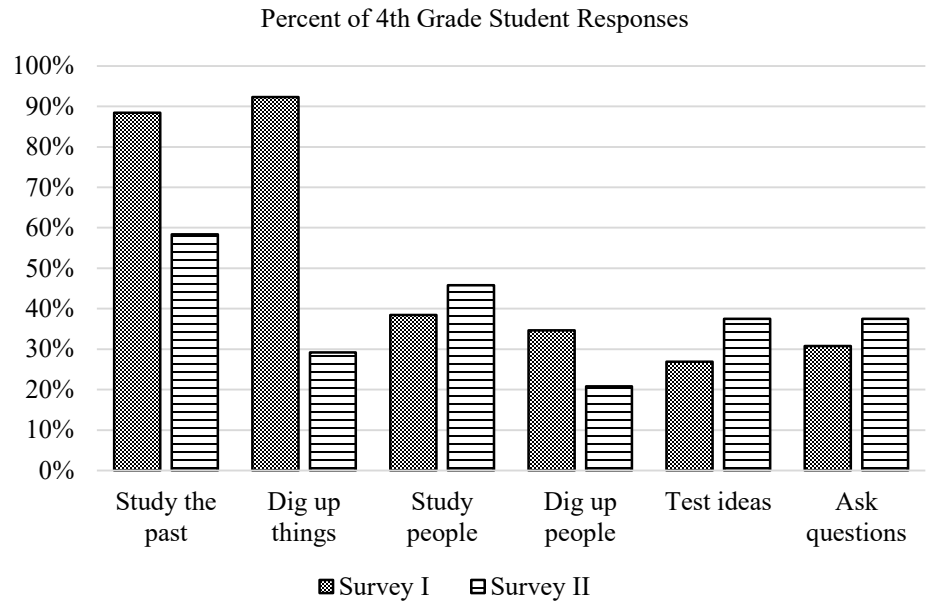
Perhaps the most gratifying are responses to the final question of the day: "What do archaeologists do?" Though, students tended to grasp the concepts that archaeologists study the past and dig up things already in place, after the Sandpoint Project curriculum a greater number indicated that archaeologists also study people, test ideas, and ***ask questions.***

Student participants had the option of indicating which tools archaeologists use in answer to the question, "What do archaeologists do?" because tools of the job can help conceptualize actions. Correct options included maps, shovels, trowels, and compass (Figure

17). The tool most often chosen in both grades and in both surveys was the shovel. Fourth graders next chose maps and trowels most often, followed by the compass. Of note, tools were chosen less overall by fourth grade participants in Survey II, in many cases by approximately half. In comparison, sixth grade participants were much more consistent in their responses between surveys, with the exception of more students choosing maps as a tool used by archaeologists (increasing from 14, 48%, in Survey I to 21, 72%, in Survey II). Tools for digging were consistently more readily recognized as tools of archaeology than a map or compass.

Concepts of archaeology changed between surveys, including misconceptions. Misconceptions were provided as options alongside actions/ideas and tools used in archaeology. Both digging up dinosaurs and treasure hunting were the misconceptions most often chosen by fourth and sixth grade participants. Associating archaeology with treasure was noted more with sixth grade responses than fourth grade responses (Figure 18). In fact, this misconception increased from 21% (6) to 35% (9) between surveys for sixth graders; whereas for this same group, the association of archaeology with dinosaurs decreased (from 38%, 11 in Survey I to 27%, 7 in Survey II).

Two or fewer participating fourth and sixth graders chose the misconceptions of studying aliens or stealing things in either Survey I or II, in total (Figure 18). Fourth grade participants chose fewer misconceptions than sixth grade participants. The ever aggravating notion (to archaeologists) that archaeology is digging up dinosaurs was chosen by fewer fourth and sixth grade students in Survey II. Approximately two thirds (17, 65%) of fourth grade respondents indicated digging up dinosaurs in Survey I. The number was much smaller, nearly halved, in Survey II (9, 38%).



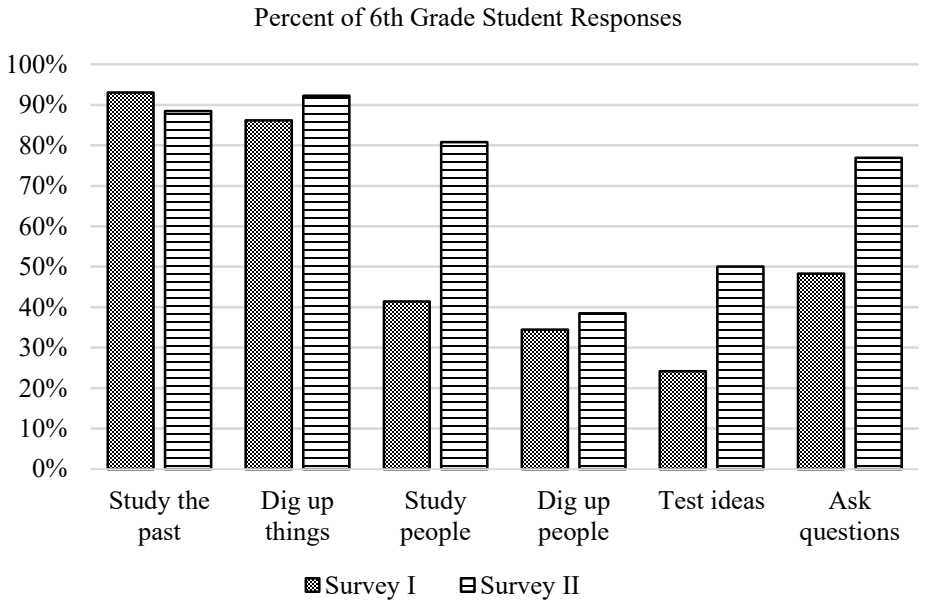


Figure 16. Fourth and sixth grade responses to surveys I and II question: What do archaeologists do? Responses grouped by action.

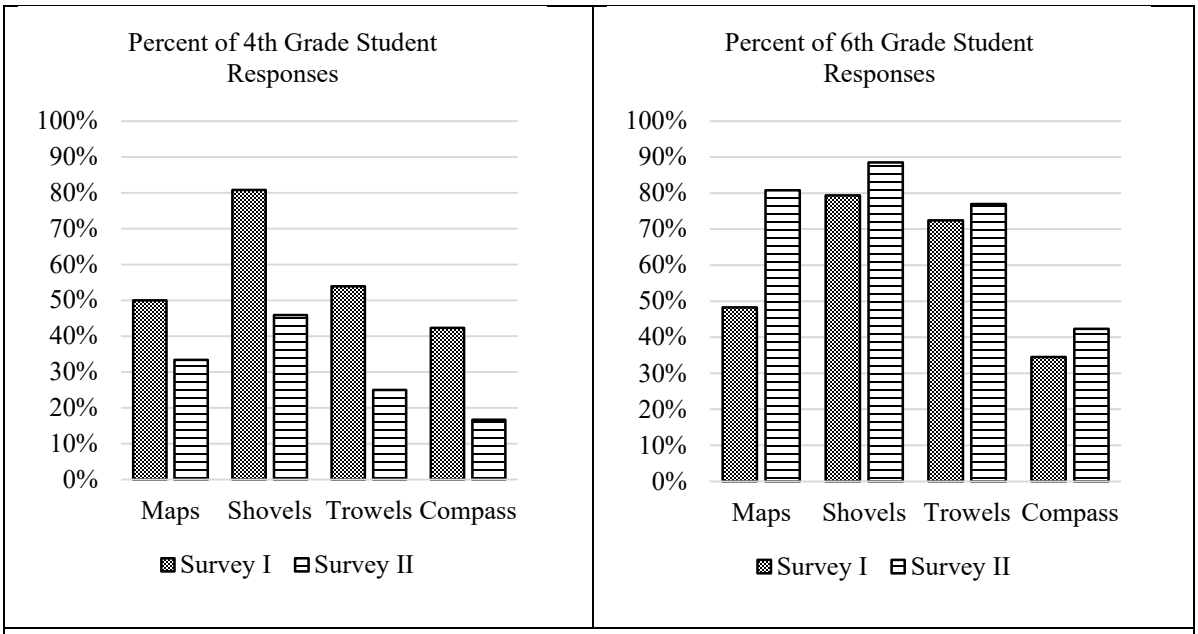


Figure 17. Fourth grade responses to surveys I and II question: What do archaeologists do? Responses grouped by tools used.

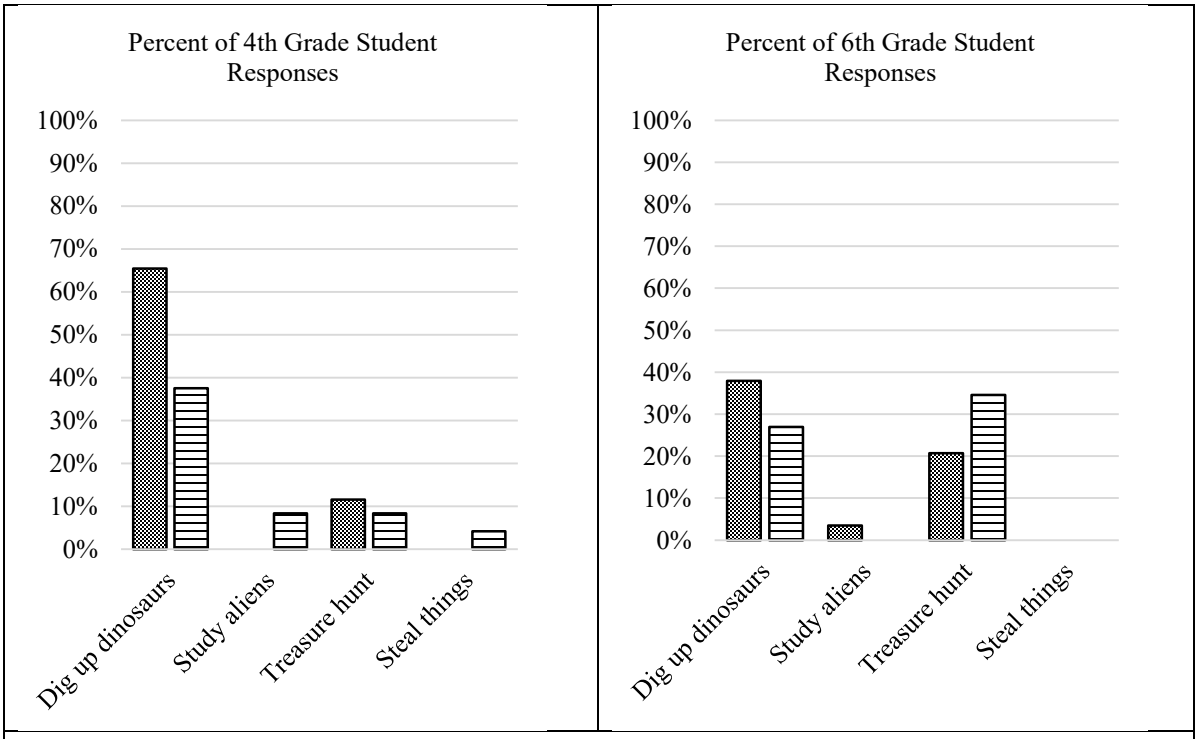


Figure 18. Fourth grade responses to surveys I and II question: What do archaeologists do? Responses grouped by misconceptions.

In Survey II, sixth grade students were asked to define archaeology in their own words. After the kits, they consistently described it with terms such as the "study of past people and things". Their answers are broken down and represented visually in a word-cloud. The resulting image (Figure 19) displays the most frequent words as the largest and the least common as the smallest. Common words such as I, and, the, is, etc. were removed from their responses, then the subject, action, and descriptive words were entered into Wordle, a web-based word cloud generator. Wordle produced a graphic of the words with the size of the word corresponding to the frequency (the larger the word, the more common).

Most often, sixth grade survey participants described archaeology as the study of past things/people/artifacts. Evident in their understanding is that archaeology studies people of the past through objects – or stuff. Consistent are the links between age or time (past, old, ancient, and prehistory) and people. Many answers expanded on this sort of basic description to include artifacts, digging, old or ancient stuff that was used and left behind. The smaller words tend to represent more specific concepts, both accurate and misconstrued; including experts, history, remains, buried, earlier lives, cultures, the present, treasures, paleontology, and dinosaurs.

Though dinosaurs persist as a misconception in one student's definition, it is outnumbered by the links that others make between humanity and cultures (as separate words, but representative of people, rather than dinosaurs). One student even used the word *paleontology* in their response, demonstrating a distinct awareness of the study of dinosaurs (paleontology) as something different from the study of historic and prehistoric peoples through the materials they leave behind (archaeology).

Figure 19. Word cloud of sixth grade participant responses to the Survey II question, "What is archaeology?"
The more common the word, the larger the word. Cloud generated by Wordle. Cloud not at comparable scale to other word clouds within this text.

Inquiry

Surveys

In both Survey I and Survey II fourth and sixth graders were provided opportunities to ask questions and describe what they were interested in learning about archaeology. Additionally, sixth grade students were surveyed about what questions they would ask after participating in the archaeology lesson plans. Students were not limited to a specific topic. In response to the question, "Do you have any questions? If so, what are they?" six times more fourth grade students asked questions in Survey II (12) than I (2), whereas nearly the same number of sixth graders asked questions in Survey I (11) and Survey II (10). Questions are categorized by the seven key question types: who, what why, when, where, how, and how (quantity) as well as those questions that can, in principle, be answered with yes or no. Yes or no questions tend to ask about specific scenarios or details.

Fourth grade questioning increased in the post-kit survey compared to the pre-kit survey and the types of questions differed. The types of questions also differed. Prior to participating in the archaeology teaching kit testing, only two students provided a question in the "Do you have any questions? If so, what are they?" section. The questions they asked pertained to byway construction and whether they would be going on a field trip. Ten questions were asked in Survey II – five times as many as in Survey I; seven of which pertained to archaeology. Half of these questions aimed to clarify the experiential aspects of archaeology and suggest that at least some students would be interested in participating in "real" archaeology or talking more with an archaeologist about his or her practice.

Fourth graders asked two questions in Survey I, "Will we be traveling?" and, "What was dug up when the bypass was made?" (Table 10). The first question is typical of the

desire for students to know what activities or contexts to expect in future experiences. Both questions were answered during the use of the kits in the classroom. Two fourth grade students asked what archaeology was and one asked what archaeologists do in Survey II, though this information was explored during the use of the kits (Table 11). Additionally, two fourth grade participants asked about dinosaurs after the use of the kits.

Table 10: Survey I, Do you have any questions? If so, what are they?

Question Type	Fourth Grade Responses	Sixth Grade Responses
None	11	10
Yes/No	Will we be traveling?	Are we going on any field trips? Do we find stuff? Are we learning about local digging or archaeology? Are you finding a lot of stuff? Will we learn about civil war. Will we learn about World War Two?
What	What was dug up when the bypass was made?	What was there money like back then?
How		How did people get materials like steel and other stuff back then? How do you know where a historical site is? Yes, I was wondering how you figure out that a site is archaeological. [How people lived long ago.] How it going?
Why		Why are we learning about the past? (I think the future is more interesting. :)) Yes, why is archaeology important to you?

Note: Thirteen fourth grade participant responses, 21 sixth grade participant responses

Sixth graders also wanted to know if they would be travelling outside of the classroom and if they would be learning about archaeology (Table 10). One sixth grade

student asked about how to study dinosaurs in Survey II (Table 11). Sixth grade students also asked "how" questions as general inquiries about "how" archaeology works. Interestingly, participants from both grades also asked particulars about why archaeology is important to the and what she does as an archaeologist, as well as other particulars about her experiences as an archaeologist (they knew that she is an archaeologist).

Table 11: Survey II, Do you have any questions? If so, what are they?

Question Type	Fourth Grade Responses	Sixth Grade Responses
None	7	12
Yes/No	Are you going to bring video games? have you ever found gold before that would be awesome!!!!!!!!!! Do you like to see different stuff? Yes, I want to know if we can do it.	Will we learn about World War Two? Is it fun digging up bones?* Can herbs or other supplies be preserved in old houses, ever?
What	What do archaeologists do when you study cavemen? What is archaeology? I can't remember what it is. What is archaeology about? What do you do as an archaeologist?	What is the most important thing in archaeology?
How	How did the dinosaurs die? How do dinisours die and live and how did cave man live and die?	How many things have you found over the 20 years of Sandpoint? How do they come up with the equiment? How do you study dinosaurs? How far would you usually have to dig down?
Why		Why do archaeologists care about old things?
Comments		I don' think I would like to touch dead people. –creepy (Is it fun digging up bones?)* I have already learned all of my answers to my ? because of you. (Thanks)

Note: Seventeen fourth grade participant responses; 22 sixth grade participant responses, some responses are in multiple categories*

Specific yes/no questions asked by both fourth and sixth grade participants also tended to ask if materials would cover major conflicts such as the Civil War, World War I, or World War II; indicating a familiarity or awareness of these major events in American and World History. One student from each grade was curious about the degree of hands-on participation, asking if the class would be going on any field trips or finding stuff themselves. This demonstrates an interest in a place-based experience that is "real."

"Why" questions pertained to both the class and to the archaeologist as a person (Table 10, Table 11). One student wanted to know the reasoning for learning about the past, explaining that the future is more interesting (perhaps a future futurist in our midst). In both surveys, students ask for the archaeologist to explain why archaeologists do what they do or why the subject is interesting. This demonstrates a desire for students to understand the purpose of archaeology and, in at least one case, a questioning of the archaeologist's motivations for their professional role.

Fourth graders were asked the question, "What would you like to learn about archaeology?" in both Surveys I and II. Their answers are categorized by broad themes in Table 12 (Survey I) and Table 13 (Survey II). Prior to the use of the kits, most students said they'd like to learn about themes such as people, places, and objects. The tendency of their curiosity leaned towards the desire to explore what life was like in the past. A few students offered up topics pertaining to byway archaeology, including specific stories and the setting of historic Sandpoint. Students were also interested in objects and how they worked. Another had particular interest in the soils (context) of archaeology. Before the kit, only one student asked about dinosaurs; whereas, after the kit, three students stated that they wanted to learn more about dinosaurs.

Table 12: Survey I, Fourth Grade: What would you like to learn about archaeology?

Category	Response
Sandpoint/Place	original Sandpoint
	About the history of Sandpoint and other cities and countries.
	I would like to learn about people that lived here.*
Life	What life was like and how things went way back then.
	I would like to learn about how it used to be like.
	How things used to work.*
People	I would like to learn about people that lived here.*
	I would like to learn about my ancestors.
	About dead people who got moved.
	I would like to learn about human archaeology
Objects	what kind of things were back then like guns.
	How things used to work.*
	I want to learn about what is dug up.
	What's the rarest thing you've found?
	I would like to learn more about what kinds of things are dug up.
	what people used
General	prehistoric
	I would like to learn about the history
	I would like to learn more about it.
	anything
	A variety of things about what happened a long time ago.
Context	What types of soil wuld most likely would stay contained in it?
Misconceptions	About how to put together a whole dinosaur

Note: Twenty-two fourth grade responses; *some responses fall under multiple categories.

In Survey II, students did not demonstrate the same curiosity about past peoples in Sandpoint (Table 13). One was interested in Atlantis; several responses were fairly general; others related to natural history; and five respondents indicated that they had learned all they wanted, did not want to learn more, or were uncertain about what they would like to learn

about archaeology. Out of all the fourth grade responses, one student stated, “I love it, it’s awesome.” While this does not demonstrate a specific interest within archaeology, it is perhaps evidence of a burgeoning passion for the topic. Overall, fourth grade students demonstrated curiosity about archaeology prior to the use of the kits. One may surmise that, as with most topics, the provided information functioned in several ways, including sating the curiosity of participants and polarizing a few (disinterest and love). In general, interests leaned towards past peoples and ways of living.

Table 13: Survey II, Fourth Grade: What would you like to learn about archaeology?

Category	Response
Sandpoint/Place	Alatis [Atlantis]
Life/People	What the earliest humans lived like. I wanna know a lot about them, but not everythin
General	A lot of different things like how to do it or see old stuff. rocks hard or easy, when it was created. I love it it's awesome
Biology/Misconceptions	(3) cell(s) (3) dinosaurs How many species of spiders ar there in the whole world?
Negative or Neutral	I know all I want to know. I don't know if I want to learn anything or not. I don't really want to learn about archaeology. I don't really want to. Don't really want to learn about archaeology.

Note: Twenty fourth grade responses.

Sixth grade participants were also asked what they would like to learn about archaeology, before the teaching kits. Their interests are organized into general categories of

Sandpoint/place, past life, people, objects, general archaeology, the built environment, misconceptions, and how archaeology "effects the world" (Table 14, Figure 20). Curiosities pertain to what archaeology can offer, questions about why people choose to be archaeologists, and how archaeology can play a role or make an impact in a larger global context. Though the contents of the kit focused on a particular time and place relating to the development of industry, settlement, commerce, and historical lives of people in the Inland Northwest, students wanted to know how the field of archaeology relates to a broader context, personal choices of professional archaeologists, and contemporary settings. In effect, students challenged, "So what?" In this way, students demonstrated an ethnographic interest, of sorts.

Other interests that students wrote down are similar to fourth graders, though there were more general interest responses and fewer inquiries about people. Of note, three students specified interests relating to the built environment, buildings and ruins (Figure 14). As with the fourth grade, a sixth grader offered the interest in dinosaurs. A student described archaeology as a process, indicating that he or she picked up on some complexity that is associated with the discipline – there are steps to take. Another misconception presented was an interest in hauntings. Both of these interests are points to clarify as not relating directly to archaeology in the real world. One sixth grade student challenged archaeologists to place archaeology in a broader perspective stating, "What I would like to learn is how it [archaeology] effects the world" (Table 14, Figure 20).

Rather than ask the same question of sixth grade participants in Survey II, they were prompted to share what they would ask if they were archaeologists (Table 15). Questioning pertained to identifying things and what they were used for, hinting at the mystery inherent

Table 14: Survey I, Sixth Grade: What would you like to learn about archaeology?

Category	Response
Sandpoint/Place	A lot of things like What is old in Idaho ect.*
	How did people in Idaho or Sandpoint live and get materials to make things.*
	How it works and moer about Sandpoint.
	I would like to learn more about Sandpoint.
Life	A lot of things like What is old in Idaho ect.*
	How did people in Idaho or Sandpoint live and get materials to make things.*
People	How did people in Idaho or Sandpoint live and get materials to make things.*
Objects	How did people in Idaho or Sandpoint live and get materials to make things.*
	I'd like to learn about old tools used long ago. Also all old things in general.*
	I would like to learn about what people really do to find things, and what archaeologists find.
	How they tell if there is stuff.
	What they have found.
General	I would like to learn more about the archaeology process.
	Anything I can.
	I would like to learn about old things in history.
	I'd like to learn about old tools used long ago. Also all old things in general.*
	probably prehistoric or historical archaeology
	about prehistoric old things
	(4) What happened in the past.
	Whatever they will teach me.
	I would like to know why they study things and how much time does it take.
	What is it
	I don't know because I don't know what archaeology is.
Built Environment	Ghost towns and haunted buildings.*
	[…] and old buildings and lik bones from the old days
	I would like to learn about the history of ruins.
Context	What I would like to learn is how it effects the world.
Misconceptions	Ghost towns and haunted buildings.*
	To learn about dinosaurs.

Note: Twenty-six sixth grade responses; *some responses are in multiple categories.

Table 15: Survey II, Sixth Grade: If you were an archaeologist, what questions would you ask?

Category	Response
Uncertain / No questions	I don't know what being one is like, so I'm not sure.
	I don't know.
	Nun
Yes/No	Have you seen old stuff?
	Is archaeology even fun?
What	(2) What is it?
	What it was used for?
	What was this area used for?
	What have you dug up?
	I would ask about artifacts, like how old they were or what they were.*
	What materials were used for houses in Sandpoint during the early 1900s?
	What is some history you know about where you live? †
How	(2) How do you use it?
	How did it get here?
	How did we live back then?
	How did they make tools in the past?
How (quantity)	(3) How old is this?
	How long ago was it used?
	How many things did factorys make a year?
	How long has archaeology been going on?
When	When did this person die?
Who	Who lived here in the past?
Where	(3) Where did it come from?
	Where are the bones?!
Other	(2) Historic questions.
	That if you were a archaeologist you would be very interested in it so do it.

Note: Twenty-five sixth grade responses; some participants asked multiple questions; *some responses are in multiple categories; †ethnographic or oral history question.

is a foundation of inquiry-based learning, but would students ask questions modeled after archaeological inquiry? What and how questions dominated the responses. Questions in many historical objects and practices.

Though three respondents were uncertain of what they would ask, twenty-two sixth grade students asked nearly the breadth of the seven key questions; yes/no, how, how (quantity), when, who, and where. No one asked a why question, in this particular case. In addition to "what" questions, several asked "how" questions, which broach an inquiry of understanding differences or similarities between the ways past people and contemporary people do things or how to get places. Another question pertained to where objects came from; the relationships between people, things, and places were on their minds.

Questions included those about who and or what was in a place in the past, indicating an understanding of that differences in what life was like at are possible at various points in time. One student proffered inquiry based on the historic context of Sandpoint in the early 1900's, modelling questions introduced in the classroom during the use of the teaching kits. Another posed a question asking for a person to share their knowledge of the place in which they live, essentially approaching pedagogies of shared authority and community engagement: "What is some history you know about where you live?"

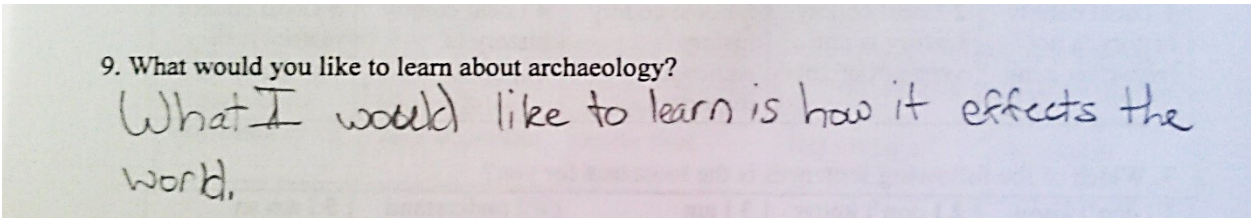


Figure 20. One sixth grader's response challenges archaeologists to place archaeology within a global context.

Participant Observations

Participant observations included time spent introducing the project to three sixth grade classrooms and one fourth grade classroom as well as with two sixth grade classrooms during the laboratory artifact analysis activities in lesson six (See Appendix D for lesson plan) and question and answer periods. Prior to the start of the use of the kits, the researcher made one visit to each classroom to introduce myself and explain how students would participate in archaeology units relating to real excavations in Sandpoint, Idaho. The researcher conducted two participant observation sessions in two participating sixth grade classrooms during the typology lesson (Appendix D). During the first introductory visit, students participated in a question and answer period where they were free to ask the researcher anything they wanted.

Similarly, during the participant observations, the researcher rotated between working groups of students to sample the activities with them. They could ask any questions they wanted. This approach helped to identify issues of confusion on how lessons were intended to be structured, the clarity of directions, what may be difficult to ascertain about historic or fragmented objects, the helpfulness of included materials, other directions that could be good to incorporate, and the interest of students as demonstrated through their inquiries. In part, we focused on the discussion of objects, some of which were intentionally unidentifiable beyond material type. This was meant to include the dimension of uncertainty in the ability to identify the totality of past material assemblages through visual and tactile observation alone.

Challenges in the lesson predominantly pertained to the need for additional background material or exercises to clarify the concepts of how objects were made and what

kind of evidence to look for (made by hand, molded by machine, etc.) and understandings of decoration (gilding, glaze, etc.) versus manufacturers' identification (i.e., maker's mark). Students were prone to taking for granted the accuracy of description of markers' marks (i.e., labelled as fine porcelain even though a ceramic is a stoneware or earthenware), rather than refer to the research materials for verification of material or place of manufacture (i.e. thinking an object labelled "CHINESE PORCELAIN" was porcelain made in China, even if it was a stoneware made in England).

While students made observations of artifacts in the classroom, they asked questions of both the teacher and the researcher. Participants tended to only directly ask the researchers if they were within a three desk space proximity or during times for collective review of an activity section. Following the unit, teachers began a discussion of observation and inferences, inviting the researcher to add input. Teachers helped facilitate connections between previous lessons in United States and local history with what students observed, leading to an exploration of inferences based on both artifact evidence and historical texts. Discussion naturally led to students asking the researcher questions. At the end, one teacher transitioned into a more formal period of "question and answer with the archaeologist." Topics pertained to the artifact collection as well as my experiences and opinions as an archaeologist.

Types of questions students asked included clarification of how they should organize items during a typology exercise, suggested parameters for classification, and functional identification. Instructions directed students to group items for description based on observations of common or differing traits. Questions indicated that it would be prudent to refine the research materials so that students wouldn't have to refer to as many sources or to

extend the time allotted for the lesson. Multiple sources had been provided to encourage a simulated experience of research in which you continue to dig for answers and compare information. Given the premium on time for lessons, such extensive research was not tenable if students were to document a breadth of artifacts that would allow for a larger slice of historical life through a breadth of material culture.

Each time the researcher visited the classroom, students asked the researcher about being an archaeologist. At times, it was a challenge to keep the discussion on track with the Sandpoint kit lessons; however, this interest clearly indicates a public ready for archaeologists to participate in lessons about archaeology in elementary classrooms. By being present in the classroom, the students are able to have a direct, questioning experience. It is another opportunity for them to ask questions, rather than be told information. It is also an opportunity for archaeologists to clarify possible misunderstandings or misconceptions directly, from the "horse's mouth."

A major theme of interest expressed by students was the researcher as an archaeologist and what she does or what studies. Of particular interest was what the researcher thought of as the best, most curious, fun, or where I had worked or topics I had studied. The following examples are representative of the most common questions that students asked the researcher:

- Where do you work?
- What places have you worked before?
- Where is your favorite place to work?
- What is the most interesting thing you have found?
- What was the coolest thing you found in Sandpoint?

- Did you work on the Sandpoint Project?
- Did you find gold on the Sandpoint Project?
- What is the most valuable artifact you have found?
- Are we going to go to an archaeology site?
- Are we going to do archaeology?

In response to the questions about gold and the value of objects, the researcher clarified that the true value of these objects was in the questions they could help answer about the past. The questions and answers are what is of value. The researcher's answer to the last question listed was that they *were doing* archaeology when they conducted artifact observations, research, identifications, and inferences. I stressed that archaeology was about more than digging up stuff in the field and included identification, research, and analysis of objects to help understand the past. Additionally, theories and understandings of the past evolve based on research, methods, data, and resources on hand. I emphasized the importance of sharing results, as they had during their discussion of observations, inferences, and what they already knew about United States and local history.

Design

Teacher Feedback

In addition to correspondence, interviews, and a focus group following the use of the kits, teachers were asked to take notes on curriculum, contents, and utility during their use of the kits. They were provided with evaluation forms for each lesson as well as an overall

survey at the end. A sixth grade teacher at school A (Teacher 6a) provided extensive feedback.

Following the use of the kits, Teacher 6a completed a summary survey that explored efficacy, ease of use, and likelihood of future use. Out of a scale from 1 (not very effective, very difficult to use) to 5 (very effective, very easy to use), Teacher 6a rated half of the six lessons implemented at a 4 (mostly effective, easy to use), two of the lessons at a 3 (somewhat effective, somewhat difficult to use) and one lesson at a 2 (not very effective, very difficult to use). In considering future use of the kit, Teacher 6a was asked to choose all the statements that are true. The following are the statements chosen:

- I would consider using the kit after revisions are made that better take into account standards and goals.
- I would consider using this kit after lesson plan structure revisions.
- I would consider using this kit after lesson plan content revisions.
- I would use parts of this kit.
- I would use this kit again.
- I am excited to use this kit again.

Teacher 6a provided specific feedback on lessons used through an evaluation form as well as notes taken on her curriculum printout. The forms primarily attempted to capture feedback regarding adapted uses or alterations to lesson plans as well as teacher opinion on how well the lesson aligned with state standards, goals, and objectives (Appendix K). Additionally, space was provided for comment on the favorite part of the lesson or activity, what didn't work or what was the least favorite aspect, the condition of the materials, and

any other thoughts. Through these forms, s/he offered feedback on the six lessons she utilized during kit testing.

Teacher 6a found the unaltered introductory lecture, “What is Archaeology?” aligned very well and s/he presented the material on just one day. The “excellent slides with teacher notes” were her/his favorite aspect. The teacher helped clarify the definition of inference by adding the concept of past knowledge, since this is the definition used in their science book. S/he had students add vocabulary provided during the lesson to their science notebooks, integrating a tool already established for use throughout the school year.

In comparison, the “Chronology and Perspective” lesson mostly aligned, but was complex and difficult. Teacher 6a taught the lesson over the course of two days and altered the assignment so that students researched three events each. She utilized suggested supplementary videos that explored contemporary Native American perspectives on time and seasonality (Couer d'Alene Tribe and Nez Perce Tribe 2004). Students continued to add lesson vocabulary to the science notebooks. This lesson generated additional feedback during the focus group interviews. Alterations were made to this lesson in order to further visualize and explore perspectives on time and seasonality.

S/he found the “Cookie Excavation” exercise, adapted from the Florida Museum of Natural History Fossil Cookie Excavations and the Florida Public Archaeology Network Cookie Excavations, explores concepts of excavation. The lesson was rated as aligning very well. Additionally, it was easy to understand and very hands-on.

Two teachers emphasized the importance to clarify any materials that would need to be purchased for the exercises, such as the cookies, granola bars, and sandwich materials for the mapping and stratigraphy activities. Teachers broke students into groups for the

sandwich stratigraphy lesson in order to reduce costs. They also adapted the sandwich stratigraphy lesson to include the regional geological history in the telling of the depositional story and saw the possibility continuing to enhance the lesson to include ties to regional glacial activity. Though teachers felt the need to alter the lessons slightly, they observed that students really enjoyed the hands-on aspect of the exercises and "totally understood" the concepts. One teacher even demonstrated the types of "Aha!" moments that students had as sudden comprehension. An improvement, however, would be a tool to explore the compass rose because some students had a difficult time grasping cardinal directions and grids (Appendix D).

The "Granola Bar Mapping" and "Peanut Butter and Jelly Archaeology" exercises, from the Florida Public Archaeology Network's adaptation of the "Expeditions into Ohio's Past: Teacher's Guide," were altered slightly. Both teachers 6a and 6b focused on mapping on the grid. Students had difficulty mapping multiple layers and cutting into the sandwich to see the stratigraphy. Teachers switched to cutting square sections with plastic knives, rather than "probing" the sandwich with straws, in order to see the stratigraphy. They also had students work in groups in order to cut down the cost of supplies used in making the sandwiches, which calls for various ingredients to be "deposited" as analogous components of events and activities over time, narrated by the teachers. Though s/he encountered some challenges with the lessons, teacher 6a commented that they provided excellent instructions and teacher scripts.

The final lesson, "Labwork: Classification and Clues," was conducted over the course of three days in order to include the various components, classify more artifacts, and debrief. Teacher 6a rated the lesson as aligning very well and her favorite aspects were the

hands-on activities and interesting information. The greatest challenge was managing all of the items. S/he noted that the condition of the materials was "great." This lesson was one of the most involved and received the most attention during participant observations and teacher feedback.

During the laboratory analysis exercise, students went beyond the observation and analysis prompts to start making comparisons between objects. Teachers purposefully mixed up the materials so that there was a variety of types (such as ceramic, glass, and metal items) for the students to document in their science notebooks. Students also began to conduct experiments with the objects to see how one piece might relate or interact with another. This was similar to the cross-mending of fragments that is conducted by archaeologists to identify the minimum number of vessels in an assemblage; however, the students explored possibilities by testing the objects to see how different or similar materials might move with or interact with each other, going beyond how pieces of the same material fit together. One suggestion made by teachers was to write more objects into the lesson plan as a means for kids to focus on artifacts, find differences, and address the challenge of identifying something when you're not sure what it is. A practical suggestion included clarification on the use of rim diameter charts (to measure the diameter of partial ceramic vessels).

Teacher 4a restructured the timeline and context lesson plan in order to simplify it for her class. As s/he implemented the lesson, students, "had to get an event from their lifetime, an event from their parents' lifetime, and an event from their grandparents – or someone even older." S/he said that, "… it actually turned into a great learning-teaching opportunity as we talked about especially events from the past that was totally out of their realm. And then we were able to talk about: What is a global event? What is a local event?

Or, was it just an event in their own personal life?" S/he also commented that parents enjoyed being part of the timeline and interview project, as adapted. The detail about parents enjoying the being part of the timeline and interview project indicates that either students shared their parents' reactions or the parents made comments to teachers about the activities, generating a discussion, not just a one-way feed of information.

Teacher 4a also took the time to conduct with her class an in-depth analysis discussion of historic photographs included in a series of slides that contributed to the introduction of archaeology concepts. Collectively, they took the opportunity to talk about why a person might take a photograph and its context.

Teachers expressed mixed feedback on the format of curriculum materials. Though the digitized curriculum and supplementary materials was helpful for use with the smart boards, teachers emphasized the need for hardcopy materials with larger font. They suggested continuing to include both hardcopy and digitized reference materials for identification of artifacts during the laboratory analysis activities. Bound and/or laminated hardcopies would last longer and the advantage of the digitized references is the use of the smartboard technology by students.

Interview

The sixth grade teacher at School B particularly emphasized utilizing hands-on, realistic, and science-based curriculum. The teacher found the artifacts the most fascinating aspect of the kit and students were "honored" to see and touch real artifacts from the Sandpoint excavations. Though the artifacts drew the attention of students and teacher alike, teacher feedback indicated several features that created challenges and left room for improvement. While the teacher thought archaeology was a well-rounded approach to

teaching kids about a certain time in history, the largest initial challenge was to introduce the history of Sandpoint and the concept of archaeology to an established curriculum. The teacher stressed that science as part of explorations and conclusions is a part of any grade level, but it must pertain to something that is supposed to be covered in sixth grade, stating, "Just because it's interesting doesn't mean we can study it." Suggested areas for which there was room for improvement or expansion included the cookie excavation, the themed focus of the kit, increasing the variety of activity types, including a section on the historic buildings of Sandpoint, a guide to interpretation of artifacts, and strengthening the tie between artifacts and specific places and times.

The cookie excavation activity was fun, but the teacher, who had attended an archaeology field school, felt that the cookies don't really show a realistic view of what archaeologists do and was unsure of how well the activity crossed over into the real world. The teacher had to pre-teach cardinal directions and coordinates due to some student confusion when they first talked about the lesson concepts. Activities with food in it tempted students to eat the props, so the suggestion was made to utilize dough and hide objects in it rather than chocolate chips. Whereas there was concern for the practical translation of the activity, the teacher felt that the concepts of the activity were strong. The format would be better suited to younger students, and that having food in the classroom was distracting; this activity could be improved by utilizing real objects, rather than tempting treats.

Teacher 6c found the variety of topics in the kit distracting and lacking focus. While the intent of the kit was to provide a range of historical social topics to explore, focusing the theme of the kit would enable students to follow along and connect with the content more easily. S/he suggested the kit delve more specifically into a theme, rather than explore the

breadth of historical Sandpoint. One preference was to not cover any material pertaining to the Restricted District, a subject the teacher chose not to broach with students.

The majority of kit activities pertained to observing materials and documenting characteristics or contexts of materials. In addition to objects, books, and activities, the teacher suggested adding more images to contextualize artifacts and more variety of exercises – such as essay writing. This would help to connect with a greater breadth of learning styles and reinforce concepts for those who learn well through writing as well as contribute to the development of writing skills.

Another suggestion was to incorporate lesson plans that include historic buildings. A historic building near the excavated areas is the Sandpoint Depot, the oldest active passenger depot on the old Northern Pacific line (Spence 2009). Commonly referred to today as the Sandpoint Burlington Northern Railway Station, it was nominated and listed on the National Register of Historic Places in 1973 (National Register of Historic Places 1973). It is the only remaining standing structure between the Burlington Northern line and Sand Creek, an area that was part of the earliest site of the town of Sandpoint.

Teacher 6c would like to see a strengthening of the relationship between the artifacts and a more specific narrative. While the laboratory analysis activity was great in terms of incorporating real objects, it was heavily observation-based and left room for incorporating details that would assist in the interpretation and understanding of these objects in their original context. In order to reinforce the concept of context, the teacher incorporated an additional exercise that had the students go through their own garbage. They were asked to analyze the sorts of activities that took place and piece together what future people would expect their lives to be like based on the trash they left behind.

More suggestions for improvements included adding writing components, more PowerPoints, clarification in what the objects were and where they were from (definitive labels), and more photos to compare what historical Sandpoint looked like to what it looks like today. Additionally, the teacher had expected to see items such as coins, jewelry, or more valuable objects, rather than so many broken objects. When asked if it would help to have an archaeologist in the classroom, the teacher replied, “An archaeologist standing up and talking in front of eleven-year-olds can be a little dry, unless they have some visuals or some objects…” Feedback from students, teachers, and others were included in the revision of the Sandpoint kits and the results are discussed in the following chapter.

Chapter 6: Discussion and Recommendations

Archaeology curricula have been developed, tested, and utilized in the classroom for several decades with results contributing to evaluation, program assessment, and education research (Davis 2005, Eisenwine 2000, Moe 2011, Simon 2013, Smardz and Smith 2000, Levstik, Henderson, and Schlarb 2008, The PAST Foundation 2010). There is, however, room for formal discussion of the impacts of such curriculum as well as opportunities for revision. Testing of the Sandpoint Archaeology teaching kits and gathering feedback from participants in a formal evaluation was invaluable in identifying the strengths and weaknesses of the lessons and associated materials. It also revealed a deeper context for some Idaho students' attitudes towards aspects of cultural resources, including archaeology, history, and the built environment. One could also argue that it also explored the relevance of these topics to elementary-age members of communities. A combination of established models from previous research, results from participant feedback, and the experience of this process itself all contribute to the ongoing exploration of the relationship between archaeology and education outreach.

A key takeaway in terms of attitudinal feedback is the change in sixth grade students' interest in history and archaeology. More students indicated they like to learn about history (Figure 4) and archaeology (Figure 6) after their experience with the Sandpoint archaeology teaching kit. An increase in awareness of the complexity of students' family history as well as local history was evident in inventory responses, participant observations of class exercises and discussions, and interviews. Through exercises focused on students asking questions, making observations, and discussing the results with each other, they explored historical details of their families and contextualized their histories. While framing

the lessons locally, sixth graders found it important to consider the bigger picture. In the grand scale, students found archaeology to be important as well as interesting, but perhaps not as important as they thought before learning more about it. Consider that this is the time when shifting perspectives on history and context are taking place. One student spelled out the challenge to archaeologists, "What I would like to learn is how [archaeology] effects [*sic*] the world." While framing the lessons at a state or regional level, sixth graders found it important to consider the bigger picture of the past and how it relates to the present day at a global scale.

Students' understanding of history and the world beyond their immediate experiences begin to expand around fourth grade (Davis 2005). The scale at which students perceive history changes over time; as they get older they are able to grasp more nuances of context. Sixth grade is when Idaho curriculum delves into World History. The fact that sixth grade students placed comparatively less importance on local county history may be due to a variety of factors, but it stands to reason that their ability to place themselves in a broader global context as well as conceive of a deeper time with more complex circumstances lifts the focus (and importance) from local county history. Though local communities and making personal connections with local and family histories is important and useful at the fourth grade level, placing historical archaeology and the events of the past in a global context as students get older is vital. This reiterates the notion that in education and learning, as in archaeology, context is key. By combining inductive reasoning and inquiry-based approaches as a foundation of the teaching kit, the materials provided an opportunity for students and teachers to realize the elastic nature of history and interpreting data. As Traille says, "It is probably to the detriment of history classrooms and ultimately society if all

students are not given the tools for exploring and challenging their preconceptions by learning how to accommodate a broad awareness of the past" (2007:37). By using archaeological approaches and methods of laboratory analysis in the classroom, teachers can help students to think critically about cultural preconceptions. While this approach provides such an opportunity, reference materials are necessary in order to provide a context in which participants can explore the data and their own interpretations. Showing a student a part of an object for which they have no cognitive frame of reference, or schema, they tend to fall back to identifying the object by filling in blanks with what they do know (Richardson 2003). Simultaneously, it is recommended that the reference to this new object or material is presented in a form that is familiar.

Teachers referenced the kit as schema –ideas that prepared students to recognize and build upon concepts in the future. If this notion took root, students can continue to refer to what they learned in the Sandpoint Project as a framework for perceiving future information or a building block for future learning. This would affect their future perception of archaeology.

The common dinosaur = archaeology misconception showed up in fourth grade participants' post-kit inquiries (survey question "Do you have any questions? If so, what are they?"). This may indicate students making a methodological connection between what paleontologists study (dinosaurs) and what archaeologists study (people). Davis (2005) faced a similar challenge in a student that described southwest cultures in terms of ninjas. In her study, upon closer inspection, it turned out that the student was making personal connection and interpretations of past cultures through a passionate interest in ninjas. It was a matter of the lens through which he chose to interpret peoples and culturally categorize

them by similarities; and though it was not technically accurate, it was a way he and the class could make associations between what he considered shared behaviors or material culture characteristics. Though the fact that archaeologists do not study dinosaurs is certainly a misconception to clarify, the fact that fourth grade students could be recognizing similar approaches in paleontological and archaeological practices is perhaps a positive. In this instance they knew the survey questions would be seen and answered by someone who, perhaps in their minds, was the closest to an "expert" they would get to ask about dinosaurs or the general past. Davis also realized in concept mapping exercises that hierarchical categorizations are difficult for younger children (2005). By introducing the concept of archaeology in fourth grade, for these students it may help to develop a more complex schema for the study of the past.

An attempt was made to document the inquisitiveness of students before, during, and after the use of the kits in classrooms. In the Sandpoint Archaeology teaching kit study, student questioning increased for fourth grade participants, as demonstrated by the responses in Table 10 Table 11. Though the curiosity of students did not necessarily change (for example telling what they would like to learn about in Table 12 and Table 13 was people-, thing-, and place-focused), they contributed more questions or comments in the follow-up survey. During sixth grade classroom observations students often related their experiences and knowledge of historical objects, demonstrating their construction of knowledge on a foundation of what they already knew – or at least making connections that they could identify through their understanding and sharing these stories. In addition to these stories, they asked questions about the people of Sandpoint and made inferences of what their life was like at the end of the laboratory analysis lessons.

The fewer number of fourth grade participants who responded that archaeology is the study of the past or that archaeologists dig things up in the second survey (reduced from 24 in the first survey to 7 in the second) may be somewhat surprising until we take into account a much heavier science emphasis taught in fifth grade Idaho classes. Fifth grade is the year Idaho students begin to more intensely focus on what can be a heavily structured science curriculum. By sixth grade, students are more familiar with scientific concepts than their fourth-grade selves and may have been more ready to recognize testing ideas and asking questions as scientific approaches to studying people through archaeology. The systematic study of objects – or observation and inference based on evidence – was emphasized in archaeology kit lessons modeled after laboratory analysis of artifacts. It is likely that hands-on lessons in analysis experienced by sixth grade participants helped to reconnect to and emphasize more complex concepts such as testing ideas and asking questions, concepts that they would have learned the previous year.

It is likely that many results reflect the scale at which students comprehended history and, through this lens, archaeology. In other words, students realized that there are more complexities to archaeology than they had previously known and their realized knowledge in the face of this changed scale influenced their answers. Students' scale of conceptions about time and history, their overall attitude towards archaeology, and their understanding of archaeology increased or expanded. The archaeology activities, materials, and discussions with an archaeologist helped to draw a more complete picture of what archaeologists do; students grasped and retained key concepts, including study people (from the past), ask questions, and test ideas (Figure 16).

Other studies, such as those done by Body et al. (2014) and Moe (2011) performed focused evaluations of archaeology as a science teaching tool. Evaluations of Project Archaeology's Investigating Shelters: Poplar Forest curriculum took place from 2007-2009. In their published case study, Body et al. (2014, 95) found a general increase in positive attitudes towards science as well as a much greater overall response rate when asked to "provide examples of science process skills such as observations, inferences, classifications, and context." Out of 55 surveyed fourth and sixth grade students, none felt that archaeology was not important; this opinion held in the post-kit survey, in which 50 of the same students participated.

Though not all student respondents chose all the options for tools or ideas and action that actually apply to archaeology, many did. Not all archaeological inquiry requires a shovel or trowel to explore the human past. Adapted versions of the Florida Public Archaeology Network's lessons in guides and directions were performed by sixth graders and a larger number of the participants chose maps as a tool of archaeologists after their experience with the curricula. In fact, this option saw the greatest difference in response by sixth graders between surveys.

The number of sixth grade participants who chose the option "treasure hunt" in response to the question, "What do archaeologists do?" emphasizes the distinction between professional archaeology and looting that may be difficult to discern by the public. In fact, the number of sixth grade students who chose this option was greater after the use of the kits, despite intellectual value of objects emphasized and monetary or material value discouraged. Future explorations of the concept of treasure before and after archaeology

lessons may help to recognize where the distinction is made, cognitively. How do participants' concepts of "treasure" shift between monetary and intellectual values? When provided the opportunity to ask their own questions, without qualifying restraints on the types of questions, students often asked questions about the researcher's personal experience with archaeology and its importance to me. They were curious about an archaeologist's perspective based on real-world experience. In this case, an archaeologist's participation provided another opportunity for students to ask questions. Students, educators, and archaeologists would benefit from archaeologists going into the classroom and interacting directly with school groups, answering questions, and building participatory relationships.

Overall, teachers participating in the assessment consistently said they would be excited to use the revised version of the curriculum and contents. The hands-on and realistic components of the kit were their favorite and they encouraged the curriculum to be as realistic as possible, rather than "babyish."

Levstik, Henderson, and Schlarb reported that the majority of fifth grade participants in an archaeological curriculum in the southern U.S. defined archaeology as the "study, the past, culture, and humans/people" or a variation thereof (2008). They also reported that fifth grade students had difficulty understanding the materials that objects were made out of, the construction process, and how they were procured (Levstik, Henderson, and Schlarb 2008). Their study found that students may not make the connection between objects and culture if elementary age students encounter challenges linking cultural concepts to material objects (Levstik, Henderson, and Schlarb 2008). Similarly, this researcher observed similar challenges faced by Idaho students during participant observations of two sixth grade

classrooms while they did the artifact analysis exercise; they expressed frustration while attempting to describe observations about how objects were made and the materials. Teachers adapted their approach during the lesson in order to connect the manufacture of objects to people, thus attempting to ameliorate a student disconnect between objects and culture. Though this key aspect of the lesson plan was clarified in the revised version, moving forward the trunk curriculum could be developed further by including experiential activities such as making clay vessels or spinning fibers on drop spindles and weaving or by supplementing informational materials related to glass-blowing and bottle manufacture.

In a later study, Levstik, Henderson, and Young (2014) found the usefulness of place-based experiences in tandem with teaching the concept of chaîne opératoire (the sequence of operations) to fifth grade students to clarify concepts of culture, innovation, intelligence, and deep time's relevance to contemporary understandings of people. They detail three civic benefits of a broadened understanding of culture and time as:

> First, the ability to look beyond the narrow confines of the present as a broad a sweep of human experience as possible prepares citizens to recognize and better understand pattern and variety as fundamental to being human. Second, the recognition of the role of human intelligence and agency in adapting to change and negotiating pattern and variety over long periods of time positions citizens to approach difference less dismissively and to consider their own agency in responding to change. And, third an understanding of constraints of human agency can help citizens make better sense of human choices (Levstik, Henderson, and Youngdo 2014, 190).

If self-assessment of student knowledge changes from belief in their familiarity with archaeology to recognition of their familiarity with it in a greater context, it is worth considering whether their context for comparison of understanding to that of the expert/specialist is taken into consideration, or, alternatively, whether their experience with archaeological subject matter has raised questions (Table 8). In this study, one student from

each grade assessed him or herself as an expert in the first survey. The two students who assessed themselves as experts in the first survey did not do so in the second survey. In fact, no student chose an expert ranking after the teaching kit lessons and activities.

In light of possibly comparing their level of knowledge with a professional archaeologist as students are learning, they may rank their knowledge or understanding on a personally recalibrated scale. This may be particularly the case if questioning is emphasized; the proposition that there are more questions to be asked and knowledge to be gained may be at odds with perceptions of knowledge as concrete.

Recommendations

As Levstik and Barton said, "When we identify with groups in history, we stake out identities in the present; when we look at where the world has been, we hope we will understand where it is going; when we judge the decisions of the past, we promise to make better ones next time" (2011, 2). Interests shared and questions asked by fourth and sixth grade students in surveys demonstrate an effort to identify with or understand historical peoples of Sandpoint, Idaho. In continued use of the kits, it would be helpful to scale feedback gathering to address what are students preconceptions, expectations, and attitudes toward archaeology, as well as ask whether participants' experiences changed what they thought and, if so, why. Additionally, it would be helpful to design measures that teachers could incorporate for their own assessments, if they wish.

For those who are constructing or compiling teaching materials, incorporate the feedback process from the beginning of curriculum design, even from the beginning of developing research questions. It was helpful to identify the goals and themes of content, and then build correlating activities around these concepts. This can be done

collaboratively, as demonstrated by Solórzano and others (2011). In discussion, new lines of exploring the past can be followed and strengthened by what these lines have in common with established goals and themes. What are the conceptions and misconceptions that communities have about the past and how can archaeology help to address them?

By establishing a line of feedback between community members and archaeologists prior to archaeological investigations, archaeologists can help answer questions provided by the public. This involvement much earlier in the investigative process may impact methodology, research, and interpretations. Essentially, such pre-project questioning already exists in the form of Harris polls that have been conducted by professional societies over the decades, but these polls focus on knowledge, misconceptions, attitude, and support rather than specific public curiosity about the past (Pokotylo and Guppy 1999, Ramos and Duganne 2000) . In short, we should ask for their questions.

Though the kit was usable and teachers indicated they would be excited to use it in the future, really good suggestions were made by teachers for the improvement of the content and materials. Gathering feedback on the lessons should continue in the spirit of continued improvement as well as in order to remain current with evolving technologies used in the classroom. Additionally, not all classrooms have the same setting or materials available. Having an open avenue for feedback on the kit design would help ensure that teachers throughout Idaho can use them with ease. As a supplement to the introduction of the project, putting together a video describing the location and archaeology activities for those teachers who cannot take their class to the location of the Sandpoint Project would be an improvement.

As a case study, these results would be difficult to use in comparisons without

standardization or a better understanding of the larger population. Future steps could be to organize research framework for more consistent, comparative, and inferential evaluations. Another would be to attempt to design and conduct a state-wide baseline survey of students and citizens in order to establish population data for comparison. A third would be to partner with state history, heritage, and education organizations to brainstorm questions that can be asked of all Idaho students and citizens. This would set the stage for more developed inferential analysis of the effects of education and outreach materials across a breadth of social science disciplines.

Below is a list of steps recommended for the continued development and refinement of the kits as well as cultural resources management in Idaho:

- Keep asking questions and getting feedback.
- Continue formal (i.e. recognized, reported, measurable) and informal dialogs between CRM and the public.
- Expand upon the mixed method approaches in both breadth of sample populations as well as time spent questioning and observing.
- Develop a better way to identify the relationship between adolescents' knowledge/learning and community knowledge/learning. Expand the survey of surrounding community.
- Design a survey that would return more responses; incentivize responses.
- Generate continued discourse with archaeology educators as well as community.
- Expand the evaluations to include evaluations by historians, archaeologists, and other stakeholders.

- Incorporate experiential components and opportunities for students to participate in “real” archaeological investigations.

As demonstrated by questions and shared interests, sixth grade is a great time for archaeologists to talk with students about personal motivations as professionals and why they do what they do. Professionals can also discuss archaeology with students in a greater context of global effects. I would like to work with regional archaeology and history organizations, such as the Idaho State Historical Society and the Idaho Archaeological Society, to build a network of archaeologists who visit classrooms and not only participate in sharing their research interests with students, but are trained to present archaeology curriculum or able to train teachers in the use of archaeology curriculum, such as the approach taken by Project Archaeology.

A recommended future direction is to explore and demonstrate the concept of science more in-depth as well as make more repeated links between scientific methods and the practice of archaeology. For example, the Multi Focus Affective Inventory statements, “I like to learn about scientific topics,” and “I don’t like to learn about scientific topics,” could be translated into more comprehensive Likert scales that incorporate aspects such as conducting scientific experiments, doing science, and what students conceive as science. Do they feel archaeology is a science or employs scientific methods (also a question for archaeologists)? Do students recognize that they are following scientific methods of observation whilst participating in the analysis of historic artifacts and recording their observations?

Developing curriculum that pertains to historic buildings in such towns as Sandpoint, Idaho, is another direction to take. Specifically, lessons about the Sandpoint Burlington

Northern Railway Station could act as a starting point from which to segue into exploring Sandpoint history through material culture. Similarly, the former Northern Pacific rail line station is a historic gateway to the North Idaho region.

Another area to explore how lessons can be developed for the Sandpoint Restricted District and in which contexts the lessons could be taught. One of the major tenets of historical archaeology is to shed light on those people in history who are cast in shadow for one reason or another. Social norms likely play a role in the wish to not cover Sandpoint's Restricted District (saloon, dancehall, brothel, and bordello) in elementary classrooms; however, Becca Simon's work with similar materials from Colorado demonstrates that it is possible to explore lives of people who worked at these establishments through the material culture.

Future studies could ask students what they learned, and if their questions were answered. Asking what they learned would provide content that researchers could then attempt to measure. If combined with student self-assessment of knowledge, it may provide insight to understanding in comparison to confidence in knowledge. At a greater sample size, attempts could be made to identify what correlations may exist between self-assessment of knowledge, knowledge learned through materials in the study, and awareness of scales of knowledge about archaeology (including professional archaeologists).

References Cited

Anderson, Lorin W. 1981. *Assessing Affective Characteristics in the Schools*. Boston, MA: Allyn and Bacon, Inc.

Anderson, Lorin W., and David R. Krathwohl, eds. 2000. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Boston, MA: Pearson.

Anthropological Studies Center. 2005. Digging West Oakland: What Archaeologists Found Under the Cypress Freeway. In *Cypress Replacement Project Interpretive Report*. Oakland, CA: Sonoma State University Anthropological Studies Center for California Department of Transportation District 4.

Anthropological Studies Center. 2008. "Interpretive and Outreach Services." Sonoma State University Accessed 29 August. http://www.sonoma.edu/asc/consultingservices/interpretive.htm.

Archaeological Institute of America. 1994. Code of Professional Standards; Electronic document. Accessed January 27, 2011.

Atalay, Sonya. 2012. *Community-Based Archaeology: Research with, by, and for Indigenous and Local Communities*. Kindle ed. Berkeley, CA: University of California Press.

Bagozzi, Richard P., and Robert E. Burnkrant. 1979. "Attitude Measurement and Behavior Change: a Reconsideration of Attitude Organization and Its Relationship to Behavior." *Advances in Consumer Research* 6:295-302.

Baumler, Mark F. 2002. Montana Archaeology Education Resource Catalog: A Guide to Educational Materials for the Teaching of Archaeology and Prehistory in Montana Schools. edited by Montana Historical Society: Montana Historical Society.

Bloom, Benjamin S., Max D. Engelhart, Edward J. Furst, Walker H. Hill, and David R. Krathwohl. 1984. *Taxonomy of Education Objectives, The Classification of Educational Goals: Cognitive Domain*. White Plains, NY: Longman.

Britt, Kelly M. 2007. "Archaeology -- the "Missing Link" to Civic Engagement?" In *Archaeology as a Tool of Civic Engagement*, edited by Barbara J. Little and Paul A. Shackel, 151-172. Lanham, MD: AltaMira Press.

Brody, Michael, Jeanne M. Moe, Jöelle Clark, and Crystal B. Alegria. 2014. "Archaeology as Culturally Relevant Science Education: The Poplar Forest Slave Cabin." In *Public Participation in Archaeology*, edited by Suzie Thomas and Joanne Lea, 90-103. Rochester, NY: The Boydell Press.

Bruner, Jerome S. 1965. *Man: A Course of Study*. Cambridge, MA: Educational Services, Inc.

Burke Museum of Natural History and Culture. 2014. "Browse Burke Boxes, Education." Burke Museum of Natural History and Culture Accessed 11 September. http://www.burkemuseum.org/education/boxes_browse/category/archaeology#archaeology_of_west_point.

Burke Museum of Natural History and Culture, and West Point Tribal Oversight Committee. 2003. "The Archaeology of West Point." Burke Museum of Natural History and Culture Accessed 11 September. http://www.burkemuseum.org/westpoint/.

Butler, Virginia. 2014. "Developing a Model for Public Outreach: the Archaeology Roadshow in Portland, Oregon." 67th Annual Northwest Anthropological Conference, Bellingham, WA, March 27, 2014.

Champion, Erik. 2011. "Playing with the Past." In. London: Springer.

Chinese Railroad Workers in North America Project. 2014. "Archaeology." Accessed 10 September. http://web.stanford.edu/group/chineserailroad/cgi-bin/wordpress/researchmaterials/archaeology/.

City of Sandpoint. 2014. "History." Accessed April 24. http://www.cityofsandpoint.com/default.asp.

Clark County Historical Museum. 2013. "Artifact Detectives." Clark County Historical Museum Accessed August 29. http://www.cchmuseum.org/education/artifact-detectives/.

Colwell-Chanthaphonh, Chip, ed. 2007. *History, Justice, Reconciliation*. Edited by Barbara J. Little and Paul A. Shackel, *Archaeology as a Tool of Civic Engagement*. Lanham, MD: AltaMira.

Commerce, U.S. Department of. 2014. "State and County QuickFacts." Accessed February 20. http://quickfacts.census.gov/qfd/states/16/16017.html.

Cotter, John L. 1979. "Archaeologists of the Future: High Schools Discover Archaeology." *Archaeology* 31 (1):29-35.

Couer d'Alene Tribe, and Nez Perce Tribe. 2004. "Lifelong Learning Online: The Lewis & Clark Rediscovery Project." University of Idaho. http://www.webpages.uidaho.edu/L3/index-2.html.

Cutler, Ellen B. 2006. *What Archaeology Tells Us About Prehistory*. Edited by Scott Foresman. Glenview, IL: Pearson.

Davis, Elaine. 2000. "Governmental Education Standards and K-12 Archaeology Programs." In *The Archaeology Education Handbook: Sharing the Past with Kids*, edited by Karolyn Smardz and Shelley J. Smith. Walnut Creek, CA: AltaMira Press.

Davis, Elaine. 2005. *How Students Understand the Past: From Theory to Practice*. Walnut Grove, CA: Alta Mira Press.

Debert, Jolene. 2014. "Hook 'em When They're Young: Using Enquiry-Based Learning Workshops in Archaeology." In *Public Participation in Archaeology*, edited by Suzie Thomas and Joanne Lea, 81-87. Rochester, NY: The Boydell Press.

Dell'Olio, Jeanine, and Tony Donk. 2007. *Models of Teaching: Connecting Student Learning with Standards*. Thousand Oaks, CA: Sage.

Diamond, Judy, Jessica J. Luke, and David H. Uttal. 2009. *Practical Evaluation Guide: Tools for Museums and Other Informal Educational Settings*. Edited by Russell Lewis, *American Association for State and Local History Book Series*. Lanham, MD: AltaMira Press.

Education, Idaho State Department of. 2014. Content.

Eisenwine, Marilyn J. 2000. "Teaching Archaeology in the Middle School: Evaluation of an Interdisciplinary Unit." PhD PhD, University of Texas.

Ellick, Carol. 1991. "Archaeology is More Than a Dig: Educating Children About the Past Saves Sites for the Future." In *Archaeology and Education: the Classroom and Beyond*, edited by K. C. Smith and Francis P. McManamon. Washington, D.C.: Department of the Interior.

Ellick, Carol. 1998. "A Life of Its Own: An Education Program Takes Root in the Desert." *Common Ground* 3 (1).

Ellick, Carol. 2008. "Audience, Situation, Style: Strategies for Formal and Informal Archaeological Outreach Programs." In *Past Meets Present: Archaeologists Partnering with Museum Curators, Teachers, and Community Groups*, edited by John H. Jameson and Sherene Baugher, 249-264. New York, NY: Springer.

Eppard Vision. 2014. "Applied Preservation Technologies (APT)." Eppard Vision Accessed 11 September. http://eppardvision.org/apt.html.

Frost, Norman R. 2000. "Environmental Education: Perspectives for Archaeology." In *The Archaeology Education Handbook: Sharing the Past with Kids*, edited by Karolyn Smardz and Shelley J. Smith, 377-393. Walnut Creek, CA: AltaMira Press.

Gallivan, Martin D., and Danielle Moretti-Langholtz. 2007. "Civic Engagement at Werowocomoco: Reasserting Native Narratives from a Powhatan Place of Power." In *Archaeology as a Tool of Civic Engagement*, edited by Barbara J. Little and Paul A. Shackel, 47-66. Lanham, MD: AltaMira.

Gaston, Jenna. 1991. Appendix B: Sandpoint North/South Cultural Resource Overview. In *Sandpoint North and South, Final Environmental Impact Statement*. Boise, ID: Manuscript, Idaho Transportation Department.

Higgins, Rebecca, Chase Young, Alex Peterson, Molly E. Swords, and Kristen Tiede. 2014. "University of Idaho Campus Archaeology Project: Our Experiences and Public Outreach." Great Basin Anthropological Conference, Boise, ID.

Hurry, Silas D. and Dorsey Bodeman. 2008. "The Whole Site is the Artifact: Interpreting the St. John's Site, St. Mary's City, Maryland." In *Past Meets Present: Archaeologists Partnering with Museum Curators, Teachers, and Community Groups*, edited by Jr. and Sherene Baugher John H. Jameson, 53-68. New York, NY: Springer.

Idaho Archaeological Society. 2011. "Sand Creek Byway Archaeological Project." Idaho Archaeological Society Accessed August 29. http://idahoarchaeology.org/projects/sandcreekarchaeology/.

Idaho Archaeological Society. 2012. "Events." Accessed 5 October. http://idahoarchaeology.org/ias-events/.

Idaho State Department of Education. 2013. "Report Card." Accessed February 24. https://apps.sde.idaho.gov/Accountability/Content/files/FiveStarRatingSystemOverview.pdf.

Indicators Idaho. 2014. "County Highlights." Accessed April 22. http://www.indicatorsidaho.org/DrawRegion.aspx?RegionID=16017.

Jacobsen, Michele, Jennifer Lock, and Sharon Friesen. 2013. "Strategies for Engagement: Knowledge Building and Intellectual Engagement in Participatory Learning Environments." *Education Canada* 53 (1).

Jameson, John H., ed. 1997. *Presenting Archaeology to the Public: Digging for Truths*. Walnut Creek, CA: AltaMira Press.

Jameson, John H., and Sherene Baugher, eds. 2008. *Past Meets Present: Archaeologists Partnering with Museum Curators, Teachers, and Community Groups*. New York, NY: Springer.

Kelly, Katherine M., and Melanie Diedrich. 2014. "Extending our (Out)reach -- Promoting Stewardship, Public Awareness, and Education." Northwest Anthropological Conference, Bellingham, WA.

King, Thomas F., ed. 2008. *Cultural Resource Laws and Practice*. 3rd ed. Lanham, MD: AltaMira Press.

Krajcik, J., R. Mamlok, and B. Hug. 2001. "Modern Content and the Enterprise of Science Education in the Twentieth Century." In *Education Across a Century: The Centennial Volume*, edited by Lyn Corno. Chicago: University of Chicago Press.

Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia. 1999. *Taxonomy of Education Objectives, The Classification of Educational Goals: Affective Domain*. 2nd ed. Vol. 2. White Plains, NY: Longman.

Kuzon, William M., Melanie G. Urbanchek, and Steven McCabe. 1996. "The Seven Deadly Sins of Statistical Analysis." *Annals of Plastic Surgery* 37 (5):265-272.

Levstik, Linda S., and Keith C. Barton. 2011. *Doing History*. Fourth ed. New York, NY: Routledge.

Levstik, Linda S., A. Gwynn Henderson, and Jennifer S. Schlarb. 2008. "Digging for Clues: An Archaeological Exploration of Historical Cognition." In *Researching History Education: Theory, Method, and Context*, edited by Linda S. Levstik and Keith C. Barton, 393-407. New York, NY: Routledge.

Levstik, Linda S., A. Gwynn Henderson, and Lee Youngdo. 2014. "The Beauty of Other Lives: Material Culture as Evidence of Human Ingenuity and Agency." *The Social Studies* 105 (4):184-192.

Lewis, Ann-Eliza H. 2008. "Transportation Collections: On the Road to Public Education." In *Past Meets Present: Archaeologists Partering with Museum Curators, Teachers, and Community Groups*, edited by Jr. and Sherene Baugher John H. Jameson, 299-318. New York, NY: Springer.

Likert, Rensis. 1932. "A Technique for the Measurement of Attitudes." *Archives of Psychology*:1-55.

Lipe, William D. 1984. "Value and Meaning in Cultural Resources." In *Aproaches to the Archaeological Heritage*, edited by Henry Cleere, 1-11. Cambridge, Great Britain: Cambridge University Press.

Lipe, William D. 2009. "Archaeological Values and Resource Management." In *Archaeology and Cultural Resource Management: Visions for the Future*, edited by Lynne Sebastian and William D. Lipe, 41-63. Santa Fe, NM: School for Advanced Research Press.

Little, Barbara J., ed. 2002. *Public Benefits of Archaeology*. Gainesville, FL: Univesrity Press of Florida.

Little, Barbara J. 2007. "Archaeology and Civic Engagement." In *Archaeology as a Tool of Civic Engagement*, edited by Barbara J. Little and Paul A. Shackel, 1-22. Lanham, MD: AltaMira Press.

Little, Barbara J. 2008. "Archaeology and Civic Engagement." In *Archaeology as a Tool of Civic Engagement*, edited by Barbara J. Little and Paul A. Shackel, 1-22. Lanham, MD: AltaMira Press.

Little, Barbara J., and Paul A. Shackel, eds. 2007. *Archaeology as a Tool of Civic Engagement*. Lanham, MD: AltaMira Press.

MacDonald, Cathy. 2014. "Accessing Archaeology in the School System: Powerful Partnerships - a Case Study of the Challenges and Rewards for Archaeologists, Teachers and Students (Canada)." In *Public Participation in Archaeology*, edited by Suzie Thomas and Joanne Lea, 73-80. Rochester, NY: The Boydell Press.

Marks, Jeffrey. 2011. "Defining a Unique Model of Public Engagement and Evaluating its Implementation at the 2011 NPS Fort Vancouver Public Archaeology Field School." MA, Institude of Archaeology, University College London.

Marks, Jeffrey. 2014. "Defining a Unique Model of Public Engagement at the Fort Vancouver Public Archaeology Field School." 67th Annual Northwest Anthropological Conference, Bellingham, WA, March 27, 2014.

McDavid, Carol. 1998. "Levi Jordan Plantation." Accessed December 1. http://www.webarchaeology.com/html/Default.htm.

McDavid, Carol. 2002. "Archaeologies that hurt; descendants that matter: A pragmatic approach to collaboration in the public interpretation of African-American archaeology." *World Archaeology* 34 (2):303-314. doi: 10.1080/0043824022000007116.

McDavid, Carol. 2004. "From "Traditional" Archaeology to Public Archaeology to Community Action." In *Places in Mind: Public Archaeology as Applied Anthropology*, edited by Paul A. Shackel and Erve J. Chambers, 35-56. New York, NY: Routledge.

McManamon, Francis P. 1991. "The Many Publics for Archaeology." *American Antiquity* 56 (1):121-130. doi: 10.2307/280977.

McManamon, Francis P., and Alf Hatton. 2000. "Introduction: Considering Cultural Resource Management in Modern Society." In *Cultural Resource Management in Contemporary Society*, edited by Francis P. McManamon and Alf Hatton, 1-19. New York, NY: Routledge.

McNutt, Nan. 2000. "Assessing Archaeology Education: Five Guiding Questions." In *The Archaeology Education Handbook: Sharing the Past with Kids*, edited by Karolyn Smardz and Shelley J. Smith. Walnut Creek, CA: AltaMira Press.

Mercer, Kristen. 2005. "Assessing Archaeological Outreach Programs: A Case Study from Northern Idaho." MA Anthropology, Department of Sociology and Anthropology, University of Idaho.

Merriman, Nick. 2004a. "Diversity and Dissonance in Public Archaeology." In *Public Archaeology*, edited by Nick Merriman, 1-18. New York, NY: Routledge.

Merriman, Nick, ed. 2004b. *Public Archaeology*. New York, NY: Routledge.

Moe, Jeanne. 2002. "Project Archaeology: Putting the Intrigue of the Past in Public Education." In *Public Benefits of Archaeology*, edited by Barbara J. Little, 176-186. Gainesville, FL: University Press of Florida.

Moe, Jeanne. 2011. "Conceptual Understanding of Science Through Archaeological Inquiry." PhD, Department of Education, Montana State University.

Montangero, Jacques. 1996. *Understanding Changes in Time: The Development of Diachronic Thinking in 7-12-year-old Children.* Translated by Tim Pownall. First ed. New York: Taylor and Franci.

Morgan, Tyler. 2010. Historical Artifacts Education Kit Review. Vancouver, WA: Clark County Historical Museum.

Moyer, Teresa. 2004. "To Have and Enjoy the Liberrty of Conscience." In *Places in Mind*, edited by Paul A. Shackel and Erve J. Chambers, 85-100. New York, NY: Routledge.

Mullins, Paul. 2007. "Politics, Inequality, and Engaged Archaeology: Community Archaeology Along the Color Line." In *Archaeology as a Tool of Civic Engagement*, edited by Barbara J. Little and Paul A. Shackel, 89-108. Lanham, MD: AltaMira Press.

Murphy, Harry. 1998. "Center of Change." *Common Ground* 3 (1).

Musil, Caryn McTighe. 2003. "Educating for Citizenship." *Peer Review* 5 (3):4-8.

National Forum on Education Statistics Race/Ethnicity Data Implementation Task Force. 2008. Managing an Identity Crisis: Forum Guide to Implementing New Federal Race and Ethnicity Categories (NFES 2008-802). Washington, DC: Idaho State Department of Education.

National Governors Association Center for Best Practices, and Council of Chief State School Officers. 2010. Common Core State Standards. Washington, DC: National Governors Association Center for Best Practices and Council of Chief State School Officers.

Okamura, Katsuyuki, and Akira Matsuda, eds. 2011. *New Perspectives in Global Public Archaeology*. New York: Springer.

Owens, Roxanne F., Jennifer L. Hester, and William H. Teale. 2002. "Where do You Want to Go Today?: Inquiry-Based Learning and Technology." *Reading Teacher* 55 (7):616-25.

Parker-McGlynn, J. Kyle. 2014. "Digital Museums Used to Create Accessibility and Educational Outreach." 67th Annual Northwest Anthropological Conference, Bellingham, WA, March 27, 2014.

Pokotylo, David, and Neil Guppy. 1999. "Public Opinion and Archaeological Heritage: Views from Outside the Profession." *American Antiquity* 64 (3):400-416. doi: 10.2307/2694141.

Potter, Parker B., Jr. 1994. *Public Archaeology in Annapolis: A Critical Approach to History in Maryland's Ancient City*. Washington, D.C.: Smithsonian Institution Press.

Project Archaeology. 2010. "Project Archaeology." Montana State University and Bureau of Land Management Accessed 17 January. http://projectarchaeology.org/.

Project Archaeology. 2014a. "Develop a Vision for Archaeology Education for the Next 25 Years." National Archaeology Educators Conference, Crow Canyon Archaeological Center, Cortez, CO.

Project Archaeology. 2014b. "Identify Common Ground, Common Goals, and Common Needs." National Archaeology Educator's Conference, Crow Canyon Archaeological Center, Cortez, CO.

Project Archaeology. 2014c. "Literature Circle." National Archaeology Educators Conference, Crow Canyon Archaeological Center, Cortez, CO.

Project Archaeology. 2014d. "National Archaeology Educator's Conference." Montana State Universisty and Bureau of Land Management Accessed 12 November. https://projectarchaeology.org/shop/national-archaeology-educators-conference.

Ramos, Maria, and David Duganne. 2000. *"Exploring Public Perceptions and Attitudes about Archaeology"*. Harris Interactive Poll for the Society for American Archaeology.

Renk, Nancy F. . 2014. *A Glorious Field for Sawmills: Humbird Lumber Company 1900-1948*. Sandpoint, ID: Bonner County Historical Society.

Richardson, Ken. 2003. *Models of Cognitive Development*. East Sussex, UK: Taylor & Francis Library, Psychology Press.

Rockman, Marcy, and Joe Flatman, eds. 2012. *Archaeology in Society: Its Relevance in the Modern World*. New York, NY: Springer.

Rogge, A. E., and Patti Bell. 1989. Archaeology in the Classroom: A Case Study from Arizona. In *Technical Briefs*: National Parks Service.

Rowland, Julia. 2014. "Connecting Community Archaeology in Action in Skagit County, Washington." 67th Annual Northwest Anthropological Conference, Bellingham, WA, March 27, 2014.

Rubin, Herbert J. , and Irene S. Rubin. 2005. *Qualitative Interviewing: The Art of Hearing Data*. Second ed. Thousand Oaks, CA: Sage.

Sabloff, Jeremy A. 2008. *Archaeology Matters*. Walnut Creek, CA: Left Coast Press.

Schwartz, Tracy. 2014. "Preparing for the Public: The Dos and Don'ts of Public Archaeology as Learned Through Trial and Error." 67th Annual Northwest Anthropological Conference, Bellingham, WA, March 27, 2014.

Scott-Ireton, Della A., and David Gaimster. 2012. "Historical Archaeology and Public Engagement." In *Archaeology in Society: Its Relevance in the Modern World*, edited by Marcy Rockman and Joe Flatman. New York, NY: Springer.

Senf, Janet H., Mikel Aickin, Kay A. Bauman, and and James R. Allender. 1989. "Attitude Change: Measuring the Effect of an Educational Program." *Evaluation Review* 13:550-556.

Shackel, Paul A., and Erve J. Chambers, eds. 2004. *Places in Mind: Public Archaeology as Applied Anthropology*. New York, NY: Routledge.

Shackel, Paul A., Mark S. Warner, and Paul Mullins, eds. 1998. *Annapolis Pasts: Historical Archaeology*. Knoxille, TN: University Tennessee Press.

Shih, Ching-Chun, and Julia Gamon. 2001. "Web-Based Learning: Relationships Among Student Motivation, Attitude, Lerning Styles, and Achievement." *Journal of Agricultural Education* 42 (4):12-20.

Simon, Rebecca L. 2013. "Teaching with Broken Glass: A Portfolio of Historical Archaeological Research, Curriculum Development, and Public Outreach." Masters Portfolio, Department of Anthropology, Colorado State University.

Smardz, Karolyn, and Shelley J. Smith, eds. 2000. *The Archaeology Education Handbook: Sharing the Past with Kids*. Walnut Creek, CA: Society for American Archaeology and AltaMira Press.

Smith, K. C. 1998. "Pathway to the Past: Archaeology Education in Precollegiate Classrooms." *Social Studies* 83 (3):112-117.

Smith, K. C., Francis P. McManamon, and United States. National Park Service. Archeological Assistance Division. 1991. *Archeology and education, the classroom and beyond*, *Archeological assistance study,*. Washington, DC: U.S. Dept. of the Interior, National Park Service, Cultural Resources, Archeological Assistance Division.

Society for American Archaeology. 1996. Principle of Archaeology Ethics. Accessed December 14, 2011.

Society for Historical Archaeology. 2015. Ethical Principles of the Society for Historical Archaeology.

Solórzano, Marisa E. 2011. "CRM, Education, and Community: Designing a Teacher's Toolkit for Third Grade Classrooms in Duarte, CA." Master of Arts, Cultural Resouce Management, Sonoma State University.

Spence, Aric. 2009. "About the Station." Aric Spence Accessed 29 Nov 2015. www.sandpointtrainstation.com/about_the_station.php.

State of Idaho. 2008. "Statistical Report: Idaho Public District and Charter Schools 2007-2008." In.

Stranahan, Patricia (Pam) W., Dorothy Lippert, Dirk Van Tuerenhout, and Elisa Phelps. 2008. "New Ways of Looking at the Past: Archaeological Education at the Houston Museum of Natural Science." In *Past Meets Present: Archaeologists Partnering with Museum Curators, Teachers, and Community Groups*, edited by John H. Jameson and Sherene Baugher. New York, NY: Springer.

SWCA Environmental Consultants, ed. 2014. *The Other Side of Sandpoint: Early History and Archaeology Beside the Tracks, The Sandpoint Archaeology Project 2006-2013*. Edited by James C Bard, Mark S. Warner and Robert M. Weaver. Coeur d'Alene, ID: Idaho Transportation Department.

Swords, Molly E. 2013. "Putting History on Display: Sandpoint Project Update." *The Wire*, 8-9.

Swords, Molly E., ed. 2014. *Volume 4: Summary of Methods and Data*. Edited by James C Bard, Mark S. Warner and Robert M. Weaver, *The Other Side of Sandpoint: Early History and Archaeology Beside the Track, the Sandpoint Archaeology Project 2006-2013*. Portland, OR: SWCA Environmental Consultants.

Swords, Molly E., James MacNaughton, Abram Grisham, Alyssa Griffith, Kristen Tiede, and Mark S. Warner. 2014. "Vandal Archaeology - The Campus Archaeology Project at the University of Idaho." Great Basin Anthropological Conference, Boise, ID.

The PAST Foundation. 2010. Annual Report. Columbus, OH.

U.S. Department of Commerce. 2013. Census Urban and Rural Classification and Urban Area Criteria. 2014 (February 20).

U.S. Department of Education, National Center for Education Statistics. 2011-2012. "Common Core of Data, Institute of Education Sciences." Accessed February 20. http://nces.ed.gov/ccd/schoolsearch/.

Warner, Mark S., Tracy Schwartz, Stacey Camp, Jessica Goodwin, Amanda Bielmann, and Tim Mace. 2014. "Public Archaeology in the West: A Case Study from Boise, Idaho." *Journal of Northwest Anthropology* 48 (2):213-234.

Weaver, Robert M., ed. 2014. *Sandpoint Stories*. Edited by James C Bard, Mark S. Warner and Robert M. Weaver. Vol. 1, *The Other Side of Sandpoint: Early History and Archaeology Beside the Tracks*. Couer d'Alene, ID: SWCA Environmental Consultants for Idaho Transportation Department.

Weaver, Robert M., James C. Bard, and James J. Sharpe. 2006. Final Research Design for Archaeological Data Recovery of the Sandpoint Byway Project, Sandpoint, Idaho: Rearch Design for Idaho Transportation Department.

Webb, Anna. 2014. "Urban Archaeology: Excavation will Uncover Secrets of Building at Old Fort Boise." *Idaho Statesman*. Accessed August 25, 2014. http://www.idahostatesman.com/2014/06/11/3228921/urban-archaeology.html.

White, Nancy M. 2000. "Teaching Archaeologists to Teach Archaeology." In *The Archaeology Education Handbook: Sharing the Past with Kids*, edited by Karolyn Smardz and Shelley J. Smith, 328-339. Walnut Creek, CA: AltaMira.

Whiting, Nancy C. 1998. "Archaeology and Intercultural Education in the Elementary Grades: An Example from Minnesota." *The Social Studies* 89 (6):254-259.

Widgix, LLC. 2014. In *SurveyGizmo*.

Williams, Martha. 2000. "Retrospective: Personal Thoughts on the Maturation of Archaeological Education." In *The Archaeology Education Handbook: Sharing the Past with Kids*, edited by Karolyn Smardz and Shelley J. Smith. Walnut Creek, CA: AltaMira Press.

Zimmerman, Larry J. 2003. *Presenting the Past*, *The Archaeologist's Toolkit*. Walnut Creek, CA: Altamira.

APPENDICES

Appendix A: National Institutes of Health Certificate of Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Mary Petrich-Guy** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 02/13/2011

Certification Number: 631596

Appendix B: Institutional Review Board approval letter

University of Idaho

September 4, 2012

Office of Research Assurances
Institutional Review Board
PO Box 443010
Moscow ID 83844-3010

Phone: 208-885-6162
Fax: 208-885-5752
irb@uidaho.edu

To: Warner, Mark
Cc: Petrich-Guy, Mary

From: Traci Craig, PhD
Chair, University of Idaho Institutional Review Board
University Research Office
Moscow, ID 83844-3010

Title: 'Historical Archaeology Teaching Kits Testing and Evaluation'

Project: 12-294
Approved: 09/02/12
Expires: 09/01/13

On behalf of the Institutional Review Board at the University of Idaho, I am pleased to inform you that the protocol for the above-named research project is approved as offering no significant risk to human subjects.

This approval is valid for one year from the date of this memo. Should there be significant changes in the protocol for this project, it will be necessary for you to resubmit the protocol for review by the Committee.

Traci Craig

Traci Craig

Appendix C: Kit Organization and Inventory

HOW ITEMS ARE ORGANIZED, BY LEVEL

Surface	**Binder, books, posters (in tube), flash drive with lanyard, measuring tape**
Level 1	Lesson 6 Exercise C Artifacts, Lesson 6 Exercise D Artifacts, gloves, encased artifacts
Level 2	Light bulb, trowel, gloves, Lesson 6 Exercise D Artifacts (two levels deep)
Level 3	Lesson 6 Exercise A Artifacts
Level 4	Lesson 6 Exercise B Artifacts, Lesson 6 Exercise E Artifacts

CAUTION: KIT CONTAINS REAL ARTIFACTS AND SOME SHARP OBJECTS, HANDLE WITH CARE

Inventory:

- Idaho Archaeology: Sandpoint Lesson Plans binder
- Jump Drive including:
    - Idaho Archaeology: Sandpoint Lesson Plans
    - Visuals & Reference Materials
        - Slides and visuals to use with lesson plans
    - Research Materials
- Research Materials
    - Kit Laboratory Manual, Glass manual, Ceramics manual, Rim diameter charts (for measurement and identification)
- Books
    - Archaeology for Kids
    - Sears Roebuck and Co. (reprint)
    - Motel of Mysteries
    - The Industrial Revolution with 25 Projects
- Sandpoint Archaeology Project Artifacts (*CAUTION: SHARP OBJECTS*)
    - Lesson plan inventory sheets
        - Lesson 6, Exercise A: Maker's Marks and Ceramic Patterns
        - Lesson 6, Exercise B: Ceramic vessel rim diameter measurements
        - Lesson 6, Exercise C: Glass finish analysis
        - Lesson 6, Exercise D: Typologies
- Non-archaeological hands-on objects
        - Lesson 6, Exercise E: Minimum vessel counts (MVC)
- Some Archaeology Tools
    - trowel (bricklaying style, not gardening trowel), string, nine spikes (nails), measuring tape (meters and feet), masking tape, gloves
- Electrical activity items: light bulb

Appendix D: Select revised archaeology teaching kit lesson plans

Lesson 4: Cookie Excavation

Adapted from Florida Museum of Natural History, Fossil Cookie Excavations and Florida Public Archaeology Network, Cookie Excavation

Recommended grade level	***Any***
Idaho State Standards	*Under revision to correspond to updated 2013 state standards.*
Time required	10 - 15 minutes (with grid 30 – 45 minutes)
Setting	Classroom
Special considerations	Materials marked with an asterisk (*) are not included in the archaeology kit
Corresponding curriculum	Rendezvous with Idaho History, Chapter 2 The Idaho Adventure, Chapter 1: Literature link, Map Activity, pg 16 (student edition)

Overview

Students will experience excavation using a cookie and toothpick

Objectives

Students will demonstrate an understanding of the process of excavating artifacts.

Materials

For each student:
1 chocolate chip cookie* or 1 granola bar* *(remember to check for food allergies)*
1 toothpick*
1 small plate*

Background

Excavation is the method that archaeologists use to extract artifacts out of the ground.

The work is very difficult and has to be detail-oriented since the archaeologist is destroying the very thing he/she is trying to study by removing it from its context. There are no "do-overs." It is also impossible for the archaeologist to know exactly what is under the ground, so he/she has to be very careful not to damage artifacts they cannot see while excavating artifacts at the surface.

Archaeologists use metric measurements in order to be able to compare data between sites around the world.

Procedure

Pre-lesson compass rose exercise, if necessary

1. **Pass out the materials to each student.**
2. **Tell the students that they are archaeologists and they have been asked to excavate their artifacts (the chocolate chips) from their archaeological site (the cookie) to the best of their ability by keeping their chips intact.**

	3. After allowing enough time for students to excavate, stop the class and find out how many students were successful in excavating whole chips from their cookie.
Closure	**Ask the students:** **1. What problems did they encounter excavating their chips?** **2. Was it easy to determine where the chips were in the cookie?** **3. How many students excavated a chip only to discover that they sacrificed another one underneath it?**
Possible Add-ons	**Activities 17 and 18 from *Hands-On Archaeology: Real-Life Activities for Kids* by John R. White.**

Teacher Tips

I have found that people fall into two groups when excavating their cookies – they either pick the chips out leaving a hole in their cookie or they destroy the cookie and leave the chips.

The level of complexity for this exercise greatly depends on the type of cookie being excavated. For younger groups, a M&M candy cookie works best – the candy pops right out of the cookie. Older students may enjoy the challenge of an extreme chocolate chip cookie, like Chips Ahoy Chocolate Chunk. No matter where you attempt to excavate a chip, you will find it surrounded by other chips and nearly impossible to keep them all whole.

You can extend this exercise to include gridding and mapping of the chips as they are excavated. Use the Cookie Grid on the next page or have the students sketch the cookie on a piece of graph paper and record each chip they excavate on their grid. If you use cookies like the Chips Ahoy with candy chips, there are four different colors that can be assigned artifacts categories.

For example, the yellow chips can represent pottery sherds, the blue chips can be stone tool flakes, the green chips can be food remains, and the red chips can be shells. They can answer questions relating to the concentration of artifacts in areas by color and how that might be interpreted. If you have an area with a lot of yellow, maybe that's where people were making pottery. If there are also green chips present, maybe that's where people were cooking and eating.

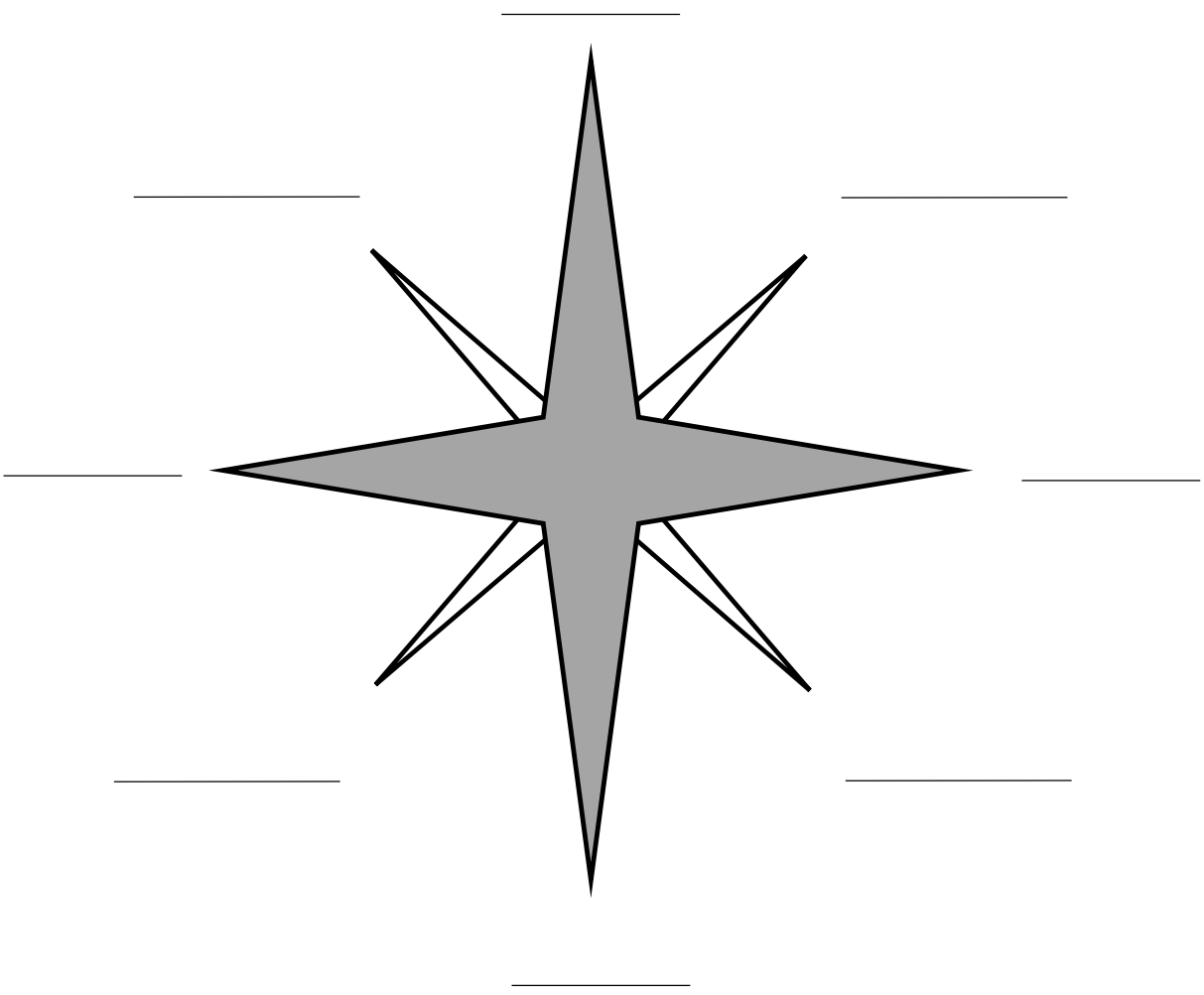
You may also want to try using a soft granola bar instead of a chocolate chip cookie. These are shaped more like an archaeological unit and have the students look for changes in soil color as well as artifacts.

Name: _____ Date: _____

Telling Direction: Compass Rose

A compass rose shows directions on a map. The cardinal directions are North, South, East, and West. On a compass the N stands for North, the S stands for South, the E stands for East, and the W stands for West. The intermediate directions on a map are found between the cardinal directions. The intermediate directions are Northeast, Southeast, Southwest, and Northwest.

Fill in the directions on the compass rose below:



Name:_____ Date:_____

Cookie Excavation Grid

Cookie Excavation Site Grid Map of Excavation Site

1. Place your cookie in the middle of the Cookie Excavation Site grid (left side). Do not move your cookie from this spot.

2. Find the following coordinate pairs on your cookie:

Top:_____ Bottom:_____
Left side:_____ Right side:_____

3. Transfer these coordinate pairs to the Grid Map and sketch the perimeter of your cookie.

4. Plot chips as you excavate them on your Grid Map.

5. What problems did you encounter trying to excavate your chips?

_____
_____

6. Did you have to sacrifice any chips in order to keep one whole?

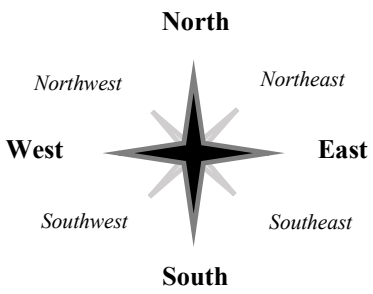
_____
_____

Cookie Excavation Site

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										
G										
H										
I										
J										

Grid Map of Excavation Site

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										
G										
H										
I										
J										



Name:_____ Date:_____

Granola Bar Mapping

Granola Excavation Site Grid Map of Excavation Site

1. Place your granola bar in the middle of the Granola Excavation Site grid (left side).
2. Find the following coordinate pairs on your cookie:

NE corner:_____ NW corner:_____

SE corner:_____ SW corner:_____

3. Transfer these coordinate pairs to the Grid Map and sketch the perimeter of your bar.
4. Plot objects (such as chips) as you excavate them on your Grid Map.
5. What problems did you encounter trying to excavate your "test unit"?

_____

6. What are your colors for the granola?_____ chips?_____

other?_____

7. Why do you think archaeologists map in different colored soil? Why are soil changes important?

_____

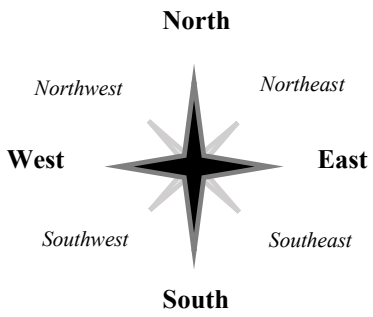
_____

Granola Excavation Site

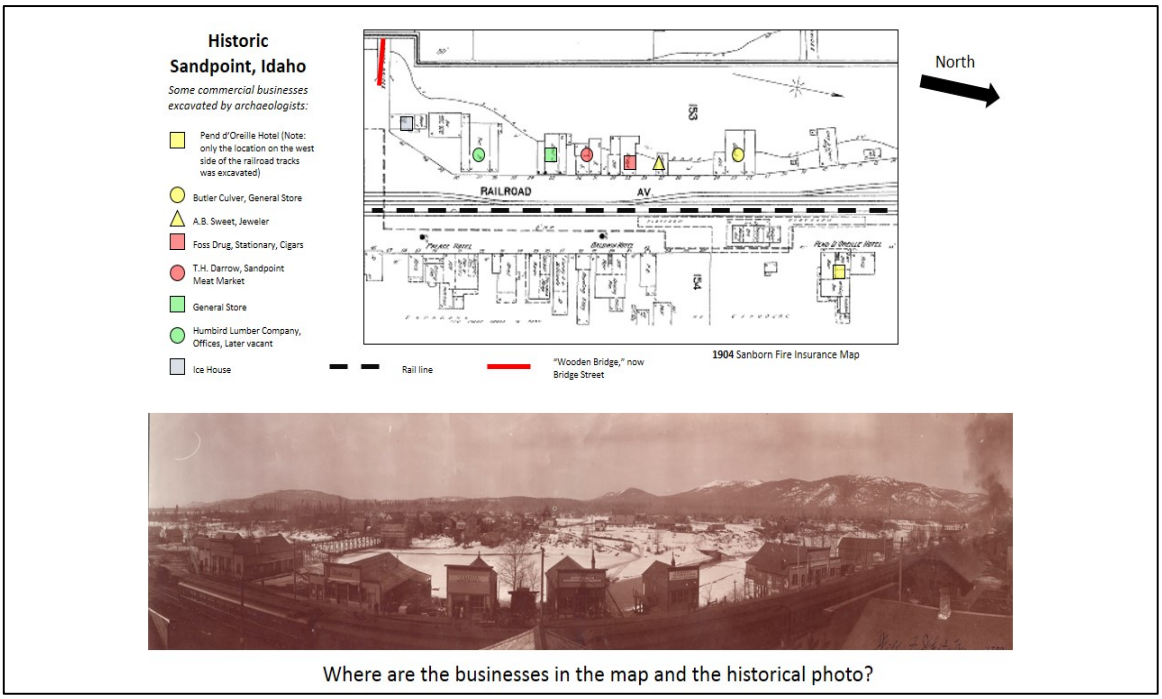
	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										
G										
H										
I										
J										

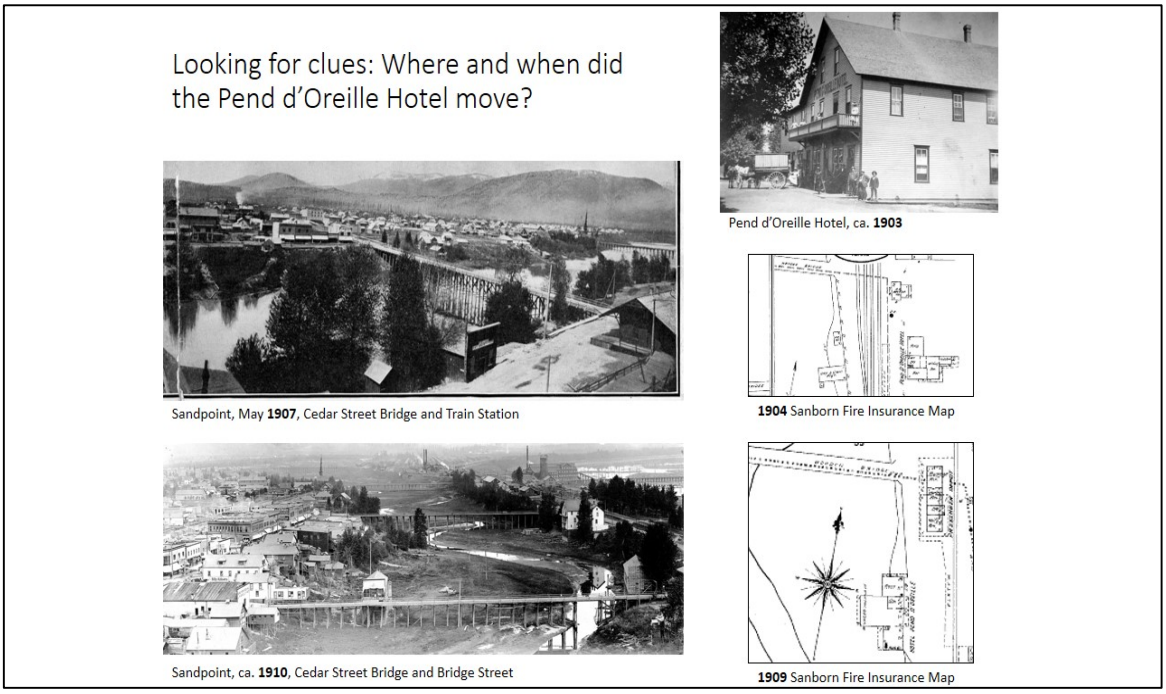
Granola Excavation Site

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										
G										
H										
I										
J										

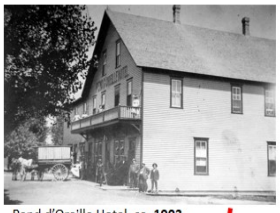


Appendix E: Historical photograph and map analysis activity

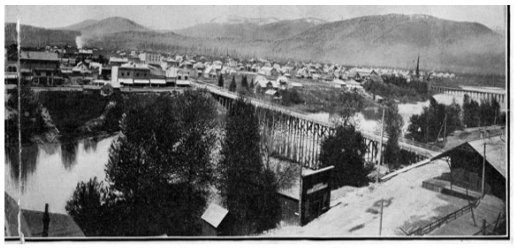




Looking for clues: Where and when did the Pend d'Oreille Hotel move?



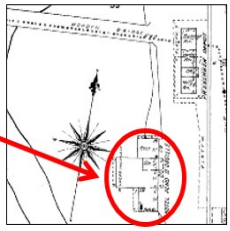
Pend d'Oreille Hotel, ca. **1903**



Sandpoint, May **1907**, Cedar Street Bridge and Train Station

1904 Sanborn Fire Insurance Map

Sandpoint, ca. **1910**, Cedar Street Bridge and Bridge Street



1909 Sanborn Fire Insurance Map

Appendix F: Select revised "Take Aways"

Take Away 2: Trade Networks

Evidence: Nephrite Celt, Source of Nephrite Material, Distance

During archaeological excavations in 2008, a nephrite celt was recovered from the area east of Sand Creek where the old Humbird Lumber Mill's blacksmith and machine shop was once located. The celt, a jade-like stone tool, is evidence that regional Native Americans had extensive trade networks long before the arrival of Euro-Americans and machine-based networks such as roads or railways. The green stone celt was likely traded from British Columbia, Canada, because that is where the closest known source of green nephrite is located.

[Refer to *NephriteCelt* PDF or PowerPoint in Visuals file]

What did archaeologists find out?

A nephrite celt *(nef-rite selt)* was recovered during archaeological excavations in Sandpoint, Idaho.

Map of what is now northwest United States and southwest Canada.

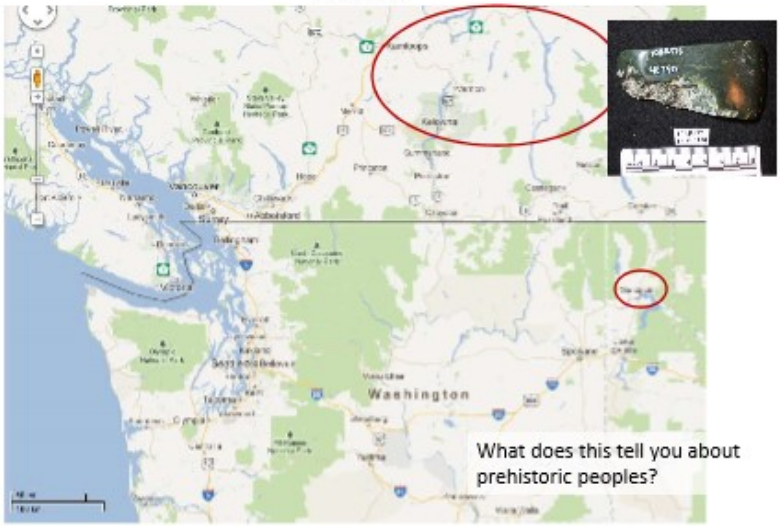
Note where the nephrite material comes from and where the celt was found (Sandpoint, ID).

Native coastal peoples likely used nephrite celts for woodworking. Celts are similar to axes, gouges, and chisels. Nephrite was also used for skin scrapers, pestles, and hammerstones (tools for processing food).

Q: How do you think the nephrite celt traveled from place to place before roads or railways existed?

Q: How far away are these two places?

This nephrite celt was likely carried and traded south via the Arrow Lakes to Kettle Falls on the Columbia River, then south along the Colville River to the Pend Oreille River and up the Pend Oreille River to Lake Pend Oreille. Can you trace this route on a map? Approximately how long is this route?



What does this tell you about prehistoric peoples?

Bibliography

Betts, Robert C.
In press. Sandpoint Byway Prehistoric Byway Prehistoric Artifact Lithic Analysis. SWCA Environmental Consultants, Portland, OR.

Darwent, John
1998 *Prehistoric Use of Nephrite on the British Columbia Plateau.* Archaeology Press, Simon Fraser University, B.C.

Walker, Deward (editor)
1998 *Handbook of North American Indians, Vol. 12: Plateau*. Smithsonian Institution, Washington D.C.

Petrich-Guy, Mary (2012) Nephrite Celt Visuals from the Sandpoint Byway Archaeology Teaching Kit.

Take Away 3: Children in Early Sandpoint

See Visuals_Resources: TakeAways: Sandpoint Children

[**Slide**: title page]

One of the main purposes of historical archaeology is to study people and bring to light the story of those who are not mentioned in history books or historical accounts. For example, not many history books are written from the view point of children. During excavations of Sandpoint, archaeologists recovered artifacts that tell us a little about the lives of children in the early days of the town.

[**Slide**: Sanborn maps of Sandpoint, Idaho, ca. 1904, 1909, and 1915. *Note: Neither the colors nor the shapes represent particular types of businesses. Symbols are purely to distinguish one business from another.*]

The areas of Sandpoint that were excavated before the construction of the I-95 byway were mostly businesses and boarding houses for workers. Though these areas are not places where you would think children would be found, archaeological artifacts and historical photos tell another story.

[**Slide**: Farmin Family on house porch on First]
The first waves of settlers in the American West were usually mostly men, especially in towns with industries like logging and mining. The children that came west with families were very important. They helped out on farms, in businesses, and at home.

[**Slide**: Sandpoint's first school house]

There were fifty children in the town of Sandpoint by the time the first school house was built. This picture was taken in 1894.

Earliest Sandpoint had a reputation as a rough and tumble town. Families like the Farmins worked to civilize the notorious town.

Historically, children in Sandpoint explored and played in the town in a variety of places and often quite late. In 1917, a newspaper article in the *Pend d'Oreille Review* mentioned that children were, "…running at large upon the streets at night." The article goes on to describe children hanging out outside while their parents were at a dance.

[**Slide**: children's toys from Sandpoint]

In total, 257 pieces of children's toys and a children's tooth were found during excavations. This includes 124 doll parts and 80 marbles. Though records do not list children as residents or employees of businesses in the areas excavated by archaeologists, the objects show us that children of the early town played all over the town. It is also possible that children lived in these locations, but were not included in the records.

[**Slide**: children in a barrel]

"Seen through the eyes and imaginations of a child, everyday objects take on new and creative meanings, making a dump pile a playground, forts out of fallen trees, and a barrel a hiding place."

– Swords and Kisling, 2013

Discussion questions:

- What sort of businesses do you see in the maps?
- Are all the businesses in the same location from 1904-1915?
    - No, the Pend d'Oreille Hotel moved from the east side to the west side of the tracks between 1904-1909. Other businesses closed or moved to the west side of Sand Creek when the platted area became the main town.
- What information on this slide is a clue as to what might have happened to some of the businesses that moved?
    - Sanborn Fire Insurance Maps. Fire was a big challenge to many developing cities. Several fires ran through this area in the early days. Sometimes after fires, businesses would move to the west side of Sand Creek.
        - The Pend d'Oreille Hotel moved across the tracks after a fire. Based on maps and historic photographs, it is likely the hotel moved around 1907.
- Would you expect to find evidence of children in commercial areas?
    - If so, what kind of evidence would you expect to find? If not, why not?

Appendix G. Accredited Professional Development Course

Department of Education
University of Idaho

EDCI 405/505: Idaho Archaeology in the Classroom

Course Syllabus

Instructor
Mary Petrich-Guy

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Course Description: Welcome to EDCI 405/505: Idaho Archaeology in the Classroom. This professional development course will familiarize you with proper archaeological concepts and Idaho archaeology research in order to teach a variety of subjects using historical archaeology curriculum and hands-on materials. This is a four-part course: completing readings on your own, completing four short assignments, attending a half-day workshop, and attending the afternoon portion of the Idaho Archaeological Society (IAS) Conference.

Objective: Learn basic principles in archaeology and cultural resource management; familiarize oneself with Idaho archaeology kit contents; discuss approaches to utilizing historical archaeology as a means of teaching subjects such as social studies, history, science, and geography to fourth, fifth, and sixth grade students; become more familiar with current issues and projects in historical and Idaho archaeology; identify additional resources to supplement archaeology curriculum.

Prerequisites: None.

Class meeting: Saturday, October 20th, The Learning Center, Rooms TBA
8:30 am – 12:00 pm Workshop
1:00 pm – 5:00 IAS Conference

Textbooks:
1. Panchyk, Richard (2001) *Archaeology for Kids: Uncovering the Mysteries of Our Past*. Chicago Review Press, Chicago, IL. ISBN: 1-55652-395-5
   - This book can be purchased for less than $13 (new) on Amazon.com or for less than $5 (used) via bookfinder.com
2. Idaho archaeology curriculum packet to be provided in class.

Other readings (suggested):
1. "Archaeology for Educators" web pages (Society for American Archaeology): http://www.saa.org/publicftp/public/educators/index.html
2. "Exploring Historical Archaeology web pages (Society for Historical Archaeology) http://www.sha.org/EHA/splash.cfm
3. "Projects" web pages (Idaho Archaeological Society) http://idahoarchaeology.org/projects/

Accommodations for Students with Disabilities: Disability Support Services at the University of Idaho provides services and support to ensure that students are able to access and participate in the opportunities available at the university. In keeping with this

objective, students are expected and encouraged to utilize the resources of DSS to the degree they determine necessary. Although a significant degree of independence is expected of students, DSS is available to assist, should the need arise.

Students are asked to notify DSS as soon as possible to discuss disability-related concerns and needs. Services include, but are not limited to: alternate text, assistive technology information, readers, notetakers, sign language interpreters, real-time captioning, campus housing arrangements, campus accessibility and disability parking information, priority registration assistance, new student orientation, testing accommodations, advocacy, or assistance with any other campus disability-related needs.

Grading: Grades are pass/fail and will be based on class participation, conference attendance, and completion of assignments.

Assignments: There are several assignments for this class, two before the class and two after.

Before Class:

1. Please email the instructor which grade and subject(s) you teach, which district you are from, how many students you typically work with, and a brief description of the setting of your classroom (i.e. physical space and resources such as technology). **Due October 18th, 11:59pm**.
2. The readings below should be read prior to the start of the class. Please come to class with a minimum of two discussion points or questions in mind for each reading. **Due October 20th, 8:00am**.
    - The following sections of *Archaeology for Kids* (Panchyk 2001):
        - Introduction, *pgs xi-xii*
        - How Archaeology Works, pgs 1-13
    - *Why Teach with Archaeology?* By Paul Brauner http://www.saa.org/publicftp/public/educators/PDF/GeorgeBauer1.pdf

After Class: You may complete each "after class" assignment either in writing (approximately 500 words each assignment) or by video presentation (2-3 minutes each assignment).

Assignments must be received by posting them to blackboard within two weeks after the class. If you have difficulty submitting the assignments, please email the instructor prior to the due date.

3. The third assignment is to discuss which lesson plans you would use and how as well as a critique of two to four lesson plans. **Due November 4th, 11:59pm**.
4. The final assignment is to briefly review the conference presentations you attended. Please include such details as title, author, and your opinions on each presentation. **Due November 4th, 11:59pm.**

Topics and Class Structure:

Basics of historical archaeology

- Vocabulary
- Foci
- Cultural resource laws and ethics
- Concepts: Research, Field, Lab, Interpretation
- Tools (maps, census, etc.)

Applying Historical Archaeology Concepts in the Classroom

- Inquiry
- Experiential/Interactive
- Real-world research

[Break]

Reviewing Kits

- Organization
- Content

Hands-on Teaching Kit Activities

- Break into groups and review lesson plans
- Exercise

[Break]

From Class to Community, Utilizing Anthropological Concepts

- Doing local research

Other Resources for Idaho Teachers

- Educational/classroom resources
- Experiential resources

[Break]

Discussion

- To dig or not to dig
- Q&A with Idaho Archaeologists
- "What is that?" Things out of context.
- How would you utilize teaching materials?
- What resources are in your community?
- Survey (optional)

[Break]

Conference Presentations

- Attend afternoon presentations
- Peruse additional educational materials on display

Appendix H. Student Notification of Study and Consent

September 1, 2012

Dear Idaho Student,

My name is Mary Petrich-Guy and I am an archaeology student at the University of Idaho. I am building and testing an archaeology teaching kit for Idaho's elementary school classrooms. The kit will have facts about archaeology and history as well as artifacts from historic Sandpoint, Idaho. Archaeology artifacts are old things that people used to use a long time ago.

You and your classroom have been chosen to help test the archaeology teaching kit and give feedback about archaeology. Your teacher will teach the archaeology lessons [specific date to be filled in for each class].

You will be asked to answer questions about social studies, science, geography, and archaeology. Some questions will be asked on paper and some questions will be asked in person. Sometimes I be in your classroom while your teacher uses the teaching kit. I may also ask you questions while I am at your school. *You do not have to answer any questions if you do not want to*.

I will use a voice recorder when we talk in person. All of your answers will be anonymous. Your name will not be linked to answers or opinions. You will not be graded on any of your answers or opinions.

Not all students in the school district will be testing the teaching kit. Your tips and opinions will help create a useful and fun tool for teaching archaeology in elementary classrooms.

If you have any questions, please ask your teacher, principal, or me. We will be happy to help.

If you do not want to answer any questions at all, please tell your teacher and me.

Sincerely,
Mary Petrich-Guy

Department of Sociology and Anthropology
University of Idaho
P.O. Box 441110
Moscow, ID 83843
petr5725@vandals.uidaho.edu

Appendix I. Parent Notification of Study and Consent

Archaeology Teaching Kit Testing

The University of Idaho Institutional Review Board has approved this project

Study

Researchers from the University of Idaho are investigating the applications and effects of historical archaeology teaching kits as tools for teaching social studies, regional history, science, and geography in Idaho classrooms and invite your child(ren) and you to participate. The study will extend from September 10, 2012 to December 31, 2012. The teaching kits will be in fourth and sixth grade classrooms from mid-September to mid-October.

The teaching kits will include information gathered from archaeological excavations and analysis of artifacts from historic Sandpoint, Idaho, and the Inland Northwest. Idaho students will study regional archaeology and encouraged to make connections between social science, history, and their own environment through the introduction of archaeological processes of inquiry and interpretation.

The study will use a combination of surveys, group interviews and in-class observations. All student and guardian participants will remain anonymous. Interviews will be either noted or audio taped and transcribed; any information identifying participating minors' and guardians' will be deleted. Feedback gathered in interviews and surveys will be analyzed in order to:

- Ensure teaching trunk materials and curriculum complement state content standards, goals, & objectives
- Assess effectiveness of information gathered through archaeology projects as teaching material
- And, possibly, track the extent to which taught subjects extend from the classroom (ex: children) and into the community (ex: guardians).

Participation

Student

As a participant in this study, your child will be asked to anonymously:

- Participate in individual and group interviews
- Respond in writing to written questions
- Complete feedback questionnaires

Guardian

As a participant in this study, parent(s)/guardian(s) will be asked to:

- Take an optional, anonymous survey after the kit has been tested in the classroom

Taking part in this study is completely voluntary. Participants may skip any questions that they do not want to answer. If you and your child(ren) decide to take part, you are free to withdraw at any time. All student and guardian information and identities will be kept confidential.

Investigators

The researchers conducting this study are Mary Petrich-Guy and Dr. Mark Warner. If you have any questions, you may contact Mary Petrich-Guy (petr5725@vandals.uidaho.edu) or Dr. Mark Warner (mwarner@uidaho.edu/208-885-5954), for more information. You may also reach them c/o Department of Sociology and Anthropology, University of Idaho, P.O. Box 441110, Moscow, ID 83843-1110.

Consent

Your child(ren) will also be informed of the study. You or your child(ren) may opt out of participating in this study at any time. Students who do not participate in the study may still participate in the archaeology teaching kit lessons. If you do not wish your child(ren) to participate in the study, please notify Mary Petrich-Guy and your child(ren)'s teacher(s) by email or letter before September 15, 2012.

Appendix J: Staff/Teaching Interview Questions

These preliminary questions are the basis of the interviews. Additional clarifying questions may be asked to elucidate previously unidentified themes or concerns. Questions will relate to general knowledge of regional history and archaeology, the effect of the archaeology teaching kit, interest, relevance to curriculum, ease of use, general experience, and suggestions for future design and use.

1. Do you have any questions?
2. What is your position of employment?
3. What is your general teaching style?
4. On a scale from 1 to 5 how familiar are you with archaeology? (1 being totally unfamiliar and 5 being an expert)
5. On a scale from 1 to 5, how familiar are you with local county history? (1 being totally unfamiliar and 5 being an expert)
6. What do you look for in a teaching kit?
7. What are you most interested in learning about the history of the Inland Northwest?
8. What are you most interested in teaching about the history of the Inland Northwest?
9. What kind of classroom technology do you have available to you?
10. How often do you use teaching materials that align with state content standards and goals?
    a. Always
    b. Most of the time
    c. Sometimes
    d. Almost Never
    e. Never
11. Please elaborate on the factors that guide your teaching material choices.
12. What do you think of the teaching kits?
    a. Content
    b. Ease of use
    c. Effectiveness
13. Did you discuss the kits with parents?
    a. What aspect of the kits did you discuss?
14. Did parents have questions about the kits?
15. After using the kits, did you talk with people about archaeology more than usual?
    a. How so?

Appendix K: Staff/Teacher Surveys

Before Kit Use

1. How familiar are you with archaeology? Which one of the following statements is the most true for you?

1 I don't know anything about archaeology.	**2** I don't know very much about archaeology.	**3** I am somewhat familiar with archaeology.	**4** I know a lot about archaeology.	**5** I am an archaeology expert.

2. Have you ever done archaeology? If so, please describe your experience (ex: field school, visited a dig site, read about archaeology, took classes).

3. Have you ever taught archaeology before the use of this kit? If so, in what setting (ex: college course, primary school classroom, secondary school and mock dig)?

4. Have you ever visited an archaeological excavation? If so, please list where and reasons for archaeological excavation, if known, and if it was an ongoing project.

5. What is Cultural Resource Management? Please answer to the best of your ability.

After Kit Use

1. How familiar are you with archaeology? Which of the following statements is the most true for you?

1 I don't know anything about archaeology.	**2** I don't know very much about archaeology.	**3** I am somewhat familiar with archaeology.	**4** I understand archaeology fairly well.	**5** I understand archaeology very well.

2. Which lesson plans did you use, how effective were they, and how easy were the lesson plans to use?

Using the scale in the table below to rate lesson plans and their efficacy, rate the efficacy and ease of use of each of the lessons you taught to your class. Please indicate which lesson plans you used and whether you used them with a fourth or sixth grade class. After this section, you will rate how well the combination of lesson plans you used aligned with state content standards and goals.

Rating:	**1**	**2**	**3**	**4**	**5**
Efficacy	Not effective.	Not very effective.	Somewhat effective.	Mostly effective	Very effective
Ease of use	Very difficult to use.	Difficult to use.	Somewhat difficult to use	Easy to use	Very easy to use

__ Archaeology (research and testing)
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

__ Archeology (laboratory, research, and discussion)
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

__ Culture/Migration
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

__ Industry/Business
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

__ Lifeways and Foodways
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

__ Children
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

__ Prehistoric Peoples: Before Idaho
Grade (circle one): 4 6 Rate: __ Efficacy __ Ease of use

3. Why did you use the lesson plans you indicated, as opposed to other options in the kit?

4. Did the contents of the kit portray an accurate history of North Idaho?
Circle one: Yes No Somewhat

Please explain why or why not:

5. Would you use this kit again? Please place an "X" next to all statements that are true for you.

__ I will never use this kit again.

__ I would consider using the kit after revisions are made that better take into account standards and goals.

__ I would consider using this kit after lesson plan structure revisions.

__ I would consider using this kit after lesson plan content revisions.

__ I would use parts of this kit.

__ I would use this kit again.

__ I am excited to use this kit again.

6. Will you look for more opportunities to find out about archaeology?

Indicate one:
Yes No, I really didn't like it. No, I'm just not interested.

If yes, please elaborate on how you plan to find out more about archaeology:

7. Have you visited the websites for any of the following organizations since the start of the school year? (check all that apply)

a. Bonner County Historical Society
b. Idaho Archaeological Society
c. Boundary County Historical Society
d. Idaho State Historical Society
e. Society for Historical Archaeology
f. Society for American Archaeology
g. Kootenai County Historical Society
h. Other archaeology or history web site(s) (please specify) _____

8. If you have any additional comments or feedback not discussed in the surveys, interviews, or notes, please include them below. (OPTIONAL)

Appendix L: Student Interview Questions

These preliminary questions are the basis of the interviews. Additional clarifying questions may be asked to elucidate previously unidentified themes or concerns. Questions will relate to general knowledge of regional history and archaeology, effect of the archaeology teaching kit, interest, general experience, and suggestions for future content.

1. Do you have any questions… about…?
    a. Archaeology
    b. History
    c. Local History
2. What is archaeology?
3. If you could ask an archaeologist a question, what would it be?
4. Tell me about the history of people and Idaho.
    a. Who was in Idaho before settlers?
    b. When did settlers arrive?
    c. Where did settlers come from?
    d. How did settlers get to Idaho (and specifically Sandpoint area)?
5. (When engaged in activity) What are you doing?
6. What have you learned about the history of…
    a. North Idaho?
    b. The people of Idaho/Sandpoint?
7. What can things [material objects] tell us about people who were in Idaho before today [the present day]?
8. What are you doing (during this lesson)?

Appendix M: Student Surveys

Before Kit Use

Directions:

This survey will not be graded and will not count towards your grade for this class. Surveys will be gathered, put into an envelope, and taken to the school office by a student.

Please answer each question as best as you can. Use the back of the page if you need more space. If you use the back, please show which questions you are answering.

1. On a scale from 1 to 5, how *important* is it to know *local county history*? Circle one:

1 Local county history is not important at all	**2** Local county history is not very important	**3** Local county history is somewhat important	**4** Local county history is important	**5** Local county history is very important

3. Which of the following sentences is the most true for you?

1 I don't know anything about archaeology.	**2** I don't know very much about archaeology.	**3** I am somewhat familiar with archaeology.	**4** I understand archaeology *fairly* well.	**5** I am an archaeology expert.

4. On a scale from 1 to 5, how *important* is *archaeology*? Please circle one of the following:

1 Archaeology is not important at all	**2** Archaeology is not very important	**3** Archaeology is somewhat important	**4** Archaeology is important	**5** Archaeology is very important

5. On a scale from 1 to 5, how *interesting* is *archaeology* to you? Please circle one of the following:

1 Archaeology is not interesting at all	**2** Archaeology is not very interesting	**3** Archaeology is somewhat interesting	**4** Archaeology is interesting	**5** Archaeology is very interesting

6. What do archaeologists do? Please check all that apply:

__ Dig up dinosaurs	__ Study the past	__ Use maps
__ Dig up things	__ Study people	__ Use shovels
__ Dig up people	__ Study aliens	__ Use trowels
__ Treasure hunt	__ Test ideas	__ Use compasses
__ Ask questions	__ Steal things	__ Use whips

7. Are there any archaeology sites in Idaho? Please circle one:

Yes No Maybe

8. What things are interesting to you? Please check all of the following things that are

interesting to you:

__ Prehistoric archaeology	__ Historical archaeology	__ Cultural resource management
__ Old buildings	__ Video games	__ Books
__ Family	__ History	__ Other
		_____ (What else is interesting?)

9. What would you like to learn about archaeology?

12. How often do you do the following things? Check one box for each of the following activities:

Activity	Never	Less than once a week	1-5 times a week	1-2 times a day	3-5 times a day	More than 5 times a day
Ask a question						
Play outside						
Use a map						
Play sports						
Play video games						
Read a book						

13. Do you have any questions? If so, what are they?

After Kit Use

Please DO NOT put your name anywhere on this paper.
This survey will not be graded and will not count towards your grade for this class. Surveys will be gathered, put into an envelope, and taken to the school office by a student.

Please answer each question. Use the back of the page if you need more space. If you use the back, please show which questions you are answering.

1. Which of the following sentences is the most true for you? (circle one)

1 I don't know anything about archaeology.	**2** I don't know very much about archaeology.	**3** I know what is archaeology.	**4** I know a lot about archaeology.	**5** I am an archaeology expert.

2. What is archaeology?

3. What do archaeologists do? Please check all that apply:

__ Dig up dinosaurs	__ Study the past	__ Use whips
__ Dig up things	__ Study people	__ Use shovels
__ Dig up people	__ Study aliens	__ Use trowels
__ Treasure hunt	__ Test ideas	__ Use compasses
__ Ask questions	__ Steal things	__ Use maps
__ Interpret finds	__ Write reports	__ Share information

4. Do you plan to find out more about archaeology on your own? Please circle one:

Yes No Maybe

5. Which of the following are interesting to you? Please make a check mark by all things that are interesting:

__ prehistoric archaeology
__ historical archaeology
__ I don't find any of these things interesting
__ cultural resource management
__ science

6. Is there an archaeology site in Idaho? Please circle one:

Yes No Maybe

7. What things are interesting to you? Please check all of the following things that are interesting to you:

__ Prehistoric archaeology	__ Historical archaeology	__ Cultural resource management
__ Old buildings	__ Video games	__ Books
__ Family	__ History	__ Other
		_____ (What else is interesting?)

8. On a scale from 1 to 5, how *important* is it to know *local county history*? Circle one:

1 Local county history is not important at all	**2** Local county history is not very important	**3** Local county history is somewhat important	**4** Local county history is important	**5** Local county history is very important

9. Which of the following sentences is the most true for you?

1 I don't know anything about archaeology.	**2** I don't know very much about archaeology.	**3** I am somewhat familiar with archaeology.	**4** I understand archaeology fairly well.	**5** I am an archaeology expert.

10. On a scale from 1 to 5, how *important* is *archaeology*? Please circle one of the following:

1 Archaeology is not important at all	**2** Archaeology is not very important	**3** Archaeology is somewhat important	**4** Archaeology is important	**5** Archaeology is very important

11. On a scale from 1 to 5, how *interesting* is *archaeology* to you? Please circle one of the following:

1 Archaeology is not interesting at all	**2** Archaeology is not very interesting	**3** Archaeology is somewhat interesting	**4** Archaeology is interesting	**5** Archaeology is very interesting

12. What is science? Please make a check mark next to those things that are a part of science:

__ asking questions	__ testing ideas	__ investigating your surroundings
__ interpretation	__ observation	__ experimentation
__ memorization	__	

13. What sorts of questions would you ask if you were an archaeologist?

14. Do you have any questions? If so, what are they?

Appendix N: Multifocus Affective Inventory

SOCIAL STUDIES AND ME

Directions: Please tell us how much you agree with the statements below. Some of the statements are positive and some are negative. Decide whether each statement is true for *you*. There are no wrong or right answers, so answer honestly. Do not write your name anywhere on this page. Only make X marks.

Here is a sample:

Response (one per sentence)

	True for me.	Not true for me.	I'm not sure.
I like to go to the movies.	☒	☐	☐

When you are finished, a student will collect your questionnaire and place it and all other questionnaires in a sealed envelope that will be taken by the student directly to the principal's office. Thank you for your help.

Statements	**True for me.**	**Not true for me.**	**I'm not sure.**
1. In general, I like school a lot.	☐	☐	☐
2. I like to learn about history.	☐	☐	☐
3. Math is my favorite subject.	☐	☐	☐
4. I don't like to learn about social studies.	☐	☐	☐
5. I know a lot about my family history.	☐	☐	☐
6. I like to read maps.	☐	☐	☐
7. I like to learn about scientific topics.	☐	☐	☐
8. Overall, I don't enjoy school very much.	☐	☐	☐
9. I like archaeology.	☐	☐	☐
10. I do not know very much about my family history.	☐	☐	☐
11. I like when we learn about social studies.	☐	☐	☐
12. When we study history, I don't like it.	☐	☐	☐
13. I don't want to grow up to be an archaeologist.	☐	☐	☐
14. I prefer not to read maps.	☐	☐	☐
15. I don't like to learn about scientific topics.	☐	☐	☐
16. I do not like to do math.	☐	☐	☐

Appendix O: General Interview Questions

1. What is archaeology?
2. What is historical archaeology?
3. How did you find out about archaeology?
4. Have you recently discussed archaeology with someone?
5. If so, when?
6. Have you recently discussed Idaho history with someone?
7. If so, when?
8. What is Cultural Resource Management?
9. What do you know about the history of people in Sandpoint, Idaho?
10. Or, north Idaho?
11. What have you heard about archaeology conducted for the Sand Creek Byway Project?

Appendix P: Parent/Guardian and Community Survey

1. What year were you born?
2. How long have you lived in Idaho, in years?
3. Are you the parent or guardian of a child attending fourth or sixth grade in an Idaho school?

   Yes No
4. Are you any of the following? (Check all that apply)
   a. Teacher or school district staff
   b. Archaeologist
   c. Professor
   d. Museum staff or volunteer
   e. None of the above
5. In your own words, please briefly define "archaeology." (100 words or less)
6. How familiar are you with archaeology? Which one of the following statements is the most true for you?

1 I don't know anything about archaeology.	**2** I don't know very much about archaeology.	**3** I am somewhat familiar with archaeology.	**4** I know a lot about archaeology.	**5** I am an archaeology expert.

7. On a scale between 1 and 5, how relevant is *archaeology* to contemporary society?

1 Archaeology is not relevant at all	**2** Archaeology is not very relevant	**3** Archaeology is somewhat relevant	**4** Archaeology is relevant	**5** Archaeology is very relevant

8. How relevant is *history* to contemporary society? (scale)

1 History is not relevant at all	**2** History is not very relevant	**3** History is somewhat relevant	**4** History is relevant	**5** History is very relevant

9. Should archaeological resources be protected?
   a. No
   b. Yes, by state laws.
   c. Yes, by federal laws.
   d. Yes, by state and federal laws.
10. In your own words, what was your most recent source of information about archaeology?
11. Have you discussed archaeology with your child(ren)?

    Yes No
12.

13. Have you visited the websites for any of the following organizations in the past year? (check all that apply)
    a. Bonner County Historical Society
    b. Idaho Archaeological Society
    c. Boundary County Historical Society
    d. Idaho State Historical Society
    e. Society for Historical Archaeology
    f. Society for American Archaeology
    g. Kootenai County Historical Society
14. What are your sources of information about archaeology? Please check all that apply:
    a. Movies
    b. TV
    c. Magazine
    d. Newspaper
    e. Journal
    f. Professional society
    g. Internet website
    h. Internet app
    i. School
    j. A friend or acquaintance
    k. Family
    l. School or class
    m. Novels
    n. Other (please specify)_____
15. How interested are you in local history? (scale)

1 Local history is not interesting at all	**2** Local history is not very interesting	**3** Local history is somewhat interesting	**4** Local history is interesting	**5** Local history is very interesting

16. Have you heard about the Sandpoint Historical Archaeology teaching kits?
    a. If so, how did you hear about them?
17. Do you have any additional comments? If so, please include them in the space provided.