



# Acknowledgments

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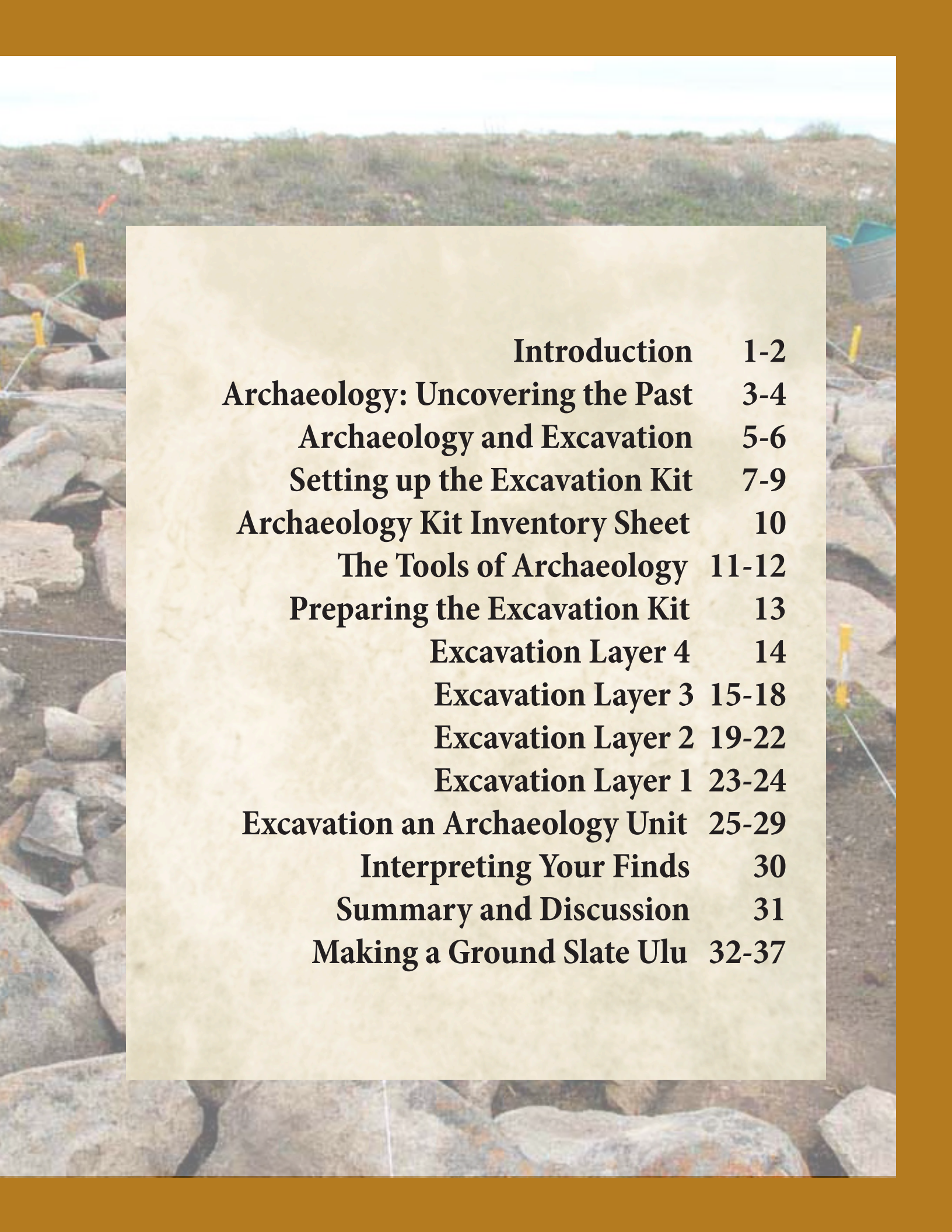
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# Introduction

## Presenting the Inuit Heritage Trust archaeology kit

Many Nunavummiut are interested in the history of Inuit culture and traditions. They enjoy seeing old sites on the land and listening to the stories elders tell about the past. Few people in Nunavut, however, know much about archaeology as a profession that is specifically dedicated to investigating the human past. This archaeology kit is designed to help Nunavummiut learn more about what archaeology is, how it is done, and what it can tell us about the Inuit past.

## Why was this excavation kit created?

The Inuit Heritage Trust has created this excavation kit and accompanying instructor's guide to help Nunavummiut learn about archaeology through hands-on experience.

The practice of archaeology in Nunavut usually requires numerous permits that are required for archaeologists to look for, map, and excavate old sites and collect the artifacts that they contain. This same permit process applies to Nunavummiut and Inuit alike. While these permits are in place to protect old artifacts and sites, they also make it difficult for people to experience the practice of archaeology without being trained professionals.

In the past, the Inuit Heritage Trust offered archaeology summer camps for Nunavummiut to work alongside professional archaeologists to help them learn more about archaeology. The program was very educational for everyone involved, and even inspired some students to enroll in archaeology

and anthropology studies after their high school graduation. In putting together this archaeology kit, the Inuit Heritage Trust seeks to bring the thrill and discovery of archaeological excavation to anyone who wishes to learn more about Nunavut's history.

## Who is this archaeology kit for?

The Inuit Heritage Trust archaeology kit can be applied in many different contexts. The excavation workshop can take place over a matter of hours, or can be extended into a full two days of programming. It can be organized to take place outdoors, inside, or in various community workshop and learning situations. This kit has been specifically designed for Nunavummiut by focusing on the archaeology of the Canadian Arctic, and using materials that are available to be purchased in Nunavut communities should replacements be required. Some examples of situations in which this kit might be used are as follows:

### 1. School groups

As this excavation kit has some challenging concepts, its use is recommended for students in the 8th grade and higher. The kit can be combined with existing archaeological resources developed by the Inuit Heritage Trust, including the Grade 8 curriculum from the Arctic Peoples and Archaeology website/CD-ROM, the Grade 9 web curriculum from Taloyoak: Stories of Thunder and Stone, and the grade 10-12 level archaeology guidebook titled "A Guide to Nunavut Archaeology and Artifacts for Northern Students."





# Introduction

## 2. Community events

This archaeology kit is a fun way for community members to learn about the past. This kit can be introduced to community events including games nights, public workshops and tourism settings.

## 3. Heritage Training

This archaeology kit is a good way to help heritage workers both understand and teach about the past. Many museums have archaeological artifacts in their collections, and can use this kit to demonstrate how these objects were excavated. Heritage workers can also use this kit to work with youth and community members who are interested in learning more about archaeology.

## What will you learn through this guide and accompanying workshops?

This guide is designed to lead participants through the processes of archaeological excavation and interpretation. It does this by:

- Helping participants understand what archaeological excavation is and why it takes place through practical experience;
- Teach the basic techniques of site excavation, documentation and analysis;
- Teach the proper methods for handling and storing artefacts after they are excavated;
- Introduce participants to experimental archaeology through the creation of traditional tools;
- Help participants learn what experimental archaeology can tell archaeologists about the past.

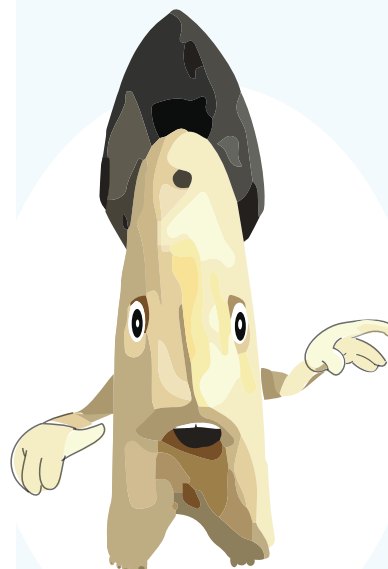
## How can this excavation kit be used?


This archaeology kit is designed to be set up and taught by one or more instructors who can take the time to familiarize themselves with the instruction manual. This manual will provide clear instructions on how to set up the excavation kit, and lead participants through the process of excavating its contents and analyzing its results. While this manual will not provide extensive information about Arctic history or the regulations surrounding archaeology in Nunavut, it will link instructors to resources where this information can be found.

The delivery of this archaeology workshop can range from a period of about four hours to two days in length, depending on the detail of instruction and number of participants involved. Instructions will be given throughout this guidebook on how facilitators can deliver the content according to their desired time-frame.

**Learn more about archaeology and past cultures in the Arctic!**

**Visit the Inuit Heritage Trust website at [www.ihiti.ca](http://www.ihiti.ca) for multiple historical resources.**





# Archaeology: Uncovering the Past

## What is archaeology?

Archaeology is the study of the human past. Archaeology often involves the collection and analysis of material objects, known as 'artifacts,' that people throughout history have left behind. Artifacts can be as small as a single tool or as big as an entire house. Artifacts can also be materials such as animal bones or landscapes that have become altered by humans. Sometimes these artifacts are found on top of the ground, and other times archaeologists have to dig into, or 'excavate,' the ground to locate them.

A good way to understand archaeology is through a comparison to puzzle solving. Archaeologists see the human past as a big unfinished jigsaw puzzle. Each artifact an archaeologist finds helps them to fill in another piece of the puzzle. As the puzzle fills in, archaeologists are able to better picture the lives of past people and cultures.

## How is archaeology done?

Archaeological projects can draw on many different kinds of knowledge. Some archaeologists specialize in animal bones or old tools, while others examine DNA evidence, or compare old sites with written documents. Some archaeologists only work under water. Regardless of what type of artifact, time period, or culture archaeology focuses on, it usually employs a very similar research process:

### Step 1: Forming Questions

The first step in archaeology is to think up specific questions about the past that can possibly be answered by researching archaeological sites. Examples might include:

- How did people hunt caribou 600 years ago?
- How have people's diets changed over the last one thousand years?
- Why did people stop living in a certain area?

Archaeology sites are rare and valuable resources, that are often only investigated once. It is therefore important to have a strong research question to make sure that they are dug up for a good reason.

### Step 2: Site Survey

When archaeologists have decided why they are going to dig, they have to conduct a site survey to decide where they will be digging. A survey is usually done by walking or flying over a landscape to look for sites of a particular place, time period or culture relating to the research question. In Nunavut, old sites like houses are often very visible on top of the ground. Other types of sites remain buried, and must be searched for more carefully.





# Archaeology: Uncovering the Past

## Step 3: Excavation

Excavation is the act of digging up old sites to collect information. This is done by carefully removing the dirt that covers the site and recording all of the artifacts, building materials and leftovers from past uses of that area. The position of each artifact is carefully mapped to create context. Sometimes, different activities occurred at the same place over time and have left numerous layers of remains. These layers, called 'strata,' often vary in their color and content, and also have to be recorded in maps. The position of layers and artifacts is often related to age: a tool found in a layer located deeper in the ground is likely older than a tool found on the surface.

## Step 4: Data Collection

The word 'data' refers to any artifact or detail of an archaeological site that helps archaeologists to better understand the past. Archaeologists must collect as much of this data as possible during their excavations to make sure their interpretation of the site is as well-informed as possible. A comparison can be drawn to a crime scene, where every clue at the site helps the detective come closer to figuring out what happened. The collection of archaeological data takes place through photographs, hand drawing maps, and the collection of artifacts, animal bones, soil samples, and any other materials found at the site.

## Step 5: Analysis and Conservation


When an excavation is finished, all the collected artifacts and data are returned to the workplace of the archaeologist (usually a university or lab) to be cleaned, studied and pieced back together. Many of the artifacts found at a site are broken or fall apart easily because of their age. Conservation is the process of repairing and stabilizing these artifacts.

## Step 6: Interpretation

When all the data from a site is collected, organized and cataloged, an archaeologist will begin to develop a story about the past using these remains. As some data will always be missing, it is impossible to know if that story actually represents what really happened. The more information and sources (such as oral history, written documents, and artifacts from neighboring sites) an archaeologist uses to develop the story, the more detailed and complete that story will be.

## Step 7: Publication

The final step of an archaeological project is to publish research results in a book, journal or plain-language document for communities. This helps other people learn about the archaeology that took place and the artifacts that were found. It also gives other people a chance to add to, or disagree with, the story that the archaeologist is putting forward about the past.



# Archaeology and Excavation

## Digging the Past

When most people think about archaeology they think about excavation, or the digging up of old sites. Excavation is one of the main ways that archaeologists gather information about the past. Despite this, archaeologists try to limit the amount of excavation that they do. Excavation is a destructive practice, meaning that once a site is dug up it disappears forever. Artifacts and information gathered from the site remain, but the site itself can never be recreated. Excavating sites is also costly and takes a lot of time. Archaeologists have a professional responsibility to properly analyze and report on all of the artifacts and information obtained from an archaeological excavation, which can often number into the thousands. Archaeologists generally try to excavate sites only when they are threatened by destruction from construction or development or when they may reveal important information about past cultures. Usually only a small portion of a site is excavated, so as to leave evidence for a future time when archaeological techniques and technologies have become more advanced.

## Why is excavation important?

If excavation is a destructive practice, then why is it done? Excavation provides archaeologists with the physical evidence they need to better understand the history of a specific area. These materials can be artifacts (objects made or modified by humans), features (human


modifications to a site or landscape), or ecofacts (environmental evidence such as seeds, bones, or pollen, that show how the local landscape was being used). These small pieces of information left behind by different groups can be combined to tell a larger story about an individual group's culture and behaviour, and how people in the area changed over time.

## Context, context, context!

An archaeological site reflects the buildup of human activities over large amounts of time. Every time someone lives in, uses, or travels through an area they leave behind indications that they were there, whether it is garbage left on the ground, buildings constructed or destroyed, or land cleared for specific purposes. These activities all leave something that archaeologists call 'context.'

Context is one of the most important ideas to the practice of archaeology. Context refers to the relationship that artifacts have to each other and to the environment in which they are found. When doing an excavation, archaeologists carefully record the exact place where every artifact is found. This helps them understand what was being done with an artifact before it fell to the ground. Finding a specific tool in a pile of butchered bones, for example, allows archaeologists to see that the tool might have been used as part of the butchering process. Context allows archaeologists to understand the relationships between artifacts on the same site, as well as how different archaeology sites are related to each other. When people remove artifacts from the land without recording their precise locations, artifacts lose all





# Archaeology and Excavation

of their contextual information and have less value for reconstructing what happened in the past.

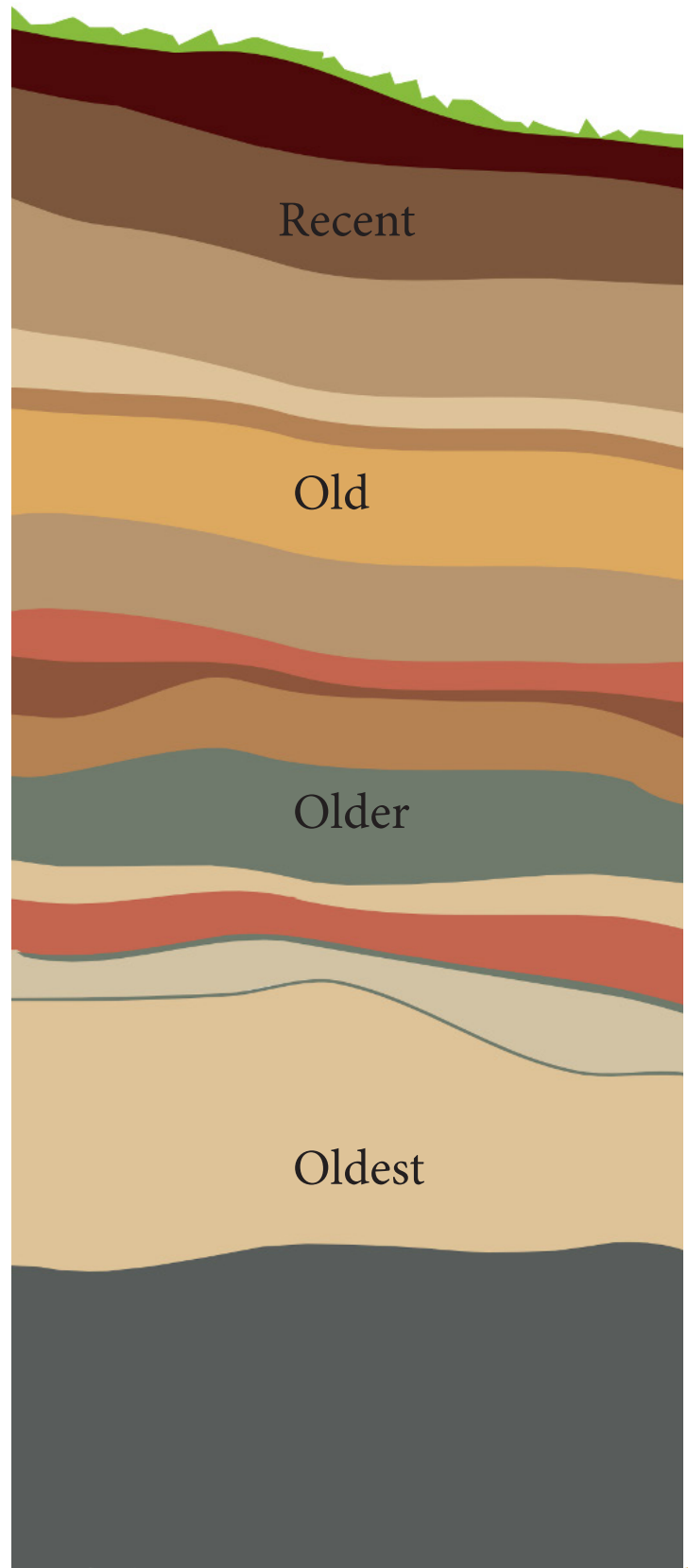
Context can include the relationship of:

- one artifact to another artifact;
- the artifacts to the feature they are found in;
- the feature to the site;
- one site to another site.

## Learning about stratigraphy

Over time, a combination of natural processes (such as the decay of plants), and human processes (such as the creation of garbage pits or the digging of holes) create visible layers in the ground. When seen in cross section, these layers resemble a layer cake, with the oldest layers on the bottom and the most recent layers on the top. These layers are different colors and consistencies because they are made up of different materials (such as heavy gravel, rich soil, sandy soil), each of which mirrors what that environment was like at a specific point in time.

Stratigraphy is the study of geological or soil layers that is used to determine the relative age of each layer. If an archaeologist finds an artifact in a deep stratigraphic layer, they can generally assume it is older than an artifact found in a shallow stratigraphic layer. Since each stratigraphic layer represents a different time period in time, archaeologists excavates them one by one, to make sure the context between the layer and the artifacts found inside of it is preserved.





# Setting up the Excavation Kit

## Introducing the archaeological excavation kit

Now that you understand what archaeology is and some of the key ideas behind archaeological excavation, it is time to set up the excavation kit. The following section will lead you through the process of preparing a replica archaeology site and leading participants through the process of excavating it.

This excavation kit has been designed to represent one section, or unit, of an archaeological excavation in Nunavut. Before digging up an old site, archaeologists will divide that site into an imaginary grid. This grid helps the team better organize their findings and allows them to take more detailed notes about the location of archaeological features and artifacts. Each square of this grid is made to measure exactly 1 meter by 1 meter, and is usually referred to as a 'unit.' Each of the meter squares is excavated separately, with all the artifacts, maps and information gathered being labeled as belonging specifically to that unit.



Above photo: An archaeological site outside of Cambridge Bay is divided into 1 meter squares to facilitate its excavation.

## Finding a location for the archaeological excavation workshop

The first step to preparing the archaeological excavation workshop is choosing your audience. The archaeology kit is ideally designed to accommodate a maximum of 10 participants, and can be accomplished with as few as 4 participants taking part. If more individuals wish to take part, the archaeology kit can either be set up numerous times to accommodate more people, or participants can work in teams to excavate and record evidence from the various layers. As some of the concepts in this workshop require more advanced knowledge of math and detailed measurements, it is suggested that participants are at least 12 years of age.

The excavation kit can be set up in almost any location. A tarpaulin has been provided to go beneath the kit to catch any soil or sand that is spilled during the process of excavation, but finding a location with a sweepable surface (or one that can get good and dirty) is still suggested. When choosing a location for the kit, it is good to consider the following questions:

- Will this space need to be used for other purposes in the next several days?
- If set up outdoors, will the weather be free of rain, wind or snow for the duration of the excavation?
- Will the materials in this kit be safe from theft?
- Is the location in a very busy area? High traffic might cause the smaller kit pieces to become lost or the context to become disturbed.



# Setting up the Excavation Kit

## The excavation kit container

Once you have found a good location for your workshop, you can begin to set up the archaeology kit. All pieces for the archaeology kit are contained within a single action packer container that looks like this:



The kit pieces fit into the container only when packed in properly. When unpacking the container to start your project, pay attention to how the materials are ordered:

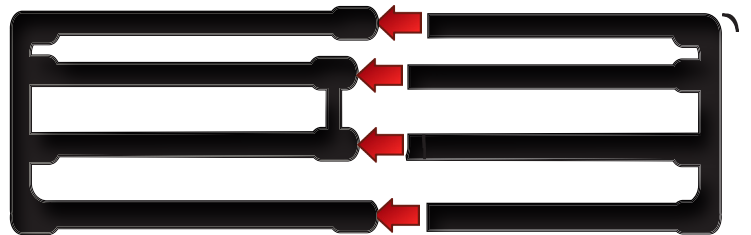
## Assembling the excavation kit

Once all the pieces have been removed from the container, the unit square can be set up in three easy steps.

### Step 1. Build the unit frame

The unit frame is a plastic square that will surround the wooden walls of your excavation unit to give them additional support during the excavation. To build the frame, connect the four sections of black plastic piping so that they form a square. Match each piece of pipe to its corresponding piece, and slide the pieces all the

way inside one another. Pieces should slide into one another easily and should need to be forced.



When all four sides have been connected they should form a square that looks like this:



### Step 2: Build the unit square

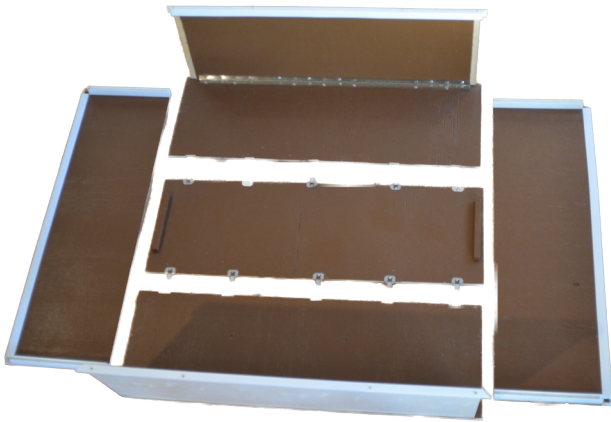
The unit square is a wooden box that will hold the dirt, artifacts and other contents of the excavation. Before preparing this box, lay out the tarpaulin on the ground. Remove all the brown and white wooden pieces from the container. Lay out the wooden pieces in the centre of the tarpaulin so that they look like this:



# Setting up the Excavation Kit

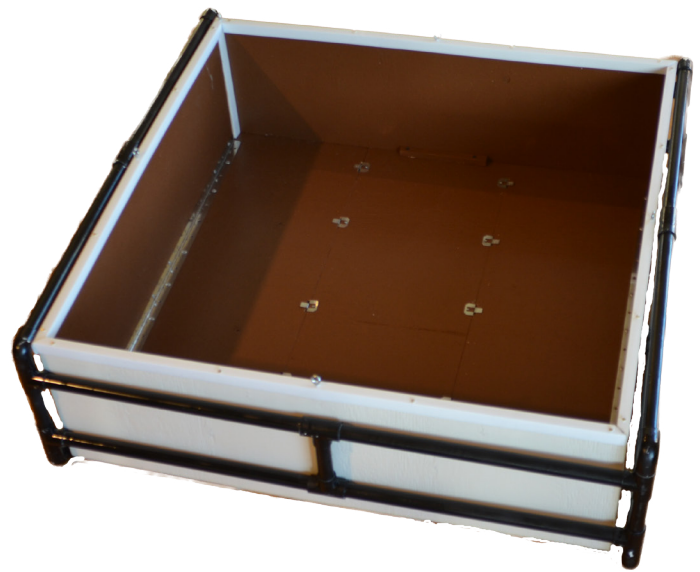
## Step 3. Completing the unit

Place the plastic frame, so that it fits snugly around the wooden square.

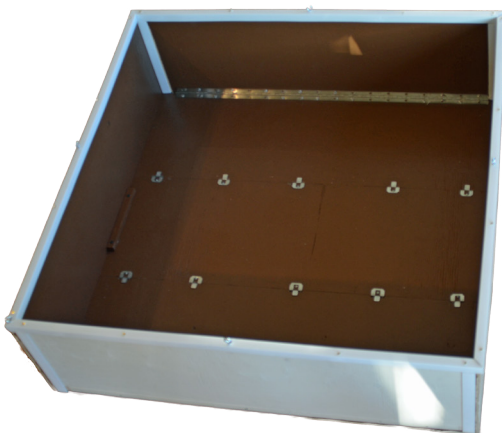


Connect the three pieces on the base of the box using the corresponding metal clips and slots in the wood. Fold the hinges at each outer end upwards so that the panels form two sides for the box. Position the two remaining panels so that their plastic groove lines up with the hinged vertical panels so that they are at a 90 degree angle. Slide into the sides to complete the upwards portion of the box.


When fully joined together, the box should look like this:



Congratulations, your archaeology unit is ready for digging!







# The Tools of Archaeology

## Tools of the Trade

The archaeology kit comes complete with tools required for an archaeological excavation. Enough tools have been provided to allow four people to excavate at a single time. Please consult the checklist of tools before and after using this kit to make sure that all the tools are there. The following section provides a brief description of the tools and their uses:

- 1. Trowel.** A trowel is the trademark tool of an archaeologist. It is used to carefully scrape back dirt and soil in a controlled way when excavating a site.
- 2. Brush.** Brushes are used to gently clean the surfaces of artifact finds, and to tidy up dirt when photographs are ready to be taken.
- 3. Bucket and dustpan.** Handbrooms and dustpans are help to keep the “floor” of a unit clean, especially before a photograph is taken of it. Soil can be scraped into the dustpan then dumped into a bucket, instead of moving soil one trowel at a time.
- 4. Screen.** Screens are used to sift the soil that comes from each unit in order to search for small artifacts and pieces of relevant material that might have been missed.
- 5. Metric tape measure.** Tape measures are used to make sure that the size of the unit and the depth of each level are as exact as possible.
- 6. Plumb bob and Line levels.** These tools are used when mapping features and excavation units. Line levels are attached to the strings that are used to outline the units and the diagonal string in order to be able to better measure the depth of each level and any artifacts that may be found. Plumb bobs are used in conjunction with the measuring tape while mapping in order to provide a precise location for any feature boundary or artifacts that may be in the walls or floor of a unit.
- 7. Artifact bags and sharpie pens.** Each artifact found at a site is placed inside its own artifact bag with all the information and measurements collected about the artifact written on the outside of the bag in permanent marker.
- 8. Graph paper.** Graph paper is used to create scaled drawings of the archaeological unit and the artifacts found inside of it. This paper will be used by the person mapping the excavation site.
- 9. Excavation log.** Excavation logs are used to record all information collected about an archaeological site including screen find, drawings of stratigraphic level and ideas that archaeologists might have about the site. The information written on artifact bags is also recorded in case the bags are lost.



# The Tools of Archaeology

1.



6.



2.



3.



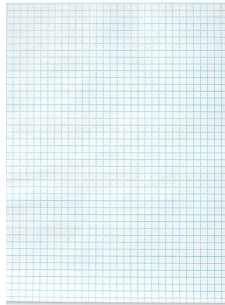
4.



7.



5.



9.



8.



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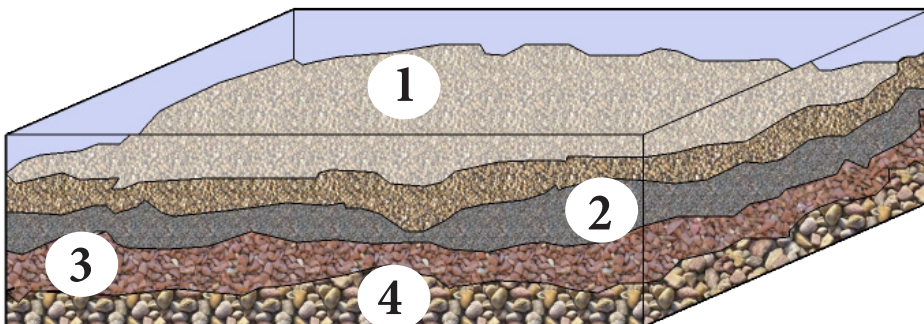


# Preparing the Excavation Kit

## Filling the archaeology kit

Once the excavation unit has been set up, it is time to insert its historical contents. This archaeology kit seeks to replicate the buildup of human activity over the course of roughly 5000 years. It does this through a series of visibly different strata, or layers, each of which represents a different period of history. Each of these layer can be considered as a separate chapters in a bigger story about the people who have lived in Nunavut. The following section will look of each of these chapters individually, showing you how to set them up and describing the story that they tell about different human behaviors and culture.

- 1. Excavation layer 1: 50 years ago (recent)**
- 2. Excavation layer 2 500 years ago (old)**
- 3. Excavation layer 3 1000 years ago (older)**
- 4. Excavation layer 4: 5000 years ago (oldest)**



## Creating soil layers

Soil does not come with this archaeology kit and will have to be found in your home community. Because soil layers represent different strata, or layers of time, they will have to look different enough from one another that excavators can tell them apart and know when they have reached a new layer. There are two different ways that this can be done. The first is by mixing together various combinations of dirt, gravel, sand, and cobblestones that can be found in the community. When describing each cultural layer, I have suggested a different mix of soils that will help tell them apart from one another.

If you find yourself in a situation where only one type of dirt or sand can be found, try using another visibly different material to signal the changes between layers. On top of each cultural layer, add a thin layer of sawdust, shredded newspaper, gravel, or some other easily identifiable cover to let participants know they have reached a new cultural level.

When creating these soil layers, remember that the oldest layers have to be deposited first, as newer layers sit on top of them. If you wish to conduct a shorter excavation, layers 1 and 4 can be omitted from the kit, and the artifacts from layer 1 simply placed on the surface of layer 2.





## Excavation Layer 4

### Layer 4: 5000 years ago

5000 years ago, the Canadian Arctic was just emerging from beneath the glaciers that had covered it for thousands of years. The Wisconsin Glaciation, which began around 25,000 years ago, locked most of North America in kilometer-deep sheets of ice. When these glaciers retreated, they left a landscape scraped clean and ready to be occupied by humans.

Layer 4 represents a time before human occupation of the Canadian Arctic. This type of layer is referred to as 'sterile,' which means that it has no traces of human occupation associated with it, and with any of the layers below it. When archaeologists reach a sterile layer in their excavations, they stop digging because they know that they will not recover any more evidence of human activity if they dig deeper.

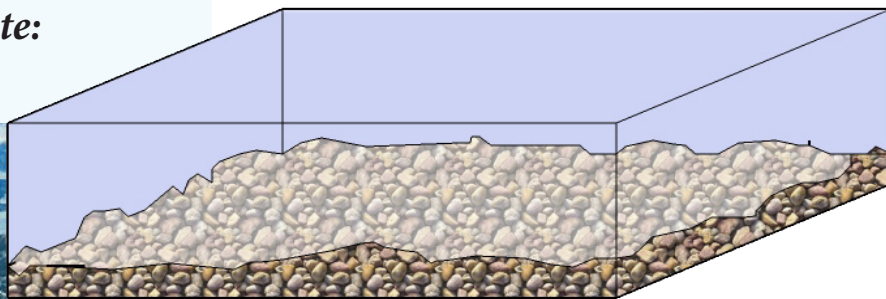


### Layer 4 soil

To make the soil for layer 4 mix together:

- 1 part light gravel
- 1 part large gravel

***Learn more about glaciation and the changing environmental conditions of the Canadian Arctic at the IHT's Arctic Peoples and Archaeology website:  
[www.ihti.ca](http://www.ihti.ca)***







## Excavation Layer 3

### Layer 3: 1000 years ago

With the deglaciation of the Canadian Arctic, humans began traveling into the region around 4300 years ago. While these groups had varying cultures and traditions, they are known by the collective name of Paleo-Eskimos by archaeologists. Not much is known about the lives of these early groups who expanded throughout the Canadian Arctic and Greenland. The tools they left behind indicate that many of them traveled in small, isolated groups, and relied on muskox and caribou for food.

Around 2500 the Paleo-Eskimo way of life began to rapidly change because the climate became much colder. The new way of life that developed is known as the Dorset culture to archaeologists. Inuit know this group by the name of Tuniit.



*Learn more about the mysterious Dorset people at the Arctic People and Archaeology website:  
[www.ithi.ca](http://www.ithi.ca)*



The Dorset people occupied the Arctic between about 500 and 1200 A.D. During this time they developed technologies that allowed them to more effectively hunt sea mammals. These tools included advanced harpoon designs, snow knives, sled shoes, igloos and other devices that allowed them to live and hunt out on the sea ice.

The Dorset people vanished from the archaeological record at some time around A.D. 1200 for reasons that are still not understood. While Inuit have stories from their ancestors about the Tuniit, no material evidence has ever been found that proves the two groups actually met.

This layer provides a snapshot of the Dorset culture at about 1000 years ago. Many of the tools in this layer are made of chipped stone, which is how sharp edges were created for harpoon and knife blades. Read more about the specific tools used by Dorset on the follow page.

### Preparing this layer

Step 1. Pour about 5 centimeters of your layer 3 soil over top of layer 4.

Step 2. Lay down the Dorset layer artifacts as shown in the diagram on the next page.

Step 3. Include several large, flat stones in with the artifacts. These stones will give students something extra to draw on their archaeological maps.

Step 4. Cover the artifact layer with another 5 centimeres of layer 3 soil.







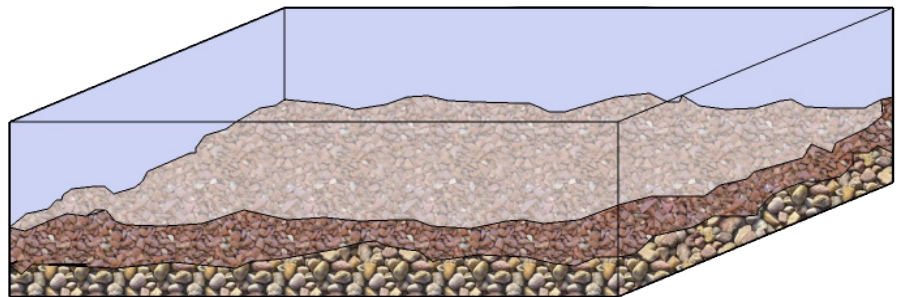
## Excavation Layer 3



### Layer 3 soil

To make the soil for layer 3 mix together:

- 2 parts dirt
- 1 part sand
- 1 part light gravel







## Excavation Layer 3

### Dorset Artifacts

A series of replica artifacts have been created to include in Layer 3 of the excavation. These are all Dorset artifacts, and descriptions of their use can be found below. In some cases, these artifacts consist of several pieces. Pictures have been provided of each artifacts assembled and in pieces.

**1. Knife (chert):** This small knife blade is chipped from chert and has side-notches to help secure it into an antler handle.

**2. Harpoon Head (antler):** This carved antler harpoon head was used for hunting seals. It would be attached to a foreshaft mounted onto a wooden handle, with a harpoon line strung through the hole in the middle of the harpoon head. A V-shaped slot is carved into the top of the antler head to fit a chipped stone endblade. The small, triangular endblade is chipped from a silica-rich stone called chert that breaks like glass, creating a sharp edge.

**3. Microblades (chert):** Microblades are long, thin flakes that were chipped off of a specially prepared stone core one after the other to create very uniform and sharp cutting tools. Microblades are thin and flat with two long sharp edges. These blades would often be fit into handles to make them easier to use.

**4. Antler fragments (antler):** These three pieces of caribou antler are waste pieces that were cut off and discarded while other tools were being made. Not every artifact found by archaeologists in an archaeology site are tools. Sometimes we find the debris left behind from making tools.

**5. Endblade (chert):** This small, triangular endblade was chipped from a silica-rich stone called chert that breaks like glass, creating a sharp edge.

**6. Burin-Like Tool (Nephrite):** These small ground stone tools were inserted into handles and were used for carving organic materials like wood, antler, bone, or ivory. Nephrite or jade is a very hard green stone that was ground into shape and would hold a sharp scraping or gouging edge.

**7. Scraper (chert):** Small triangular or rectangular tools like this were designed to have a steep scraping edge on one end and a thinner stem for inserting into a handle on the other. They would have been used for working softer organic materials like wood, antler, or hides.

**8. Hafted microblades (chert, whalebone, wood, antler):** Some microblades have chipped stems at one end or along one side so that they could be inserted into a handle. The use of handles on such blades is known as 'hafting.' In this set of reproductions, the stemmed microblade fits into the end of a whalebone handle and a second blade fits into the side slot of a wood handle and matching antler brace. The holes and grooves gouged into the wood and antler handle pieces would have once held sinew to tie the tool pieces together. When the microblade became dull, the sinew could be loosened and a new blade could be fit into the slot.

**9. Ground Slate Lance (slate):** Lances like this would have tipped the end of a spear or lance and were often used in caribou hunting. A rough shape of the tool would have been chipped into slate and then finished by grinding it against a rougher stone. The holes and notches at the base of the lance would have been used with sinew to attach the lance onto a handle.

**10. Chert Flakes (chert):** The chipped stone tools that the Dorset people made were flintknapped out of large chert stones. The sharp edges of a knapped stone tool is the result of the careful removal of dozens of small stone chips. For every one finished tool, dozens or even hundreds of waste flakes would be produced.

1.



# Excavation Layer 3

1.



5.



6.



2.



3.



8.



7.



9.



4.



10.



18







## Excavation Layer 2

### Layer 2: 500 years ago

The Thule people came to the Canadian Arctic from Alaska, and are the direct ancestors of modern Inuit. The first material evidence for Thule living in the Canadian Arctic has been dated by archaeologists to around 1250 AD. It is still not known why the Thule people migrated into new territory from their previous home in northern Alaska. Regardless of their reasons for moving, Thule people soon found themselves in a land very different from the driftwood and whale-rich coasts of their former home.

This archaeology layer represents a time around the year 1600, when Thule were in a process of fully adapting to their new homeland. The hunting of bowhead whales had been largely replaced by a reliance on smaller sea mammals such as seal. Kayaks and umiaks became used more for travel, fishing and hunting caribou in rivers. The large whalebone houses that were built by Thule were abandoned for more temporary snow houses on the sea ice, which allowed them to travel for seal hunting throughout the winter. In the summers, inland caribou hunting became more popular. Settlement sizes became smaller and less permanent than before so groups could re-locate more often to harvest a wider variety of animals.

Technology also changed during this period. Early Thule used to create ornate tools that were very task specific. Over time, these toolkits became less decorated, and had more broadly usable tools. As groups of Thule adapted to different areas and environments across the Arctic, they began to

become more diverse and gradually formed into the Inuit groupings that we know today. Regional variations began appearing in tools, housing, language and clothing. These variations have been passed along through generations, and can still be seen among regional Inuit groups such as the Netsilingmiut, the Umingmaktuurmiut, and the Utkuhiksalingmiut.

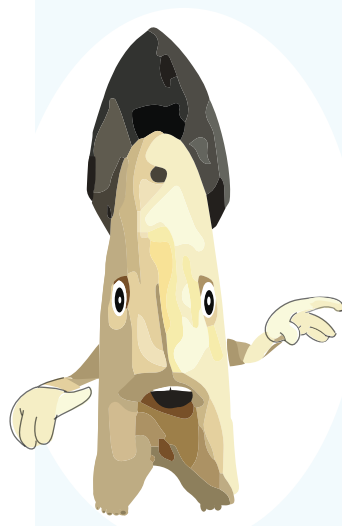
### Preparing this layer

Step 1. Pour about 5 centimeters of your layer 3 soil over top of layer 4.

Step 2. Lay down several large, flat stones along the top side of the excavation. These stones will imitate the paved stone flooring that was often used inside Thule structures.

Step 3. Lay down the Thule layer artifacts as shown in the diagram on the next page.

Step 4. Cover the artifact layer with another 5 centimeters of layer 3 soil.



*Follow the Thule migration and adaptation to the Canadian Arctic at:*

[www.ihti.ca](http://www.ihti.ca)









## Excavation Layer 2

### Thule Artifacts

**1. Ulu knife (slate, whalebone):** This knife was used by Thule women for a variety of daily tasks including sewing, food preparation and basic household cutting. The tool is made from a whalebone handle connected to a slate blade by means of a leather, sinew, or baleen lashing through drilled holes. The blades would be made by polishing slate into a sharpened edge with a combination of sand, water and whetstones. Ulus continue to be used today, although blades are typically now made of metal. Like modern ulus, the ground slate ulus found at Thule sites are often sharpened on one side only, to create a sharp bevelled edge that could be used for both scraping and cutting.

**2. Chipped Stone Ulu Preform (slate):** Slate naturally breaks apart into flat slabs. A slab that was the correct thickness for a specific tool would be selected and then chipped into a rough shape using a hammerstone. A preform like this could then be finished by grinding and abrading.

**3. Sealskin fragments (sealskin):** These two fragments of skin have stitching holes along some of the edges, suggesting that they may have been stitched together into a larger object, like a piece of clothing, a tent covering, or bag. Without other pieces of skin, it is impossible to say what they may have been used in for sure. Students can use their imagination to suggest possibilities.

**4. Slate Flakes (slate):** During the early stages of shaping a slate tool, like an ulu or a lance, the tool maker would chip the rough slate into a preform. The small chips of stone that break off the edge fall behind and leave tell tale clues that stone working was carried out on the site.

**5. Endblade or Arrowhead (slate):** Projectile points like this could have been used to tip arrows, harpoon heads, or even small lances. The symmetry of the artifact suggests that it tipped a projectile of some sort instead of serving as a knife. Knives will tend to become asymmetrical as the edges are used and resharpened, while projectiles will be maintained to keep a symmetrical, aerodynamic shape. The drilled hole suggested that it was attached to a harpoon head or arrow shaft with a rivet or possibly lashing. It is generally the right size and shape to fit the ivory harpoon head in this set, however, the harpoon head slot is too narrow and it lacks a matching hole, so this stone point was apparently made with another tool in mind.

**6. Harpoon Head (ivory):** This style of harpoon head is often associated with seal hunting and could have been fit with a metal or ground stone endblade. This particular reproduction has a narrow endblade slot to accept a copper endblade. The telltale green staining in the slot is another clue that it holds a copper endblade. The hole drilled through the middle is for the harpoon line and is placed so that the harpoon head will toggle in the wound. The hole in the base is also drilled and is designed to fit onto the rounded point of a foreshaft of ivory or whalebone. The base terminates in a single barb that helps detach the harpoon head from the foreshaft when it pierces the skin of the prey.

**7. Endblade (copper):** Endblades like this were cold hammered out of native copper or meteoritic iron using a stone hammer and anvil. Annealing the copper over an open flame would help prevent the metal from becoming brittle. Access to metal has been proposed as one of the factors in the Thule migration into the Eastern Arctic.



# Excavation Layer 2

1.



4.



2.



5.



3.



6.



22





# Excavation Layer 1

## Layer 1: 50 years ago

Humans are always in the process of creating an archaeological record. The materials that we use and leave behind in our modern lives are slowly buried and will one day become archaeological artifacts themselves. An archaeological artifact is defined as a human-made object deposited more than fifty years in the past.

There is a whole branch of archaeology that is dedicated to recently deposited artifacts. This is called historical archaeology. Historical archaeology is a form of archaeology dealing with places, things, and events from the past or present when written records and oral traditions can inform and contextualize cultural material. These records can both complement and conflict with the archaeological evidence found at a particular site.

## Sources of knowledge about the recent past

In Nunavut, there are many sources of information other than artifacts that can tell us about the recent past. Inuit have strong traditions of oral history, which is the passing down of verbal stories between generations. These stories help us make sense of the artifacts we find, and give us details that we would never be able to figure out from the objects themselves. There are also many written records that exist for the Canadian Arctic in the form of travelers' stories, government documents and trading post records. Europeans started documenting their visits to the Arctic

over 400 years ago, providing a rare glimpse into the minds of early explorers and researchers. Photographs also provide us with valuable information about early life and allows us to put faces and context to the materials we find.

## Recent Artifacts

During an archaeological excavation, all human-related materials present in the excavation grid need to be collected and documented, even if they are modern. Modern materials are still able to tell a story about how the area was used. Even contemporary artifacts can help provide dates for when humans occupied a site through their design, labels and the materials used to create them.

### 1. Rifle shells (brass):

Hunting styles have changed throughout the years, but good hunting places often remain the same. These shells show that modern people continue to hunt at this spot.

1.



### 2. Klik can (aluminum)

Old containers are often left behind from campsites. The images designs, and brand names can help us tell the time period in which they were produced and consumed.

2.





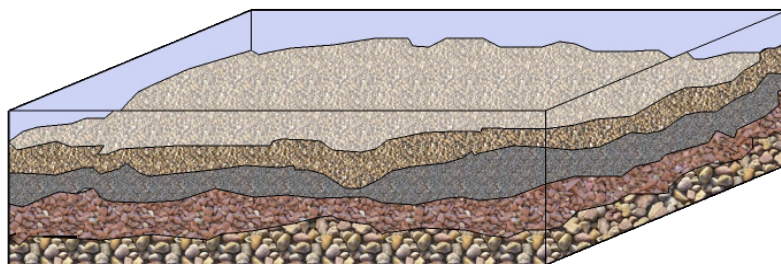
# Excavation Layer 1



## Layer 1 soil

To make the soil for layer 3 mix together:

- 2 part sand
- 1 part light gravel





# Excavating an Archaeology Unit

## Finding your datum point

The first step to setting up an excavation, is the creation of a datum point. A datum is a fixed point that will never move, and is the point from which all archaeological measurements are taken. To establish your datum, find the metal loop screwed into one corner of your excavation unit. Using a compass, align your excavation unit so that the datum is on the left hand side of the north facing wall.

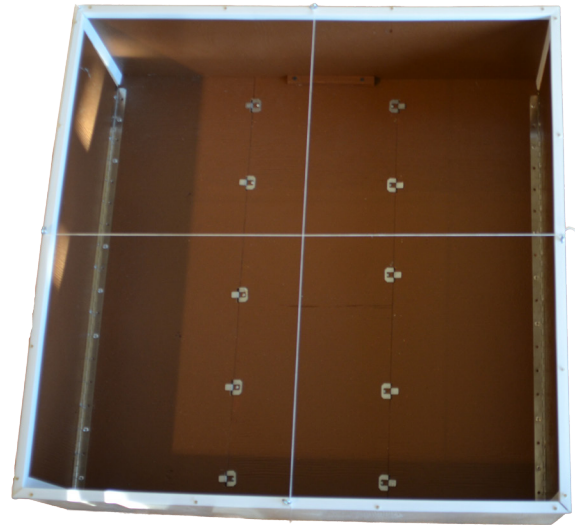
Measure out a piece of string to be roughly 1.5 meters long. Tie one end of this string to the datum screw and let the other end hang loose. This string will be used to help measure the position of artifacts.

## Creating unit quadrants

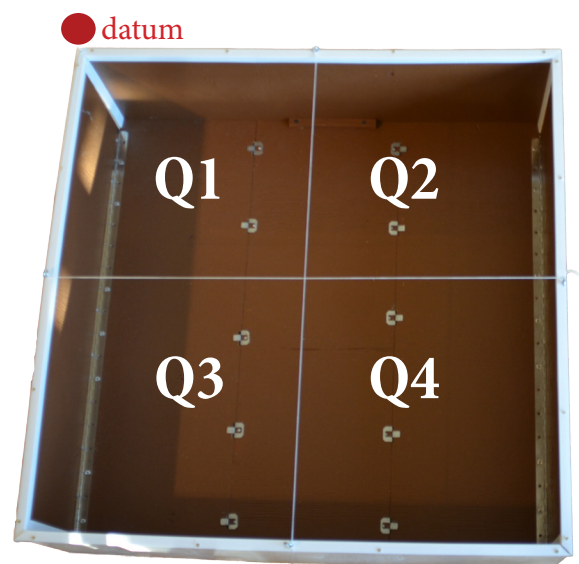
Once the datum has been found and positioned, tie two lengths of string between each of the round screws located in the middle of each wall of the unit square. This will divide the main square into four equal sections. In archaeology, the sections of a unit are known as quadrants. Make sure to tie the string tight enough between the screws so that it remains straight and does not sag.

Quadrants help organize the excavation of a unit by dividing up the space into more manageable pieces. Sometimes, if an archaeologist is unsure that a site contains artifacts, they might only dig up one quadrant of a unit (called a test pit). If more than one archaeologist is working inside a unit, they can each dig up their own quadrant.

When divided up in quadrants, your excavation unit should look like this:



When labeling artifacts and materials found in an excavation unit, sometimes it helps to list their quadrant location in addition to the precise measurements of their location. When doing this, name the quadrants as follows:





# Excavating an Archaeology Unit

## Creating an excavation team

The basic idea of archaeological excavation is to identify the sequence of historical events that occurred at a specific location. Digging is not done just to find old artifacts, but to uncover as many clues as possible and form an accurate picture of what happened in the past. This requires that archaeologists carefully excavate an area layer by layer, recording anything they find that might have been introduced into the area by humans.

Archaeological excavation is usually a team effort, with a group of people working together to do the various different jobs required by excavation. Sometimes archaeologists work alone in a unit, and sometimes multiple people work together, each taking on a different role. There are five main roles to play in excavation:

- Excavator
- Photographer
- Mapper
- Artifact Recorder
- Screener

Each of these excavation roles will be described in detail in the next section. Depending on how many people are taking part in this workshop, the group will have to be divided into multiple different jobs. It is suggested that no more than 12 people take part in the excavation at a single time.

## Excavation with 1-4 participants

If 1-4 people are participating in this excavation, each individual should be responsible for one or more quadrants of the excavation unit. Each individual will be responsible for the excavation, photography, mapping, artifact recording and screening of their own unit quadrant.

## Excavation with 4-8 participants

If 4-8 people are participating in the excavation, have them work in a teams with the following roles:

- 4 excavators (1 per quadrant)
- 2 mappers (1 mapper per two quadrants)
- 1 screener and photographer
- 1 artifact recorder

## Excavation with 8-12 participants

If 8-12 people are participating in the excavation, have them work in a teams with the following roles:

- 4 excavators (1 per quadrant)
- 4 mappers (1 mapper per quadrant)
- 1 screener
- 1 photographer
- 2 artifact recorders





# Excavating an Archaeology Unit

## Excavating the unit

The following section describes the role that each member of the archaeology team plays in excavating the archaeology site. These job descriptions have been adapted from a resource created by the Museum of Texas Tech University.

### Job 1. Excavator

Tools needed: trowel, bucket, brush and dustpan, paintbrush

1. Using the side of your trowel, carefully scrape off the dirt in very thin layers. Try not to dig straight into the dirt, making sure that you keep the bottom of the test pit as level as possible. One of the most important rules as an archaeologist is to be as methodical, neat and tidy as possible as you dig.

2. Use the trowel to scrape the dirt into your dustpan. When the dustpan is full, empty the dirt into your bucket. When the bucket is 1/3 to 1/2 full, give it to the Screener, who will put the dirt through a screen to see if you have missed any small artifacts.

3. If you encounter an artifact or feature, do not remove it. A brush can be used to gently clean all the dirt from around the artifact without moving it. Keep an eye out for colour changes or concentrations of particular materials.

4. When you see the colour and the texture of the soil beginning to change, you are entering into a new layer. Remove all the soil from one layer before starting into the next layer. Have the Mapper, Photographer and Artifact Recorder

document all the artifacts and features before removing them. Once everything has been removed, you can begin to excavate the new layer.

### Job 2. Photographer

Tools needed: digital camera (not supplied in kit), excavation log, pencil

1. Before taking any photographs, record the important details about the archaeology unit in the excavation log including date, the name of the site unit, and the soil layer being photographed.

2. Photograph the unit or quadrant whenever interesting artifacts or features are revealed. Always stand on the south side of the pit so the north side of the pit will be at the top of the photograph. If the picture is taken from far back, put a trowel in the photo area for scale. The point of the trowel should be pointing north. If the picture is a close-up, include the metric tape measure in the edge of the photograph for scale.

3. Each time you take a photograph, give it a new number in the excavation log and a description to keep track of what each the photo represents.

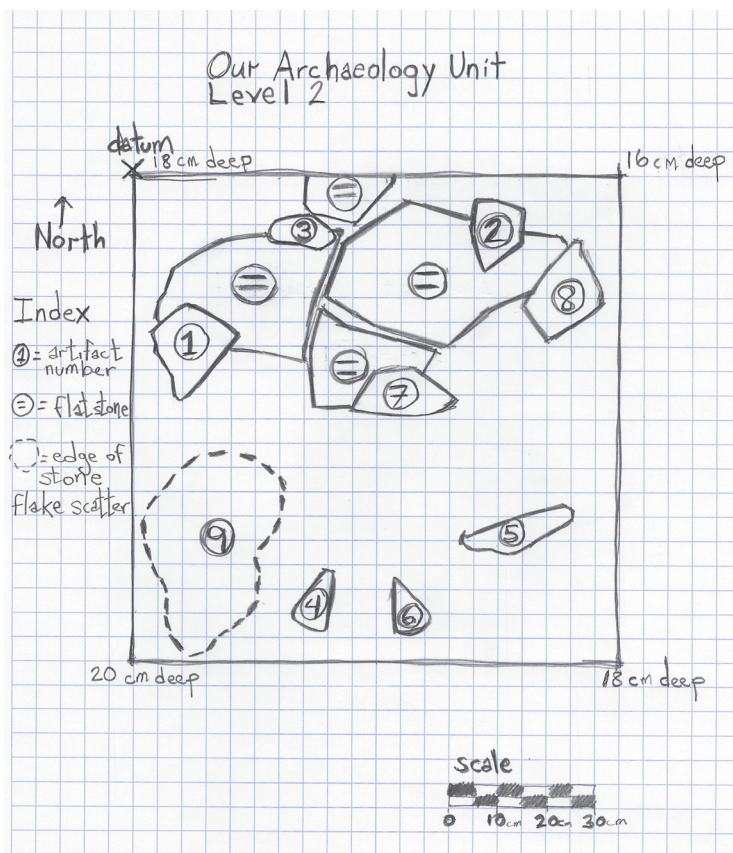
4. Photos of each completed layer should be recorded once the Excavator has completed it. A piece of paper can be placed in the photograph with all the unit details written out to make sure this information is recorded.

# Excavating an Archaeology Unit

## Job 3. Mapper

Tools needed: graph paper, metric tape measure.

1. Label a sheet of graph paper with your archaeological site's name and unit level.
2. Draw a square on the paper that represents the excavation unit. This square should be drawn at a scale of 1:5, meaning each square on the graph paper equals 5 centimeters in your excavation unit. A unit 1 meter across will therefore measure 20 squares by 20 squares on the scale map. A 50 x 50 cm quadrant, will measure to 10 squares by 10 squares on the map. Write the scale being used on the map, so that other people will know what it is.
3. When your unit or quadrant square is drawn, indicate which side faces north.



4. Measure the location of artifacts and features that are exposed so they can be recorded in the appropriate place on the map. Using the datum point at the northwest corner of the box, measure the distance east and south from this point to the center of the artifact or feature. Then translate this measurement into a scaled distance (1:5) on the map, and draw the point in. For instance, the center of artifact 1 on the following page is located 15 centimeters east and 35 centimeters south of the datum point. That means you will measure 3 squares over, and 7 squares down on the map to draw the center of the artifact. When you have your center point, roughly sketch an outline of the rest of the artifact. If an artifact or feature is big, you might want to measure multiple points, rather than just the center.
5. In each of the four corners of your layer map, list the distance between the top string and the bottom of the layer and write this in.
6. Create an index to explain any symbols or numbers being used to other people looking at the map.



# Excavating an Archaeology Unit

## Job 4. Artifact/Feature Recorder

Tools needed: Excavation log, pencil, metric measuring tape, zip-loc bags, sharpie marker, plumb bob.

1. Make sure all information is filled out completely as you begin to record artifacts. Fill in site name, date, layer number, and your name on the excavation log page and each zip-loc bag being used. List the quadrant number if applicable.

2. Give each artifact you find a number. The first artifact you find will be number 1, the second number 2, etc.

3. For each of these numbered artifacts, record the distance in centimeters from the datum point. This will mean recording an East measurement, and a South measurement. Write this measurement beside the artifact number in your excavation log.

3. Hook the line level onto the string that is attached to the datum point. Extend the string out over the artifact being measured, using the line level to ensure the string is kept as straight as possible. Drop the plumb bob over the middle of the artifact being measured. This will give you a straight line to measure along. Using your measuring tape, record the distance between the horizontal string and the artifact below it. This will be the Depth of your artifact. Add this measurement to the artifact description in the excavation log.

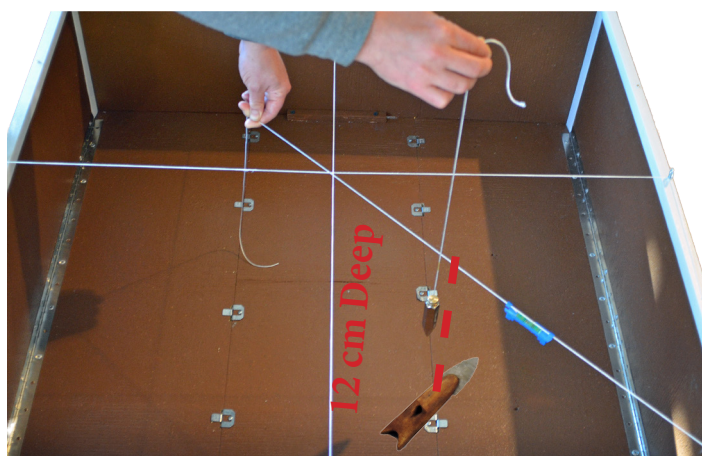
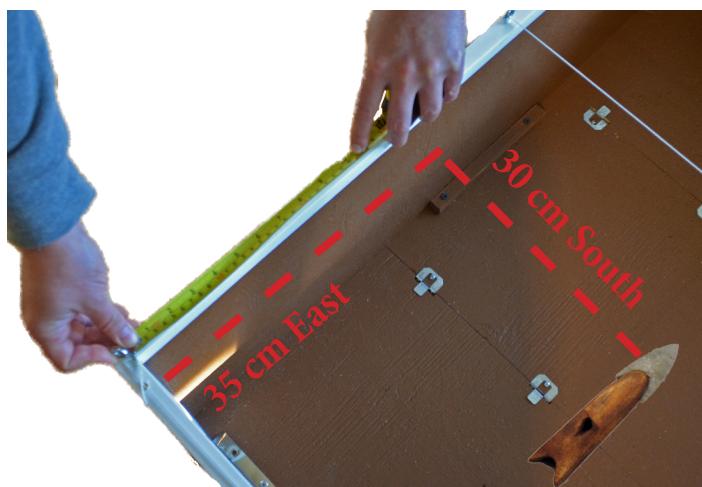
At this point, each entry into the log should look as follows:

**Artifact 1: 35 cm East, 30 cm South, 12 cm deep**

4. Place the artifact in a ziploc bag, which you also label with the same artifact number and measurements as in your excavation log. Make sure to use the permanent sharpie marker so the information does not rub off.



**Artifact Number 1**



# Interpreting your Finds

## Job 5. Screener

Tools needed: zip-lock bags, sharpie marker, screen.

1. Using the permanent marker, label the ziploc bag with the site name, date, layer number, your name, and the words 'FROM SCREEN.'
2. Take each bucket of dirt that is excavated to your screen and dump part of it in. Gently push the dirt through the screen. Whenever you see small artifacts or other objects, remove them from the screen and place them in one of the bags you have labeled.



## Analyzing and Interpreting your finds

One of the most important parts of any excavation involves the analysis and interpretation of the archaeological finds. At this stage of the project all the clues gathered during the excavation (including artifacts, maps, photos and written records) are brought together and used to build a story of what might have happened at the specific site in the past.

Upon completing the excavation, have the participants combine their evidence and use the information to answer these key questions about the site:

- Based on the artifacts and materials located, what type of activities were people once doing at this site?
- What do the materials located in the unit say about the activities of the people who once occupied the site (who they were, what they ate, what resources they harvested and used, etc)?
- Are there any patterns to the how these artifacts were located? Which ones were found together? Did different types of tools come from the different stratigraphic levels?
- What can this unit tell us about how culture in Nunavut has changed over time?





# Summary and Discussion

## Summing up


Upon completing the excavation portion of this workshop, help participants reflect on broader questions surrounding the usefulness of archaeology and its place in Nunavut. Encourage them to use their newly acquired experience with the practice of archaeology to re-assess their understandings of if and how excavation is important. The IHT resource titled “A Guidebook to Nunavut Archaeology and Artifacts for Northern Students” can be referenced to provide a series of pre-drafted discussion questions, as well as background information that will help to lead these discussions.

## Can archaeology help Nunavummiut better understand their history and culture?

Why should Nunavummiut listen to the stories produced through archaeological excavation when they already have a sense of their history and past? As participants have learned through this workshop, the field of archaeology is beneficial because it offers a unique perspective on human history and culture. By examining the minute details of the material world, archaeology is able to describe patterns of human change over long periods of time. Unlike oral and written forms of history, it is also able to recover information about the past lives of individuals, families and communities that have not been recorded or whose stories have been forgotten.

While archaeological excavation is a strong tool for understanding history, there are other sources that Nunavummiut rely upon for building knowledge about the past. These can be used alongside archaeology to help build a stronger picture of the past. The following section of this instructor’s guide will focus on a practice known as ‘experimental archaeology.’

Experimental archaeology is a branch of archaeological study that tries to better understand the past by replicating the conditions through which past people lived. This might include building and using tools, houses, or certain hunting techniques to gain first-hand experience and insight into how and why these events took place. While we will never be able to fully understand people in the past, this form of archaeology gives us a better sense of what their lives would have once been like.



# Making a Ground Slate Ulu

## Making a Ground Slate Ulu

This is a hands-on activity for up to 15 students. Students will make their own ground slate ulu using slate, wood, and string. One adult for every 5 children will help with instruction.

### Materials:

- Slate ulu blanks - 1 per student plus extras for breakage
- Wood handles - 1 per student
- String - 1-2 metres per student
- Files - 1 per student
- Abrading stones - 1 per table
- Bow drills (bow, drill, socket) - at least 1 for every five students
- Scissors - 1-2 for the room

### Classroom:

This activity is best suited for an industrial arts classroom with tables that students can sit at while they work. Protective mats for the table top are recommended. This is a dusty activity, but clean-up can be done with soap and water. With supervision, this is a safe activity, but the room should have a First Aid kit and access to running water.

### Preparation:

Lay out the protective mats on the table tops where the students will sit. Each table should have an assortment of files and grinding stones, ulu blanks, and wood handles. The string and scissors can be kept in a central location in the classroom and

accessed as need, so that they don't interfere with the student's working space.

Begin the activity with all of the students together, gathered around a demonstration area. Introduce the activity to them, following the guidelines below.

### Introduction:

Talk to the students about ulus. Do they have ulus in their kitchen at home? How are they used? What materials are they made from? Explain that in the past ulus were made out of a type of stone called slate that was ground to a sharp edge. Explain that traditional crafts and experimental archaeology are good ways to understand how people lived in the past.

Introduce the tools and materials to the students and demonstrate the three steps to making their own ulu:

- Step 1: Grinding
- Step 2: Drilling
- Step 3: Tying



# Making a Ground Slate Ulu

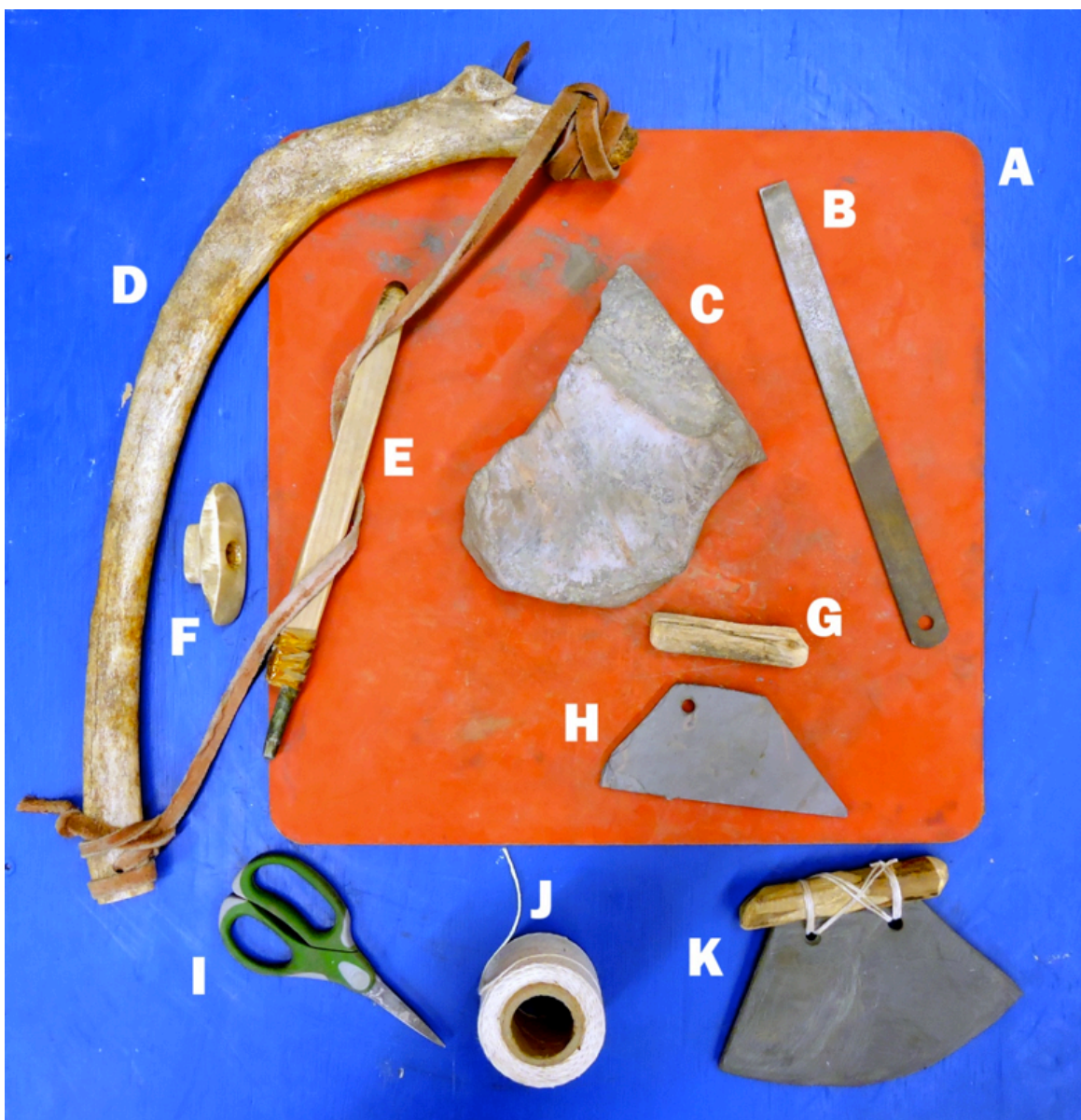


Figure 1: Activity Materials: A) Workmat, B) File, C) Abrading stone, D) Bow Drill bow, E) Bow Drill spindle, F) Bow Drill socket, G) Wood handle, H) Slate Ulu blank, I) Scissors, J) String, K) Assembled Ulu.

# Making a Ground Slate Ulu

## Step 1: Grinding

When the students move to the table work stations, they should select a slate ulu blank. The blanks are trapezoidal in shape and the long edge is the edge that will form the ulu blade, so this is the edge that needs to be sharpened. Most slate ulus were sharpened on one face only, to create a bevelled edge; the same as today's steel ulus. Students may use the stone abraders or metal files to grind and sharpen the edge of their slate ulu. This is a long, slow process, but you can encourage students by showing them the dust that they are making. If they are making dust, then they are making progress. Some students may need to be shown how to lay the slate on its side to file the edge thin and make it sharp. The curve of the ulu blade is made by filing more on each end of the long edge, to wear away the acute corners and leave a more rounded outline. This can take a long time and not all students will have the patience to grind a curved edge.

Grinding can be done at any stage during the assembly and the finished ulus can also be re-sharpened in the same way. Slate is a relatively soft stone, so care should be taken to not drop the ulu blanks on the floor or they might break. Slate breaks apart into flat sheets and this is one of the reasons it was used for making tools like ulus. Sometimes flat flakes will come off the slate while the students work it; this is usually harmless and won't affect the final tool.



Figure 2: Filing more on the corners will give the blade a round edge.



Figure 3: Ulus are sharpened on one face only so that they have a bevelled edge.



Figure 4: When grinding the edge sharp, lay the ulu on its side and try to grind the edge thin. Standing it straight up and down will dull the edge.







# Making a Ground Slate Ulu

## Step 2: Drilling

Ulu handles were attached to the blades in many different ways, including rivets and lashings through drilled holes in the slate blade. Students will use bow drills to drill two holes in their stone ulu blade. This job is easiest with two people – one person operates the drill and the other holds the stone blade. It is important to have someone hold the stone because at the moment that the drill bit breaks through the other side of the stone it will often bind in the hole and if the stone is not being held it can fly onto the floor and the stone can break.

The bow drill consists of three parts; a bow, a spindle, and a socket. The leather cord on the bow will be twisted once around the spindle and the socket sits on top of the spindle so that the spindle can turn easily. Traditionally, the socket would be held in the teeth of the person operating the drill so that they could hold the piece being drilled with their free hand. Students may try this if they wish, but it is a little more difficult and they will probably have better results holding the socket in their hand. To operate the drill the students will hold the bow with their dominant hand and press down on the socket with their other hand. The spindle is turned by sawing with the bow, slowly at first, and then faster as the students find their rhythm.

- Holes are difficult to start as the spindle's drill bit will want to dance around the surface of the stone before it finds a spot to grip. Drill very slowly and carefully until the first little depression starts in the stone to hold the drill bit in place.
- Don't drill too close to the edge. The edge of the hole should be 5-10 millimetres away from the nearest edge.
- Friction can build up heat between the socket and top of the spindle. They may even smoke. They won't catch fire, but students can be burned if they touch the smoking spindles.
- It can be easier to drill the holes if they are drilled halfway through on one side and then the stone is flipped over and the holes are finished from the other side. Archaeologically, many holes drilled with bow drills show the unique hourglass shaped cross-section that this style of drilling leaves behind. Be careful to mark the spot exactly on the opposite face, as you will want both holes to line up.
- Slate can come in different degrees of hardness and sometimes there will be hard layers buried within the stone. If you find a difficult piece to drill, you can try flipping it over and drilling from the other side or switching out drill bits. A different drill will make contact in different places in the hole and can get a stalled hole jumpstarted again.
- Finished holes should be approximately 5 millimetres in diameter. They need to be big enough to pass the string through several times.
- The bow string should be loose enough to twist once around the spindle, but tight enough that there is tension on the spindle when the students begin the sawing motion.





Figure 5: The spindle should spin straight up and down and downward pressure is applied through the hand holding the socket piece.



Figure 6: An example of a how string should be tied around the handle to secure the slate blade.

### Step 3: Tying

The final step to assembling the ground slate ulu is attaching the wood handles. In the past people would have used sinew, hide, or baleen as lashing to tie the handles in place. Antler, horn, whalebone, copper, or iron rivets were also used to hold the handles in place. The handles were made out of many different types of materials including driftwood, antler, horn, ivory, and whalebone. In this exercise we will use string for the lashing and wood for the handles.

Students may wish to prepare their handles by incising grooves in the wood. These modifications are optional. They will improve the strength of the finished tools, but they can add time to the activity. Students may wish to drill holes through the wood, although this can be time consuming and is not necessary. A quicker alternative is to use the files to incise a pair of grooves into the handle that match up with the holes on the blade. This will give the lashing string somewhere to sit and will help make a more secure bond. The files can also be used to gouge out a long groove along the bottom of the handle to fit upper edge of the slate blade.

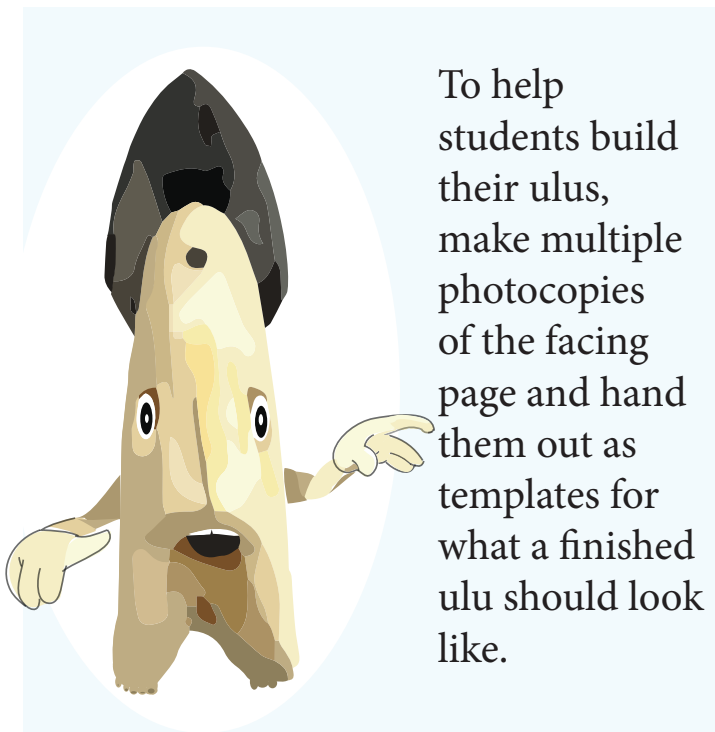
It is helpful for the students to work with a partner when tying with the string. One person will hold the handle and blade together and help keep tension in the string while the other person loops the string through the holes and over the handle. Approximately 1 – 1.5 metres of string is used for each ulu. Thread the string halfway through one of the holes and use one of the loose ends to loop over top of the handle and back through the hole. Do a couple loops on one hole and then





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criss-cross over to the other hole. It is critical that each loop is pulled tight and the tension is held in the lashing or the handle will be floppy and loose at the end. Keep looping the thread through the holes until you run out of string and then do the same thing with the opposite end of the string. When you can't fit any more string through the holes or you run out of string, tie the two ends together and trim off the excess string with the scissors. Students may need to string and restring the handle more than once before they realize how important it is to keep the string tight.



To help students build their ulus, make multiple photocopies of the facing page and hand them out as templates for what a finished ulu should look like.

At this point the ulu is finished. If the handle is a little loose, sometimes you can find a tight spot by turning the handle within the string until it sticks

## Finishing

Ideas for the students who are done early:

- Help other students hold their stone for drilling or handles and blades for tying.
- Continue grinding. Try to make the edge sharper or round off the corners to create a curved blade.
- Carve designs or their name in the slate blade.
- Trace their ulu into their notebook or onto a sheet of paper and label the parts. Describe the materials and steps they took to assemble the tool.

At the end of the activity, gather all of the students together and talk about what they learned. Was it easy or hard? How did they feel while working? Did they give up or did they persevere? What did they learn about the Inuit who lived long ago? What words would they use to describe the activity and the people who made slate ulus in the past?

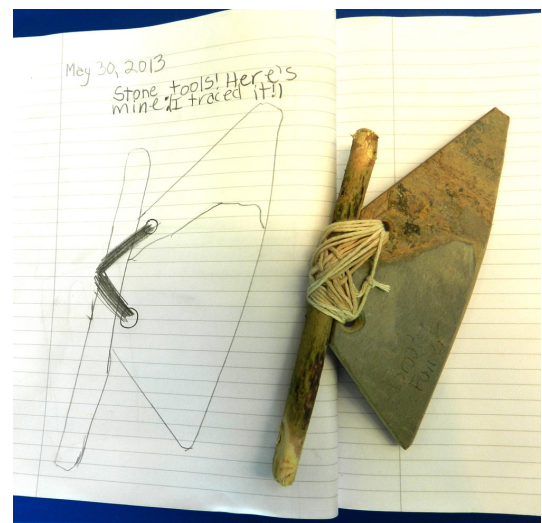


Figure 7: The completed ulu can be traced and described in participants' notebooks.

