

HOW (AND WHY) WE DO ARCHAEOLOGY

An Introduction to the Indigenous Archaeological Record

ARCHAEOLOGY LESSON PLAN SERIES

FIRST PEOPLES OF THE ATLANTIC PROVINCES OF CANADA

MI'KMAQ, WOLASTOQIYIK, AND PESKOTOMUHKADI

Lesson 2

Time and History in Archaeology

DISCUSSION IDEAS AND EXERCISES

How (and Why) We Do Archaeology: An Introduction to the Indigenous Archaeological Record

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Lesson Plan 2

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Statement of recognition: This lesson plan has been developed using educational facilities and resources within the traditional lands of the Wolastoqiyik and many other First Nations of Canada. The material in these lesson plans deals with the culture and history of the Wolastoqiyik, the Mi'kmaq, and the Peskotomuhkadi, as well as the First Nations in the Northeast of North America and across all of the Americas. Much of the knowledge base shared in this lesson plan is the direct result of the sharing of knowledge by the First Peoples of the Americas. The authors gratefully acknowledge that the unceded territories of the Mi'kmaq, Wolastoqiyik, and Peskotomuhkadi and all First Peoples made this lesson plan possible and that the rich cultural history of these peoples created the sites that we study.

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Note Concerning Ethical Treatment of the Archaeological Record

This lesson plan is not intended to replace archaeological education or give students or teachers the skills to conduct archaeology. The authors and NCCIE in no way endorse seeking out Indigenous artifacts, withholding archaeological information from regulatory bodies, looking for archaeological sites, or digging with the intention to find artifacts or sites. Conducting archaeology, including excavation, testing, surveying, and monitoring, is only to be undertaken by an archaeologist or under the direction of an archaeologist who meets the criteria to be permitted by the provincial regulatory body of the province in question. The authors and NCCIE strongly condemn any activity that endangers the archaeological record, treats artifacts in a disrespectful way (such as selling or destroying artifacts), or impedes the ability of regulatory bodies to protect cultural resources.

HOW (AND WHY) WE DO ARCHAEOLOGY

An Introduction to the Indigenous Archaeological Record

Lesson

2

Time and History in Archaeology

DISCUSSION IDEAS AND ACTIVITIES

Discussion 1: What Is Culture History?

When we are doing archaeology, our main purpose is to develop a story of the place, people, or thing we are investigating. We call this a history, and because we are trying to understand the people in that story and how they changed, we call it a culture history. We build a culture

history by looking at all the evidence about how things changed through time. Sources of evidence include relative dating methods like stratigraphy and seriation as well as absolute dating methods like radiocarbon dating and tree ring dating.

THINGS TO CONSIDER

1. What do we learn about how cultures changed through time when we build a culture history?
2. Which do you think is more important: relative dating, or absolute dating? Why?
3. Building a culture history takes a lot of work, and maybe the biggest part of the work is thinking about all the evidence and what it means. In fact, archaeologists spend a lot of time thinking. Does this appeal to you, or does it seem too hard? Do you agree that you have to use a log of logic to figure out what was going on, or does it seem like archaeologists take too many liberties with their ideas about the past?

LIST OF TERMS

analogical reasoning
calendar year
culture history
half-life

analogy
chronology
date
history

artifact-bearing layers
context
events
ice core sampling

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**law of superposition
sequence
stratum**

**millennia
strata
time depth**

**sedimentation
stratigraphy
tree ring dating**

Discussion 2: Layers of Time

One of the most important ways of knowing the past is understanding the layers that get deposited through time, both natural and human-made. In order to understand what happened through time, it is important to learn how these layers get deposited. This means understanding the natural depositional processes like sedimentation and the weathering of rocks. It also means understanding the human processes that leave traces, like artifact byproducts such as lithic debitage and culture change that lead to changes in artifact shapes through time. Understanding these processes helps us build an understanding of the culture history of our region.

Things to Consider

1. Think about the different places you spend time, like your house, your school, or the woods. What natural processes of sedimentation and deposition do you see around you?
2. Can you think of any human-made objects that have changed in your lifetime? How have they changed, and how have they stayed the same? Can you think of any classes of objects that have become obsolete and been replaced by other kinds of objects?

**LIST OF
TERMS**

**abrasion
attributes
chronology
deposited
fertile
glacial till
hafting elements
poorly sorted
sequence
strata
suspension**

**aeolian
chemical weathering
context
eroded
fluvial
glacial transport
law of superposition
sandy silt
silty clay
stratigraphy
well sorted**

**artifact-bearing layers
chronologically sensitive
culture history
events
freeze-thaw action
glaciers
mechanical stress
sedimentation
source material
stratum**

Discussion 3: Time is Complicated

By now, you may have realized that dating things is a lot more complicated than you previously thought. Some people believe that radiocarbon dating can give precise and accurate dates, but archaeologists know how complicated and difficult it is to get even a date range, let alone a single date for an event or an artifact. It is also hard for the public to understand what kinds of things we can understand about the past by looking at the present, and which things we can't possibly know. So, even though we want to share our knowledge with the

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public, it is not always easy to know how to do this in way that is convincing but not so complicated that people will not understand.

THINGS TO CONSIDER

1. How would you explain to people that we can't be certain about when something happened, only that we have a rough idea or an approximate date range?
2. Have you ever heard someone say something about the past that you know can't be true? Explain.
3. How does it make you feel that people talk about the past without always understanding it?

LIST OF TERMS

calendar year

chronology

date

hafting elements

isotope

radiocarbon dating

sedimentation

stratigraphy

calibrate

contaminated

deposited

half-life

law of superposition

radioactive

sequence

stratum

chronologically sensitive

context

events

ice core sampling

millennia

radioactive decay

statistical probability

tree ring dating

Activity 1

**Individual Project: Stratigraphy
from the Kitchen**

MENTAL POWER

Approximate time: 2 weeks

GOALS

In this exercise, you will build an artificial stratigraphy out of kitchen byproducts to understand how stratigraphy builds up over time. You will record the events on a daily basis and finally excavate the sediments to look at the stratigraphic profile.

**MATERIALS /
RESOURCES
(STUDENTS)**

What you will need:

- Kitchen utensils for excavation
- A cardboard shoe box
- A cookie sheet
- A ruler

INSTRUCTIONS

First, find yourself a shoe box or a cardboard box of a similar size. Ask your family members to put any of the following items in the box instead of in the garbage for the next two weeks:

- Coffee grounds
- Egg shells (crushed up and washed first)
- Orange peels
- Discarded flour
- Tea bags (wait for them to dry out, then open them and scatter the contents over the surface)
- Any kind of cereal (unless it was mixed with milk)
- Dust from sweeping the floor
- Soil (for instance, if a house plant was knocked over)
- Any kind of powdery substance to be thrown away

If it fills up too much, you can stop. You might want to put the box on a cookie tray for the time this project takes to avoid any moisture seeping into table tops.

Make a log of each day, listing the substance that was thrown away, the date, about what time it was thrown away, what it is, and an estimate of how much. Don't worry about it if you don't have all the things just listed; it's just helpful when you finally excavate.

Once the box is close to full, pack it down with a mug bottom and sprinkle water over it to compact it until it is evenly moist. Let it sit for a little while.

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Next, using a sharp point, divide the surface of your “soil” in half. One half you will excavate, the other you will leave. Use whatever tools you have on hand: butter knife, palette knife, spatula, trowel—all these will work. Try to do most of your excavation with a straight edge for maximum control. On the side you decide to excavate, try to go down one layer at a time and see if you can stop before you get into the next layer. See if you can tell where one layer ends and another begins. This will be much harder to do with nothing but coffee grounds than if each layer is separated by other things like dust from the floor. Remember to try to make the wall of the “soil” that you have not excavated as perfectly straight as possible.

Once you have excavated to the bottom, cut out the cardboard wall opposite your exposed stratigraphic profile. Place a ruler next to the wall for scale and take a picture of your stratigraphy.

REQUIREMENTS

Write a 1-page history of your box, being sure to include:

1. What the different strata were composed of;
2. Whether anything interesting occurred in any of the layers (e.g., Lego pieces from sweeping);
3. What events results in each layer (as you have documented);
4. Whether the stratigraphy shows a lot of separation or blends together.

Hand in your log of activities and picture of the stratigraphy with this history.

Activity 2

Class Presentation: Snow Chronology

LAND LEARNING

Approximate time: 1 week

GOALS

In this exercise, you will excavate a snow bank, document it with pictures and drawings, and present your chronology of the winter to your class as you see it recorded in the snow stratigraphy.

MATERIALS /
RESOURCES
(STUDENTS)

For this assignment, you will need:

- A trowel or other gardening tool
- A shovel
- A camera
- A measuring tape
- Graph paper

INSTRUCTIONS

Recon. Find a snow bank in your neighborhood that is at least 1 meter high (or as high as possible given the snow conditions). Start by clearing off a smooth, straight wall of it so that you have an easy-to-see stratigraphy. Make this wall be at least two feet wide and extend from the top of the wall right down to the ground (or, if ice covers the ground, to as far down as you can clear off with a shovel).

Take a picture. Next, extend your measuring tape from the ground up to the top of the stratigraphy, lock it in place, lean it there, and take a picture of the whole wall with a camera.



Draw your stratigraphy. Remove the measuring tape and draw the stratigraphy on your graph paper. You will need to make it to scale and measure each layer. Start by choosing whether to make one square on your graph paper equal 5 cm in real life, 10 cm, 20 cm, or 10 inches. It will depend on how high your snow bank is. So, if your snow bank is 1 meter high, and 1 square = 10 cm, you can draw the entire stratigraphy

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using 10 squares on your graph paper. If you want to make each square equal 5 cm, then a 1 m tall snow bank will require 20 squares.

Once you have your scale to draw to, draw a line to indicate the ground. From there, measure up to the top of the first stratum and mark this on your graph. Then draw the line along the top of that first stratum as accurately as you can. Feel free to take more measurements. Then measure from the ground up to the top of the second stratum and mark it on your paper. Draw the line at the top of the second stratum as before. Repeat until you have gotten to the top of the stratigraphy. Take a break to warm up as necessary.

Description. Have a look at each of the strata carefully. Label them with numbers on your drawing and then describe each numbered layer by particle size (e.g., coarse, fine), texture (e.g., grainy, fluffy, solid ice), distinguishing characteristics (e.g., dirty, harder than the others), and whether any objects are contained. Try to explain why each layer looks the way it did; for instance, if it is fairly grainy, you could suggest that maybe the layer melted partly and the grains fused together, whereas if it is fluffy, you could suggest that it represents a recent snowfall. Ice layers represent a period of thaw and refreezing.

Interpretation. After you have warmed up with some hot cocoa, look at your drawing and descriptions of the layers and try to come up with a history of the winter based on the stratigraphy you see. Try to take into account the place where the snow bank occurs and also try to remember what the winter is like. Can you see any strata that you think represent an event you remember, like a particularly large snowfall or a thawing and freezing event? If you want, you can even look up the actual date an event happened to figure out how long the snow stratigraphy represents.

Presentation. Present to your class a history of the winter as it is shown in the stratigraphy you studied. Use the evidence you have to support your claims. Refer to your drawing and photo as necessary. If you have dated any strata to particular events, make sure you use this as an absolute date. Give your class an explanation of any interesting layers you found, for instance one that was deposited not by snowfall but by the plow or snow-shoveling.

REQUIREMENTS

Pass in your map, your strata descriptions, and your photo for grading. Don't forget to offer thanks for the gift of snow that the land has provided, however you see fit.

Activity 3

Thought Experiment: Old House Foundation

CRITICAL THINKING

Approximate time: 1 week

GOALS

In this exercise, you will look at some evidence for time periods and you will write your best explanation of what happened during a period of time.

MATERIALS /
RESOURCES
(STUDENTS)

You will need access to the internet and/or a library for researching objects. You will also need some paper for sketching out the date ranges of different objects. You may also want to sketch out other things, such as how you imagine the foundation, what the walls look like, or what the objects around the foundation look like.

INSTRUCTIONS

Imagine that you come upon an old house foundation in the woods. The foundation is made of stone and mortar on one side, which looks like the main part of the house, and brick on the another part that looks like it was a smaller room. No wood is left but there are a few things lying around. One thing is a jar with 30 pennies and other coins with dates ranging between 1830 and 1910. There are also the following within the walls: one rubber boot, one broken tiny brown glass bottle, some rusty square nails, an enamel cup, a stainless steel fork, and the grate from an old stove. You also notice that the stone section of the foundation looks very black in places, although there is no charcoal lying around. The brick looks old but not particularly black and the brick section has a large crack running up the side.

You notice something else: several maple trees are growing both outside and inside the foundation walls. The trees outside are large and small but inside the foundation, the trees are all about 8 cm around. You saw through one to have a look at it, and the rings look like the picture below.

Clearly, this house foundation was inhabited at one point, but what happened to it? You can't know for sure, but you have indications about activities during different time periods. Here is a clue about how to build a culture history of the place. Start by looking up each of the objects on the internet to see when they were first invented or used. See if you can figure out how long they were used. Make an overlapping timeline of these ranges. You won't be able to know all the date ranges, but you will know some. You might also want to think about why different parts of the foundation are made out of different materials and what each part went through, and also why there are different-sized trees inside and outside the foundations.

REQUIREMENTS

Hand in a one-page essay about the history of the place. Use evidence from your research on date ranges. Also, use any chronological evidence you have. Finally, make a

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good argument for what you think might have happened to the building and why the people no longer live there.



Activity 4

Elder Visit: Making Sense of the Past

KNOWLEDGE SHARING

Approximate time: 1 class

GOALS

In this activity, the teacher will arrange a class visit with an Elder who is familiar with a traditional technology or skill. The Elder will come to the class to speak with students about the skill and its history to help students connect modern-day skills and art forms with their heritage and ancestors' ways of life.

**MATERIALS /
RESOURCES
(TEACHERS)**

You will need to give tobacco and possibly an honorarium if you have this in your budget.

INSTRUCTIONS

Many Elders have traditional skills that have been handed down through countless generations. These Elders often know a lot about the archaeological evidence for their skills and can speak at length about both archaeological and oral histories of the skills. This kind of history, given by a skilled person, is highly valuable for developing an understanding of how skills are handed down through time, and why.

Elders with deep historical knowledge can often be found by asking the largest museums in the area, such as the New Brunswick Museum or the Nova Scotia Museum. Archaeologists also usually know a number of Elders who have shared knowledge with them, and these archaeologists can be reached by contacting a university's anthropology program or an archaeological consulting firm (look up "consulting archaeology" in your area). Elders with historical knowledge of traditional skills are often involved in many community activities, so you can often find an Elder known to be a good historical speaker and skilled craftsperson by going to powwows and asking around.

Not everyone is experienced at inviting an Elder to speak, so here are some suggestions if you are unsure how to begin. When you contact an Elder, explain that you are teaching a class on archaeology and that it is for Indigenous students and/or students interested in the Indigenous perspective on archaeology. Ask if they would be willing to share their knowledge with your students. Explain that you are hoping to give students a look at the past by seeing how a traditional skill is done in the present. Sometimes, they need payment, and if you have this in your budget, do your best to accommodate, but if not, be as honest as you can about it. There are usually Elders who do not require payment so you may have to ask more than one if you have no money to offer. When you meet the Elder for the first time, give tobacco and remember to thank the Elder before and after they speak.

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EVALUATION

You may want to ask the students to develop some questions ahead of time, or write down their personal reflections about the talk afterwards. Marks may be based on participation, depth of thoughtfulness, or (if the Elder gets students to do or make something) ability to execute the skill.