

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 4

Seeing and Knowing in Archaeology

DISCUSSION IDEAS AND EXERCISES

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

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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.

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HOW (AND WHY) WE DO ARCHAEOLOGY

An Introduction to the Indigenous Archaeological Record

Lesson

4

Seeing and Knowing in Archaeology

DISCUSSION IDEAS AND ACTIVITIES

Discussion 1: What is Science?

Science is a specific way of doing things that involves starting with a question, doing research, developing a hypothesis, testing that hypothesis, developing an argument, checking for unwarranted assumptions, and coming to a conclusion. It relies on evidence, and tries not to go by “common sense” or “inherited wisdom” unless there is evidence supporting these claims. It also needs logical arguments that can be evaluated by other scientists who are inherently skeptical.

THINGS TO CONSIDER

1. Science is a powerful way of building knowledge about the natural world as well as creating new technology and improving existing technology. What makes it so powerful? Does this make it good?
2. What would it be like to be a scientist? Fun? Hard work? Stressful?
3. Science does not allow scientists to ever be truly “right,” but it definitely allows scientists to be wrong. This is because science “progresses” by proving old theories wrong as new evidence comes up. What does it mean to you that you can never be truly certain about your conclusions in science?

LIST OF TERMS

argument
conclusion

assumptions
data

bias
evidence

experiment
investigate
objective
phenomena
reasoning process
scientific method
unwarranted

fact
logic
observation
phenomenon
research question
test

hypothesis
mechanism
observe
proof
science
theory

Discussion 2: Traditional Knowledge

Traditional Knowledge (TK) is the knowledge built over hundreds or thousands of years as it is passed down from generation to generation. As opposed to science which seeks to break a phenomenon down into its constituent parts, TK seeks to observe and understand a phenomenon holistically in its natural environment and in its active state. It is skills- and experience-driven, as opposed to science, which is data-driven. This means that TK welcomes the knowledge each person has to contribute to the group.

**THINGS TO
 CONSIDER**

1. TK has been necessary to the survival of the people living in what is now Atlantic Canada. What about TK has helped the people not only survive, but thrive, in your opinion?
2. People who carry knowledge are called Knowledge Keepers. Their ability to remember the stories passed down from the ancestors and to keep skills alive that they were taught by Elders is very important to maintaining TK. Who do you know who is a Knowledge Keeper and what knowledge do they share? How do they share it?
3. Archaeologists (and other scientists) are increasingly looking to TK to help understand the phenomena they study. How would TK help archaeologists better understand the past?

LIST OF TERMS

bias
evidence
holistic
oral tradition
reproduce
TK
unwritten

custom
experiential
Knowledge Keepers
perspectives
science
Traditional Knowledge

customary
exploitation
objective
phenomenon
scientific method
Two-Eyed Seeing

Discussion 3: Comparing Science with Traditional Knowledge

Science comes from a Western style of knowledge gathering. Because it comes from a specific perspective, it is not always easy to use alongside TK. Does this mean science is not good to use with Indigenous cultural subjects, like archaeology? Can science be useful to TK? Is archaeology a good thing to do, given that it comes out of science rather than TK or other knowledge systems?

THINGS TO
CONSIDER

1. TK is inclusive (meant for everyone) whereas science is specializing (only some do science). What are the benefits and drawbacks of each system?
2. TK does not use writing but archaeology relies heavily on written notes, drawings, maps, and catalogues. Can archaeology be done without writing?
3. Many Indigenous archaeologists have called for Two-Eyed Seeing in archaeology, meaning that TK should be used alongside science. Is this a good compromise, or will it just make things worse?

LIST OF TERMS

assumptions	bias	custom
data	evidence	experiential
exploitation	holistic	hypothesis
investigate	Knowledge Keepers	logic
objective	observation	oral tradition
perspectives	phenomenon	proof
reproduce	science	scientific method
test	theory	TK
Two-Eyed Seeing	unwritten	

Activity 1**Individual Project: Footprints***Approximate time: 1 week***LAND LEARNING****GOALS**

In this exercise, you will try to learn more about the other creatures that live in your local landscape. You will also see if you can apply a scientific method to learning about what you are seeing.

**MATERIALS /
RESOURCES
(STUDENTS)**

For this activity, you will need:

- Access to a computer and/or a library
- Paper, pencil, and eraser for drawing
- Paper for taking notes
- Paper or a computer for writing your conclusions

INSTRUCTIONS

Go somewhere you think there might be animals. Try to find tracks in mud, sand, or snow. See if you can identify them. To help you with this, you can go to this website:

<https://www.almanac.com/content/animal-track-identification>

Step 1: Record all tracks you find. Give each different track type (that is, has different footprints) a name. Names can be “Large,” “Medium,” or “Small,” or they can be “Footprint 1,” “Footprint 2,” etc. List the track names down a page, like this:

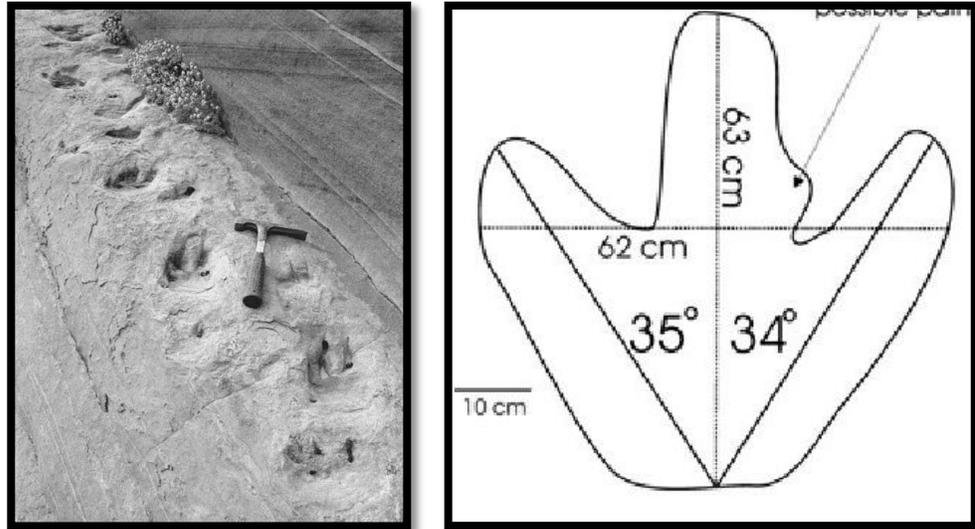
Track 1
Track 2
Track 3
Track 4
Track 5

Then record some data about the tracks. Some suggestions for data are: 1) width of largest paw or foot, 2) length between strides, 3) width between paws, 4) presence or absence of a tail dragging, and 5) whether there are claw marks. But these data can be anything you want. Try to get at least five kinds of measurements or observations.

	Paw Width	Paw Length	Between Strides	Between front and back paws	Claw Marks?
Track 1	1.4 cm	1.6 cm	2.1 cm		Yes
Track 2	0.3 cm	0.3 cm	2.3 cm		Yes
Track 3	0.5 cm	1.3 cm	5 cm		No
Track 4	3.3 cm	4.4 cm	44 cm	0 cm	
Track 5	3.1 cm	4.0 cm	23 cm		Maybe?

Next, make a description of each track. Number of sentences is not important; you need to write enough to describe each, especially how each is different from the others.

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Finally, try to draw each track. These drawings do not have to look pretty or artistic (although you can feel free to use any art skills you have!). Instead, you want to show the approximate shape of the paws, how many pads or sections are there, how close each paw print is to the others, and any other distinguishing features of the tracks. You might even want to show other objects around the tracks in case it would help the viewer understand what they are seeing. Label the drawing with some of the data you recorded (like measurement of paw width) to show the viewer how big the tracks are. Here is an example:

Now you are ready to research the tracks to see if you can find out what they are. You can ask people you know by showing them your drawings and your descriptions, or you can look up animal tracks on the internet or in a book. You can even compare the tracks to other tracks you have seen animals make. When you feel you have enough evidence for each track, write an argument for your conclusion about each track, about $\frac{1}{2}$ page for each track you recorded.

REQUIREMENTS

At the end of the activity, hand in your notes, drawings, and your conclusions about each track. If you did not have all the data for each track, that is okay if you have a reason, like maybe the tracks were incomplete, but try to remember to make a note of this and why the data was incomplete. You will be evaluated on how well you collected data and made an argument based on your data. Remember that finding out information from people, the internet, or a book is considered data so include this information in your conclusion.

*Activity 2***Class Project: Traces of Activities****CRITICAL THINKING***Approximate time: 50 minutes + 1 week for written report***GOALS**

In this project, your students will learn how to develop ideas about what happened in the past by looking at clues in the things left behind or rearranged by people doing activities.

**MATERIALS /
RESOURCES
(TEACHERS)**

For this activity, you will need:

- Two separate spaces, each space not visible when standing in the other space
- Materials for an activity that can be done within 20 minutes
- Space to quickly store what was made during the activity

Because this exercise takes place in two separate locations, you may want to get help from another teacher, teaching assistant, or volunteer.

INSTRUCTIONS

Divide the class into two groups. They need to each be in a space that is separate and not visible to the other group, such as in two different class rooms or on two different sides of a building. Each group will pick an activity or craft project to do together that will leave traces behind and that can be done in about 20 minutes for a 50 minute class or in 45 minutes for a two-hour class. Here are a few examples of projects that would work well for a 20-minute project:

- 1) Cutting out paper snowflakes and gluing them together to make a long banner for decorating a hallway or class room. Check out a video tutorial here: <https://www.youtube.com/watch?v=3NN4qa6jM0Y>.
- 2) Drawing pictures on the backs of Styrofoam containers or meat trays to print Christmas cards or Thank-you notes. Check out a video tutorial here: https://www.google.com/search?client=firefox-b-d&q=printing+with+styrofoam+meat+tray#kpvalbx=_Z9daXqrOGImFytMP86q8OA30.
- 3) Building coil pots. Check out some video tutorials here: <https://www.youtube.com/watch?v=SA-rGYh2UH0>; https://www.youtube.com/watch?v=2kkwvT_ad1g.

Each group should be given a limit of 20 minutes to finish their projects (or longer depending on the amount of time for class), after which the projects themselves should be placed somewhere out of site. It is important that each group has no opportunity to see what the other group has made. While the students are doing the activity, this

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might be a great chance to discuss how the activity is leaving traces and what the next group may conclude from these traces.

Without cleaning up after the activities, each group should now move to the location where the other group did their activity to try to discover what was done in that space. Every student needs to take notes about:

1. The materials and tools left behind (e.g., paper, clay).
2. How the materials and tools are arranged around the room. Students should consider: what are the tools and what are they used for? Where are they concentrated? Are they on work surfaces or on the floor?
3. What shape the materials and tools are in. Students should consider: are they whole? Broken? In small pieces? On the floors or on tables? Clustered in some places or spread out evenly?

From studying these traces of activities, students should now discuss with each other what they think happened in this space. They should use the evidence from their notes to support what they think happened. They should answer the following questions:

1. How many people were there, and where were they?
2. What were they doing and what did they make?

REQUIREMENTS

You may ask students to submit a written report (about 1 page long) stating their conclusions and backed up by evidence from their notes and images (e.g., drawings or cel phone photos). This is a great way to evaluate how much the students are learning.

EVALUATION

Students should be marked both on their participation (with special consideration to the way the activity would be looked at an archaeologist) and on their report on the traces left behind. Students should be encouraged to take as many notes and make as many images as possible so they can refer to these as they write their report. It may also be good to remind them that knowing what happened is not enough; making a convincing argument, that uses data, is the important part.

OPTIONS

If there is concern that a writing assignment may dampen the enthusiasm, consider marking students on their participation in the discussion of what happened.

If dividing the class into two separate groups is not feasible, this activity can be split over two different sessions.

Activity 3

Apprenticeship Project:

Traditional Medicine

ELDER TEACHINGS

Approximate time: 3 weeks (2 weeks for learning and research, 1 week to write the report)

GOALS

In this exercise, you will access the knowledge of an Elder or family member with Traditional Knowledge (TK) of medicinal plant use. You will supplement this knowledge with research on the scientific evidence about this plant use and write a report on the use of these plants.

MATERIALS / RESOURCES (STUDENTS)

For this activity, you will need to find someone from your community that you are willing and able to learn from and who is willing and able to teach you. Depending on your circumstances, you may wish to offer tobacco to an Elder or Knowledge Keeper. You will also need access to a library and/or the internet.

NOTE ABOUT TOBACCO USE FOR MINORS: If you decide to offer tobacco, as many Elders prefer to do, you will need to discuss handling tobacco with an adult. Do not attempt to purchase tobacco yourself. You will need an adult to buy it for you or give it to you.

INSTRUCTIONS

One of the main areas where science and TK have come together is in the study of medicinal plants. Many plants have healing properties, and in this part of the world, knowledge of those healing properties has been passed down through countless generations. The people around you are a tremendous resource for your learning about traditional medicine.

You will need to request teaching from an Elder or a family member who has knowledge of medicinal plants to do this exercise. Remember to ask respectfully and humbly, accepting that the answer may be “No,” and that you may have to ask more than one person. If you feel comfortable, you can offer tobacco; if you do, be sure to offer tobacco before you make your request and understand that the tobacco is theirs no matter what they say. Also make sure you explain what you plan to do with the knowledge you are asking to be shared.

Once you have found a teacher, you will have to spend time doing what the teacher says needs to be done to learn about the plants. You may have to go out in the woods to find plants and harvest them, and you may have to help carry plants or process them with the teacher. Be sure to let your parents or guardians know every time you go to someone’s home or with them into the woods, and you may want to invite a family member to come along, as long as this is okay with the teacher.

After you have gained some knowledge about some specific plants (at least three), it is time to increase your knowledge. Look these plants up on the internet, see if you can find any films about them, and see if you can speak with a botanist or biologist who might know anything about them. Botanists and biologists are often willing to share

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their knowledge and can often be found in the biology departments of universities. Also, see if you can approach any pharmacists or health practitioners about what they know about these plants and their healing properties. In other words, see how many conversations you can start!

Try to answer the following questions using all the information you have gained:

1. The plant names (common names, scientific names)
2. Habitat, range, and growing conditions of the plant (where is it found? What does it need? Is it common, rare, or nearly extinct?)
3. Physical description (leaf shape and configuration, flower colour, flower description, berries description, bark description, anything distinguishing about it, etc.)
4. All the known uses (both by Indigenous and non-Indigenous people)
5. Healing properties (in other words, what does the plant do and what health problems does it help)
6. How to process and prepare the plant
7. Side effects and consequences of overuse
8. History of use (are there any instances of the plant being used in history?)
9. Chemical compounds that are responsible for healing properties
10. Whether this chemical compound is used in modern pharmaceuticals
11. Anything else interesting about it? (taste, psychedelic effects)

You are encouraged to take pictures, make drawings, and take notes throughout and to include these in your report.

REQUIREMENTS

Your final report can be as long as you want it to be, but it should be at least two pages. The report should bring together all the information you have gathered over the last two weeks. You can redraw your drawings if you want, and label parts of your drawings or your photos. You may even want to include a map or a video you took. It is up to you; get your information across in the best way you know how. Remember, though, that writing is a very important part of science and so at least part of your report should be a written summary of all you have learned. Pass in your original notes and any documentation (cel phone pics, drawings, etc.) with your report.