

Simple Machines

Lesson Plan

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First Peoples Principles of Learning

Learning involves generational roles and responsibilities;
Learning recognizes the roles of Indigenous knowledge

Science Content, Grade 5:

Properties of simple machines and their force effects

Science Curricular Competencies, Grade 5:

Demonstrate a sustained curiosity about a scientific problem of personal interest;
Make observations in familiar and unfamiliar contexts;
Identify First Peoples perspectives and knowledge as a source of information

Estimated Time Required: 45 minutes

Objectives:

Students will practice observation and questioning skills as they examine Indigenous tools and see how Indigenous peoples utilized simple machines in their everyday tools and objects.

Activity:

Print off various images of simple machines from the *look* section of this *Can You Dig It?* pathway, the simple machine example sheet at the end of this lesson and the images in the Indigenous *Simple Machines* playlist.

<http://learning.royalbcmuseum.bc.ca/playlist/indigenous-simple-machines/>

Divide students into groups of four to five and give each group an image.

- Students will then examine their image and answer the following questions as a group: What material do we think this is made of? What do we think it

is used for? Who might use it? (for example, a hunter, a gatherer, a parent, a child, etc.), What do we wonder about the object?

- Have students label their image with what simple machines they think are being utilized in their tool. Let students know that a *compound machine* is a machine that includes more than one simple machine.
1. Have each group explain their findings to the class.
 2. Play the “Microblades and Chuck-Its” and “Working Bone to Make Weapons and Tools” videos, found in the *watch* section of this Can You Dig It? pathway. These videos explain how some of the Indigenous tools and weapons were made. For more information on microblades, look at the document found in the *read* section of the Can You Dig It? pathway.
 - a. Discussion Prompts: Do you notice any simple machines being used to create these tools? (For example, the wedge in “Working Bone to Make Weapons and Tools”.)
 - b. In the “Microblades and Chuck-Its” video, Grant Keddie talked about the modern counterparts of ancient tools. What other modern examples of simple machines can you think of?
 3. Ask the class the following questions:
 - a. How do you think these objects would have made life for Indigenous people easier?
 - b. How do you think these simple machines led to tools we use today?
 - c. How do you think life would be different if simple machines had not been developed?

If you use this lesson plan with your students, share their reflections and findings on the Royal BC Museum’s Learning Portal by making a [playlist!](#)

Simple Machine Definitions

Lever: a rod balanced on a fixed point that can help lift a heavy weight with less effort

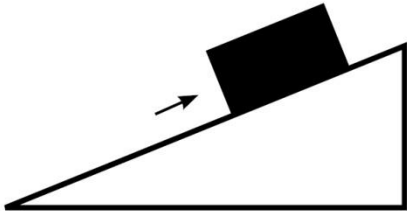
Wheel and axle: used to carry loads around easily, for long distances with less effort.

Inclined Plane: any slope or ramp that makes it easier to lift something

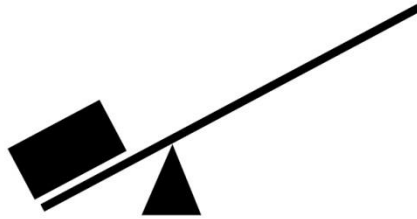
Wedge: made of two inclined planes and use to push objects apart

Screw: an inclined plane wrapped into a spiral

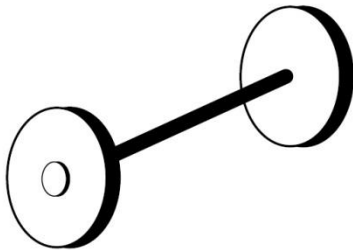
Pulley: uses wheels and a rope to raise, lower or move a load



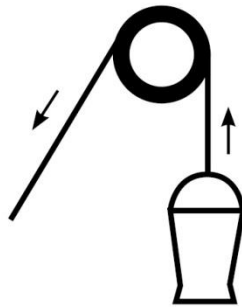
INCLINED PLANE



LEVER



WHEEL AND AXLE



PULLY



SCREW



WEDGE