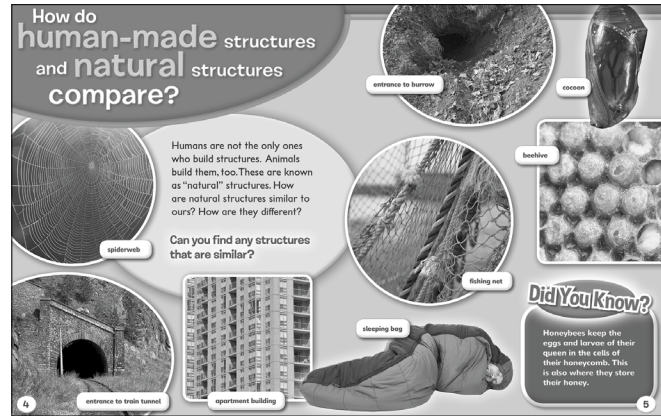
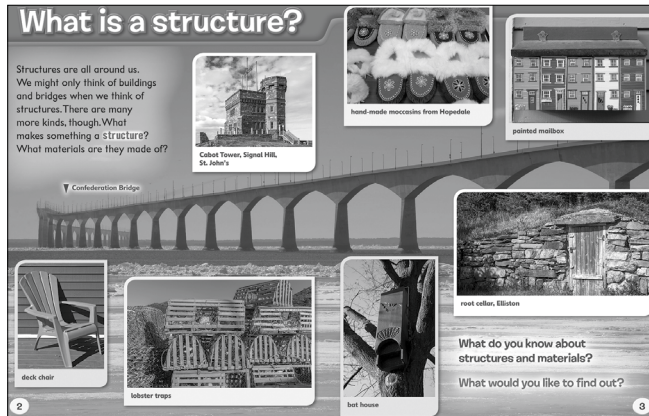


What Is a Structure?



Focus: Students investigate various objects and decide whether they qualify as structures.

Specific Curriculum Outcomes

Students will be expected to:

- 1.0 pose questions that lead to exploration and investigation [GCO 2]

Performance Indicators

Students who achieve these outcomes will be able to:

- ask questions to help them identify objects as structures
- list several examples of structures, both natural and human-made

NOTES:

Attitude Outcome Statements

Encourage students to:

- show interest in and curiosity about objects and events within their immediate environment [GCO 4]

Cross-Curricular Connections

English Language Arts

Students will be expected to:

- interact with sensitivity and respect, considering the situation, audience, and purpose [GCO 3]
- interpret, select, and combine information using a variety of strategies, resources, and technologies [GCO 5]
- create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes [GCO 9]

Getting Organized

Components	Materials	Before You Begin	Vocabulary
• Student Magazine pages 2–5 • Anchor Video: <i>Materials and Structures</i> • IWB Activity 1	• students' Science Journals • digital photos or flash cards showing natural structures (ant colony, wasps' nest, gopher hole, beaver dam, etc.) • students' Science Folders • digital cameras, tablets, or phones (optional)	• Gather 4 or 5 images of natural structures (ant colony, wasps' nest, gopher hole, beaver dam, etc.), either in digital format or on flash cards. • Arrange for a field trip to visit an interesting local structure. • Invite an Elder or Indigenous Knowledge Keeper to visit the class.	• materials • structure

Safety

- Remind students to use appropriate senses (not taste) when exploring objects.

Science Background

- A structure is anything that is built, has more than one part, and serves a specific purpose.
- Structures are built using various materials, either raw or processed. They can be a variety of shapes and sizes.
- Both humans and animals build structures, including shelters and tools.

Possible Misconceptions

- Students may think that “a structure” means the same as “a building.” Explain that structures are anything with more than one part that was built (by humans or animals) for a specific purpose.

- Students may think that some natural formations are actually structures, such as a log across a creek or a natural stone bridge. Bring them back to the definition of a structure as being something built for a specific purpose and having more than one part.

ACTIVATE



Curiosity Centre

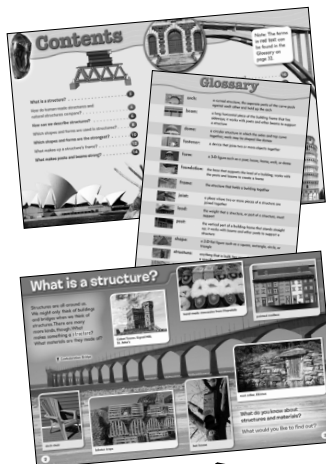
Write the word “structure” on the Word Wall. Ask:

- **What do you think of when you hear this word?**

Students may respond by saying they think of a building, a bridge, a tower, the words “construct” and “construction,” and so on.

Have students gather around the Curiosity Centre and encourage them to explore the items on it (materials such as cotton balls, sandpaper, aluminum foil, plastic wrap, blocks of wood, Lego bricks, foam blocks, pieces of rubber, craft sticks, twigs, felt, pieces of animal hide, feathers, stones, rocks, sheets of paper, pieces of fabric, and structures such as a bird’s nest, a wasps’ nest, a wooden birdhouse or bat house, a dollhouse, Lego structures, craft-stick structures, plastic toys, an umbrella, a hard-boiled egg in its shell, a shoe, a bike helmet, a reusable shopping bag, a plastic cup, and various items from Indigenous culture). Invite students to take turns choosing an item, and discuss as a class whether the item is a structure, and why or why not. Do not correct students at this time, or attempt to form a definition.

CONNECT



Introducing Structures

Introduce the Student Magazine and remind students that words in bold, red font can be found with a definition in the Glossary on page 32.

Have students open their Student Magazine to pages 2–3. Ask a volunteer to read the heading and the text aloud. Have students identify the structures on the spread, and ask:

- **What materials do you think were used to make the painted mailbox?**
(wood, paint, metal hinges and nails)

Invite students to work in small groups to list what other materials they see in the remaining images.



Ask students what they would like to know about structures and materials. Encourage students to generate questions about the objects (use who, what, where, why, when, how or a question matrix). Record their questions on the I Wonder Wall. If necessary, model with questions such as:

- **Why do we have structures?**
- **Why did someone build this structure?**
- **How do people design structures?**



- How are structures made? What materials are used?
- How do you think structures made by humans and animals are different?

Anchor Video

Play the Anchor Video: *Materials and Structures*, which is located on the Teacher's Website. Set a focus for viewing by asking students to think about what makes something a structure. You may choose to pause the video to allow students to answer questions or to discuss any questions which students may have.

After playing the video, work with students to formulate a broad definition for "structure." Record the definition on chart paper and post it on the wall. Have students record the definition in their Science Journals. The definition should include some version of the following points:

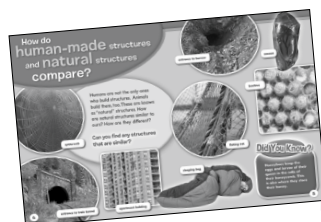
1. A structure is something that is built.
2. A structure is built for a particular purpose.
3. A structure has more than one part.
4. Structures can be built in a variety of shapes and sizes.

Animal or Human?

Ask students to identify any items at the Curiosity Centre that are "natural" (made by or which come from animals). Then show students a variety of images (either digitally or on flash cards), such as an ant colony, a wasps' nest, a gopher hole, and a beaver dam. Encourage students to discuss whether the natural objects on the table and the items in the images should be considered structures, and why or why not. Review the definition for "structure" that students recorded earlier and encourage them to use it to help them decide. Record any unanswered questions digitally or on the I Wonder Wall.



CONSOLIDATE



Is It a Structure?

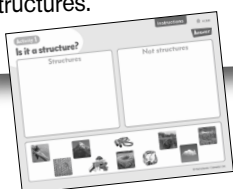
Have students turn to pages 4–5 in their Student Magazine. Invite students to identify the natural and human-made objects on the spread, and discuss how they fit the definition of "structure." Then ask students to read the heading and text. Encourage students to suggest how natural structures are similar to and different from those made by humans. Record students' ideas on chart paper.

Let's Compare

Invite students to choose partners. Ask each pair to choose two similar structures from pages 4–5 of the Student Magazine, one human-made and one natural (students may identify sleeping bag—cocoon; entrance to train tunnel—entrance to burrow; fishing net—web; apartment building—beehive). Have pairs fill in a Venn diagram to compare and contrast the structures. When pairs are finished, they can discuss their diagrams with another pair.

IWB Activity:

- Have students use
- Activity 1: *Is it a structure?* (see the
- Teacher's Website)
- to identify items as
- structures or not
- structures.





Classroom Search

Invite students to explore the classroom and make a list of three structures they see. Students should write a brief explanation of why they think each structure fits the definition they recorded in their Science Journals. Students may take digital photos of their finds using a smartphone, tablet, or digital camera.

Structures Field Trip

As a class, visit an interesting local structure (e.g., a bridge, church, house, or museum, including Indigenous museums or cultural centres). Before the visit, as a class, brainstorm a list of questions that the group would like to have answered. For example:

- **What is a structure made of?**
- **Why did the builders choose that material?**
- **Why is it shaped the way it is?**
- **What holds the structure up?**
- **How was it built?**
- **How are parts of the structure joined?**

Students might interview a guide or caretaker of the structure or talk to long-time local residents about their memories of the structure. Information might also be found at a public library or local historical society.

Classroom Visit

An Elder or Indigenous Knowledge Keeper could be invited to the classroom to describe or show different structures that are part of their culture (e.g., snowshoe, footwear, lodgings, etc.). The visitor could talk about those structures that are still being used, those that were important to traditional life, and how such structures helped them survive on the land.

EXPLORE MORE

Ants!

Provide students with access to tablets, computers, or a TV screen so they can watch an excerpt from the documentary *Ants: Nature's Secret Power* at <https://www.youtube.com/watch?v=IFg21x2sj-M>. The excerpt shows an abandoned giant anthill being excavated. Students can then either draw part of the ant “city” or write about how it is similar to and different from a human-made city.