

# Native American Dwellings



## Overview

The creativity and industrious nature of Native Americans can be witnessed in the design of their homes. Over a dozen types of Native American houses exist, and in this lesson, students will look at well-known Native American house types and engineer one with their team. The students will know and be able to identify Native Americans and their different cultures and rich history in America. In teams, students will learn about Native American housing by using their research skills and sharing interesting facts about their house with the class.

As a result of this activity, students should develop an understanding of:

- engineering and design
- problem solving
- Teamwork
- Different styles of Native American homes

## Education Standards

### TEKS 5.5

**Geometry and measurement.** The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The student is expected to classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties.

### TEKS 5.3

**Scientific investigation and reasoning.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;

## Materials Needed

*For each group:*

- Task cards (included)
- For Wigwam: twigs, sticks, rocks, clay, cardboard base,
- For Teepees: sticks, leaves (different sizes), twine

## Vocabulary

- Waaginogaan (Wigwam)
- Polygon
- Circle
- Parallelogram
- Perpendicular lines
- Line of Symmetry
- Trapezoid

## Student Objectives

- Students will distinguish between temporary, portable, and permanent houses common among Native Americans.
- Students will understand the use of natural materials as pertains to building traditional Native American homes.
- Students will construct a scale model of the traditional home using geometric properties of circles, spheres, rectangles, and triangles.
- Students will be able to list and describe the different types of houses built by Native Americans.

- Students will develop an understanding of the attributes of design and engineering design.
- Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

## Activity

1. Begin by asking students the following question (or do a Chalk Talk with each team):
  - a. What types of houses were common among Native Americans?
2. List their ideas on the board as they are offered (or add to the Chalk Talk).
3. In teams, students explore the engineering design process by selecting one of the three task cards. Each task card will focus on a different Native American dwelling.
4. Before starting the design process, take a nature walk with students to collect items to use in their design of their dwelling.
5. Once back from the nature walk, review the geometry vocabulary cards and the significance of each word (radius, circumference, diameter, perpendicular lines, lines of symmetry, parallelogram, trapezoid).
6. Students will then create a blueprint of their design (making sure to label all parts of their design including geometric shapes found in their design) before construction begins. Students should try to determine ahead of time how much material and the type of material they would need to cover their structure.
  - a. **Wigwam Engineering:** To start the building process students should determine and draw the base shape of a wigwam. Students will create a formal definition of a circle by constructing a “perfect” circle on their board with only a piece of string and pen or pencil. Have a class discussion on how the wire is used to create the framework of the wigwam.
  - b. **TeePee Engineering:** Students will use the materials collected during their nature walk to build a one person teepee. Encourage students to improve their teepees as they build and remind them of the engineering process. Have students list the geometric shapes used in engineering their TeePee.
7. Review with students the significance and purpose behind each dwelling.

## Extension

Once all groups are finished, start piecing together a village by adding/creating pieces representing a scene of an Ojibwe village using everyone's work.

