

Are You A Survivor?

Problem Your Indian tribe has traveled to an unfamiliar territory where the weather and geography (land features) are different than where you grew up. Will you survive? Create a new tool to help you and your tribe survive this new land.

Lesson Summary In this unit, the students will assume the roles of members of a tribe of Indians. As Indians, they will be posed with the problem of creating a tool that will help their tribe survive in this new found land. The tribe members will present their tool.

Major Topic and SOL

Science SOL (2010)	6.1, 6.3, and 6.6
US History I SOL (2008)	USI.2 and USI.3
Mathematics SOL (2009)	6.7, 6.16a
Language Arts SOL (2010)	6.1, 6.2c,e, 6.9a,b,

Length of Time 12 - 90 minute class periods

Student Objectives

- Predict and observe if the tools made may actually help with tribe's survival.
- Explain how tool functions in aiding survival.
- Use tools found in school, home, and work environments as examples when designing tribe's new tool.

21st Century Skills

- Critical-Thinking and Problem Solving
- Communication
- Creativity and Innovation
- Collaboration
- Information and Media Literacy
- Contextual Learning

Assessment Evidence

- In groups of 3 or 4, students will design and create a tool to aide in the survival of their tribe
- Tribe Informational sheet including weather, climate, and location (student created)
- Presentation Criteria Rubric (not included)

Supplies/Materials/Technology

Lesson 1

- Hummingbird Robotics kit (1 per group)
- Computers with the [Visual Programmer Software](#) (1 per group)
- Internet Access
- [Weather Video](#)
- [Climate Types](#)
- [Weather and Climate](#)
- [Atmosphere, Climate, and Weather](#)
- Thermometer, graph paper, and colored pencils
- Presentation Criteria Rubric (not included)

Lesson 2

- Hummingbird Robotics kit (1 per group)
- Computers with the [Visual Programmer Software](#) (1 per group)
- Internet Access
- [Visual Programmer Video Tutorials](#)
- Crafting materials for groups to choose from: empty boxes and containers (cardboard and plastic), tape, scissors, hot glue sticks, popsicle sticks, construction paper, pipe cleaners, pompoms, google eyes, felt, yarn, string, various plastic or paper cups and plates
- Hot glue gun (1 per group)
- Power cords and extension cords (needed to plug in computers, glue guns, and robots for each group)

Lesson 3

- Hummingbird Robotics kit (1 per group)
- Computers with the [Visual Programmer Software](#) (1 per group)
- Internet Access
- [Inuit Indians](#) video
- [Iroquois Indians](#) video
- [Lakota: Indians of the Plains](#) video
- [Pueblo: Indians of the Southwest](#) video
- [Kwakiutl: Indians of the Northwest](#) video

Lesson 4

- Hummingbird Robotics kit (1 per group)
- Computers with the [Visual Programmer Software](#) (1 per group)

- Internet Access
- Crafting materials for groups to choose from: empty boxes and containers (cardboard and plastic), tape, scissors, hot glue sticks, popsicle sticks, construction paper, pipe cleaners, pompoms, google eyes, felt, yarn, string, various plastic or paper cups and plates
- Hot glue gun (1 per group)
- Power cords and extension cords (needed to plug in computers, glue guns, and robots for each group)

Lesson 5

- Hummingbird Robotics kit (1 per group)
- Computers with the [Visual Programmer Software](#) (1 per group)
- Crafting materials for groups to choose from: empty boxes and containers (cardboard and plastic), tape, scissors, hot glue sticks, popsicle sticks, construction paper, pipe cleaners, pompoms, google eyes, felt, yarn, string, various plastic or paper cups and plates
- Hot glue gun (1 per group)
- Power cords and extension cords (needed to plug in computers, glue guns, and robots for each group)

Lesson 6

- Hummingbird Robotics kit (1 per group)
- Computers with the [Visual Programmer Software](#) (1 per group)
- Power cords and extension cords (needed to plug in computers and robots for each group)
- Video camera

Lesson 1: (2 - 90 minute classes)

- To introduce the students to the concepts of weather and climate, show the students the video, [Weather and Climate](#).
- Explain to students they are going to collect temperature data to see how it varies day to day.
- Ask students to brainstorm what other aspects of the weather might influence temperature. (ex., wind, precipitation, cloudiness) They will need to collect data about these factors too.
- Review this [Weather Video](#)
- Review this [Climate Types](#) video
- Show the students the video, [Atmosphere, Climate, and Weather](#). Introduce students to the procedure for taking the thermometer outside. Steps are as follows: 1.) Stand in shade away from buildings. 2.) Wait a few minutes for thermometer to adjust to outside temperature. 3.) Hold thermometer at eye level. 4.) Take a reading. 5.) Record your reading. 6.) Record daily temperature for 5-6 days, note if there is cloudiness, precipitation, or wind.

- In small groups or as a class, have students obtain daily average temperature data from Weather.com. This information is based on the climate of their community. Once they collect the data, they should graph both the weather and climate data to see the difference between the two.
- Once collected and graphed, discuss the difference between weather and climate using high order thinking questions.

Lesson 2: (2 - 90 minute classes)

- Inform the students that they are going to assume roles as a member of an Indian tribe trying to survive in a new environment. They need to create a tool to aide in their tribe's survival.
- They will first have to learn about what is in the Hummingbird Robotics kit, and how to use the programming tool, [Visual Programmer](#) (~12 minutes of videos for learning), researching and watching a few tutorials with their teammates.
- In a group of 3-4 students, brainstorm a design for a survival tool.
- Instruct students to get into their tribe "groups" and discuss possible design solutions.

Lesson 3: (2- 90 minute classes)

- Instruct students to label the locations of the following tribes; Inuit, Kwakiutl, Pueblo, Lakota, and Iroquois, on a United States map that is provided to them.
- Have students use colored pencils to color code the locations.
- Explain relationships among landforms, water features, climatic characteristics, and historical events.
- Review these videos on the Indian Tribes
 - [Inuit Indians](#)
 - [Iroquois Indians](#)
 - [Lakota: Indians of the Plains](#)
 - [Pueblo: Indians of the Southwest](#)
 - [Kwakiutl: Indians of the Northwest](#)

Lesson 4: (1– 90 minute classes)

- Start the class by asking students, if they think their tribe's tool will aide in their survival?
- In the computer lab, have students research their Indian tribe, including their geographical location, climate, and environment. They also need to research the same information on their new environment.

Lesson 5: (3 – 90 minute classes)

- Put the students in groups of 3-4 students and ask them to decide on their group roles:
Project Manager: This person's role will be to keep the group on task with individual roles and responsibilities. They will also be in charge of collecting materials used for the project task(s) and will monitor the time to complete the project(s).

Publicist: This person's role will be organizing a presentation for their group to show how it their tool works, explain how it was put together, and discuss the challenges and successes for the group.

Design Engineer: This person's role will be to be the lead programmer and prototype tester of the group's design(s).

- Have the groups design a tool for their tribe's survival.
- Explain to the students that they are going to use what they learned/reviewed about weather, climate, tribes, and geography by creating a tool using the Hummingbird Robotics kit. Begin class by putting your students into their tribe groups and giving them time to discuss their original designs.
- Inform them that there is a scarcity of their tribe's materials. They are limited to only the materials found in their environments. The teacher will then show students the materials they have to create and build their tool (this will be the crafting materials you provide to each tribe).
- The students will now be able to begin working on their tool and presentation.

Lesson 6: (2 – 90 minute classes)

- Start the class by asking them, if they think their tool will actually contribute to their tribe's survival?
- Students will present their tribe's tool to the class by showing how it works, explain how it was put together, and discuss the challenges and successes for their group.