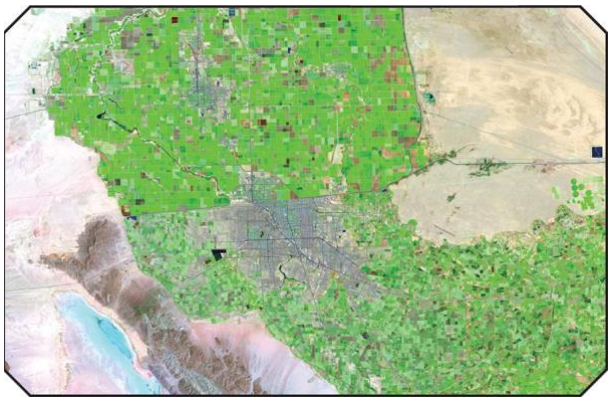
Odyssey of the Eyes

Learners create a 3-D model of an area and develop a classification system for the landforms in their model. They use their eyes as remote sensors and view the model from a variety of heights and perspectives. Students then create maps of the objects they see. The maps can be used to answer certain questions about the environment.

Purpose

To familiarize learners with the importance of perspective and introduce students to various scales of remotely sensed data.



Time

Approximately two 30 to 40-minute sessions

Materials

- ☐ Paper towel or toilet paper tubes
- ☐ A variety of materials (boxes, cardboard, paper, paint, glue, tape, etc.) to make models
- ☐ Ruler
- ☐ Observation Journal
- ☐ Registration Form (included below)
- ☐ Observations of the Model Activity Sheet (included below)
- ☐ Symbolic Map Data Sheet (included below)

What to Do

Preparation

1. Gather all materials prior to the building of the model.
2. Using a common road map or trail map, review the basic components of maps and models such as map keys and symbols.

Part 1: Building and Viewing the Model

1. Learners form groups and write a plan for building a model of an area. Learners should list necessary materials and draw a proposed sketch of their model on the Odyssey of the Eyes Registration Form.
2. Plan to have two 30–40-minute sessions to build the models.
3. Learners will now use their eyes to view the model through a paper towel tube from four different views. This will give learners an opportunity to view a change in **resolution** and a change in **field of view**. Have learners record their observations on the Observations of the Model Activity Sheet.
    a. Mouse's View: Observe the model from the side.
    b. Bee's View: Observe from 10 cm above the model.
    c. Bird's Eye View: With the model on the floor, observe from desk level.
    d. Satellite View: Observe from a second story window or stairwell.

Part 2: Making a Symbolic Map of the Model

1. Have learners pick a symbol to represent each land cover type in their model (roads, rocks, pond, creek, lake, grass, buildings, etc.). List the land cover items and symbols in the Symbolic Map Data Sheet.
2. Use the symbols to create a map of the area in the Observation Journals.
3. Have learner groups exchange symbolic maps, decipher the maps, and write a fictional story about an event that could occur within the mapped environment.

Questions for Review

1. Are there any visual differences between the Bee's View and the Mouse's View? What are they?
2. Compare your four drawings. Which view would be the most useful if you were:
    a. An eagle looking for a mouse?
    b. Looking for animal tracks?
    c. Finding a lost child in the woods?
    d. Seeing how much of the forest has been damaged by storms or pollution?
3. What are the advantages of using satellites to view the Earth? Are there any disadvantages?

Key Words

Resolution: the quality level of an image

Field of view: the maximum area that can be seen

Extension

Collect a few different types of maps. Discuss the purpose of each map. Explore the maps' different scales and fields of view in the discussion.

Acknowledgements

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Odyssey of the Eyes Registration Form

Name: _____ **Date:** _____

Write a short description of the model you are going to create in the space below.

Materials Needed	Provided By

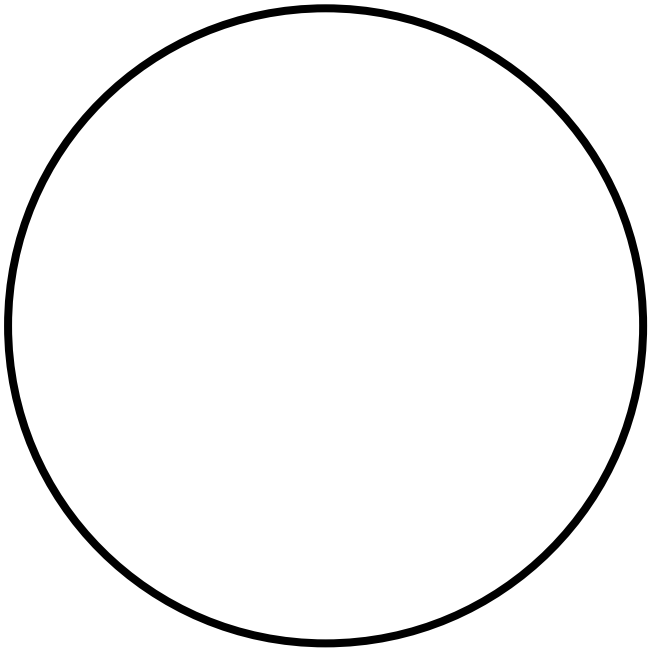
On the back of this page, draw a diagram of the model you are going to create.

Odyssey of the Eyes

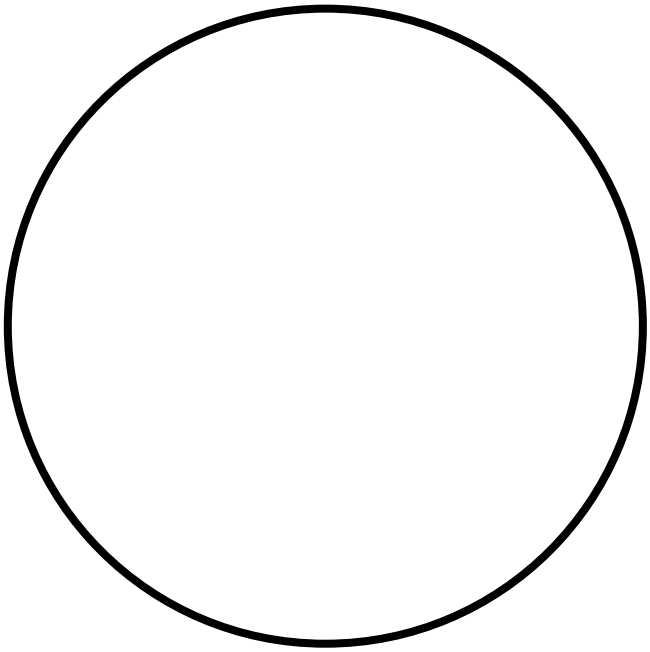
Observations of the Model

Name: _____ **Date:** _____

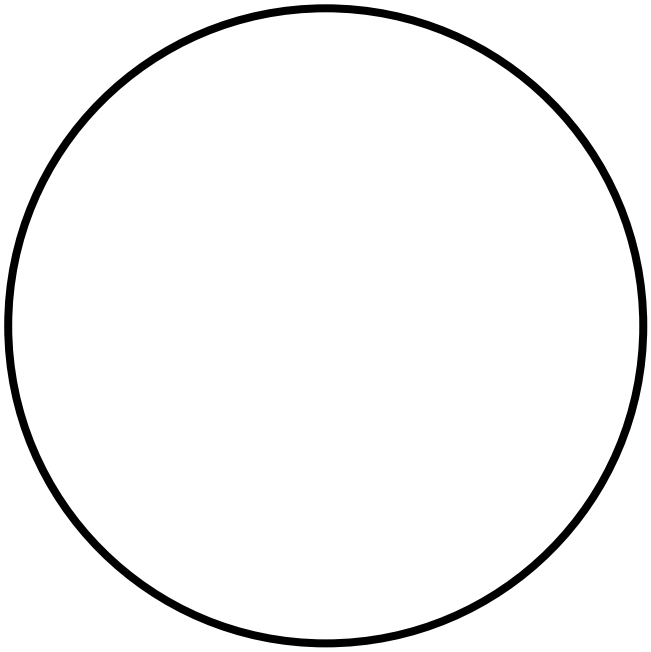
Mouse's View



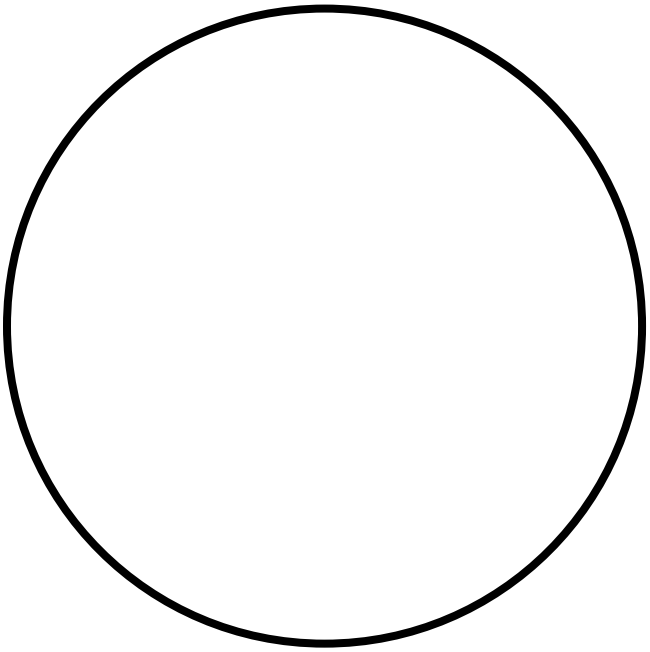
Bee's View



Bird's Eye View



Satellite View



Odyssey of the Eyes
Symbolic Map Data Sheet

Name: _____ **Date:** _____

Land Cover Key

Land Cover Type	Symbol
Example: Road	
Example: Tree	

Use the back of this paper to draw your symbolic map. Include the dimensions of the map in centimeters (length and width).