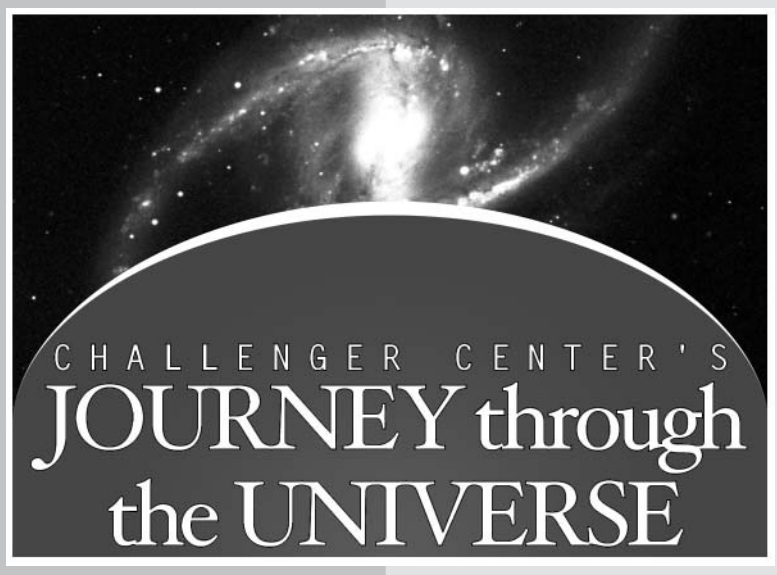

Are There Other Neighborhoods Like Our Own?

Searching for Abodes of Life in the Universe

This lesson is taken from an education module developed for Challenger Center's *Journey through the Universe* program. *Journey through the Universe* takes entire communities to the space frontier.

Start the *Journey* at www.challenger.org/journey.

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Grade Level
K-4

Explore Bigger Neighborhoods

Overview

The essential needs for animal survival are air, shelter, food, and water. The activity "My Hometown" lets students answer the essential question, "where do we get the essential needs for life in our neighborhood?" They then built a model of the neighborhood, labeling local resources that meet essential needs. But in fact, the acquisition of essential needs (and non-essential needs) usually goes beyond our neighborhood.

For example, water (a definite necessity for life) comes directly out of the kitchen faucet. But where does the water come from? How does it get to our house? For those who live in urban areas, this water comes from a water purification facility which, in turn, gets the water from a regional reservoir, which is fed from a river. The river water may come from melted ice off a mountain glacier, which came during a winter snowstorm, which picked up moisture from the ocean. Thus, the water from the faucet may not come from our neighborhood at all—it may come from very far away.

What does it really mean that our water (or any number of other essential resources) doesn't come from our neighborhood? It means that we must rely on other neighborhoods for our survival. It can also mean that other neighborhoods rely on your neighborhood/community for their survival. This dependence, or interdependence, is critical for everyone to understand because what other neighborhoods do can affect your essential resources – what you need to survive.

Some of the resources that fulfill our needs may be beyond anyone's control. The Sun provides energy for Earth in the form of light – we can't regulate the Sun, but we can harness its energy to produce electricity and heat.

ESSENTIAL QUESTION

Why are we dependent on neighborhoods outside of our own?

OBJECTIVES

Students will:

- **Develop a list of resources outside their own community.**
- **Identify other neighborhoods outside of their own.**

In this activity, students will go beyond identifying where to find the resources to meet their essential needs within their own neighborhood. They will research the actual source of these resources. They will determine if essential needs can be found locally or beyond their neighborhood. If beyond their neighborhood, they'll research where the resources come from.

MATERIALS

- If the activity, "My Hometown," has been completed, use the existing list of essential needs and resources.
- Magazines
- Scissors
- Arrows
- Glue

Procedures

1. If you have already completed the "My Hometown" activity, have students review their Essential Needs list from the activity. If you haven't, have students imagine themselves stranded on a deserted island. As a class, brainstorm the resources they would need to survive. When finished, narrow the list down to those resources that are fundamental to human survival (e.g., air, food, water, shelter, or a comfortable environment). Have students then brainstorm where they get these resources within their own neighborhood (their own community). For instance, they might get food at home, at a restaurant, or even at school.
2. Many of these essential resources are brought into their neighborhood by truck. Some, like air, flow in naturally. Have students identify all the resources on their list that do not come from within their neighborhood. Have them think carefully about each item. (e.g., What is the hamburger you're eating made of? Where is it made? Where do the ingredients come from?)
3. Allow students to add to the list other resources where the raw materials are not found in their neighborhood, even if they are not "essential" (e.g., gasoline, even information).
4. Once students have identified resources that are brought into their neighborhood, have them research the sources of those resources. Have them place special emphasis on the essential resources that are fundamental for human survival. Students can use the library, Internet, interviews, and other sources for their research.
5. Have students label each of the arrows on the Student Worksheet with one of the essential resources that comes from outside their neighborhood, including food, water, and air.
6. If students completed the My Hometown activity, have them cut out the arrows and attach them to the base of their neighborhood model to indicate that these essential resources come from other neighborhoods.
7. Using the magazines, have students cut out small pictures to use as a key to represent each of the resources.
8. Have students cut the pictures in half and attach one half of a picture to the appropriate arrow.

9. Once the students have completed their research, have them create a Mind Map using the second half of the pictures.
10. The Mind Map should include the pictures, labels identifying the essential resources, and text and graphics describing the sources of the essential resources.
11. When their research is complete, have the students give an oral report about where the resources come from and how they get into their neighborhood.
12. You may wish to discuss the importance of looking at the "big picture." Why do we need to care about other neighborhoods, and not just our own?

Questions and Conclusions

1. How far did the glass of water coming out of your sink travel to get to you?
2. How many neighborhoods were required to produce an apple pie? Where did the apples, flour, oil, and vanilla come from?
3. Explore with the students the interconnectedness of all the neighborhoods of planet Earth.

ASSESSMENT

Students' work can be evaluated using the following rubric:

4 Points
- Report is complete.
- At least four outside resources are identified.
- Oral report is clear and understandable.

3 Points
- At least three outside resources are identified.
- Oral report is clear and understandable.

2 Points
- At least two outside resources are identified.
- Oral report is difficult to understand.

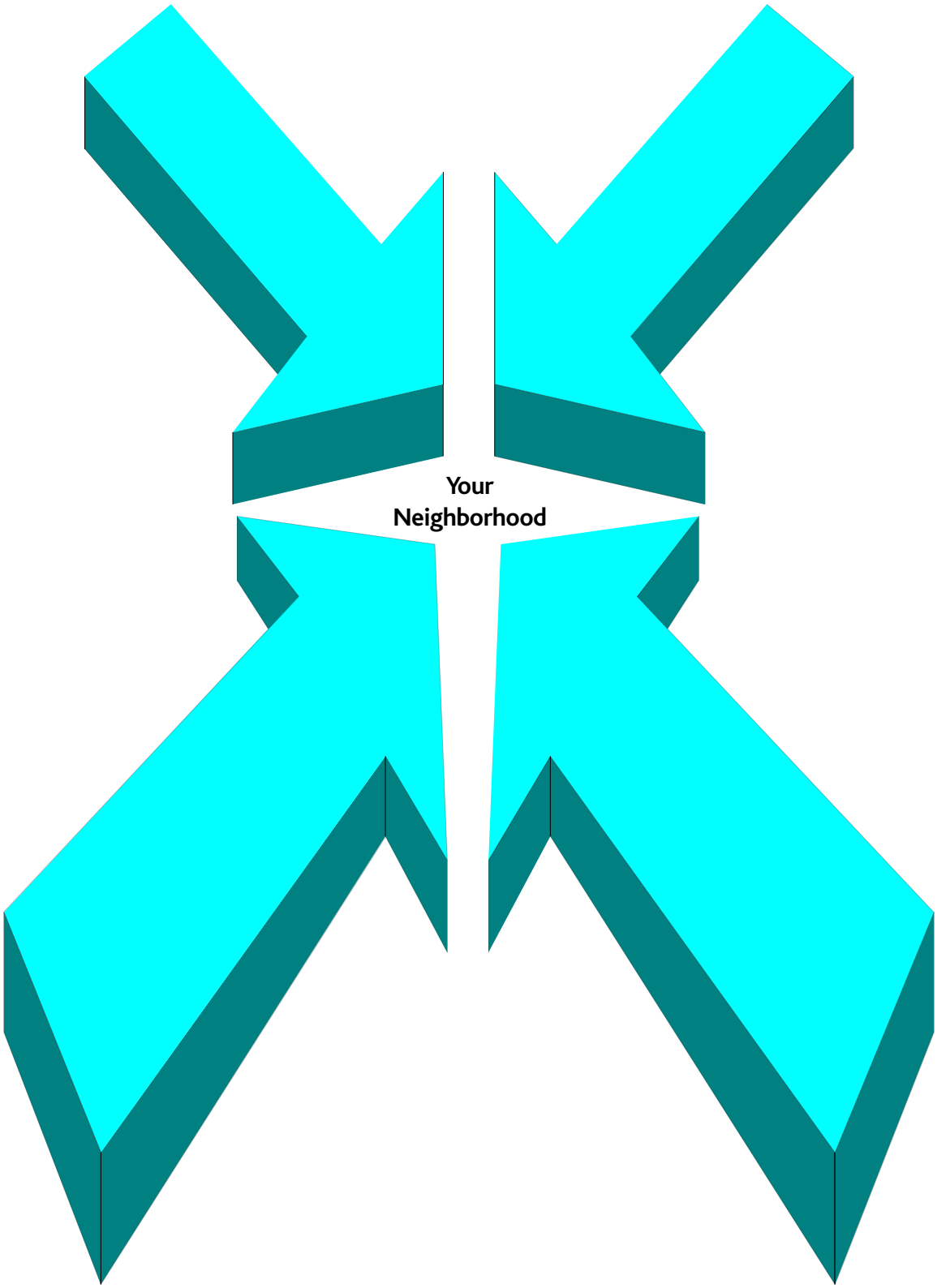
1 Point
- At least one outside resource is identified.
- Oral report is difficult to understand.

0 Points
- No outside resources are identified.
- Off topic or unrelated.
- Oral report not completed.

Transfer and Extension

1. While we are often dependent on materials from outside our neighborhood, there are times when foreign materials are not welcome in a community. Research the presence of South American cane toads and rabbits in Australia, snakes in Guam, or gray squirrels in England. Discuss the potential down side of bringing outside materials into a community.

Student Worksheet



Challenger Center Programs

The internationally acclaimed **Challenger Learning Center** Network currently consists of state-of-the-art, innovative educational simulators located at 49 sites across 29 states, Canada, and the United Kingdom. Staffed by master teachers, the core of each Center is a two-room simulator consisting of a space station, complete with communications, medical, life, and computer science equipment, and a mission control room patterned after NASA's Johnson Space Center. See *www.challenger.org* for information.

A joint initiative of Challenger Center for Space Science Education, the Smithsonian Institution, and NASA, ***Voyage — A Journey through our Solar System*** is a space science exhibition project that includes permanent placement of a scale model solar system on the National Mall in Washington, DC, and at locations all over the world. See *www.voyageonline.org* for information.

Space DaySM launches new *Design Challenges* created by Challenger Center each school year. The inquiry-based challenges are designed to inspire students in grades 4-8 to create innovative solutions that could aid future exploration of our solar system. See *www.spaceday.org* for information.

Challenger Center's ***Journey through the Universe*** program provides under-served communities with diverse national resources, including K-12 curriculum materials, teacher workshops, classroom visits by scientists from all over the country, and Family Science Nights. See *www.challenger.org/journey* for information.

The **MESSENGER** spacecraft (MErcury Surface, Space ENvironment, GEochemistry and Ranging) is to be launched in 2004 and go into Mercurian orbit in 2009. Challenger Center is one of the partner organizations charged with MESSENGER education and public outreach activities. See *www.messenger.jhuapl.edu* for information.

Through the Challenger Center **Speakers Bureau, Voyages Across the Universe**, staff members speak to student audiences of 30-1,000, conduct workshops for 100-300 educators, give keynote and featured presentations at conferences, as well as conduct Family Science Nights at the National Air and Space Museum, and other facilities across the nation, for audiences of 300-1,000 parents, students, and teachers. See *www.challenger.org/speakers* for information.

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