# The Planet Wakyabi

## Summary

This lesson focuses on students understanding how organisms' specialized structures and variations work with the environment to help them survive.

# Materials

- Quick Introduction for Planet Wakyabi (pdf)
  - Optional
- Large Poster of The Planet Wakyabi (pdf)
- Organism Description handout (pdf)
- <u>Humanoid of handout</u> (pdf)
- Animal of handout (pdf)
- Insect of handout (pdf)
- <u>The Planet Wakyabi Mix and Match for Survival Test</u> (pdf) Colored pencils, crayons, markers

# Background for Teachers

This lesson focuses on students understanding how organisms' *specialized structures* and variations work with the environment to help them survive. Previous discussion of each of these terms separately is advised, but not necessary. If you have not taught each of these, take it a little slower in the beginning and give more examples of the vocabulary terms in the discussion. This is a good lesson to help students see how they all work in tandem.

Discuss planet Earth and how it has many different types of habitats. Describe how different locations on Earth have different weather conditions that change throughout the year. Introduce students to the Planet Wakyabi—a large planet drawn on a poster board. It shows mountains, marshes, volcanoes, jungles, deserts, and more, identified in a key. Students will describe the different landmasses by the key symbols and name them. Students come up with the different habitats in the world while you write the information on the poster. It is the students' job to inhabit the planet with animal, humanoid, and insect life forms. Each student is assigned a different landmass and a different type of species to create. Discuss the need to pay attention to the environment assigned and give their species particular specialized structures and variations to ensure its survival. When finished, share with the class.

# Intended Learning Outcomes

- 1. Use Science Process and Thinking Skills
- 4. Communicate Effectively Using Science Language and Reasoning

# Instructional Procedures

# Invitation to Learn

Ask, "If tomorrow a strange chemical filled the air and we all suddenly grew massive coats of fur that couldn't be shaved off, how might that change the way we live?" Have the students consider the question for a moment silently and then call on students for answers. Listen for students moving to colder climates because it is too hot with their new fur coats. See if they pick up on how that variation might change what type of environment we choose to live in. Transition into the lesson. Refer to the opening question at the end of the lesson to determine student understanding of this concept. An optional *Quick Introduction for Planet Wakyabi* is provided.

Instructional Procedures

Brainstorm the Earth's many different types of habitats. List them on the board as students brainstorm (e.g., hot, cold, wet, humid, dry, rocky, flat, marsh areas, etc.). Discuss how different locations on the planet have different weather conditions and how it changes throughout the year as we rotate around the sun. Some areas are always consistent—which ones? (The poles and the equator—always freezing and always hot.)

Now introduce them to the *Planet Wakyabi* —a large planet drawn on a poster board. Show mountains, marshes, volcanoes, jungles, deserts, and more, using a key and symbols. Don't describe the different areas beforehand. Instead, have the students describe what the different symbols probably stand for. As they decide, write what they are on the key. Guide the discussion so you end up with different landmasses with various habitats. Discuss the weather of each area and what it would be

like according to where it is (close to the poles/equator, etc.). Write the description on the map. Choose students to name the landmasses like countries.

Discuss the probability of Planet Wakyabi having many different types of organisms living there. The organisms have interesting variations and specialized structures that allow them to survive on the different parts of the world. Imagine that this is a world like ours was millions of years ago—no cars, planes, refrigerators, roads. What kinds of specialized structures would humans, animals, and insects need to survive?

It is the students' job to populate Planet Wakyabi. They will be creating a *Humanoid*, *Animal*, or *Insect*, *Animal*, life form to populate one of the landforms on the planet Wakyabi. Each student is assigned a different type of species to create (for variety). You can decide if you want to assign landmasses or allow students to decide where the new life form is going to live. Pay attention to the environment and give their species particular specialized structures and variations to ensure its survival.

Students must add at least three specialized structures to their animal in order to help it survive. When they are finished creating and coloring their animal, insect, or humanoid, write a descriptive summary using the *Organizm Description* handout about their organism (one to two paragraphs), describing the three main variations. Remind them to use vocabulary terms in their summary.

Share the new species with the group. Use the discussion time to point out how the environment, specialized structures, and variations all work together to help the species organism survive. Display pictures and descriptions in the hall with Planet Wakyabi.

## Strategies for Diverse Learners

## **ESL/Special Needs Students**

It is easier for some students to take an animal that already exists and make changes to it instead of coming up with an entirely new species. Some students need a brainstorming session to help them think of neat specialized structures—get their ideas flowing with questions such as, "If you could be any animal, what would it be? Why? What can it do that you like? Maybe you should put that on your animal? What other animals do you like?" Their new species may end up a hodge-podge of many other existing animals!

#### Gifted and Talented

Allow students that are caught up in the project or finish early to create plant species or oceanic organisms for Planet Wakyabi. Be sure to include a written description of the new organism.

#### Extensions

#### Language Arts

Students write fictional stories about the organism they created for Planet Wakyabi and an

adventure on the planet. As a class, brainstorm a dangerous plot that threatens the survival of all organisms on the planet. Students write individual stories about what happens to them and how their organism survives using its variations and specialized structures. Read stories aloud and compare. Have students vote on their favorite ending.

#### Science

This lesson is a good opening/connecting lesson into a science unit on landforms. Students enjoy revisiting this planet and talking about how the environments and their inhabitants change with earthquakes, volcanic eruptions, erosion, etc.

## Social Studies

Study the great waves of immigration the United States felt at the beginning of the 1800's and the 1900's and discuss how the "melting pot" of America mixed variations in humans that were separate for hundreds of years.

#### Writing Extension

Create a graphic organizer with three triangles around a center triangle. Have each outer triangle say the words *specialized structures, variations, environment* and the inside one say *survival*. The students describe and give an example of what each of these words are and explain how they work with each other.

## Family Connections

Students take their species home and share it with their family. A sibling or parent can help add more variations to share with the class.

Students take a blank organism form home and invite their family members to create a new species that lives in the Wakyabi oceans.

Have students research the wildest specialized structure they can find on the Internet of an animal, plant, or insect. Share with the class.

#### Assessment Plan

Students complete *The Planet Wakyabi Mix and Match for Survival Test.* Provide the definitions of *specialized structure, variations, environment*, and *survival*. Have the students write a short story about a fictional pair of animals. They must correctly use the four terms in context to demonstrate understanding of meaning and how they work together.

#### Authors

Utah LessonPlans