

THROWING SHADE BALLS



STUDENT WORKBOOK

ACCELERATE



FLOATING BALLS

Reservoirs help communities conserve water. In recent years, some have been covered by plastic spheres. What is the purpose of these objects?

SHADE BALLS

There are many types of bodies of water, such as oceans, rivers, lakes, and reservoirs.

Each body of water has different qualities.

- Oceans are a home for many organisms. An **organism** is any living structure that can grow and reproduce, such as plants and animals.
- Lakes are places where water collects, and they can be natural or human-made.
- Rivers are natural structures that carry water from higher to lower elevations.
- **Reservoirs** are human-made structures used to collect water for future human use.



Different bodies of water experience different climates. **Climate** is the set of weather conditions that exist in an area in general or over a long period of time. Some climates are moist and cool, while others are hot and dry. In areas where the climate is hot and dry, one might see shade balls in reservoirs.

Shade balls are black or white plastic balls that float on the surface of a body of water to block the sun from heating up or evaporating the water as quickly. This allows a reservoir to store water for longer, leading to more water being available for people to use.



Black shade balls in the Ivanhoe Reservoir.

PLANTS AND ALGAE

Explore and test the impact of shade balls on ecosystems using the plants you started growing.

LEARNING GOALS:

- ✓ I can show how energy is transferred from the sun to plants to animals.
- ✓ I can show how the availability of resources affects organisms and populations in an ecosystem.

SHADE BALL EXPERIMENT

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Set-Up

In this section, you will be working with the plants you started growing in the previous section. Make sure that your seeds have sprouted before continuing. This should take 3–7 days. If they do not sprout in that time, plant new seeds and try again. You can move on to the next section if your sprouts are not ready yet.

WHAT YOU NEED:

FROM THE KIT:

- Foam beads
- Graduated cup
- Invisible tape
- Plants in pie plates (from Activity 1)
- Poly bag

OTHER:

- Scissors

WHAT TO DO:

STEP 1 Cut the poly bag to make three circles approximately 14 centimeters (cm) in diameter. Each should cover the top of the pie plates.



STEP 2

Tape one circle to the top of each pie plate. It should fit loosely.



REFLECT

? How well did your prediction match your results? Explain.

7 WHAT'S FOR LUNCH?

Diets

In your experiment, you will find that foods in a sunny, warm location with direct contact with the soil will decompose the fastest. The foods in the cool, dark location without direct contact with the soil decompose the slowest. This is because there are microorganisms, such as bacteria and fungi, in the soil.

Microorganisms (microscopic organisms) can only be seen under a microscope. Even though they are small, they have a big job to do. Microorganisms are found everywhere, including in and on our bodies. No matter where they are found, microorganisms are **decomposers**. This means that they decompose or break down organic material.



You have probably heard the word organic before and it has many meanings depending on how you use it. You may have purchased organic produce from the supermarket. Organic food is food grown without the use of pesticides and fertilizer.

Another definition of organic is material that is living or was once living. If something is organic in origin, it came from living things or organisms. Organic material could be body tissues or decayed organisms. This is the organic we mean for our definition of a decomposer.



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