

# Fifth Grade

## Survivor

### Core Concepts

1. Identify internal and external features animals have to allow them to survive.
2. Identify internal and external features plants have to allow them to survive.
3. Analyze how animals gather and respond to information.
4. Create a game that teaches others about how plants and/or animals are adapted for their environment.

### Essential Vocabulary

Adaptation	Attribute	Behavior	Camouflage	Capillary Action
Carnivore	Consumer	Ecosystem	Environment	Habitat
Herbivore	Invasive Species	Migration	Native	Non-Native
Omnivore	Organism	Predator	Prey	Producer
Species	Structure	Survive	Trait	

### STEM Fair Ideas

1. How does blubber help seals and whales survive in frigid waters?
2. How does burrowing underground help animals stay warm in cold temperatures and stay cool in hot temperatures?
3. How can variations in color help some butterflies hide better than others?
4. What type of bird beak is best for sipping nectar? Finding worms? Catching bugs in the air? Scooping fish out of the ocean?
5. Why does moss/lichen and succulents stay so small and close to the ground when other plants do not?
6. How does a waxy coating on the leaves and stem stop plants from drying out?
7. What is mimicry? Why would an animal or plant want to look like something different?
8. How does having an opposable thumb help apes and humans complete tasks that other animals cannot?
9. How do desert plants survive?
10. What is phototropism? How does the placement of the light affect how the plant grows?

# Fifth Grade

## Earth and Space

### Core Concepts

1. Observe the patterns of the night/day cycle as well as shadows. These patterns can be used to confirm the motions (rotation and revolution) of the Earth. Patterns of motion can be used to predict future motion.
2. Recognize that stars range greatly in size and distance from Earth and this can explain their apparent brightness.
3. Observe and explain the effect of gravity on an object results in a change of motion. Some forces act through contact, some forces act even when the objects are not in contact. The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center.
4. Observe the night sky in order to keep a moon journal at home.

### Essential Vocabulary

Apparent Brightness	Axis	Celestial Objects	Constellation
Gravity/Gravitational Force	Orbit	Revolution	Rotation

### STEM Fair Ideas

1. How does the angle of the sun affect the appearance of shadows?
2. How does the distance of a light source affect its brightness?
3. How does the diameter of a beam of light affect its brightness?
4. How does gravity affect the movement of a pendulum or swing?
5. Does the weight of an object affect how fast it falls due to gravity?
6. Create a sundial and explain how the shadows tell the time.
7. Use different colored light bulbs to test if the color of the light affects its visibility at night from different distances.
8. When an object falls from a greater height, does it hit the ground with more force?
9. Attach a magnet to the middle of a sheet of cardboard and prop it up to make a ramp. Take a needle or paper clip and let it slide down the ramp away from the magnet. Does it go straight down or does the magnet affect its path? Try moving the path of the needle/paper clip closer to the magnet. What happens? Why?

# Fifth Grade

## Earth Systems

### Core Concepts

1. Identify the essential components and interactions of the four earth systems.
2. Describe how the four major earth systems interact.
3. Explain why freshwater is important and where humans can find freshwater.
4. Understand that most freshwater is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere.
5. Identify the positive and negative effects on the environment as a result of human activity.
6. Understand that individuals and communities are doing things to help protect earth's resources and environments using scientific ideas.

### Essential Vocabulary

Atmosphere	Biosphere	Ecosystem	Environment	Geosphere
Glacier	Ground Water	Hydrosphere	Interact	Organisms
Reservoir	System	Water Cycle	Natural Resources	

### STEM Fair Ideas

1. What effect does trash have on the cleanliness of water?
2. How does salt affect the moisture of different substances?
3. Use different substances (rocks, sand, charcoal, coffee filters, etc.) to filter dirty water to see what helps keep our water clean.
4. Spread a layer of petroleum jelly on the plastic or glass front of a picture frame. Place it in different locations inside and outside to see what's in the air.
5. Create an oil spill on top of a basin of colored water. Try different materials to soak up the oil. What works? How do you soak up the oil without soaking up the water?
6. Research ways people are trying to keep plastic out of the oceans. Set up an experiment that tests one of these ways. Does it work?
7. Recreate the colored water and celery experiment but add motor oil or extra fine glitter to the water. Does the celery "drink" these pollutants?
8. Show how groundwater gets polluted by filling a clear jar with water, large rocks, small rocks, and soil. Slowly drizzle oil on the top of the soil and observe what happens. Does "rain" make the oil travel faster?