

## Grade 5 Science

### **Describe and graph the motion of objects.**

- Describe the position, speed and direction of a moving object in terms of distance and time.
- Measure and graph the motions of various objects (without calculations)

### **Understand that forces are constantly acting on (pushing or pulling) objects on the Earth.**

- Identify contact (touching) and non-contact forces acting on a moving or stationary object.
- Describe how constant motion is the result of balanced (zero net) forces.
- Describe acceleration as speeding up or slowing down.
- Relate unbalanced forces to acceleration (speeding up, slowing down, changing direction).
- Describe what happens when two forces act on an object in the same direction or opposing directions.
- Relate strength of unbalanced force acting on an object to the size of the change in motion of the object.
- Relate the size of change in motion to the mass of an object.

### **Explain how the characteristics of plants and animals allow them to survive and reproduce in their environment.**

- Describe various physical and behavioral characteristics of animals.
- Recognize the diversity of living organisms, and explain how scientists group them based on their physical features (Groupings: flowering/non-flowering plants; invertebrates/vertebrates; invertebrates: insects/spiders/worms; vertebrates: mammals/fish/reptiles/birds/amphibians).
- Describe how fossils provide evidence about how living things and environmental conditions changed over time.
- Explain what can happen to a species when its environment changes.

### **Explain that the traits of an individual are influenced by both environment (acquired traits) and genetics (inherited traits).**

### **Describe how animal systems work together to maintain the basic needs of the animal.**

- Describe the basic needs of living things (air, water, food)
- Describe the following body systems: digestive (mouth, saliva, stomach, small intestine, large intestine); circulatory (heart, blood vessels/arteries/veins); respiratory (lungs); excretory (kidneys); skeletal; muscular; nervous; and reproductive (related to reproductive health curriculum).
- Explain the general purpose of the body systems listed above, in terms of the animal's basic needs.

### **Design models demonstrating the seasons and the positions and motions of the planets and other objects around the sun.**

- Explain how the orbit of the earth around the sun is used to define a year. Explain how the rotation of the Earth on its axis is used to define a day.
- Explain the apparent motion of the stars (constellations) and the sun across the sky.
- Give evidence from observations in the night sky that the planets orbit the sun.
- Demonstrate and explain seasons using a model.
- Design a model of the solar system that shows the relative order and scale of the planets, dwarf planets, comets, and asteroids to the sun.

### **Explain moon phases, eclipses and tides in terms of the motions of the moon around the Earth.**

- Understand that gravity holds the moon in its orbit around the Earth.
- Explain where the moon's light comes from. (reflected from the sun)
- Show on a model where the daylight and nighttime sides of the moon are in relation to the sun.
- Explain the phases of the moon.
- Explain lunar and solar eclipses.
- Explain how the waters in the ocean respond to the gravitational pulls of the sun and the moon (that is,

explain tides).