
TEKS K.6 Force, motion, and energy. The student knows that energy, force, and motion are related and are a part of their everyday life. The student is expected to:

(C) observe and describe the location of an object in relation to another such as above, below, behind, in front of, and beside.

Background Knowledge

Light, heat, and sound are forms of energy. Energy makes it possible to do work for organisms to grow, and can cause matter to change. Energy makes people and objects such as cars and computers move. When something moves, we say it is in motion.

Plants use light energy from the Sun to grow, and then animals get energy from eating the plants. The Sun gives us light and heat energy. Sound is caused by the back and forth motion of the tiny particles that make up all matter. The motion or vibration of these particles allows sound to travel to our ears so we can hear.

A force is a push or a pull. We use a pushing force to throw a ball. When we walk, we push against the ground with one foot as we pull the other foot up to take another step. To open a car door, we pull it to get in and push it to get out.

Energy, force, and motion are all around us, and we use them every day.

Essential Questions

What words do we use to describe the location of an object?
(Above, below, behind, in front of, and beside)

How can you tell if something has moved?
(If something moves, its motion and/or its location changes.)

What makes objects move?
(A force such as a push or pull.)

What is energy?
(It is the ability to do work or to cause matter to change.)

Where Are You Now?

Objectives:

- To describe their location relative to other objects' locations.
- To realize that an object's location can change.
- To realize that an object's location relative to one person may be different when comparing its location to someone else's.

Materials:

An object to use for demonstrating, including a stuffed animal
Large colored paper or chart paper for each group
Markers
Journals
Cardstock or sheets of white paper

How to Conduct:

I.

- Bring two volunteers to the front of the room.
- Have them stand side-by-side, an arm's length apart.
- Hold the object between them.
- Ask: Which words describe the location of the object compared to the two students? (Have the words "beside", "above", "in front of", "behind", and "below" written on the board.)

II.

- Have the two students turn to one side so they are in line and facing the same direction.
- Hold the object between them.
- Ask: Which word describes the location of the object as compared to the first student? (Behind) As compared to the second student? (In front of)
- Repeat the process for "above" and "below" with either student.

III.

- Divide the students into groups of three.
- Place an object, such as a stuffed animal, in the middle of the room.
- Write each one of the directional words (Above, between, in front of, behind, and below) on a sheet of cardstock or paper and give one to each group.
- Instruct each group to examine what is beside, above, etc., the stuffed animal.
- When asked, each group will tell what object's location, compared to the stuffed animal's location, matches the word on their sheet of paper.
- Have the students write the words in their journal, and draw a picture that shows an example of the word.

It's Relative

Objectives:

- To describe their location relative to the location of other objects.
- To realize that the location of an object may be different when comparing its location to someone else.

Materials:

A grid map of the classroom with students' names marking their locations and important objects drawn/labeled on the grid.

A set of 3 cards per group with one of the words written on each card—"beside", "in front of", "behind."

How to Conduct:

- A. Create a "map" of the classroom on a large grid with students' names showing where they sit.
 - Put important objects on the grid: teacher's desk, door, bookshelves, etc.
 - Point to a student's name on the grid and an important object.
 - Ask: Which card best describes the student's location relative to the object's location?

(Group members discuss and choose the card that fits.)

Simon Says

Objectives:

- To describe their location relative to the location of other objects.
- To realize that the location of an object may be different when comparing its location to someone else's.

Materials:

Will vary

How to Conduct:

- The students take turns calling out instructions for the “Simon says” game. Instructions could include: “Hold your book above your head”, “Behind your head”, “Beside your desk”, etc.