



Which Way Did She Go?

Science

Things on the Move

The sequence of events keeps the story moving in tale of Cinderella. There is also movement throughout of other things—moving feet, mice running, a pumpkin carriage, a twirling wand, a bell ringing, all bringing about action from start to finish.

National Standards > Science

NS.K-4.1 Science as Inquiry (Grade K-3)

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

NS.K-4.2 Physical Science (Grade K-3)

- Properties of objects and materials
- Properties and changes of properties in matter
- Position and motion of objects
- Motions and forces
- Light, heat, electricity, and magnetism
- Transfer of energy

Kentucky: Science > Physical Science

2. Students shall develop their abilities to apply core concepts and principles from mathematics, the sciences, the arts, the humanities, social studies, practical living studies, and vocational studies to what they will encounter throughout their lives.

Properties of Objects and Materials (2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time)

2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.

(Grades K-3)

SC-E-1.2.2 An object's motion can be described by measuring its change in position over time such as rolling different objects (e.g., spheres, toy cars) down a ramp.

SC-E-1.2.3 The position and motion of objects can be changed by pushing or pulling. The amount of change in position and motion is related to the strength of the push or pull (force). The force with which a ball is hit illustrates this principle.

Ohio: Science>Science> Physical Sciences

- Demonstrate an understanding of the composition of physical systems and the concepts and principles that describe and predict physical interactions and events in the natural world.
- Demonstrate an understanding of the structure and properties of matter, the properties of materials and objects, chemical reactions and the conservation of matter.
- Understand the nature, transfer and conservation of energy, as well as motion and forces affecting motion, the nature of waves and interaction of matter and energy.

Benchmark(s) Grades K-1)

B. Recognize that light, sound and objects move in different ways.

Benchmark(s) Grade 2)

A. Recognize sources of energy and their uses.

Note: Emphasis for Grade 2 is on the movement of sound and light.

Benchmark(s) Grade 3

B. Describe the forces that directly affect objects and their motion.

Ohio: Science>Scientific Inquiry

- Develop scientific habits of mind as they use the processes of scientific inquiry to ask valid questions and to gather and analyze information.
- Develop hypotheses and make predictions.
- Reflect on scientific practices as they develop plans of action to create and evaluate a variety of conclusions.
- Communicate findings to others.

Benchmark(s) Grades K-2

A. Ask a testable question

B. Design and conduct a simple investigation to explore a question.

C. Gather and communicate information from careful observations and simple investigation through a variety of methods.

Benchmark(s) Grade 3

B. Organize and evaluate observations, measurements and other data to formulate inferences and conclusions.

Objective

Student will:

- Explore and examine the various ways things move.
- Explore and examine the ways to change how something moves through push and pull, rolling, change of speed and direction, etc.

Assessment

Student will be able to:

- Recognize the force that is causing movement of an object (e.g., push and pull, gravity, magnetism, collision, vibration, friction, etc.)
- Sample items to gauge student understanding:

1. What is force? (power or energy)
2. What is motion? (change of place or position)
3. Describe three things that move and how. (e.g., car moving on wheels, roller coaster moving *due to speed, etc.*)

Vocabulary

- Force
- Motion

Materials

- (Learning stations to be set up at the teacher's discretion for students to explore movement of objects through push and pull, gravity, magnetism, collision, vibration, friction, etc.)

Activity 1

Going From Here to There

Teacher will:

1. Prepare for students' study of force and motion by designing and setting up hands-on stations around the room through which students will rotate observing, exploring and examining forces that generate movement (e.g., push and pull, gravity, magnetism, collision, vibration, friction, etc.).
2. Introduce/review the concept of force and motion to address how the various ways things move.
3. Have students reflect and brainstorm various movements of objects and people in the production, Cinderella.
4. Have students suggest what force allowed an object to move (e.g., feet, wheels, etc.)
5. Explain to students directions for their rotation through the learning stations. At each station will be available an observation sheet for student completion.
6. Regroup students (whole class) to share findings of experimentation and observation.

Students will:

1. Identify objects of movement in the production, Cinderella.
2. Rotate through hands-on learning stations to experience and observe the various ways things move.
3. Summarize findings of experimentation and observation.