

Cinderella and Fella Post-Show STEAM Lesson

PURPOSE OF THE LESSON

Students will create a form of transportation for Cinderella to travel to the castle.

ENDURING UNDERSTANDING

Friction affects the way an object moves.
Weight affects the way an object moves.

ESSENTIAL QUESTIONS

- How do objects move?
- What does a successful problem solver do when he encounters a problem?
- How did you choose which materials to use?
- Was it important to your group to make the vehicle visually pleasing?

SUBJECTS

Engineering

ART APPROACH

Visual Art

SUCCESS INDICATORS/ASSESSMENT

Formative assessment includes observation of students by the teacher with goal of 90% of the group reaching the objectives of the lesson. Students will complete a recording sheet to show their work.

STUDENT PRIOR KNOWLEDGE

Students will have attended the performance of *Cinderella and Fella*.

BIG IDEA AND ESSENTIAL QUESTION	OBJECTIVES	VOCABULARY	MATERIALS	KEY QUESTIONS FOR STUDENTS
<p>BI: Students will create a mode of transportation for Cinderella that will move.</p> <p>EQ: How do objects move?</p>	<p>Students will create a carriage out of materials that moves across a flat surface.</p>	<p>Push, pull, friction, motion, heavy, light</p>	<p>Pipe cleaners, feathers, tape, paper clips, tissue paper, straws, egg cartons, string</p>	<p>Why would Cinderella need transportation to the castle?</p> <p>Why did you choose this form of transportation?</p>

STANDARD GPS/CORE CURRICULUM

S2CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

- a. Raise questions about the world around them and be willing to seek answers to some of the questions by making careful observations and measurements and trying to figure things out.

S2CS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.

- a. Use ordinary hand tools and instruments to construct, measure, and look at objects.
- b. Assemble, describe, take apart, and reassemble constructions using interlocking blocks, erector sets and other things.
- c. Make something that can actually be used to perform a task, using paper, cardboard, wood, plastic, metal, or existing objects.

S2CS4. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- a. Identify the parts of things, such as toys or tools, and identify what things can do when put together that they could not do otherwise.
- b. Use a model—such as a toy or a picture—to describe a feature of the primary thing.
- c. Describe changes in the size, weight, color, or movement of things, and note which of their other qualities remain the same during a specific change.
- d. Compare very different sizes, weights, ages (baby/adult), and speeds (fast/slow) of both human made and natural things.

ELAGSE2RL1: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

ELAGSE2RL3: Describe how characters in a story respond to major events and challenges.

VA2PR.1 Creates artworks based on personal experience and selected themes.

- a. Creates artworks to express individual ideas, thoughts, and feelings from memory, imagination, and observation.
- b. Creates artworks emphasizing one or more elements of art (e.g., space, line, shape, form, color, value, texture) and principles of design (e.g., balance, repetition).
- c. Combines materials in new and inventive ways to make a finished work of art.

PROCEDURES

1. Introduce the lesson by reviewing the scene in which Cinderella begins her travel to the castle.
2. Discuss the use of the fireflies and how they guided Cinderella.
3. Ask students, "How might Cinderella have traveled to the castle faster?"
4. Place students in groups of 3-4. Express clear guidelines on how they will create their mode of transportation:
 - a. 1 egg carton, 1 piece of string, 1 straw, 10 centimeters of tape, 10 feathers, 2 pipe cleaners, 3 paper clips, 3 pieces of tissue paper
 - b. Students will be given 20 minutes to design and create their mode of transportation.
5. Allow students time to test their mode of transportation and change it if so desired.
6. Allow students to explain the visual components of their vehicle.



Help Cinderella Reach the Castle

Sketch your Design

Test Your Design

Test 1: Place your vehicle at Point A. Try moving your vehicle to Point B.

Did it move? ___ Yes ___ No

What problems occurred?

Test 2: Adjust your vehicle. Place your mode of vehicle at Point A. Try moving your vehicle to Point B.

Did it move? ___ Yes ___ No

What problems occurred?

Final Test: Adjust your vehicle. Place your vehicle at Point A. Try moving your vehicle to Point B.

Reflect

Were your changes effective? Explain below.
