

Grade Level: Grade 5

Topic: Complex Machine

Title: Evaluating Design: Looking at Complex Vehicles

Objectives

- The student will explain the relationship between force and distance in complex machines.
- Students will evaluate specific design features of complex machines.

Standards

- 5.2.4 – Keep a Science notebook to record observations and be able to distinguish inferences from actual observations.
- 5.3.11 – Investigate and describe that changes in speed or direction of motion of an object are caused by forces. Understand that the greater the force, the greater the change in motion and the more massive an object, the less effect a given force will have.
- 5.3.12 – Explain that objects move at different rates, with some moving very slowly and some moving too quickly for people to see them.
- 5.3.13 – Demonstrate that the Earth’s gravity pulls any object toward it without touching it.

Materials

- STC set K’Nex (see blackline master, pp. 28-29, (TE -Teacher Edition)
- Rubber bands
- One propeller unit per group (see pp. 120-121, TE)
- Science notebooks
- Safety goggles

Adapted from: Scott Foresman Science, Grade 5, Chapter 13, Lesson 4, pp. 430-431 and STC Motion and Design unit. (Use after Lesson 7 in unit)

Activity

1. Distribute all materials.
2. Teacher directions: Explain objectives of lesson.
3. Science Notebook entries
 - a. Name, date, time
 - b. Give students question: “Which of these two complex machines provides the most force and distance?”
 - c. Students will create a chart to record the number of turns of propeller or rubber band it takes, and the distance the vehicles travel.

- d. Students will create and write their own procedures for this activity in their notebooks.
4. Students complete activity according to their written procedures.
5. Students will summarize and record results in notebook.
6. Students will recommend and write a conclusion in their Science notebook based on the question investigated.

Assessment

Use FOSS Scoring Guide