

Case Details

Case Title:

The Big Top

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Grade Level(s):

Middle School

Subject(s):

Physical Science

Summary:

The Big Top Circus has come to town. It is opening night and during the final rehearsal things start to go wrong. Can you help the performers get everything back on track in time for tonight's curtain?

Suggested Citation:

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Learning Objectives:

1. State Newton's three laws of motion and display an understanding of their applications.
2. Calculate the acceleration that results from a net force.
3. Use Newton's Second Law of Motion in solving problems when friction is ignored.
4. Use Newton's Second Law of Motion in solving problems when friction is included.
5. Use Newton's Second Law of Motion in solving problems dealing with tension.
6. Solve problems involving the incline plane.

National/State Standards:

Georgia Performance Standards

S8P3. Students will investigate the relationship between force, mass, and the motion of objects.

- a) Determine the relationship between velocity and acceleration.
- b) Demonstrate the effect of balanced and unbalanced forces on an object in terms of

gravity.

c) Demonstrate the effect of simple machines (lever, inclined plane, pulley, wedge, screw, and wheel and axle on work.

S8P5. Students will recognize characteristics of gravity, electricity, and magnetism as major kinds of forces acting in nature.

a. Recognize that every object exerts gravitational force on every other object and that the force exerted depends on how much mass the objects have.

S8CS6. Communication

c. Organize scientific information in appropriate tables, charts, graphs, and identify relationships they reveal.