

FORCES AND MOTION: COMIC STRIP



Time: approximately 10-15 minutes for demonstration, directions, and discussion; approximately 45 minutes for research and note-taking; approximately 60 minutes for comic strip creation

Instructional Goals:

- The student will use the **PebbleGo Next Science** online database to research friction, gravity, magnetism, and electromagnetism.
- The student will apply knowledge learned about forces and motion to create a comic strip illustrating those concepts.
- The student will create a diagram illustrating the forces in action as depicted in his/her comic strip.

Materials/Resources:

1. **PebbleGo Next Science** online database
2. objects for demonstrating forces (see examples in the Focus section of this lesson)
3. **Forces and Motion** foldable graphic organizer (one for each student)
4. **Forces and Motion Comic Strip** handout (one copy for each student) Note: There are two versions of this handout. Version 1 requires students to use at least one type of force to complete the activity. Version 2 requires students to use all four types of forces to complete the activity.

Procedures/Lesson Activities:

Focus

1. Demonstrate for students several types of forces. For example:
 - a. gravity- drop a book on a desk
 - b. friction- running across the room
 - c. magnetism- attracting paperclips with a magnet
 - d. electromagnetism- typing on a computer keyboard

Teach/Model

2. Ask students what is happening in all of these demonstrations. Explain that a type of force is at work pushing and pulling the objects. While you cannot see the force itself, you can see the effects of the force during the demonstrations.

Guided Practice



3. Explain to students that they are going to research the four types of motion you just demonstrated: friction, gravity, magnetism, and electromagnetism.
4. Give each student a copy of the **Forces and Motion** foldable graphic organizer.
5. Demonstrate how to navigate to the **PebbleGo Next Science** online database articles on forces and motion. Read through the graphic organizer explaining how detailed the research notes should be.

Independent Practice

6. Allow time for each student to complete the **Forces and Motion** foldable graphic organizer. Check for accuracy and understanding of the scientific concepts for each force.

Closure

7. Have each student complete the **Forces and Motion Comic Strip** handout.
8. Check for accuracy before students glue the **Forces and Motion** foldable graphic organizer and **Forces and Motion Comic Strip** handout into their science journals or notebooks.

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Foldable Directions

1. Copy pages back-to-back in the order they are printed.

Pages 1 & 2

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Forces and Motion			
Friction	Gravity	Magnetism	Electro-magnetism

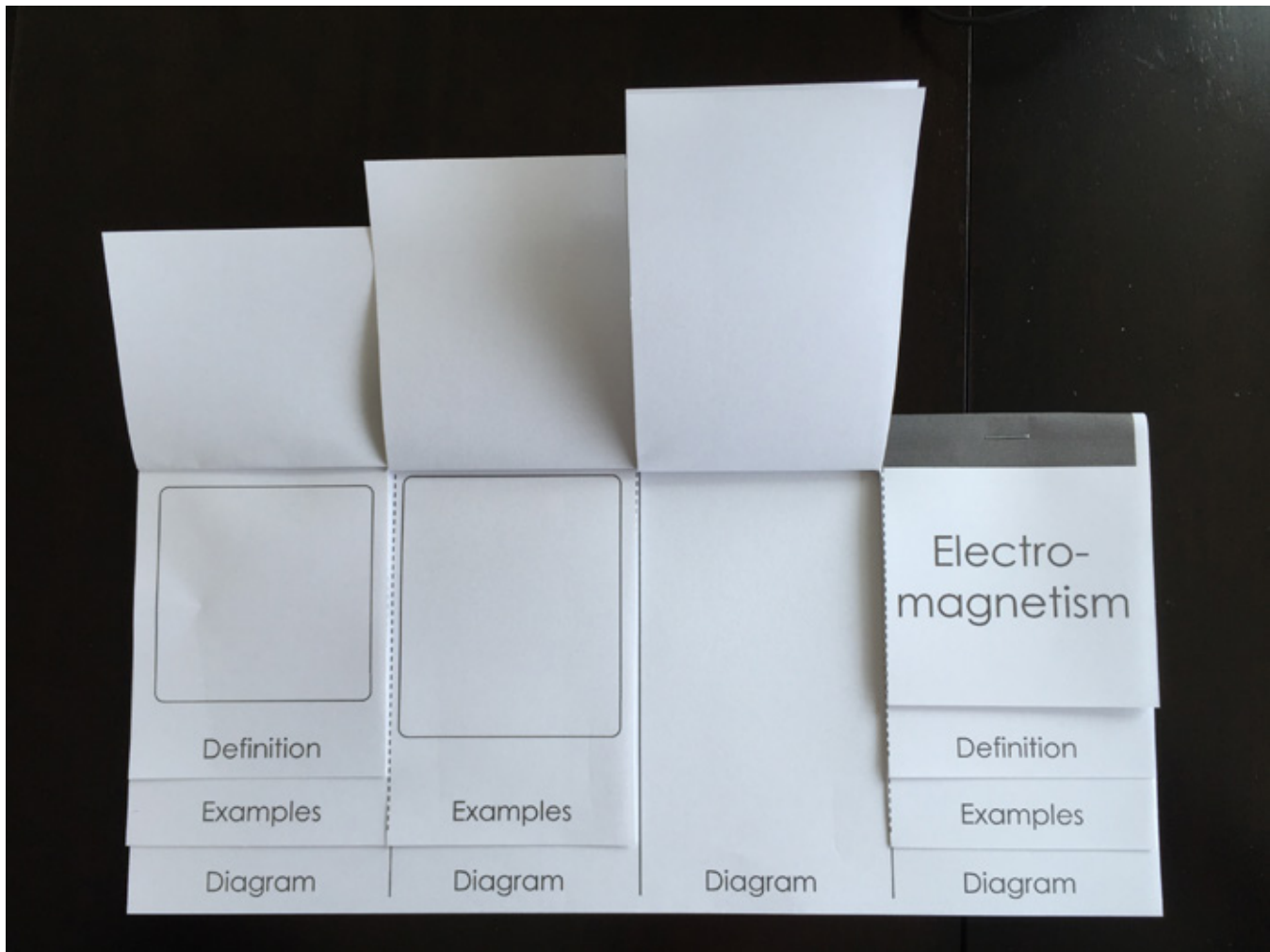
Diagram	Diagram	Diagram	Diagram
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Pages 3 & 4

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Definition	Definition	Definition	Definition

Examples	Examples	Examples	Examples
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2. Fold along the gray lines.
3. Nest pages 3 & 4 inside pages 1 & 2.
4. Staple the pages together.
5. Cut along the dotted lines. (Do not cut the solid lines.)



Forces and Motion

Friction

Gravity

Magnetism

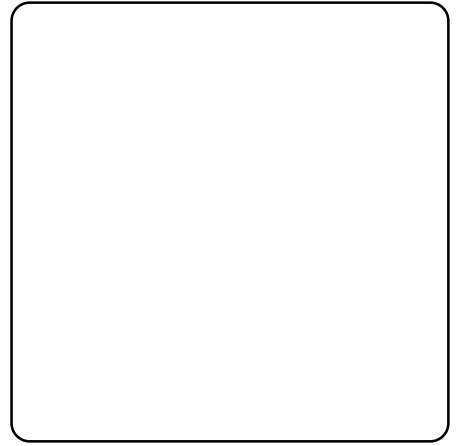
Electro-
magnetism

Diagram

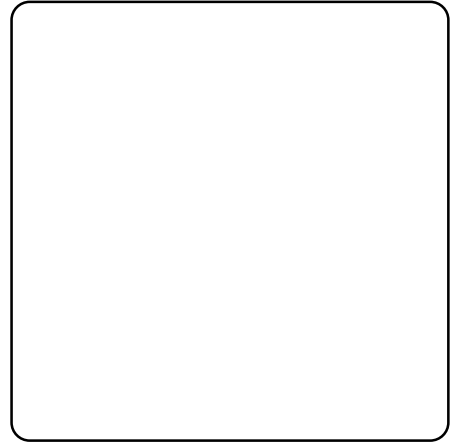
Diagram

Diagram

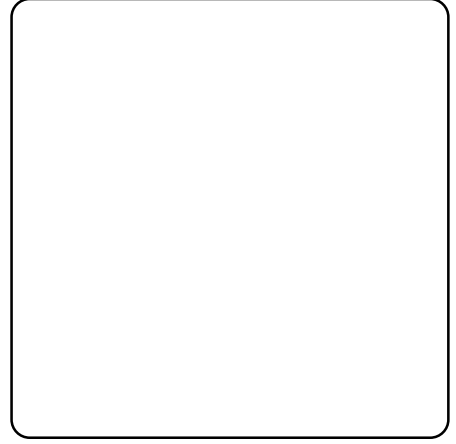
Diagram



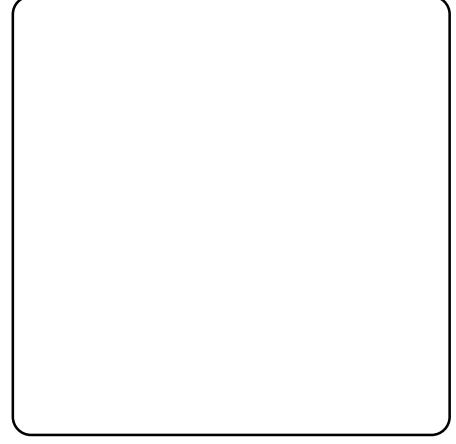
Definition



Definition



Definition



Definition

Examples



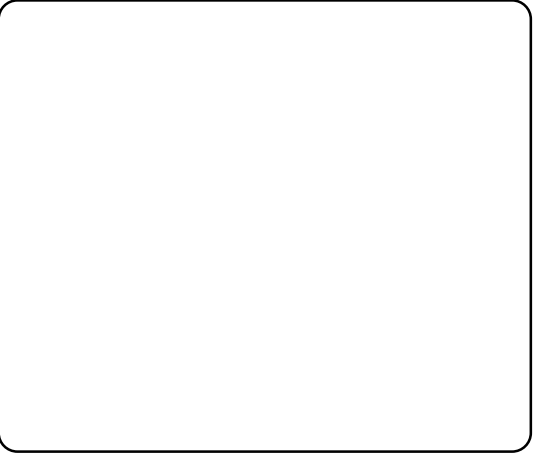
Examples



Examples



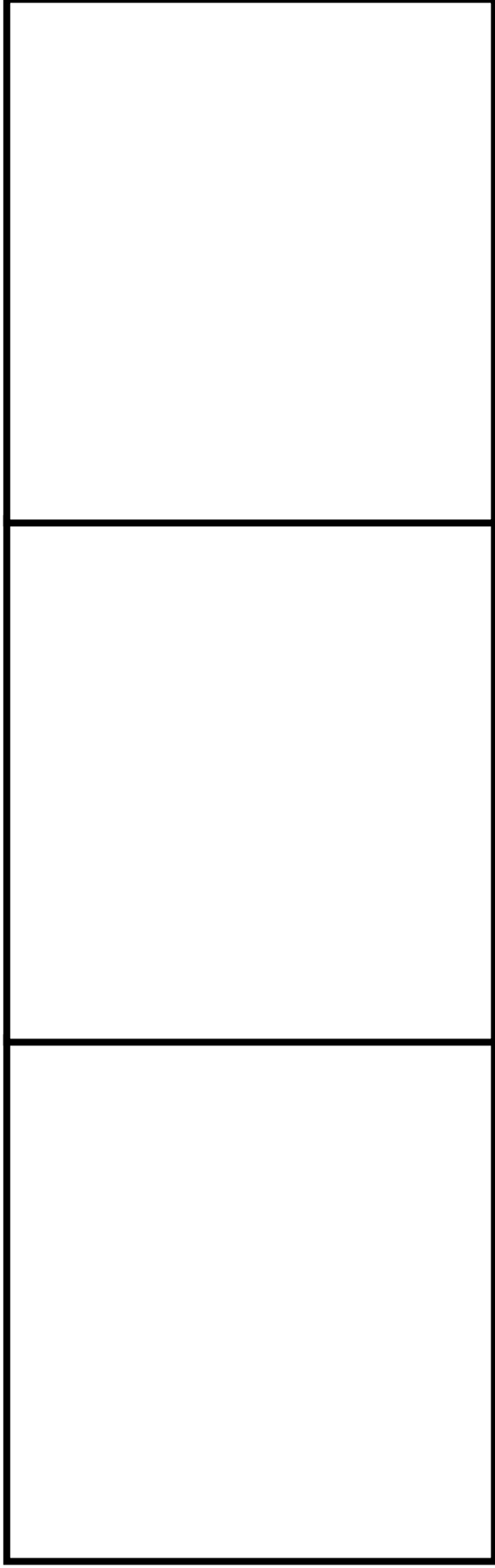
Examples



Name: _____

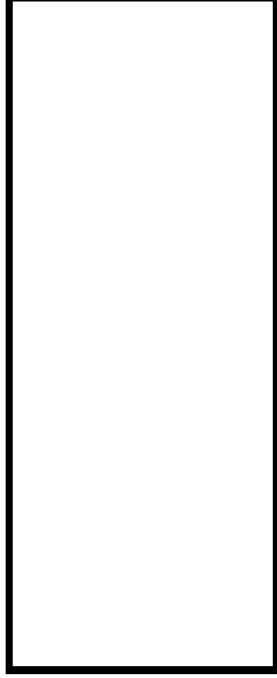
Forces and Motion Comic Strip

Create a comic that includes at least one event occurring due to an unbalanced force.



In this comic, which forces are at work? Be specific in describing the objects and the forces at work.

Draw a diagram of one of the comic's forces in action. Add arrows and labels to explain how the force(s) are interacting and which way the movement is going.



Name: _____

Force and Motion Comic Strip

Create a comic including at least one event from each of the four types of forces researched.

Draw a diagram of each of the comic's forces in action. Add arrows and labels to explain how the forces are interacting and which way the movement is going.

Friction			Electromagnetism
			Magnetism
			Gravity