What Is Flexibility?

SPECIAL INSTRUCTIONS: The core goals of these lessons are to help students identify and explore flexibility. Although it is important to provide the vocabulary set forth in this topic, modify the activities as necessary to better meet the needs of your students. A classroom poster should be started during the first topic and lesson, which you will add to during each successive lesson.

Summary: Topic 1 defines flexible and rigid. In addition, the lessons within this topic provide a conceptual foundation for flexibility through concrete, playful activities. Students will begin individual notebooks in which to keep their work.

Prerequisite skills: None

Related skills: Awareness of body

OUTCOME—CRITERIA FOR MASTERY

1. The student defines flexibility and rigidity in physical, concrete terms.
2. The student identifies whether an object is flexible or rigid.
3. The student demonstrates an understanding of the advantages that flexibility offers a physical object.

TOPIC BACKGROUND AND RATIONALE

Cognitive instruction is the first element of Unstuck and On Target! In cognitive instruction, students, teachers, and parents learn and teach new vocabulary, specific flexibility routines and scripts, and why flexibility is useful. The first step in learning a new skill is to understand what it is. Cognitive flexibility is a difficult abstract concept; therefore, it is important to make sure that elementary school students understand its meaning and value—in the concrete, physical world first, which is the goal of this lesson.
Lesson 1  Flexibility Investigation

PURPOSE
The purpose of this lesson is to introduce the concept of flexibility and bring salience to its definition. The activities included in this lesson are designed as hands-on, scientific experiments to explore flexibility in its physical form; the activities can be established as stations through which students rotate. At one station, students will experiment with physical force applied to objects that are flexible and rigid; at another, students will explore the physical properties of physical and rigid objects using only the sense of touch; and at the last station, students will create a small art project to demonstrate flexible and rigid. Students will have a handout for each station that will guide them through the activity. There are four activities in this lesson.

Materials Required for All Activities

Not Included
- One loose-leaf, full-size three-ring binder for each student
- Uncooked spaghetti noodles
- Rubber bands
- Toothpicks and pipe cleaners or twine
- 8.5” x 11” paper
- Glue
- Two objects that are flexible and two objects that are rigid
- Several blindfolds
- Whiteboard or chart paper
- Dry/wet erase markers or markers
- Four containers and a trash bin
- Magazine pictures or Internet access to download pictures
- Markers, colored pencils, pencils, and/or crayons
- Scissors
- Timer

Included
- Handout: Flexibility
- Handout: Flexible and Strong
- Handout: Flexible Objects
- Handout: Flexible Can Be Faster
- Classroom Extension 1
- Home Extension 1 and Home Signoff

Generalization

School Integration
- Highlight flexibility as a physical attribute as often as possible in the days following this lesson.
- Praise the students when they do the same.
- Start a notebook for each student; label it My Flexibility Notebook. Have students add their work from each lesson to the notebook, which should go home with the student on the day of the lesson and come back to school the next day. In addition, once students return their completed Home Extensions, add the handouts to their individual notebooks.
- Complete Classroom Extension 1.

Home Integration
Upon completion of the lesson, send home a copy of Home Extension 1 and Home Signoff.

Modifications
The activities in this lesson are not well suited for older students (middle school and above). It is important to begin with a concrete definition of flexibility as it applies to the physical world. Older students can explore more complex applications of flexibility (e.g., skyscrapers).
ACTIVITY 1
What Are Flexibility and Rigidity?

Materials

**Not Included**
- Whiteboard or chart paper
- Dry/wet erase markers or markers
- Magazine pictures or Internet access to download pictures
- Markers, colored pencils, pencils, and/or crayons
- Glue
- Scissors

**Included**
- Handout: Flexibility

Instructions

In the first part of this lesson, introduce the concept of *flexibility* (Handout: Flexibility) and contrast *flexible* and *rigid* in physical terms. Use the key words on this handout to create a visual at the front of the room.

1. Demonstrate rigid and then flexible posture. You might say, for example, “If you are tired and want to sit down, you have to make your body flexible, right? If you stay rigid, you are stuck in one place standing up.”
2. Explain that skyscrapers are massive structures but are designed to give a bit in the wind to remain standing.
3. Write key words on the board as you describe flexibility and rigidity.
4. Explore with the students other examples of objects that are flexible.
5. Have the students complete Handout: Flexibility. They should work individually, using visuals that they create themselves or find in magazines or on the Internet (using clipart software) to complete the second column of the handout.
6. Ask students to select at least one word that is a synonym for *flexible* (e.g., stretchy, bendable) and another that is a synonym for *rigid* (e.g., stiff, unyielding).
## Flexibility

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<thead>
<tr>
<th></th>
<th>Student examples</th>
<th>Parent examples</th>
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</thead>
<tbody>
<tr>
<td><strong>Flexible</strong> — bending,</td>
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<tr>
<td>changing, switching</td>
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<tr>
<td><img src="octopus.png" alt="Octopus" /></td>
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<tr>
<td><strong>Rigid</strong> — stiff, extremely difficult to change, stuck</td>
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<td><img src="landscape.png" alt="Rocky Landscape" /></td>
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