

## Grade 2 Clarifying Lessons: Roll or Slide?

**OLD Resources.** These resources have NOT yet been updated to align with the revised elementary mathematics TEKS. These revised TEKS were adopted by the Texas State Board of Education in 2005, with full implementation scheduled for 2006–07. These resources align with the original TEKS that were adopted in 1998 and should be used as a starting point only.

### What is a Clarifying Lesson?

A model lesson teachers can implement in their classroom. Clarifying Lessons combine multiple TEKS statements and may use several Clarifying Activities in one lesson. Clarifying Lessons help to answer the question "What does a complete lesson look like that addresses a set of related TEKS statements, and how can these TEKS statements be connected to other parts of the TEKS?"

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### TEKS Addressed in This Lesson

Geometry and spatial reasoning: 2.7A, B

Underlying processes and mathematical tools: 2.12D; 2.13A; 2.14

### Materials

- geometric solids (commercial and real-world: boxes, cans, balls, ice cream cones, etc.)
- ramp (made from a board with one end on a stack of books)
- recording sheet

### Lesson Overview

Students organize solids into categories, depending upon whether they will roll, slide or do both.

### Mathematics Overview

Students describe and compare attributes of three-dimensional geometric solids.

**Set-up (to set the stage and motivate the students to participate)**

1. Display a collection of solids. (2.12D)
2. Select one object at a time and have students identify other, similarly shaped objects in the room. (2.12A)
3. Allow time for students to handle the solids and observe the attributes of each one. (2.7A, B)
4. Create a ramp on a table or on the floor to test each solid's ability to roll or slide. (2.7A, B; 2.12D)
5. Before releasing the object down the ramp, have students predict whether each one will roll, slide, or be able to do both. (2.7A, 2.12A)
6. Release the solid and have students observe the results. There may be some discussion about the need for more than one trial. (2.7A)
7. Have students complete the chart with predictions, then use the objects and the ramp to test their predictions, and correct their charts, if necessary. (2.7A, B; 2.12D, 2.13A)

**Teacher Notes (to personalize the lesson for your classroom)****Guiding Questions (to engage students in mathematical thinking during the lesson)**

- What is this shape's name? (2.7A)
- How many of its attributes can you name? (2.7A)
- Can you find other objects with the same attributes? (2.7A, B)
- How are these two objects alike? How are they different? (2.7B)
- Why did you predict this object would roll? Slide? Both? (2.12A, 2.13A, 2.14)
- What decisions do you have to make in testing the objects? (2.14)

**Teacher Notes (to personalize the lesson for your classroom)**

**Summary Questions (to direct students' attention to the key mathematics in the lesson)**

To have students review their observations made during the activity, ask questions such as:

- What are some things you observed about the solids? (2.7A, B; 2.12D; 2.13A)
- How is the cube different from the sphere? (2.7A, B; 2.13A)
- Are they alike in any ways? (2.7A, B; 2.13A)
- How is the ice cream cone different from the can? (2.7A, B; 2.13A)

To focus students' attention on the connection between the attributes of the solids and their physical behavior on the ramp, ask questions such as:

- What was alike about all the objects that slid? (2.7A, B; 2.12D; 2.13A)
- What was alike about all the objects that rolled? (2.7A, B; 2.12D; 2.13A)
- What pattern did you see in the objects that did both? (2.7A, B; 2.12D; 2.13A)

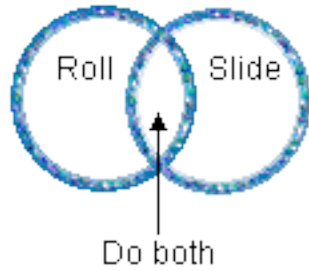
**Teacher Notes (to personalize the lesson for your classroom)****Assessment Task(s) (to identify the mathematics students have learned in the lesson)**

- Have students design an object that can only roll.
- Have students design an object that can only slide.
- Have students design an object that can do both.
- Have students write three summary statements in their mathematics journal about solids that roll, slide, or do both.

**Teacher Notes (to personalize the lesson for your classroom)****Extension(s) (to lead students to connect the mathematics learned to other situations, both within and outside the classroom)**

- Instead of using the recording chart, students can make a picture graph or bar-type graph to show which objects only roll, only slide, or do both.

- Students can use yarn to make a large Venn diagram on the floor or on the desktop. They can label the circles and the intersection and place the actual objects inside the appropriate sections.



**Teacher Notes (to personalize the lesson for your classroom)**