



Skill Practice

Measure

LESSON 2: 25 minutes

What do you measure to calculate speed?

You turn on the television and see a news report. It shows trees that are bent almost to the ground because of a strong wind. Is it a hurricane or a tropical storm? The type of storm depends on the speed of the wind. A meteorologist must measure both distance and time before calculating the wind's speed.

Materials

- meterstick stopwatch wind-up toys (4)
- calculator graph paper

Learn It

When you **measure**, you use a tool to find a quantity. To find the average speed of an object, you measure the distance it travels and the time it travels. You can then calculate speed using the average speed equation. In this lab, you use distance and time measurements to calculate speeds of moving toys.

Try It

1. Read and complete a lab safety form.
2. Use the data table below to record your data. Add more lines as you need them.
3. Choose appropriate starting and ending points on the floor. Use a meterstick to measure the distance between these points. Record this distance to the nearest centimeter.
4. Wind a toy. Measure in tenths of a second the time the toy takes to travel from start to finish. Record the time in the data table.
5. Repeat steps 3 and 4 for three more toys. Vary the distance from start to finish for each toy.

Toy Speeds			
Toy	Distance (m)	Time (s)	Average Speed (m/s)


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Skill Practice continued

Apply It

6. **Calculate** the average speed of each toy. Record the speeds in your data table.

7. **Create** a bar graph of your data. Place the name of each toy on the x -axis and the average speed on the y -axis.

8.  **Key Concept** Use the definition of *speed* to explain why the average speeds of the toys can be compared, even though the toys traveled different distances.
