Keep It Rolling!

Procedure

1. **Measure** Work with a partner. Measure 2 m from the wall. Mark this position with a line of masking tape on the floor.

2. **Record Data** Record your measurement in the blank under **Short Distance**.

<table>
<thead>
<tr>
<th></th>
<th>Short Distance:</th>
<th>Long Distance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll 1</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roll 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. **Experiment** Slowly roll a ball straight toward the wall. This is Roll 1. Have your partner start a stopwatch just as the ball crosses the tape and stop the stopwatch just as the ball strikes the wall. Record the time in the chart.

4. **Collaborate** Change places with your partner. Have your partner roll the ball faster than you rolled it. Time this roll. Record this time as Roll 2 in the chart.

5. **Use Variables** Take several steps back from the line of masking tape. Mark a second line with masking tape. Measure the distance between the wall and the second line. Record this distance under **Long Distance**. Repeat steps 3 and 4 for the longer distance.
Conclude

Write the answers to the questions below.

1. **Collaborate** For each distance, compare the time of your roll to the time of your partner's roll. Whose rolls took less time?

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2. **Analyze Data** How does distance affect the time it takes the ball to reach the wall?

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**Solve a Problem** The fire department wants to shorten the time it takes fire trucks to travel from the firehouse to a fire. Describe two ways that fire trucks could reach fires faster.