

**WORKSHEET**

**47**

**MATH IN SCIENCE: PHYSICAL SCIENCE**

**MATH SKILLS USED**

- Addition
- Subtraction
- Multiplication
- Division
- Averages
- Decimals
- Percentages

## Average Speed in a Pinewood Derby

Determine the average speeds of a Pinewood Derby car.

Cindy and Santiago have just finished building model cars for their school's annual Pinewood Derby. In order to test their cars, Santiago sets Cindy's car at the top of a 240 cm long ramp and releases it. Cindy uses a stopwatch to measure how long it takes the car to reach the bottom of the ramp. The two decide to conduct three trials for each car and then calculate the overall average speeds. Cindy recorded her initial results in the table below.

Cindy's Car

Trial	Time (s)	Average speed (cm/s)
1	8	
2	10	
3	8	

### The Race Is On!

1. Complete the third column of the chart, and show your work below.

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2. What was the overall average speed of Cindy's car?

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3. Santiago's car has an overall average speed of 25 cm/s. If he could increase his car's overall average speed by 10%, what would his car's new overall average speed be?

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4. By adding lubricant to the wheels of his car, Santiago determines that he can increase his car's average speed to 29.5 cm/s. What percentage increase does this represent?

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