

ON THE MOVE

Student Name: _____

ISAT Test Prep Skill: Physical Science

With so many places to see, it's time to travel! Before you journey to new places, dazzle your friends with your knowledge about the science of trains.

Using your knowledge about energy and motion, answer the questions below. (You may want to check your work by researching your answers online.)

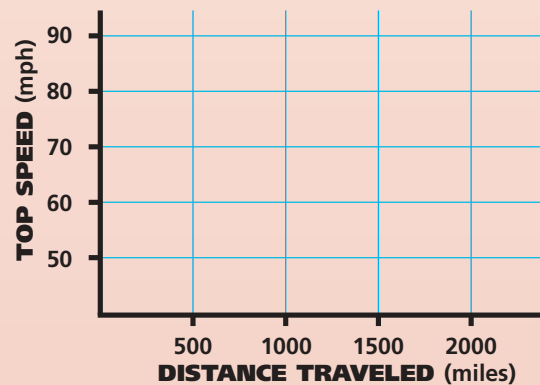
- 1** Trains need an incredible amount of power to carry passengers safely from place to place. If the generator inside a diesel engine generates up to 4,700 amps of current, this is an example of:
- electrical energy
 - nuclear energy
 - chemical energy
 - solar energy

- 2** Trains have steel wheels to reduce **friction**, which slows the speed of a train. Friction creates:
- ice
 - heat
 - magnetism
 - water

- 3** A passenger train with five cars can use 1.5 gallons of fuel per mile. If the train travels at a constant speed, what would happen if more passenger cars were added?
- More fuel would be required.
 - Less fuel would be required.
 - There would be no change in the amount of fuel used.
 - The train would travel at a slower speed.

- 4** Graph the following data in the table:

Train	Top Speed	Distance Traveled
State House	90 mph	500 miles
Illini	70 mph	1,000 miles
Illinois Zephyr	55 mph	1,400 miles



- 5** If time equals distance traveled divided by speed, how long is a one-way trip on the State House train when traveling at a constant rate?
- 6.6 hours
 - 5.6 hours
 - 8.6 hours
 - 7.6 hours



Bonus!

Find out more about how locomotives work! Research one of the following topics and present a short description of what you have learned: traction; steel wheels; power, fuel, and batteries; braking; or driving.