

# MSP

Measurements of Student Progress



## Science Grade 5

**Released Scenarios and Items  
Student Edition  
2012**

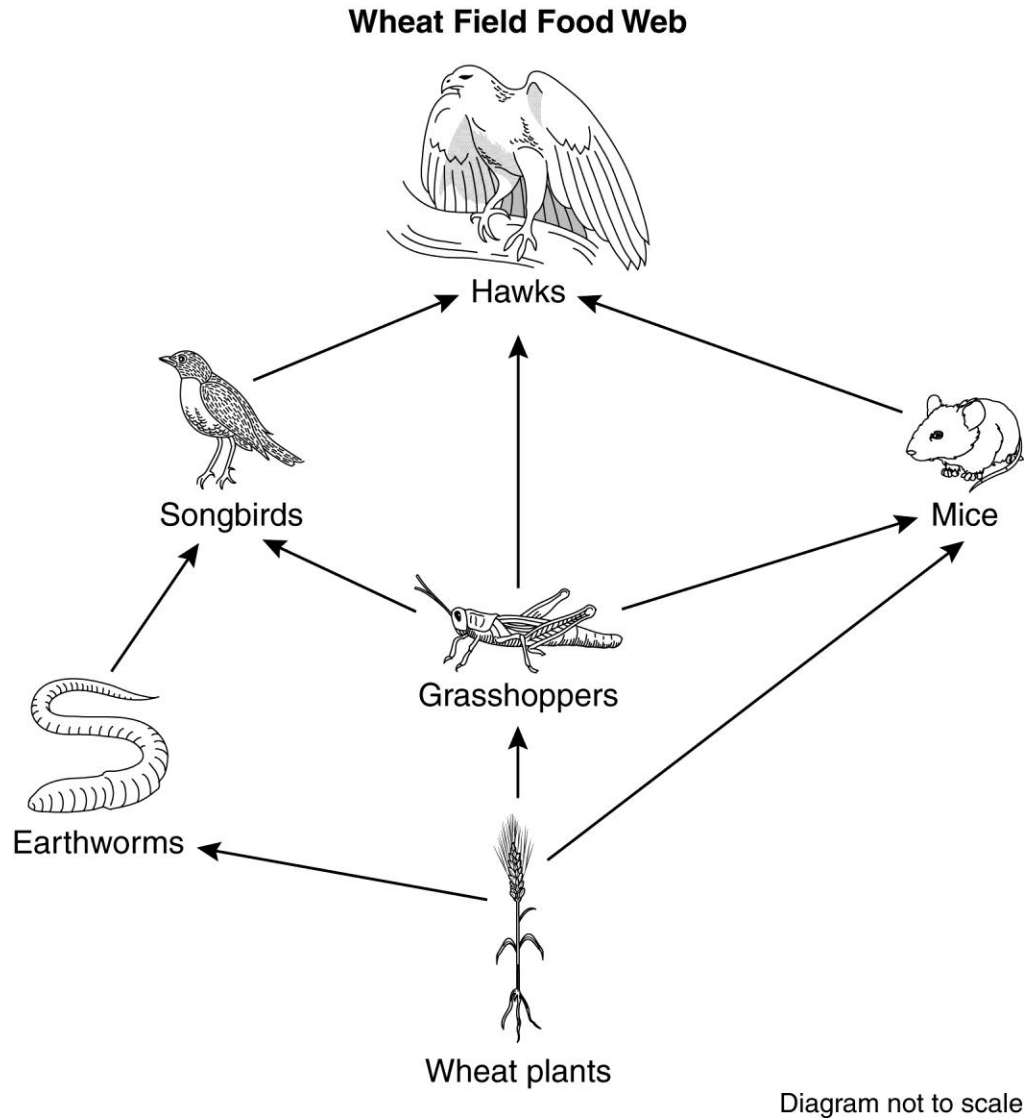
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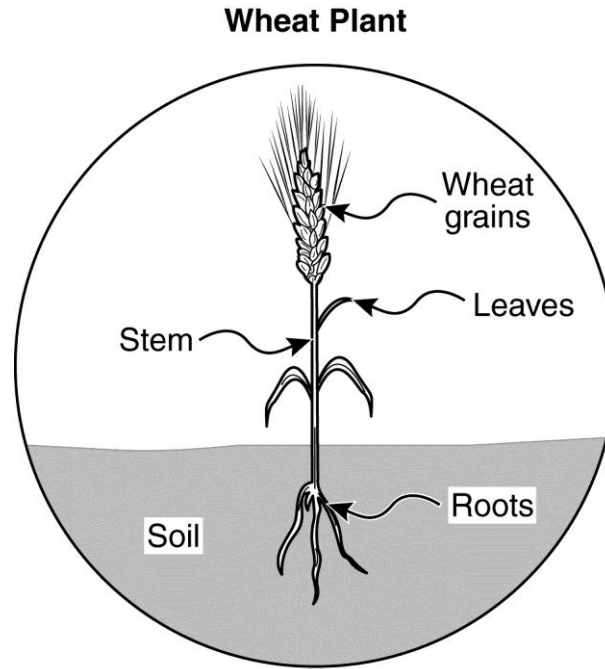
## Wheat Field

**Directions:** Use the following information to answer questions 1 through 5.

Ariana and Matt visited a wheat field. They drew the Wheat Field Food Web.



Ariana and Matt also made a diagram of a Wheat Plant.



1 What is the role of the wheat plant in the wheat field ecosystem?

- A. Producer
- B. Consumer
- C. Decomposer

2 Which is a source of energy for the wheat plant?

- A. Air
- B. Soil
- C. Sunlight

3 The wheat plant is a subsystem of which system?

- A. Roots
- B. Field
- C. Stem

4 How does the worm population benefit a wheat field ecosystem?

- A. Worms attract water to the soil.
- B. Worms give off oxygen for the wheat plants.
- C. Worms help wheat plants get mineral nutrients.

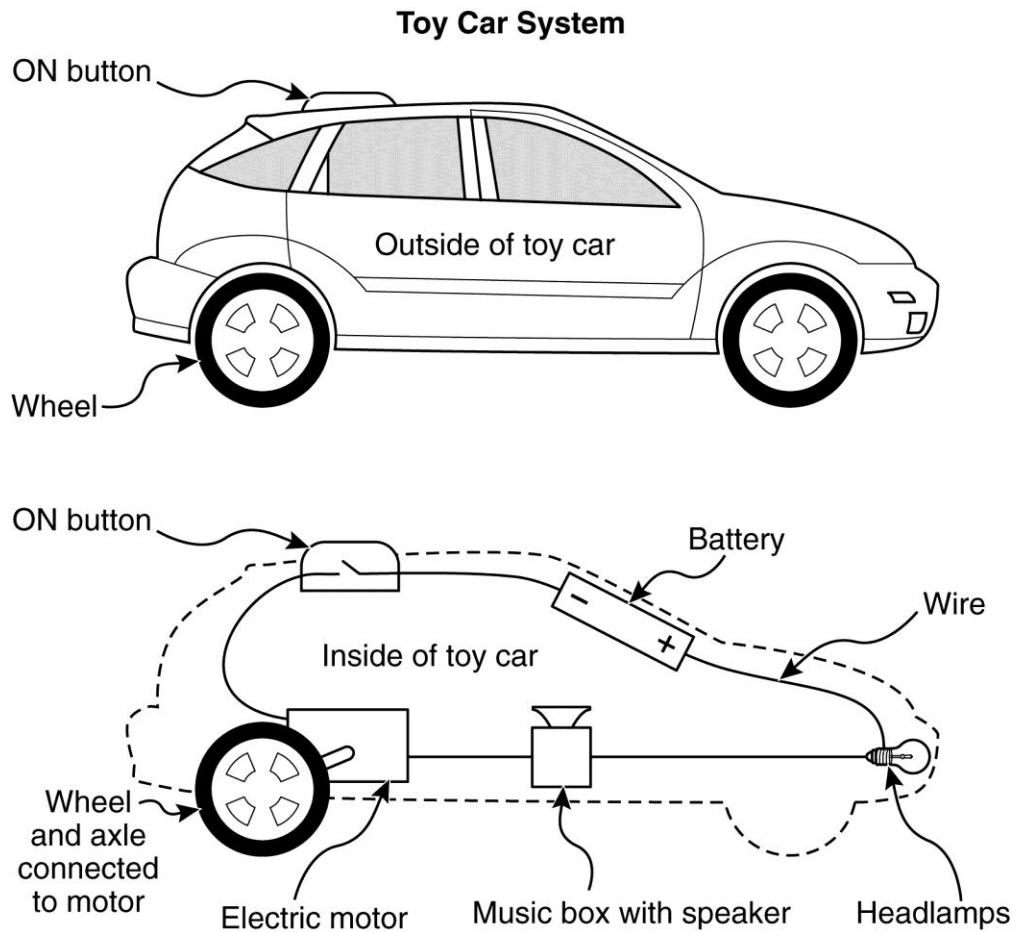
5 Sometimes a row of trees is planted along the edge of a wheat field. Why do farmers plant rows of trees next to their fields?

- A. To prevent wind from eroding the soil
- B. To protect animals from the rain
- C. To provide food for the wheat

## Toy Car

**Directions:** Use the following information to answer questions 6 through 11.

Paul and Sheryl studied a Toy Car System at school. The Toy Car System is a model car with a battery. When the ON button is pressed, the toy car rolls forward, plays music, and flashes the headlamps. Paul and Sheryl made the following diagram showing the parts of the Toy Car System.



6 What form of energy is used to make the headlamps flash?

Write your answer in the box.

- 7 Paul and Sheryl did an investigation with the toy car. They recorded their data in the table shown.

Time (seconds)	Distance Toy Car Moved (centimeters)		
	Trial 1	Trial 2	Trial 3
0	0	0	0
2	59	60	60
4	123	120	114

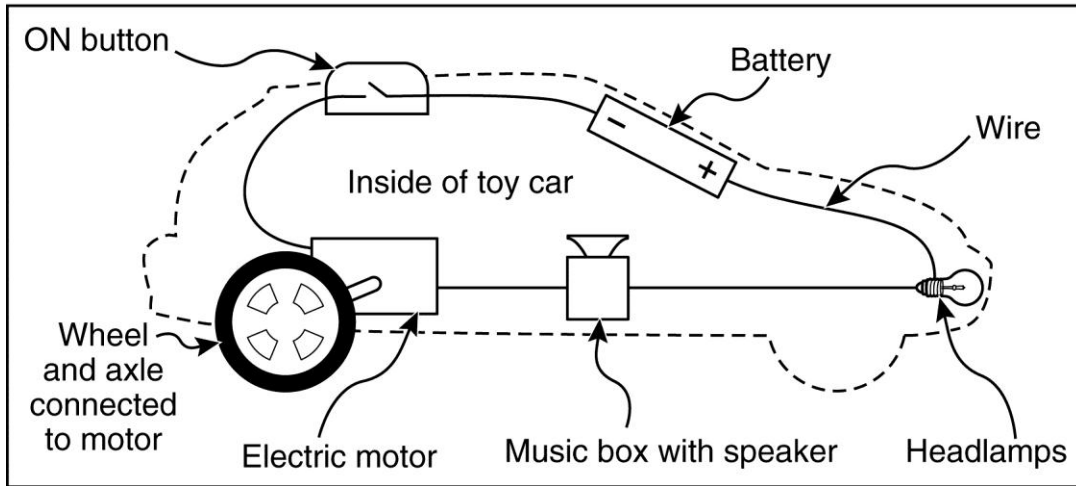
What question can Paul and Sheryl answer with their data?

- A. How does the time the car rolled affect the distance the car moved?
- B. How does the size of the wheels affect the distance the car moved?
- C. How does the mass of the car affect the distance the car moved?



- 8 Paul and Sheryl are working together to solve a problem with the toy car shown in the Toy Car System diagram.

**Toy Car System**



When they pressed the ON button the car did not roll forward.

Describe **two** possible causes and solutions to the problem.

<b>One cause and solution:</b>
<b>Another cause and solution:</b>

- 9 Most real cars are powered by gasoline. Scientists are developing cars powered **only** by batteries. What is a problem scientists are trying to solve by developing these cars?
- A. Gasoline resources are limited.
  - B. Cars often break down on highways.
  - C. Batteries are expensive to produce.
- 10 What causes the toy car to play music?
- A. The type of wheels
  - B. The vibrations in the speaker
  - C. The brightness of the headlamps

- 11 Paul and Sheryl did an investigation with three different toy cars. They collected their data in the table shown.

Toy Car	Distance in 5 seconds (meters)
A	1.5
B	1.8
C	2.1

Which Toy Car moved the fastest?

- A. Toy Car A
- B. Toy Car B
- C. Toy Car C

## Glossary of Non-Science Terms for Released Item Document

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Students are permitted to use this Glossary sheet as a reference.

axle	A metal pole on which the car wheels turn.
beaker	A glass container used for science experiments.
clay soil	A type of soil that is sticky and easily molded when wet.
graduated cylinder	A container used for measuring.
potting soil	Dirt that is used for growing plants in pots.
sandy soil	A type of soil that is mostly sand.
stopwatch	A watch used to time events like a car race.
stream	A small river.
variable	All the parts of a system that could be changed are called variables. In an experiment one variable is changed and another variable is measured. The rest of the variables are kept the same.