



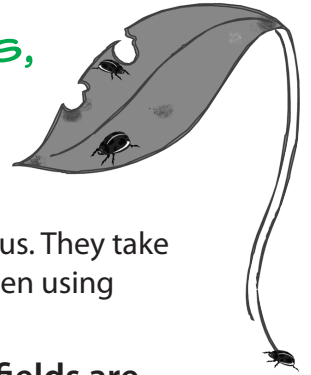
# Agriculture, Food & Natural Resources

People in the Agriculture, Food & Natural Resources cluster work with the land, water, plants, trees and animals. In many of these jobs, a lot of time is spent outdoors studying nature.

# Agriculture, Food & Natural Resources

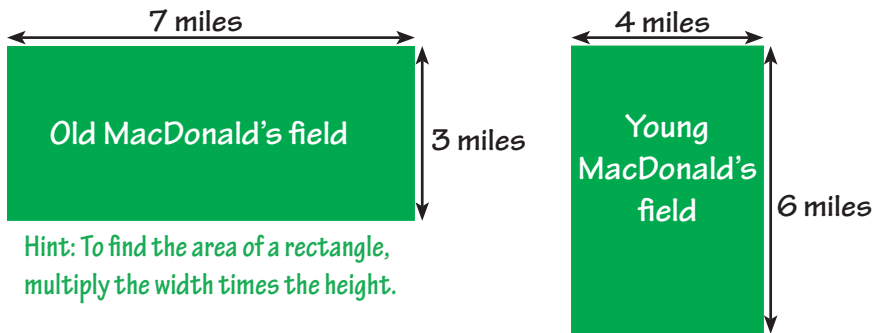
Pesticide Handlers, Sprayers & Applicators, Vegetation ■ Soil & Plant Scientists  
Agricultural & Food Science Technicians ■ Biological Technicians  
Buyers & Purchasing Agents, Farm Products ■ Foresters

## Pesticide Handlers, Sprayers & Applicators, Vegetation



Pesticide handlers, sprayers and applicators work with chemicals that kill weeds, bugs or other animals that harm plants. They apply the chemicals to trees, plants, lawns or crops. These chemicals are called pesticides. These chemicals can be dangerous. They take training to learn about the chemicals. They wear protective gear to keep them safe when using these chemicals.

**Before the sprayer can apply pesticides, he needs to know how big the fields are. Find the area of the fields. Which one will need more pesticide?**



Hint: To find the area of a rectangle, multiply the width times the height.



## Soil & Plant Scientists

Soil scientists study the things that make up soil. Soil is made up of air, water, rocks, minerals and organic matter. Different plants and crops need different types of soil to grow. Soil scientists figure out the best soil for a plant. Some of them figure out how to stop soil erosion. Plant scientists study plants and how they grow. Some plant scientists make plants healthier. Others figure out how to get rid of bugs that harm plants. They work in offices and labs. They also spend time outdoors.

**Match the descriptions to these things that make up parts of soil.**

- |         |  |
|---------|--|
| Topsoil | A small round stone  |
| Silt    | Fine sand, soil or mud carried by flowing water. It sinks to the bottom of rivers, lakes, etc. |
| Sand    | The top layer of soil. You can find plant's roots here.  |
| Pebble  | Loose grains of finely ground rock. You can find a lot at beaches and deserts.                 |

## School Rules: (How much education do you need?)

Occupation	High School	Some Beyond High School	Associate Degree	Bachelor's Degree	Advanced Degree
Pesticide Handlers, Sprayers & Applicators, Vegetation	✓				
Soil & Plant Scientists				✓	
Agricultural & Food Science Technicians			✓		
Biological Technicians				✓	
Buyers & Purchasing Agents, Farm Products				✓	
Foresters				✓	

## Agricultural & Food Science Technicians

These technicians help agricultural and food scientists. Agricultural technicians study crops and farm animals. Some measure and test farm products. Food science technicians research foods and food production. Some create foods. Others analyze foods to see how much fat, sugar and fiber is in them. They work in labs, processing plants, farms, ranches and offices.



Answer the questions about these nutrition labels.

### Apple

Nutrition Facts			
Serving Size: 1 medium (182g)			
Amount Per Serving			
Calories 95	Calories from Fat 3		
% Daily Value*			
Total Fat 0g	0%		
Saturated Fat 0g	0%		
Cholesterol 0mg	0%		
Sodium 2g	0%		
Total Carbohydrate 25g	8%		
Dietary Fiber 4g	17%		
Sugars 19g			
Protein 0g			
Vitamin A	2%	Vitamin C	14%
Calcium	1%	Iron	1%
Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			

### Corn

Nutrition Facts			
Serving Size: 1 small ear (89g)			
Amount Per Serving			
Calories 96	Calories from Fat 3		
% Daily Value*			
Total Fat 1g	2%		
Saturated Fat 0g	1%		
Cholesterol 0mg	0%		
Sodium 0g	0%		
Total Carbohydrate 22g	7%		
Dietary Fiber 2g	10%		
Sugars 3g			
Protein 3g			
Vitamin A	5%	Vitamin C	9%
Calcium	0%	Iron	2%
Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			

### Chicken Nuggets

Nutrition Facts			
Serving Size: 4 pieces (64g)			
Amount Per Serving			
Calories 190	Calories from Fat 108		
% Daily Value*			
Total Fat 12g	19%		
Saturated Fat 3g	13%		
Cholesterol 35 mg	12%		
Sodium 367g	15%		
Total Carbohydrate 10g	3%		
Dietary Fiber 1g	2%		
Sugars 1g			
Protein 10g			
Vitamin A	0%	Vitamin C	1%
Calcium	1%	Iron	3%
Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			

Which food has the most sugar?

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Which food has the most iron?

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Which food has the least sodium?

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How many chicken nuggets are in one serving?

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# Biological Technicians

Biological technicians help scientists who study living things. They collect samples and materials. They do experiments and tests. Some work on medical research to find cures for diseases. Others work with companies and help make drugs that treat illnesses. Some test water, blood, food, drugs and plants.

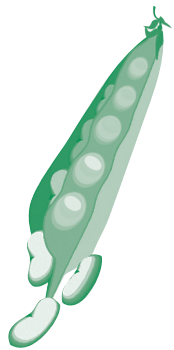


**Biological technicians gather data. They use the data to answer questions. Write down the hair colors of your classmates. Answer the questions about your data.**

Hair Color	Tally of Students	Totals
Brown		
Blonde		
Red		
Black		
Other		

Which hair color do most students have? \_\_\_\_\_

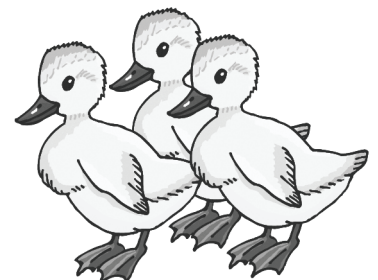
Which hair color do the fewest students have? \_\_\_\_\_



## Buyers & Purchasing Agents, Farm Products

Farm product buyers and purchasing agents buy things like grain, milk, animals or trees from farmers, ranchers, tree farms, etc. They search for sellers who provide them with high-quality products at the best prices. Sometimes they resell the item at a higher cost. Other times they take the item and use it to make another product.

**Grain is \$5 per bag. You need to buy three bags of grain. You have \$50 to spend. Will you also be able to buy seven ducklings that are \$4 each?**



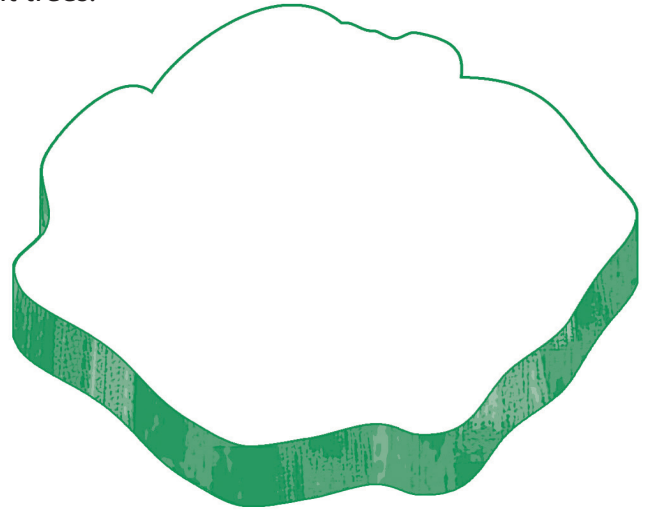


## Foresters


















Foresters take care of forests, grasslands and shelterbelts. They also figure out how people can use these kinds of lands. They study how plants and trees interact with the area around them. They make notes about trees and other resources in an area. Some create plans to plant trees.

Have you seen the rings on a tree stump? The rings tell the tree's life story. Each year a ring is added when the tree grows wider. A forester knows how to "read" the rings and can follow a tree's health and history over many years.

Draw "tree rings" in the stump to show your age. Label any years when important events took place, like when you started school, etc.



## How Much Does it Pay?

More than \$ 30.00						
\$ 25.00-\$ 30.00						
\$ 20.00-\$ 25.00						
\$ 15.00-\$ 20.00						
Less than \$ 15.00						
Average Hourly Wage in South Dakota (2018)	Pesticide Handlers, Sprayers & Applicators, Vegetation	Soil & Plant Scientists	Agricultural & Food Science Technicians	Biological Technicians	Buyers & Purchasing Agents, Farm Products	Foresters

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