

Name _____

Minnesota Comprehensive Assessments-Series III

Science Item Sampler
Grade 5



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Science Test General Directions

- This test contains two segments.
- You may write in this test book or use scratch paper.
- All answers must be marked in this test book.
- This test has four kinds of questions.
- Answer each multiple-choice question by circling your answer. The sample below shows how to do this.

Sample Question Answered in Test Book:

What should a farmer do to prevent too much fertilizer from being put on a field?

- A.** Apply fertilizer right before planting
- B.** Apply fertilizer and water at the same time
- C.** Measure the amount of minerals the soil needs
- D.** Measure the amount of water in the soil

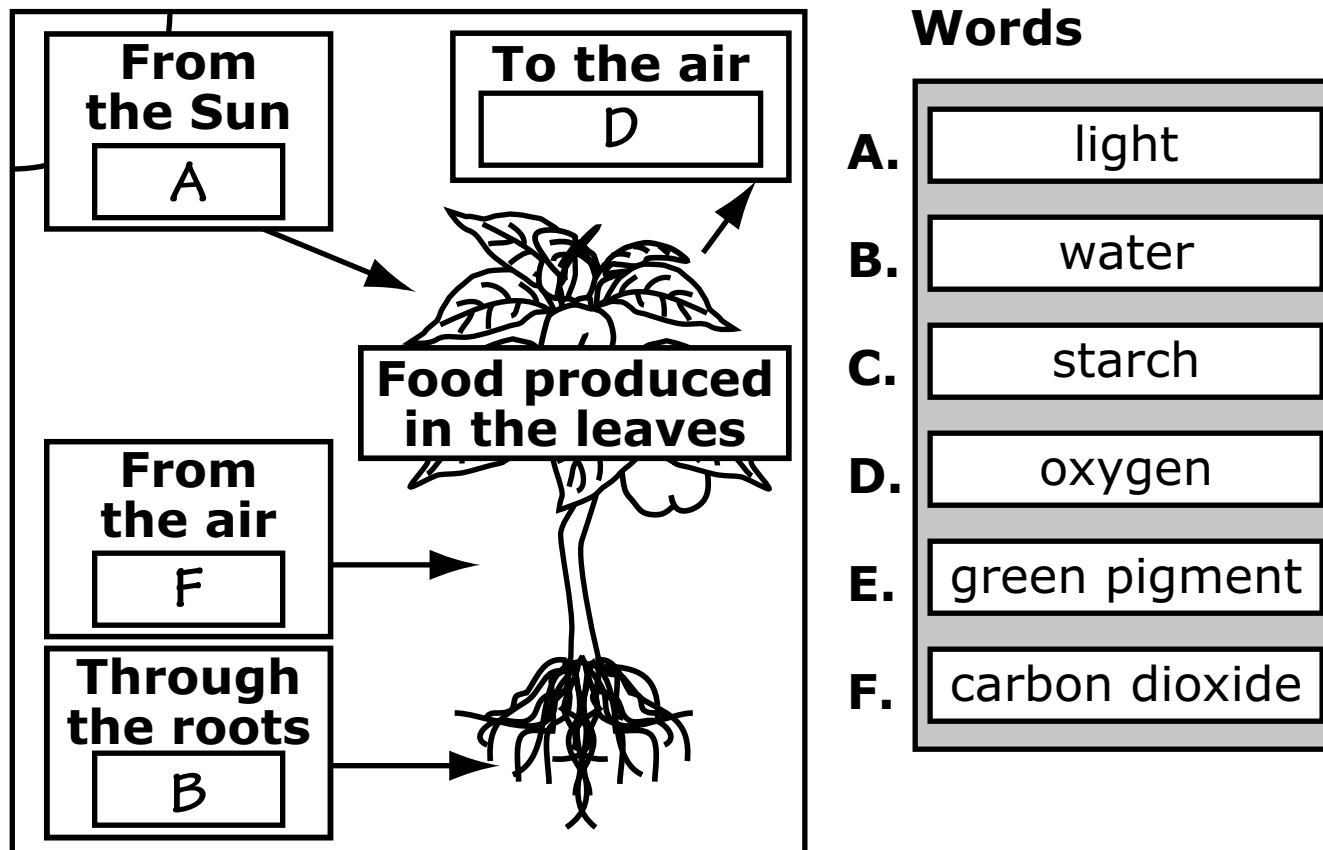
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- For some diagram questions, you will need to write the label letters (A, B, C, etc.) in the boxes. The sample below shows how to do this.

Sample Question Answered in Test Book:

This diagram shows the process of photosynthesis. Identify the parts of the photosynthesis process involved in this ecosystem.

Each word is labeled A, B, C, D, E, or F. Write the letter of the correct word in each empty box. Four of the words will be used.



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- For some diagram questions, you will need to circle the word you want to select as your answer. The samples below show how to do this.

Sample Question Answered in Test Book:

Two characteristics of pintail ducks are listed. Identify the characteristics that are the same and different in pintail ducks.

On the diagram, circle the word you want to select. You may only circle 1 word for Same and 1 word for Different.

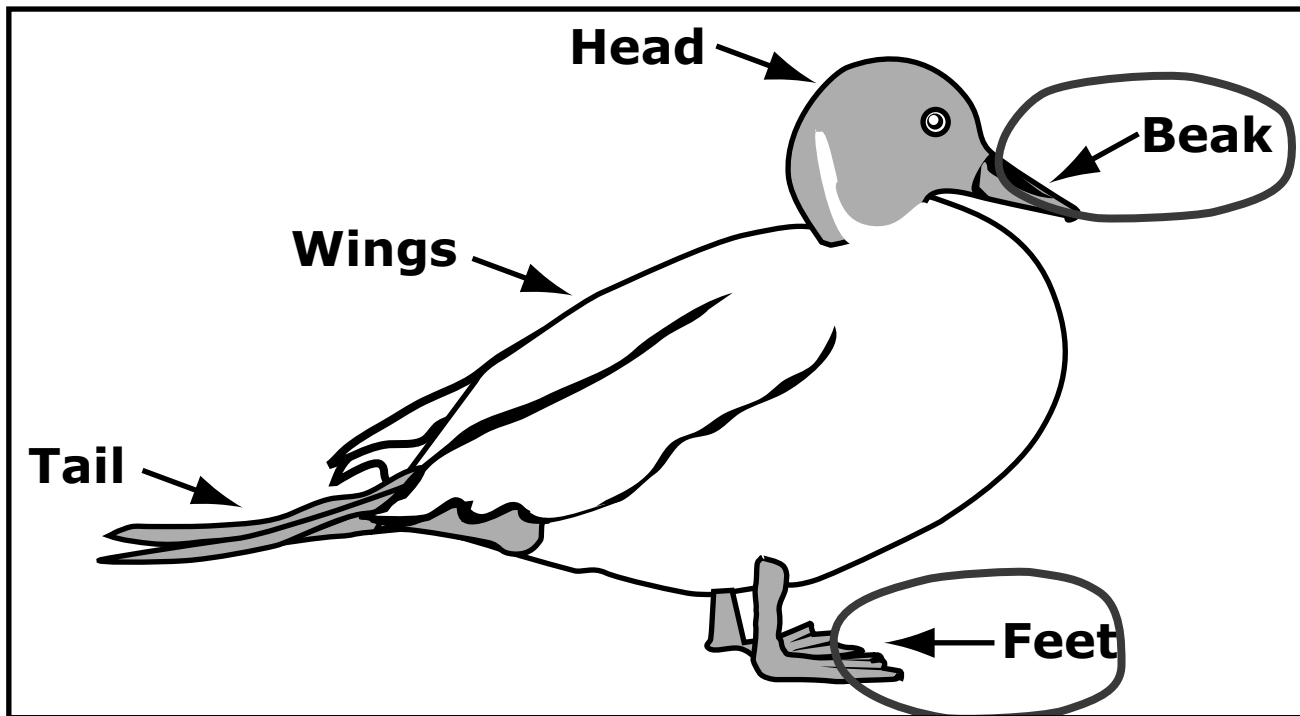
Same	Different
Body size	Body size
Number of legs	Number of legs

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Sample Question Answered in Test Book:

Choose 2 different adaptations that make this duck more suited to feed on water plants than other kinds of birds.

On the diagram, circle the 2 adaptations. You may only circle 2 adaptations.

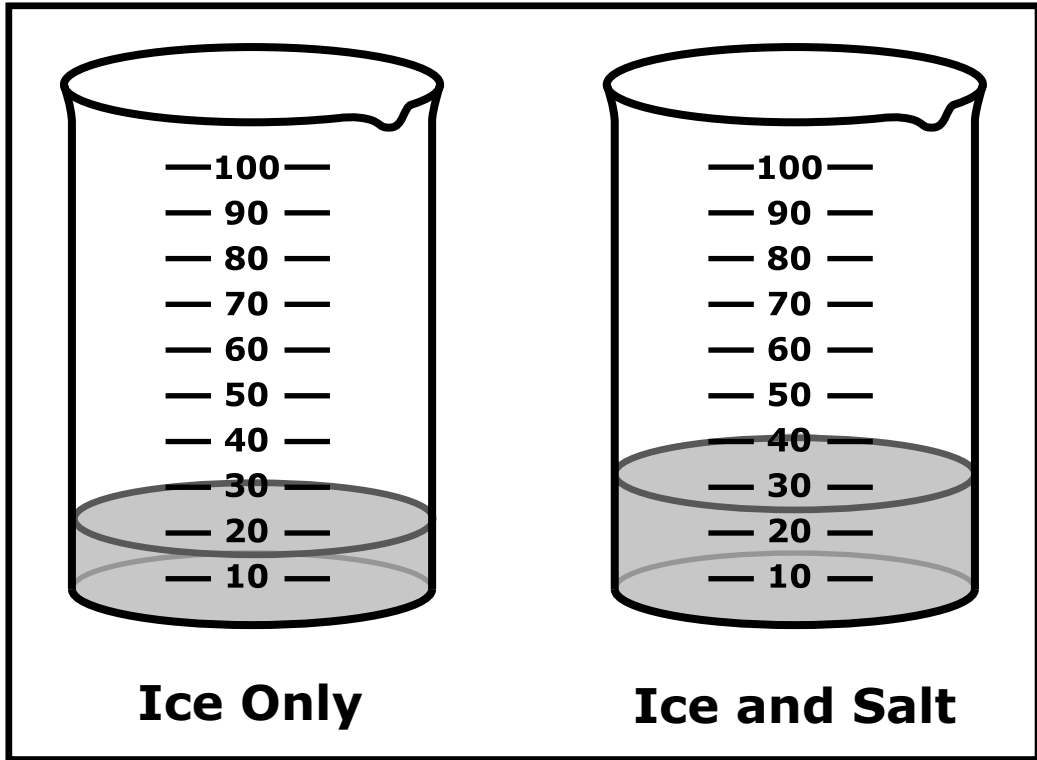


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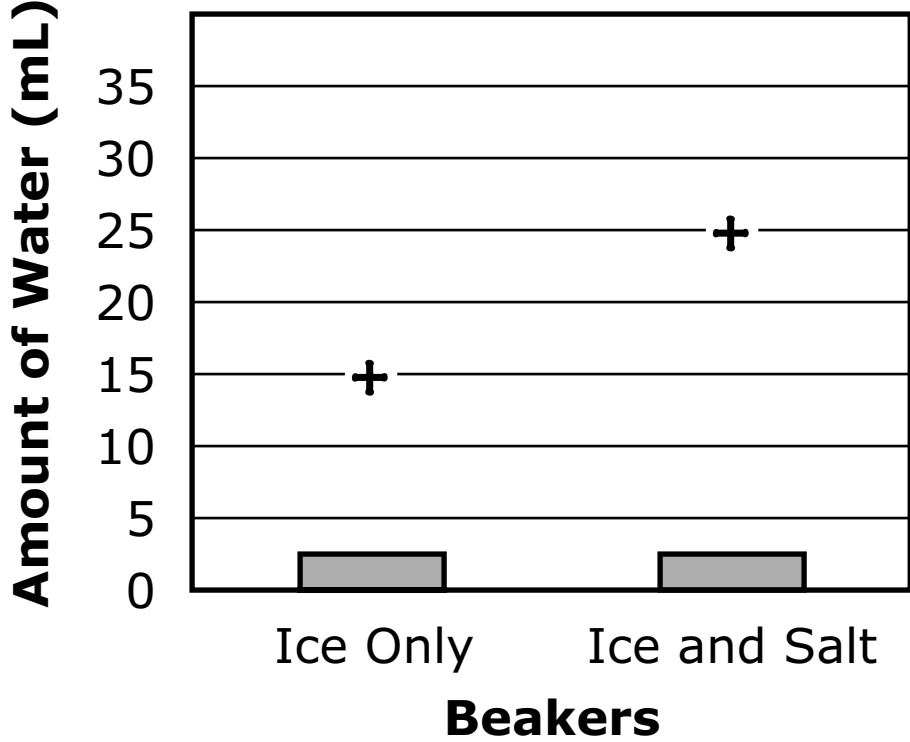
- For some graphing questions, you will need to write a "+" above each bar, where the top of the bar should be. The sample below shows how to do this.

Sample Question Answered in Test Book:

Read the water level in the beakers. Make a graph of this data.



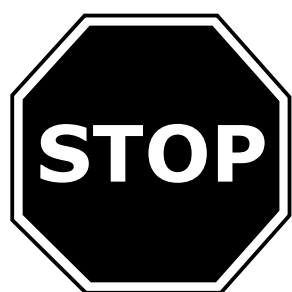
Write a "+" above each bar where the top of the bar should be.



Beaker	Amount of Water (mL)
Ice Only	25
Ice and Salt	40

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- When you finish a segment of the test, stop and check your answers. Then use the sticker given to you to seal it. Once you seal a segment, you cannot go back to it. Each segment must be sealed before you move on to the next segment.



Segment 1

You will be told when to begin this segment.

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Science Test – Segment 1

Minerals in the Soil

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Plants need minerals to grow. Sometimes people help plants get these minerals by adding fertilizers.

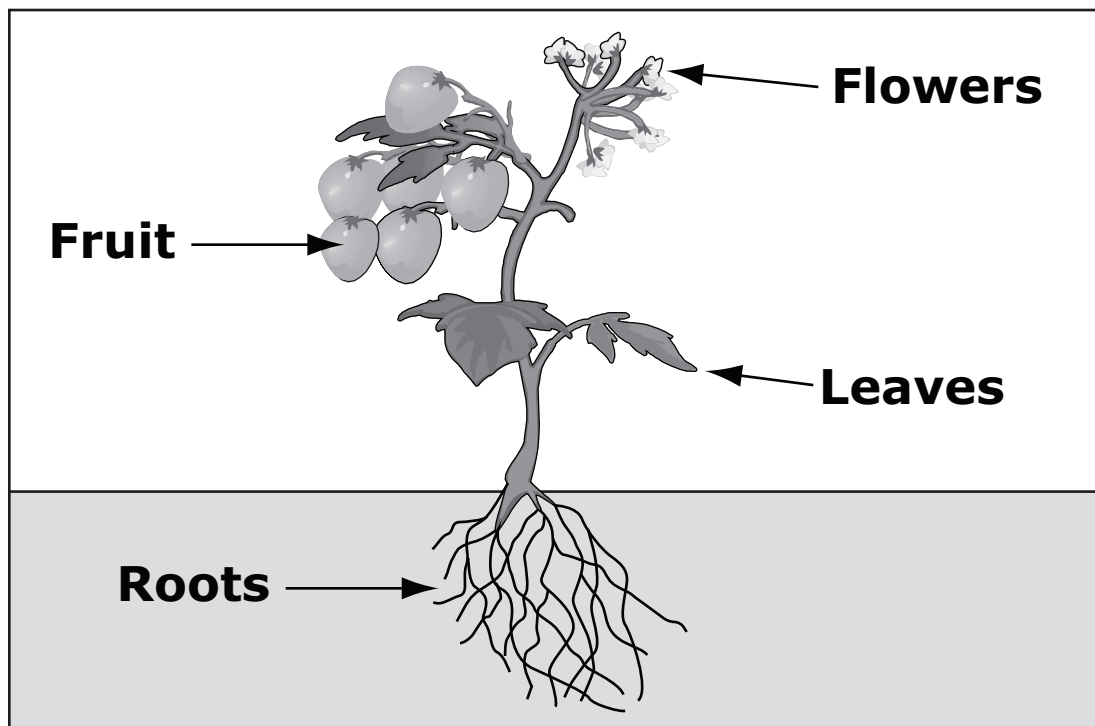


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1. Identify the part of the plant that takes in the most minerals.

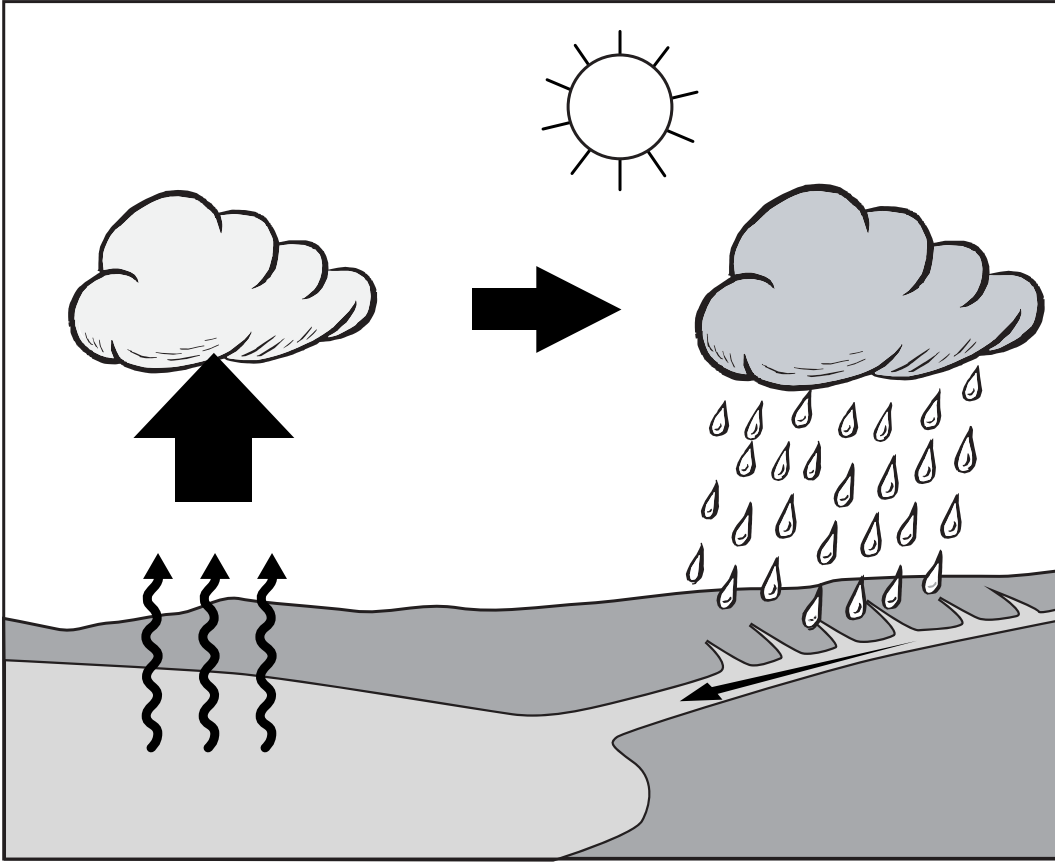
On the diagram, circle the part you want to select. You may only circle 1.



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Not all of the minerals that are added are used by the plants. Some minerals get into streams or lakes.

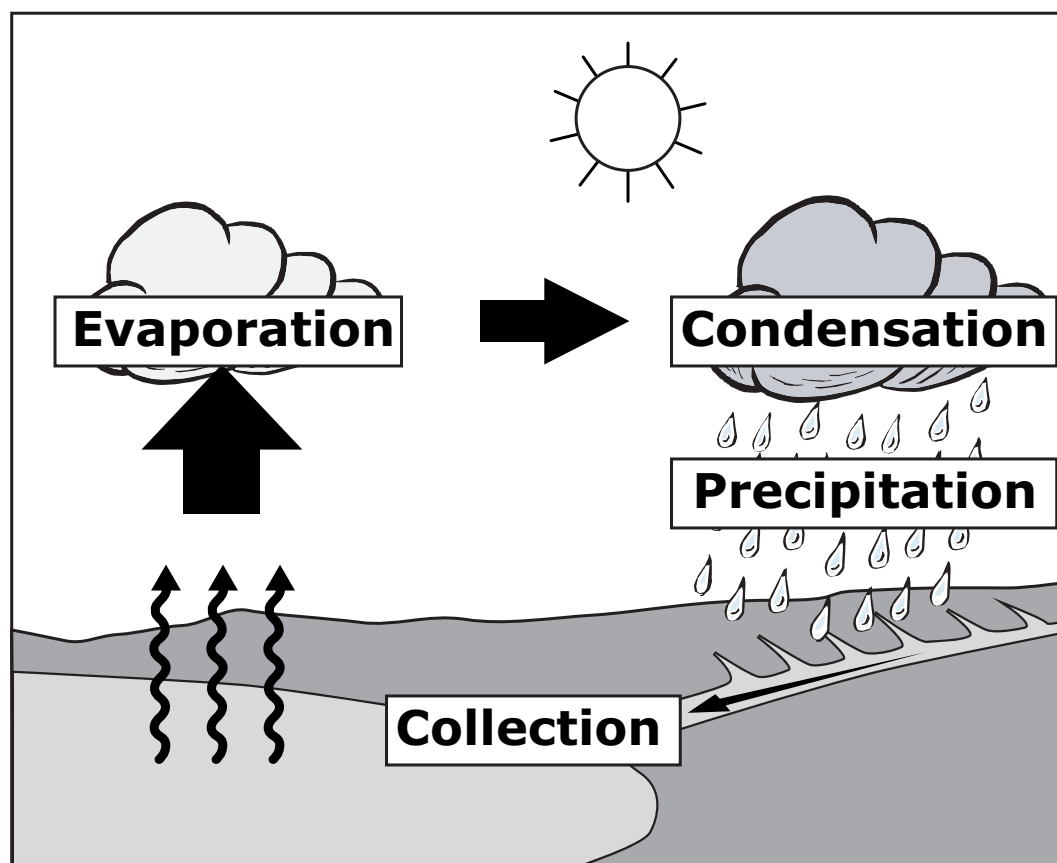


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2. Identify the part of the water cycle that takes minerals into a lake.

On the diagram, circle the part you want to select. You may only circle 1.



3. What process turns water vapor into rain clouds?
- A. Condensation
 - B. Evaporation
 - C. Freezing
 - D. Melting

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Farmers often use the same field every year to grow plants. The plants use up some of the minerals where they grow. Sometimes, farmers add more minerals to their fields to replace what the plants have used. If too much fertilizer is added, the minerals will end up in a stream or lake.



4. Which step should the farmer take to prevent too much fertilizer from going into the stream or lake?
- A. Apply fertilizer and water at the same time
 - B. Apply the fertilizer many times
 - C. Measure the amount of minerals the soil needs
 - D. Purchase the fertilizer early

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Ice Cream Investigation

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This class is going to make ice cream in a bag. They put milk and sugar in a small plastic bag. Then they place the small bag into a large bag of ice. They add salt to the ice, and shake the bag for 5 minutes.



5. What will happen to the milk when it gets cold?
- A. It will start to melt.
 - B. It will become a solid.
 - C. It will have less mass.
 - D. It will be harder to see.

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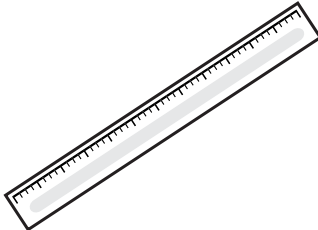
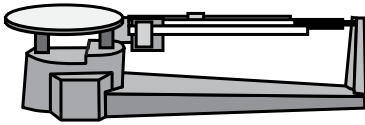
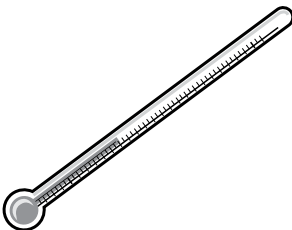
After 5 minutes, the students are ready to take out the ice cream. The bags feel so cold that the students hold them by the edges.



6. Identify the tool that would show how cold the ice cream gets.

On the diagram, circle the tool you want to select. You may only circle 1.

Tools

 Hand Lens	 Ruler
 Balance	 Thermometer

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Students want to find out how much salt to add to ice when making ice cream. They plan an experiment to see how cold ice will get with different amounts of salt. Here are the steps that they have written.

1. Put ice cubes into 5 different beakers.
2. Put salt into 4 of the beakers.
3. Do not put any salt into 1 beaker. This is the control.
4. See how cold each beaker gets after 5 minutes.

7. Another class wants to repeat this experiment. What additional information is needed to be able to repeat this experiment?

On the diagram, circle each of the statements you want to select.

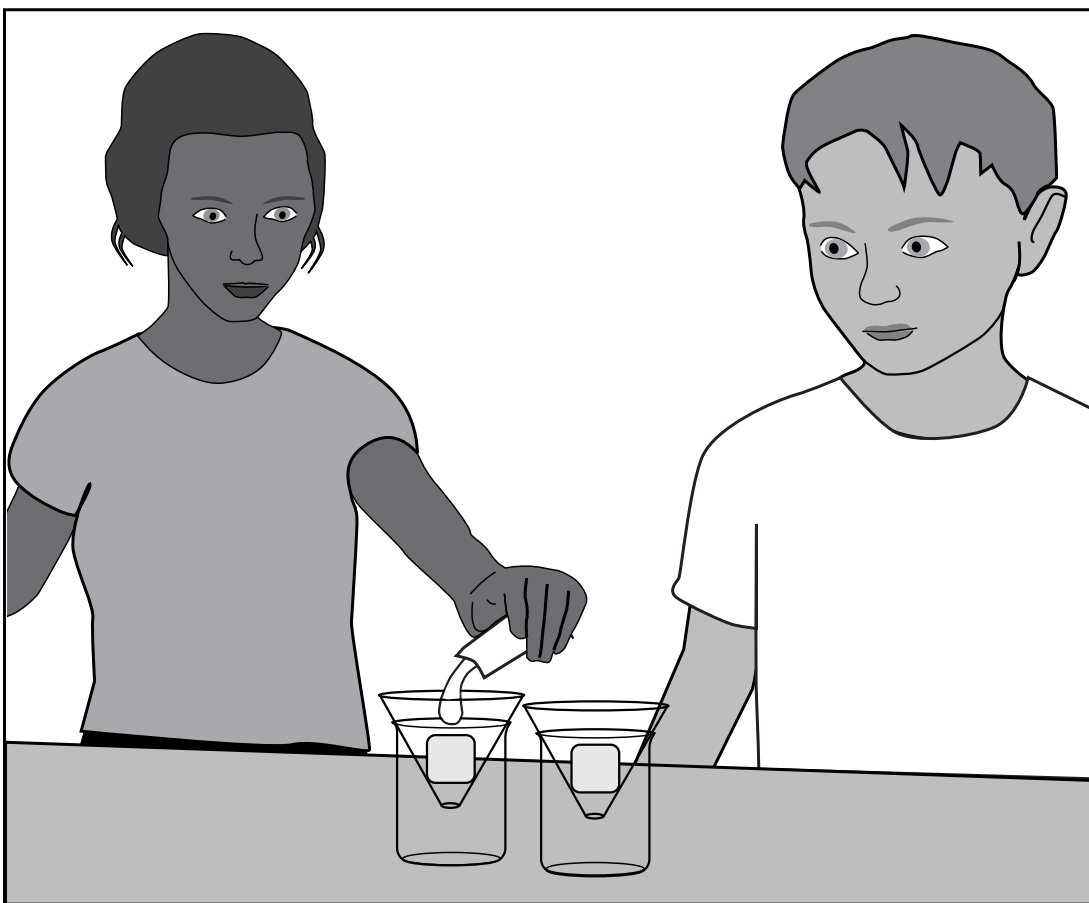
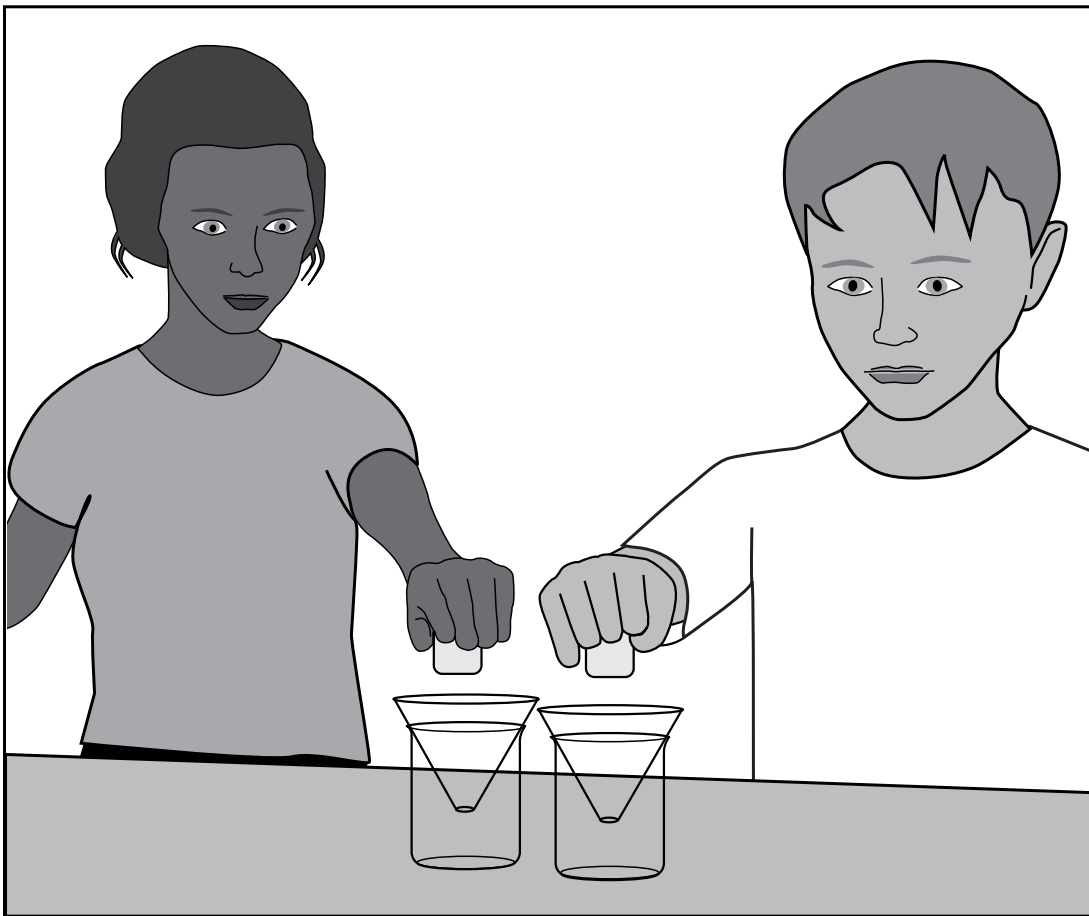
Information

- How much salt was added to each beaker
- How many ice cubes were used in each beaker
- What flavor of ice cream was made
- The size of the beaker used

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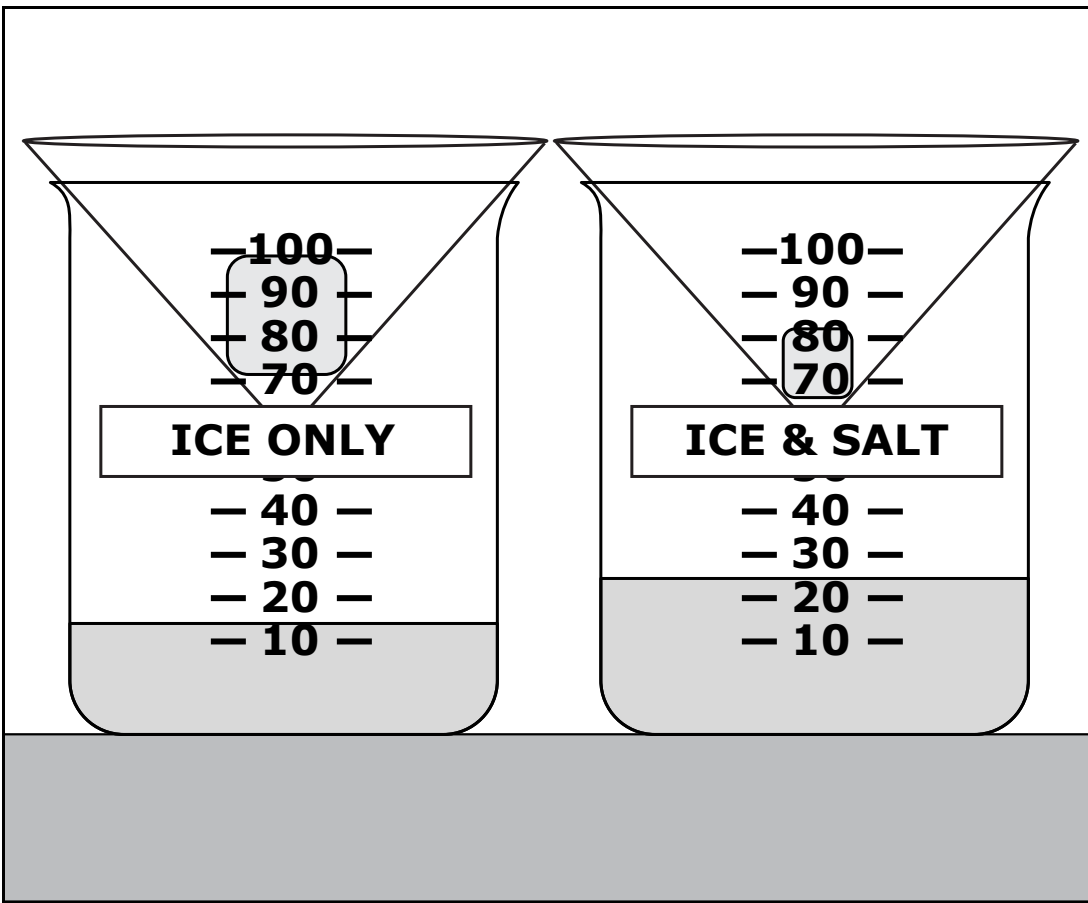
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The class is going to find out what the salt does to the ice. They will collect water from 2 melting ice cubes. Students put 2 identical ice cubes into 2 funnels. Salt is sprinkled on 1 of the ice cubes. Both ice cubes melt for 5 minutes. The water collects in 2 beakers.



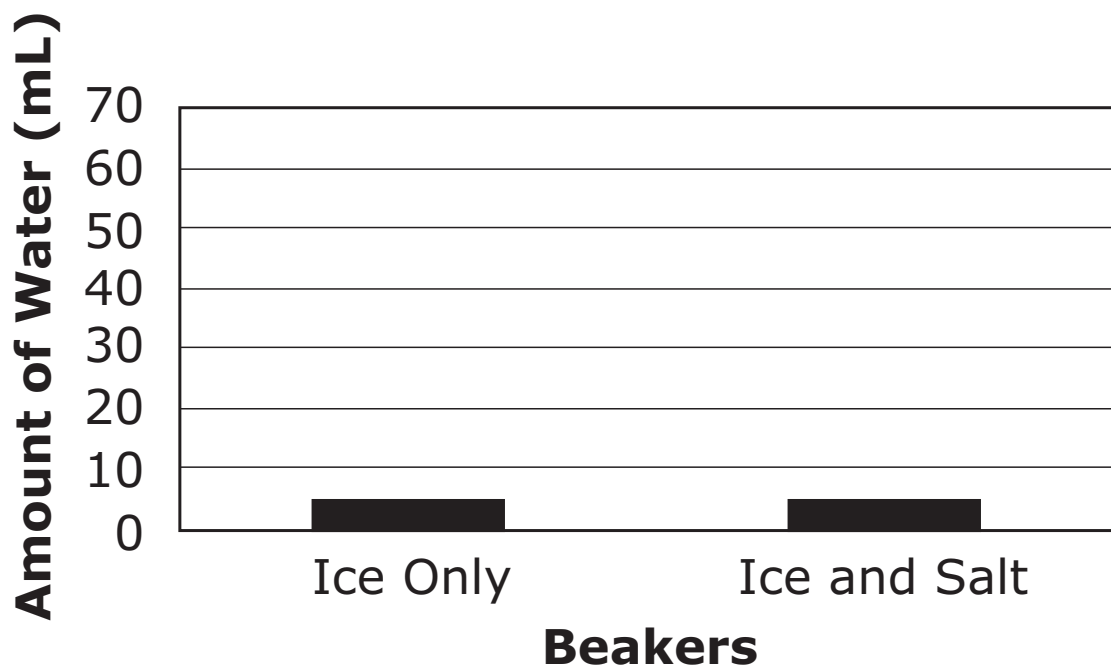
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8. Determine the amount of water in each beaker. Make a graph of this data.

Write a "+" above each of the bars where the top of the bar should be.



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Segment 2

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Science Test – Segment 2

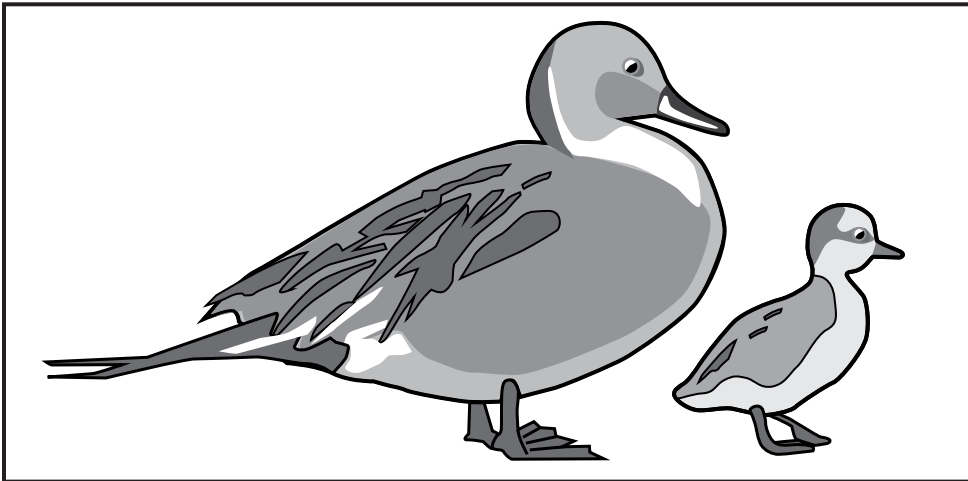
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Pintail Ducks

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The pintail duck is very common in the United States. An adult pintail duck and a young pintail duck are shown below. Young ducks have some characteristics that are the same as the adult and some that are different.



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9. Five characteristics of pintail ducks are listed. Identify which characteristics are the same and which characteristics are different in these pintail ducks.

Each characteristic is labeled A, B, C, D, or E. Write the letter of each characteristic in the correct box. You may only use each letter 1 time.

Same	Different

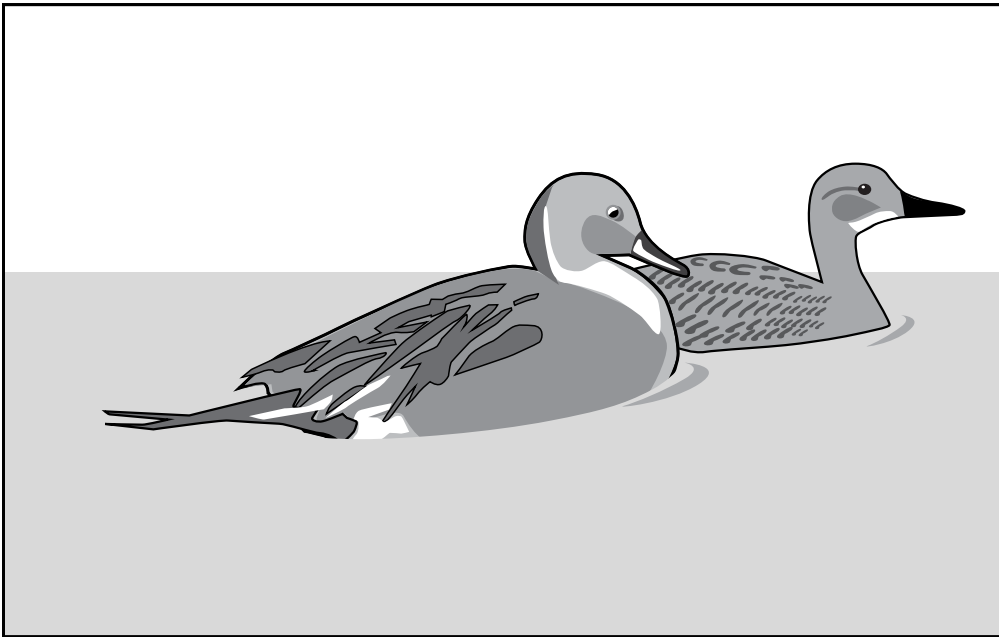
**Characteristics of
Pintail Ducks**

- A.
- B.
- C.
- D.
- E.

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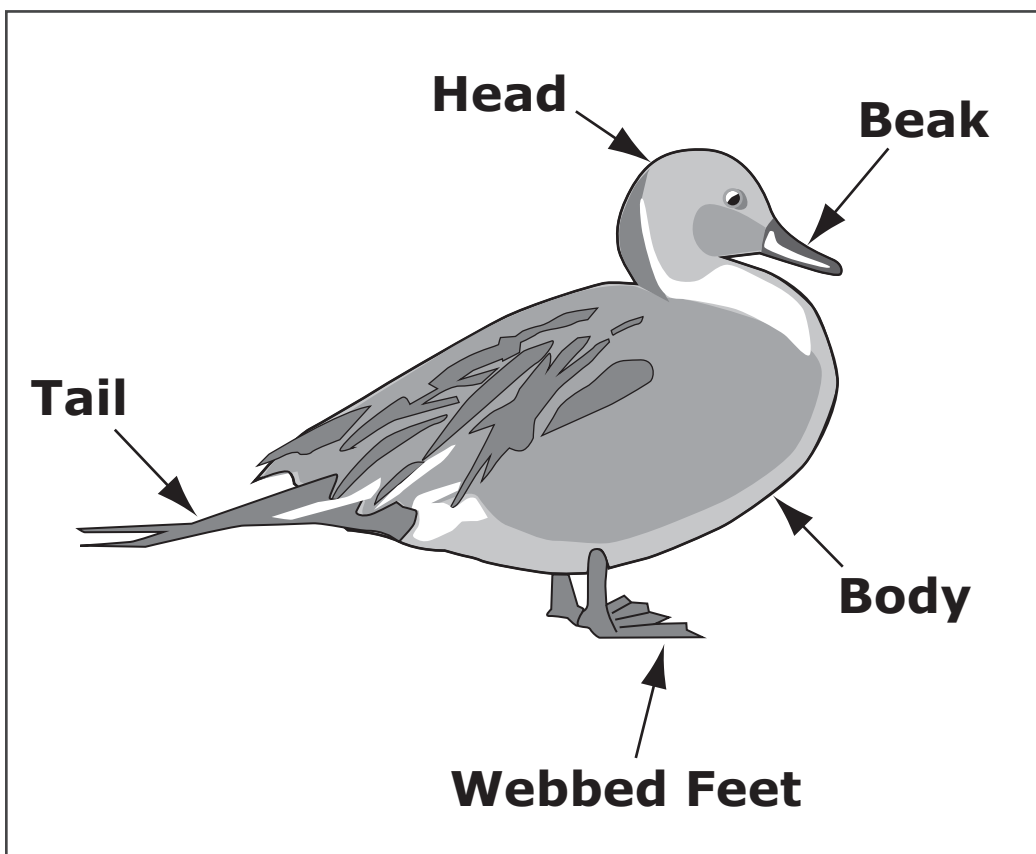
The pintail duck lives in wetlands and ponds. It eats water plants that it finds on the surface and under the water.



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- 10.** Identify 2 different adaptations that make this duck able to feed on water plants better than other kinds of birds.

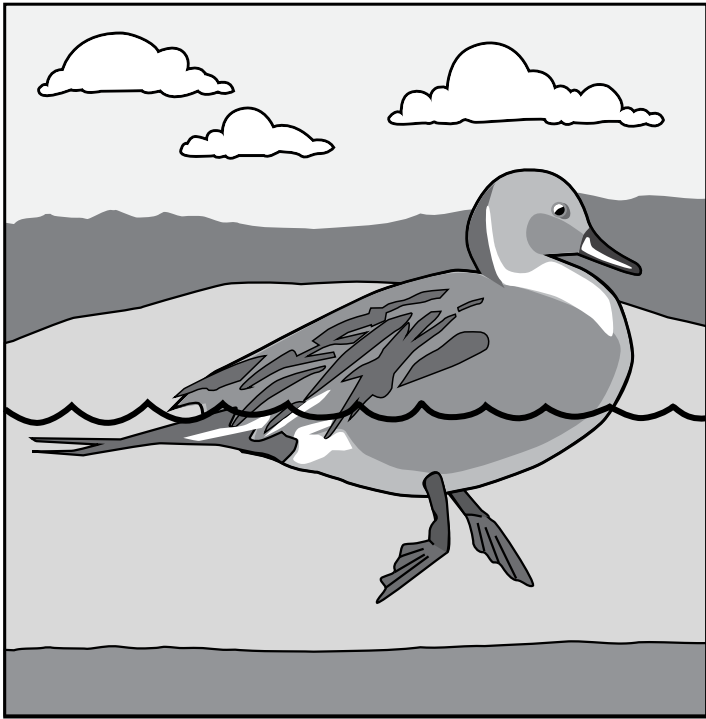
On the diagram, circle the adaptations you want to select. You may only circle 2.



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A pintail duck is swimming. Pintail ducks are strong swimmers and spend much of their time in water. They swim by moving their feet under the water.



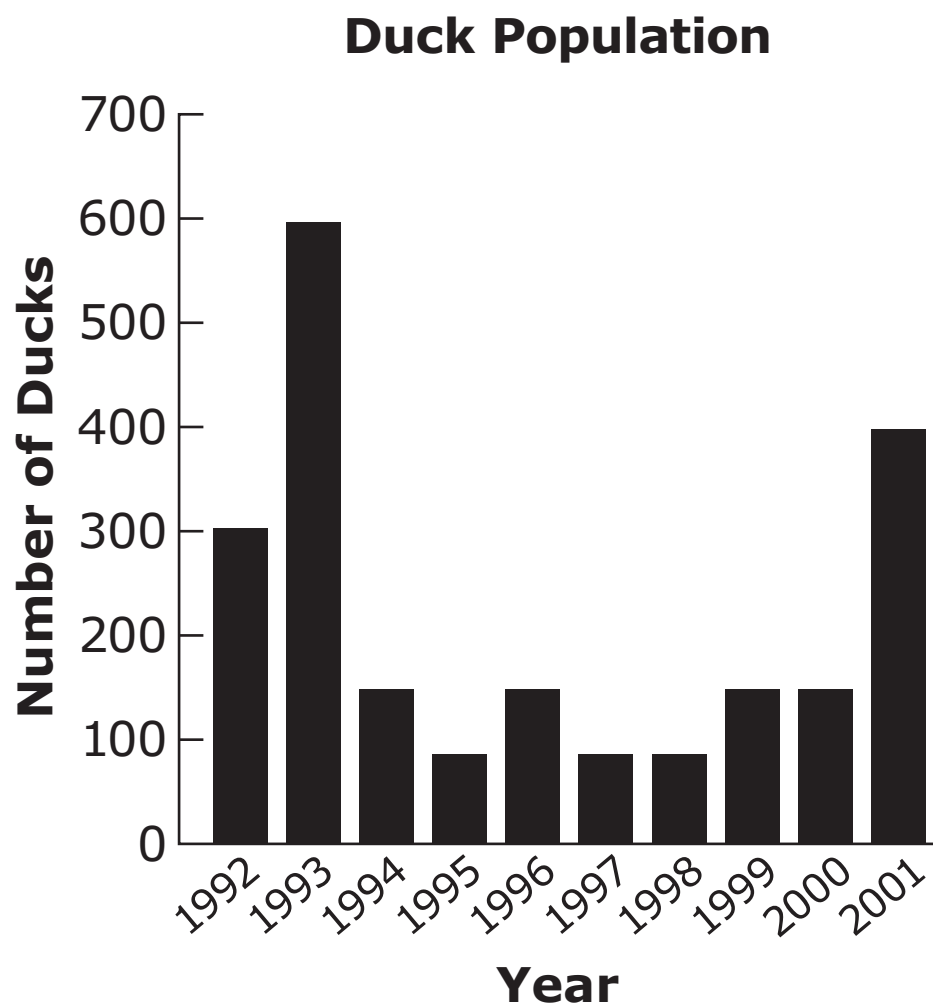
2

- 11.** Identify the force that causes the duck to slow down after it stops moving its feet.
- A.** Air pressure pushes forward on the duck.
 - B.** Friction from water pulls backward on the duck.
 - C.** Gravity pulls down on the duck.
 - D.** Water pushes up on the duck.

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The graph below shows data for a population of pintail ducks in Minnesota.



- 12.** There has been no rain for a long period of time. This has affected the Minnesota pintail duck population. Based on the data from the graph, in what year did this lack of rain begin to affect the pintail duck population?

Write your answer in the box. You may use up to 5 numbers.

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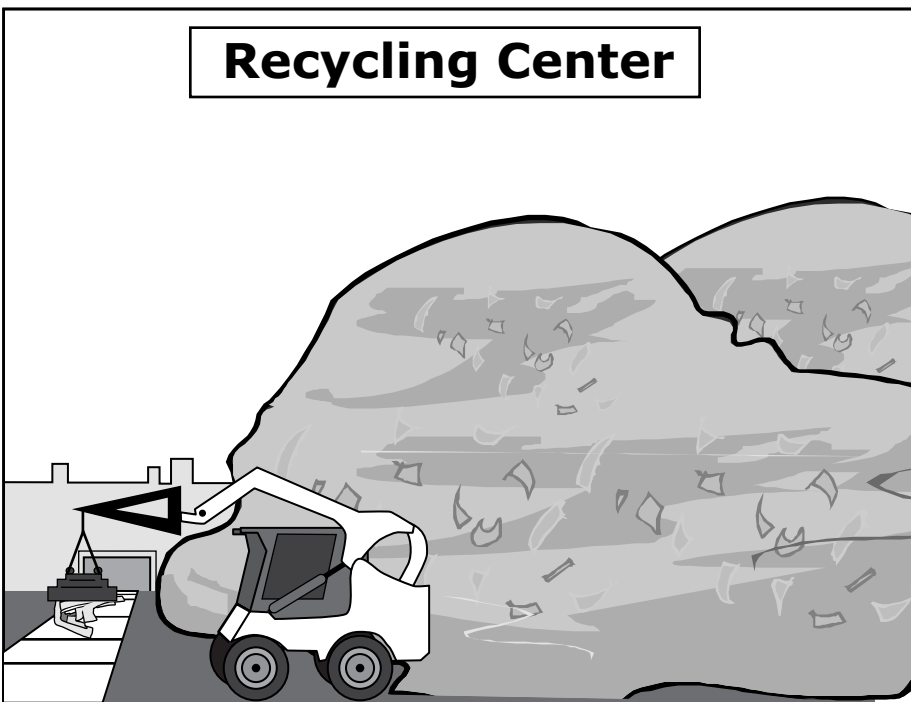
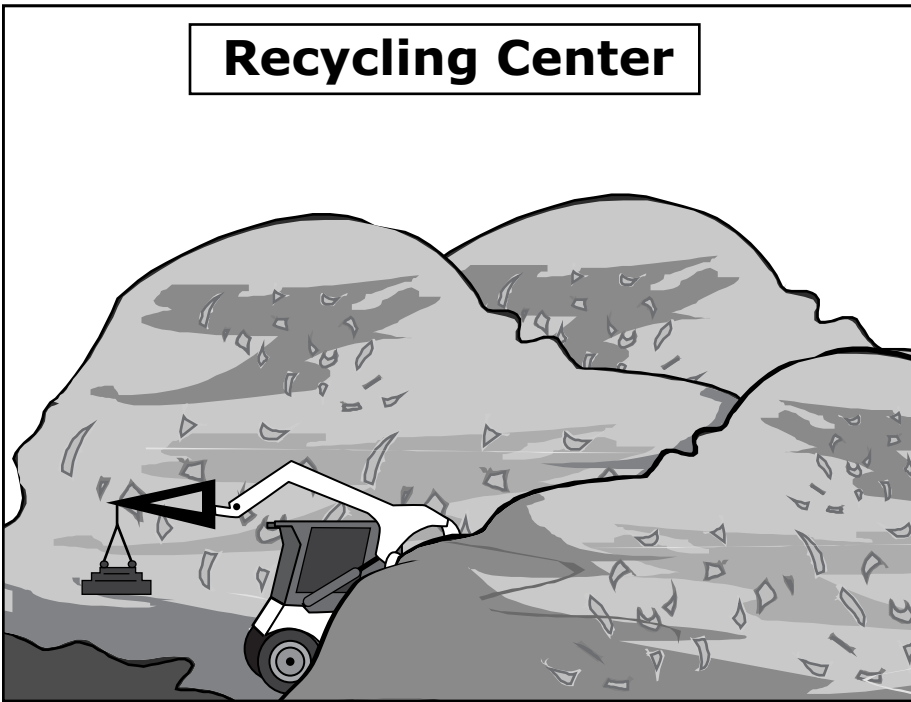
Electromagnets

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Electromagnets can be used to separate materials at recycling centers.

2



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- 13.** Identify each of the tasks at the recycling center that an electromagnet is designed to help perform.

On the diagram, circle each of the tasks you want to select.

Tasks



- 14.** The materials picked up by an electromagnet at a recycling center can be weighed. Which tool measures weight?
- A.** Balance
 - B.** Metric ruler
 - C.** Thermometer
 - D.** Graduated cylinder

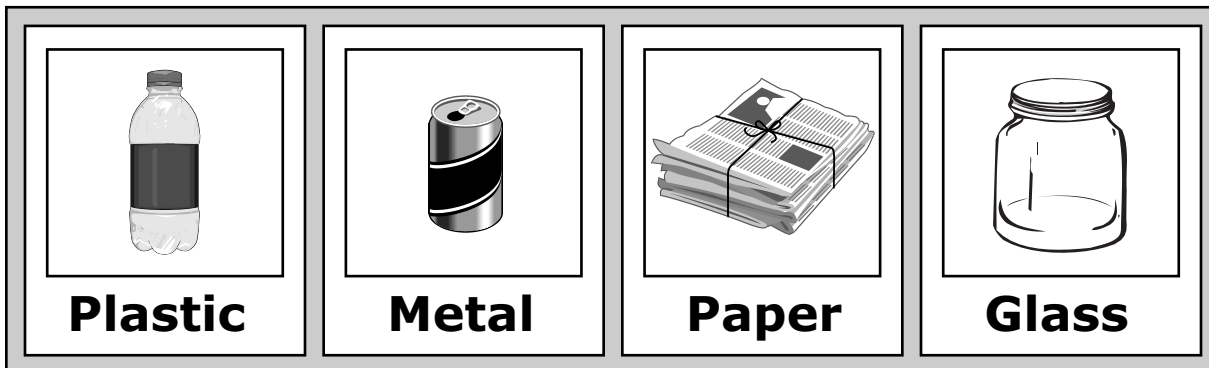
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- 15.** Materials at the recycling center are made from both renewable resources and nonrenewable resources. Identify each of the materials that are made from renewable resources.

On the diagram, circle each of the materials you want to select.

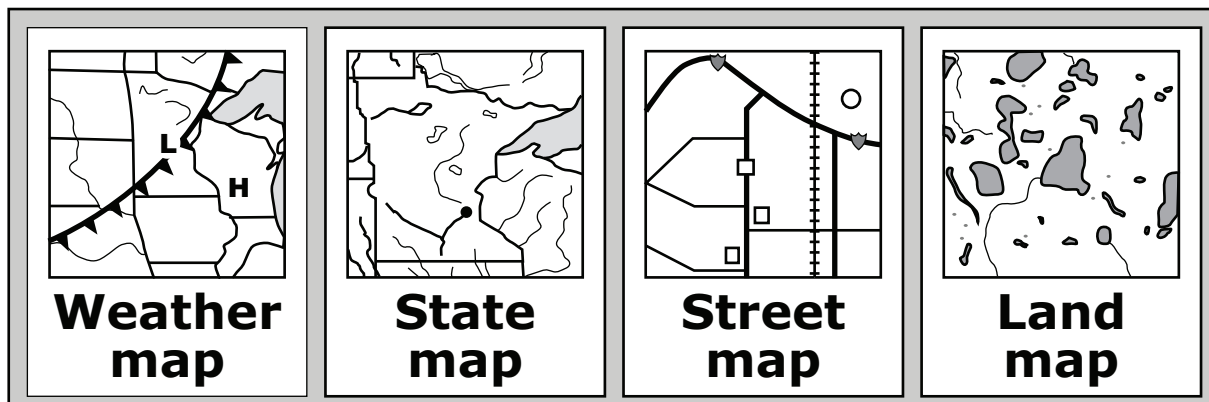
Materials



- 16.** Identify the map that is most useful when finding a recycling center.

On the diagram, circle the map you want to select.
You may only circle 1.

Maps



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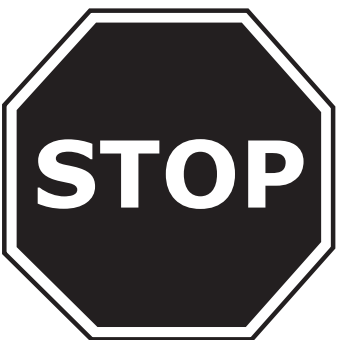
- 17.** How does choosing to recycle affect the environment?
- A.** More landfills are needed.
 - B.** More new materials are used.
 - C.** Fewer recycling centers are built.
 - D.** Fewer nonrenewable resources are used.

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Science Item Sampler
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