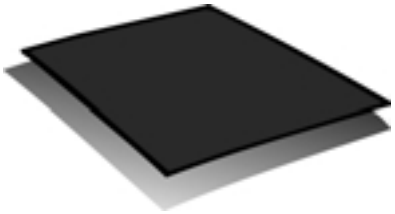
Chapter Science Investigation Name _____

Making a Crystal Garden

What You Need



black construction paper

aluminum pie plate

cup of hot water

1 spoonful Epsom salts

spoon

food coloring

scissors

goggles

Find Out

Do this activity to see how matter can change.

Process Skills

Observing
Communicating
Inferring

Time

- 1 hour to get started
- 10 minutes a day for one week

What to Do

1. Cut the construction paper to fit into the bottom of the pie plate.
   Safety! **Be careful with scissors.**
2. Stir the Epsom salts into the hot water. Safety! **Be very careful with hot water!**
3. Keep stirring until you can't see the Epsom salts. Wait for the water to cool. Then, slowly pour the salt water into the pie plate.
4. Put the pie plate near a window. Leave it there for one day. **Observe** what happens.
5. Make another cup of salt water. This time, add three drops of food coloring to the water. Pour two spoonfuls of the colored salt water onto the construction paper. Leave it there for one day.
6. **Observe** what happens. **Draw** a picture of what you see.
7. Repeat steps 5–6, using different food colorings each time.

Day	Draw Your Crystal Garden
Day One	
Day Two	
Day Three	
Day Four	
Day Five	

Student data will vary, but gardens should be getting larger and more colorful each day.

Conclusions

1. What happened to the water you put into the pie plate?

It evaporated or dried up. It became a gas.

Note: When you mix the Epsom salts (a solid) into the hot water (a liquid), the Epsom salts dissolves. When the water evaporates, the water becomes a gas. The Epsom salts becomes a solid again and makes crystals. When you add more, the crystals grow.

2. Where did the crystals come from?

When the water dried up, the salt in the water did not. It stayed on the plate.

New Questions

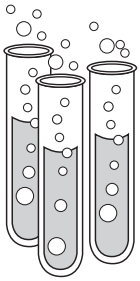
1. What would happen if you didn't add food coloring to the water?

The crystals would still appear, but they would be white.

2. Write a question you still have about the way matter changes.

Accept all reasonable questions.

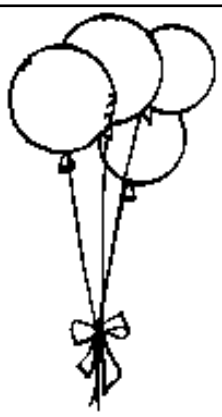
Name _____



ACTIVITY

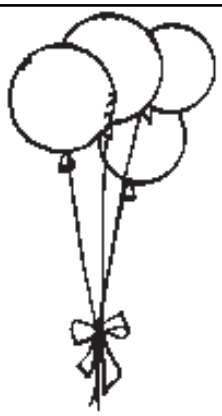
Gas Takes Up Space

How does your balloon look before you blow it up? **Draw** a picture.



Uninflated balloon shapes may vary but should show some contrast with their shapes after inflation.

Blow up your balloon. How does the balloon look now? **Draw** a picture.



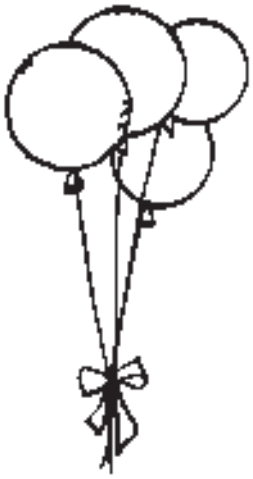
Drawings will vary but should show size and shape changes.

Name _____

Name two ways the balloon changed.

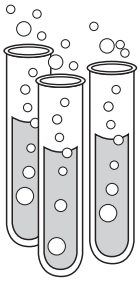
Students may say that the balloon changed in size and shape.

Predict what would happen to the gas in the balloon if you untied it. **Draw** a picture to show what you think would happen.



Answers will vary, but most students will predict that the air will leave the balloon, and the balloon will return to its smaller, unfilled size.

Name _____



ACTIVITY

Changing Water

Tell how the ice in the bowls looks. Use words.

Answers will vary, but possible answers include: solid, white, frosted, hard, square, wet.

Draw what you **see**.

First try:
Second try:

Students should draw ice.

Name _____

Tell how the ice looks after one hour. Use words.

Answers will vary, but possible answers include: liquid, water, clear, melted, wet.

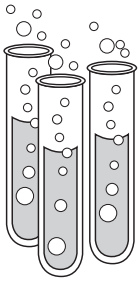
Draw what you **see**.

First try:

Second try:

Drawings should show that the ice has melted and taken the shape of the bowls.

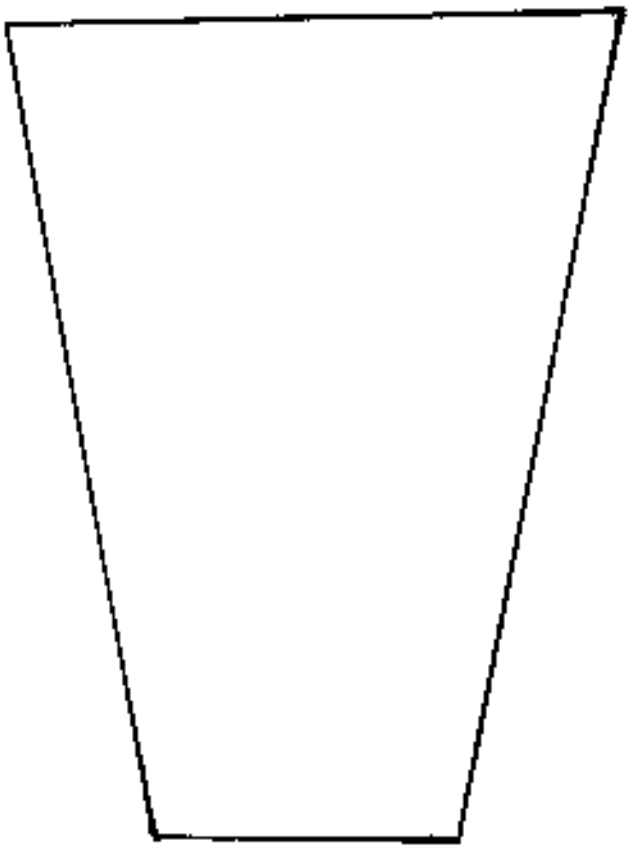
Name _____



ACTIVITY

Making Mixtures

Draw what you **see**.



Students should draw peas and water in the cup. The peas should be at the bottom of the cup.

Name _____

Watch your teacher run the blender.
Now **draw** what you **see**.

Drawing should show the blended mixture, with the peas ground up and distributed throughout the water.

Wait one hour. **Draw** what you **see**.

Drawings should show how pea parts settled at the bottom of the blender.