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mini e-book

PHOTOCOPY MASTERS

Science

States Of Matter

For Middle Primary

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mini e-book

PHOTOCOPY MASTERS

Contents

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Author: Yolanda Cool Illustrator: Alison Mutton

Ready-Ed Publcations:
info@readyed.com.au
www.readyed.net

Changing States Of Matter 1

❍ Write the correct word next to its meaning.

Boil	**Liquid**	**Melting point**	**Substance**
Container	**Melt**	**Evaporation**	**Reversible**
Gas	**Solid**	**Condensation**	**Irreversible**
Freeze	**Freezing point**	**Matter**	

1. Any object that can be used to hold things. _____

2. Something that has a definite shape and volume. _____

3. Something that doesn't have a definite shape or volume such as water vapour. _____

4. To change a liquid into a gas. _____

5. To change a liquid into a solid. _____

6. Temperature at which liquid changes into a solid. _____

7. Temperature at which solid changes into a liquid. _____

8. Something that is free to move but has a definite volume. _____

9. To change a solid into a liquid. _____

10. To increase heat. _____

11. When a gas changes into a liquid through cooling. _____

12. Something that occupies space: A physical state - a solid, liquid or gas. _____

13. What matter is made up of. _____

14. Matter that is able to return to its original state. _____

15. Matter that is unnable to return to its original state. _____

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Changing States Of Matter 2

Experiment: How water responds to changes in temperature.

Materials:

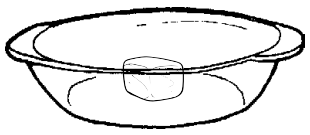
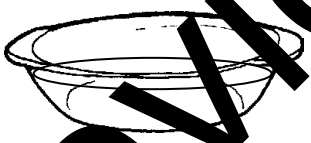
• ice cube • bowl of water at room temperature • hot cup of tea • thermometer

Process:

1. Predict the temperature of each matter.

Ice cube	Water at room temperature	Hot cup of tea
Prediction:	**Prediction:**	**Prediction:**

2. Using a thermometer record the actual temperature of each matter.

		
Temperature:	**Temperature:**	**Temperature:**

3. Complete the table.

What happens to each matter when kept at room temperature?	
Ice cube:	
Bowl of water:	
Cup of tea:	
How can each matter be changed back to its original state?	
Ice cube:	
Bowl of water:	
Cup of tea:	

Heating Matter 1

Experiment: How lemon juice responds to heat.

Materials:

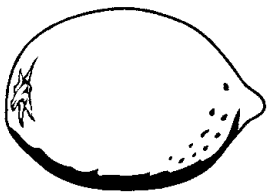
- **small container**
- **lemon juice**
- **a paintbrush**
- **paper**
- **iron**

Process:

1. Pour some lemon juice into the container.

2. Using the paintbrush, paint a secret message with the juice below.

Secret Message:



3. Leave the paper in a warm place to dry.

4. When the juice is dry - you will see nothing - it will be invisible.

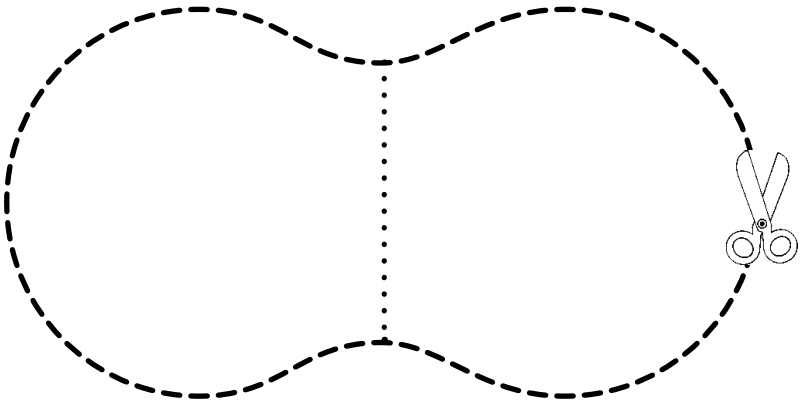
5. Ask your teacher to reveal your message by ironing the paper with a hot iron.

FACT

Lemon juice when it dries is invisible. The heat from the iron cooks the lemon juice and turns it brown. The change is permanent, making it irreversible.

Heating Matter 2

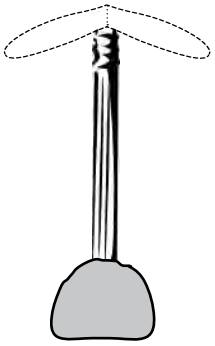
Experiment: How heat moves.



Materials:

- **pencil (with a flat end)**
- **big ball of Blue- Tak**

Process:



1. Place ball of Blue-Tak on your desk and flatten slightly.
2. Stand the pencil upright with the pointy end down into the Blue-Tak.
3. Cut out the shape above and fold along the dotted line.
4. Balance folded paper on the top of the pencil.
5. Rub your hands together for about 15 seconds *(depending on how hot or cold the room is)*.
6. Now hold your hands under the paper. Record what happens below.

What happened? _____

_____

_____

❍ After writing, discuss the results with the class.

FACTS

- **When you rub your hands together you create heat by friction.**
- **Hot air rises.**

Heating And Cooling

❍ Draw and/or describe each test matter: before it is heated, after it is heated and when it is cooled.

	Before Heated	After Heated	When Cooled
Chocolate Chips			
Marshmallows			
Crayons			
Popcorn Kernels			
Paper			
Metal Paper Clips			

Answers

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1. Container
2. Solid
3. Gas
4. Evaporation
5. Freeze
6. Freezing point
7. Melting point
8. Liquid
9. Melt
10. Boil
11. Condensation
12. Matter
13. Substance
14. Reversible
15. Irreversible

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When kept at room temperature:
The ice cube will melt.
The water will stay at room temperature.
The hot cup of tea will cool down.

To change back to original state, you must
Freeze the ice.
Leave the water at room temperature.
Heat the tea.