

G.I.R.L.S.

GIRLS INSPIRING RISING LADIES IN STEM

Name: _____ Date: _____

TOPIC #2: STATES OF MATTER

THE WATER CYCLE IN ACTION

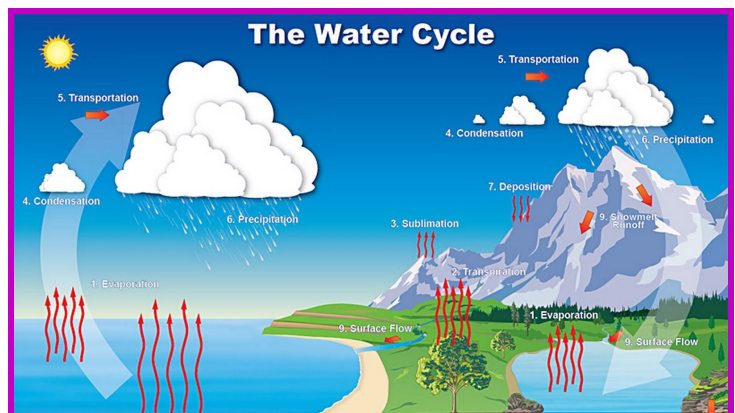
SCIENTIST OF THE DAY: DOROTHY HODGKIN

Dorothy Hodgkin was born in 1910 in Egypt. She spent most of her early childhood traveling country to country with her British parents. Her mother encouraged her to study crystals, which she developed an early interest in. She received her degree in Chemistry at Oxford University. She then went to Cambridge to study crystallography. She was one of the first scientists in England to use a computer in her research. In 1964, Dorothy became the first English woman to win the Nobel Prize. She won the prize in Chemistry for her work on vitamin B12 and penicillin. She then taught at Oxford college until she retired in 1977.



BACKGROUND

The water cycle is important to all living things on the earth! There are other cycles in your life. Your daily routine is a cycle. You wake up. You go to school. You ride the bus home. You go to soccer practice. You eat dinner. You go to bed. These events are part of a cycle. This cycle repeats itself every weekday. The water cycle is also a set of repeated events that happen over and over again. Evaporation, condensation, precipitation, and collection are the repeated events in the water cycle. These events happen over and over again.



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NEW WORDS

- **Water Cycle:** _____

- **Evaporation:** _____

- **Condensation:** _____

- **Precipitation:** _____

- **Runoff Water:** _____

TODAY'S EXPERIMENT

In this experiment, we will be using water, salt, and food coloring to explore the topic of the water cycle. When ice and food coloring are added to the can we will observe the process of condensation. We will then observe what happens when salt is added to the other can. We will record our observations.

SCIENCE CONCEPT: HYPOTHESES

In science, a hypothesis is an idea or explanation that can be tested through study and experimentation. A hypothesis is always an *educated* guess that is made using information we already know. After you make a hypothesis, you test it by doing an experiment to see what happens. Outside science, a theory or guess can also be called a hypothesis. Generally, hypotheses are stated as an "if... then..." statement.

Let's create a hypothesis for our experiment:

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MATERIALS LIST

- ☐ 2 metal cans
- ☐ Table salt
- ☐ Food coloring
- ☐ Ice cubes
- ☐ Water

PROCEDURE

1. Add water and ice cubes to both cans leaving a little bit of room at the top
2. Stir in food coloring to can 1
3. Observe what happens to the outside of the can after a few minutes
4. Record your observations
5. Add 3 tablespoons of salt to can 1 and can 2
6. Wait 15 minutes and record your observations

DATA

Can #	Observations	Observations
1 (food coloring)		
2		

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QUESTIONS

1. Why is the condensation on the outside of can 1 not the same color as the food coloring?

2. Why does the frost form when the salt is added?

EXIT PASS

I Q X I O G Y F F N J D E V U
A U K N N B P I M O S C F I C
R N W F O L R F Z I Q Y F I K
V O A T I Q E S J T E D O U N
J I T A T B C U S A M R N I O
E T E A A G I Q D R J F U Z I
Q A R X R S P V O I K P R G T
C S C P O O I B G P S M Z O C
E N Y R P B T X N S A T D Y E
D E C H A T A V Z N M K S E L
W D L T V M T U I A W T G W L
F N E D E M I N S R K Y Q S O
J O W X I M O U M T L G M P C
O C N O T Y N H L O J T E H J
U K N O I T A M I L B U S R O

COLLECTION
CONDENSATION
EVAPORATION
PRECIPITATION
RUNOFF
SUBLIMATION
TRANSPIRATION
WATERCYCLE

EXPERIMENT LINK

- <https://study.com/academy/popular/states-of-matter-experiments-for-kids.html>