

Science 8:

RECYCLE THE WATER

Student Name : _____

Group Members: _____

Date: _____

Purpose: Water is the only substance on earth that can exist naturally in all three states: solid, liquid and gas. Here, you will examine these changes in state and understand better how the water cycle works.

Hypothesis: _____

Materials:

- Two Trays or plates
- Hot plate (Kettle)
- A cup of ice
- Thermometer
- beaker
- Stand and Clamp
-

Procedure:

- 1) You may read the procedure but do not start. I will go over some safety rules and instructions on how to setup this laboratory.
- 2) Fill a beaker with a cup of ice and place on the hot plate
- 3) Have one student stir the ice-water mixture and another one observe the temperature every minute while it is being heated. Do not let the thermometer touch the bottom of the beaker. Record this information in table 1

Student 1: Stirring the mixture

Student 2: Keeping track of the one minute intervals

Student 3: Holding the Thermometer

Student 4: Recording the Temperature at each one minute interval

- 4) After the ice is melted, keep heating the water and recording the temperature every one minute until the water boils.

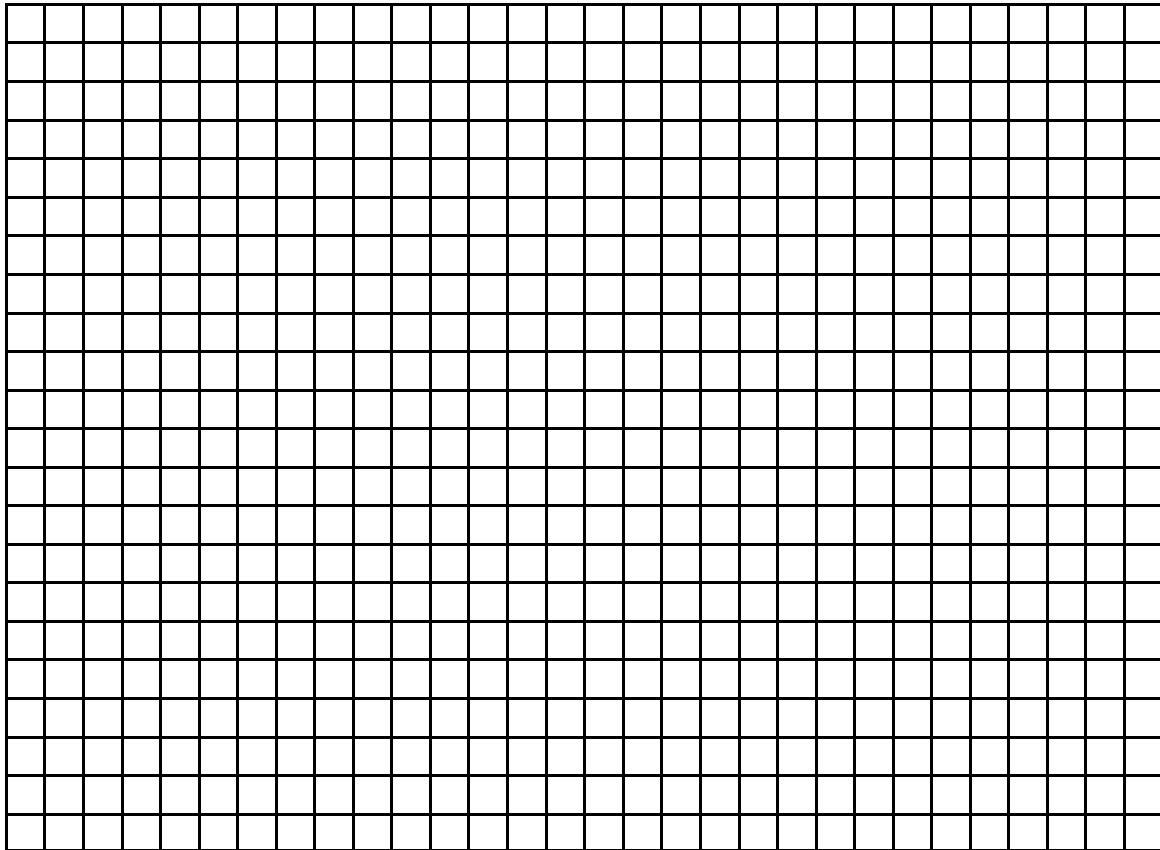
- 5) Suspend a tray or plate in the steam that is coming from the beaker, and place the second beaker under the first to catch the water drops (condensation). Remember to put cold water in the first plate.
- 6) Pour the water from the second plate back in the kettle to complete the cycle
- 7) Use the data from table 1 to plot the observed temperatures (**Dependent Variable**) against the time (**Independent Variable**) on graph 1

Observations:

Table 1.1

Time	Temperature
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Graph 1:



Draw and Label model of your Water cycle

Draw and Label a model of the water cycle in nature

Questions:

1. What was the temperature of the ice?

2. What caused the ice to melt?

3. What was the boiling temperature of water?

4. What made the steam turn back to water?

5. Would the steam condense if the top plate was filled with hot water?

6. What makes the water evaporate in nature?

7. What would happen if the beaker was allowed to boil dry?

8. What can the pouring back of the water into the beaker be compared with in the natural water cycle

9. Use the words below to label the diagram

Precipitation

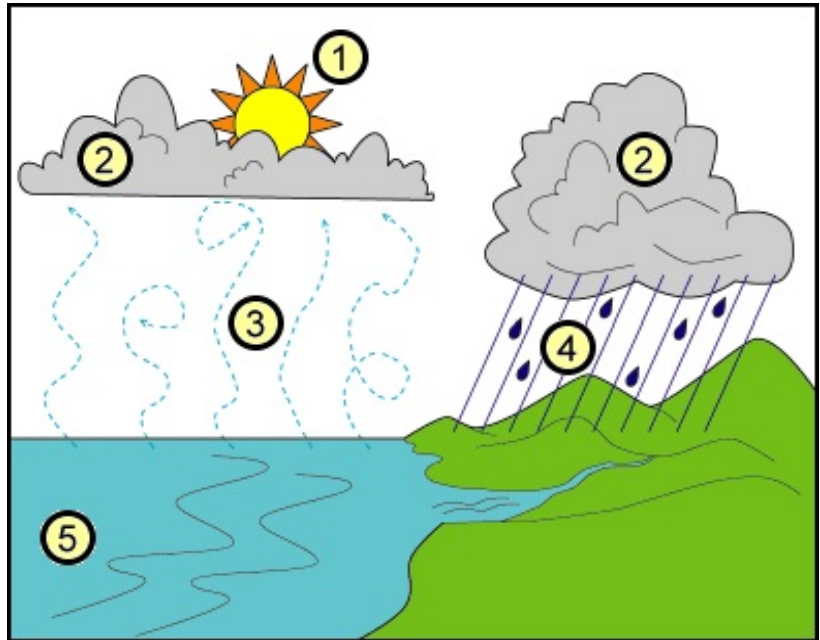
Evaporation

The Sun

The Ocean

Clouds

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____



10. Use the word below to fill in the blanks.

water (2)

rivers and lakes

sun

cloud (2)

ground

cycle

The _____ evaporates _____ from lakes and oceans. As the air rises, it cools. The water vapor condenses into tiny droplets of _____. The droplets crowd together and form a _____. Wind blows the _____ towards the land. The tiny droplets join together and fall as precipitation to the _____. The water soaks into the ground and collects in _____. The _____ that never ends has started again!

Conclusion:

