CREATE A CLOUD

Activity & Experiment

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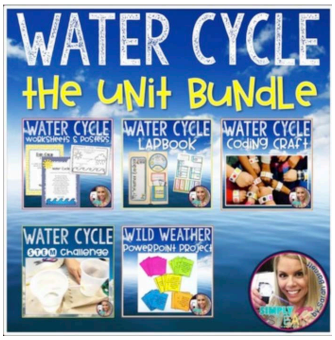
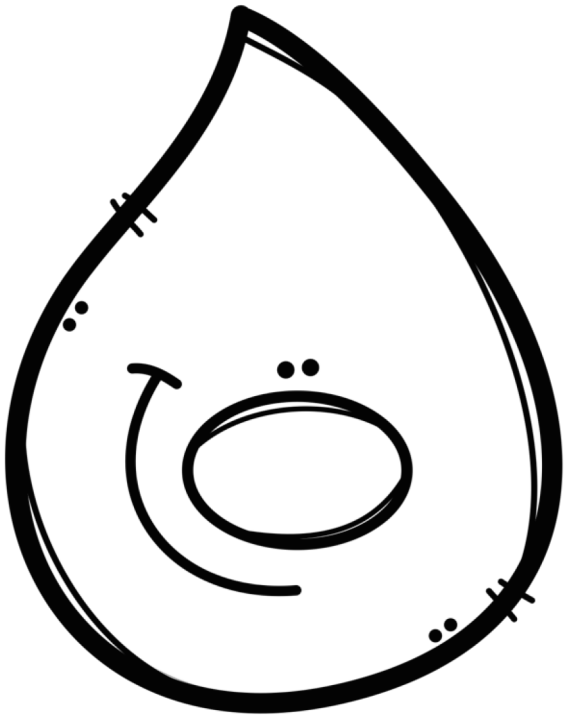


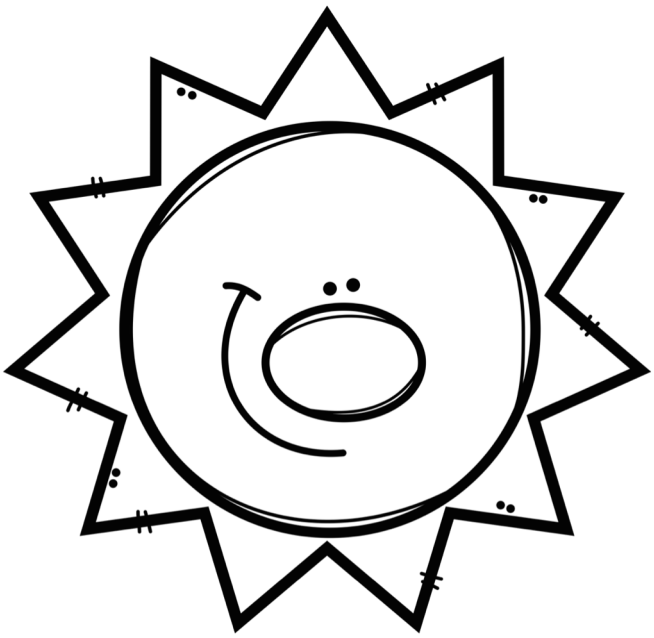
iMPORtANt Stuff

Materials for Experiment	• Clear plastic cups • Shaving cream • Food color • Paper towels
Table of Contents	• Colored and B&W job cards • Colored and B&W job descriptions • Create a Cloud worksheet (differentiated) • Teacher explanation
Time	About 30 minutes
Objectives	Students will learn that clouds hold water until the water droplets collect and become too heavy. When this happens the cloud will precipitate. Precipitation can be hail, rain, sleet, or snow.
Teaching Tips	This lesson was so much fun for us! We did it in small groups since I only had 4 different food colors. I used the following cards to give jobs. Students chose one card and then I revealed their job. This eliminated some arguing over who would do what. Students should use the Create a Cloud sheet as they're completing the experiment. Once they've completed their conclusion, you can read the teacher explanation.

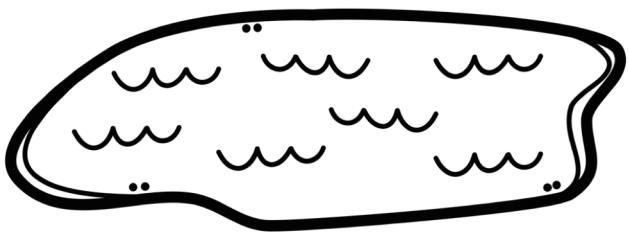
Cloud



RAiNdROP

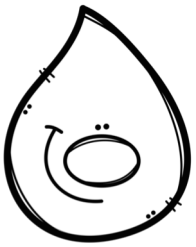
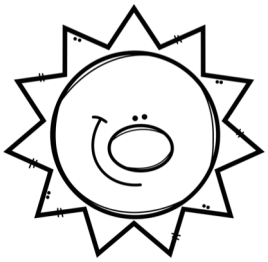


SuNSHiNe



PuddLe

In this team, we will do our best to work together to make an amazing cloud!

JOBS	DESCRIPTION OF JOB	NAME OF TEAMMATE RESPONSIBLE
 CLOUD	The cloud will squirt the shaving cream on top of the cup of water. They will create the cloud.	
 RAINDROP	The raindrop will drop food color on top of the cloud (shaving cream). The raindrop will also follow the procedures listed.	
 SUNSHINE	The sunshine will help make the classroom pretty again by throwing away materials and wiping up the tables.	
 PUDDLE	The puddle will pour water into the cup.	

Name: _____

CReAte A CLoud

PROCEDURE:

Step 1: Pour 1 cup of water in a clear plastic cup.

Step 2: Squirt shaving cream to cover the top.

Step 3: Add 1 drop of food color to the top of the shaving cream.. Record your observations.

Step 4: Add 3 drops of food color. Record your observations.

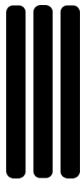
Step 5: Continue to add 3 drops of food color until you see a change. Be sure to tally how many drops of food color you added.

OBSERVATIONS:

When I added 1 drop of food color _____ happened.

When I added 3 drops of food color _____ happened.

DATA:

Step 3 1 drop added	Step 4 3 drops added	Step 5 _____ drops added
		

How many drops were added to the cup before there was a change?

_____ + _____ + _____ = _____

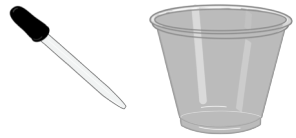
CONCLUSION:

I added _____ drops before there was a change. The cloud began to _____ because it became too _____.

Name: _____

CReAte A CLoud

PROCEDURE:



Step 1: Pour 1 cup of water in a clear plastic cup.

Step 2: Squirt shaving cream to cover the top.

Step 3: Add 1 drop of food color to the top of the shaving cream.. Record your observations.

Step 4: Add 3 drops of food color. Record your observations.

Step 5: Continue to add 3 drops of food color until you see a change. Be sure to tally how many drops of food color you added.

OBSERVATIONS:

What happened when you added 1 drop of water? What happened when you added 3 more drops of water?

_____

_____

DATA:

Step 3 1 drop added	Step 4 3 drops added	Step 5 _____ drops added

How many drops were added to the cup before there was a change?

_____ + _____ + _____ = _____

CONCLUSION:

How many drops did it take before there was a change? _____

What happened to the cloud and why did it happen?

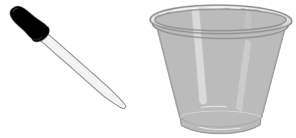
_____

_____

Name: _____

CReAte A CLoud

PROCEDURE:



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Step 5: Continue to add 3 drops of food color until you see a change. Be sure to tally how many drops of food color you added.

OBSERVATIONS:

_____

_____

_____

DATA:

number of drops added

How many drops were added to the cup before there was a change?

_____

CONCLUSION:

_____

_____

_____

TEACHER EXPLANATION

So what happened was...

The shaving cream represents the water droplets floating in the sky. They're less dense than the air molecules in the atmosphere. In fact, clouds can be heavier than a herd of elephants before they begin to precipitate!

As clouds collect water droplets, the drops begin to stick together. This is because water is attracted to itself. Kind of conceited right?! Well, it's actually called cohesion. Water is attracted to itself because the molecules that form water. There are two hydrogen and one oxygen. This makes the water molecules "sticky".

The water molecules even stick to dust particles in the air. Since Earth is terrestrial, meaning it's a big rock, it kicks up a lot of dust. Once these tiny droplets condense in the sky, they get thick and heavy. The thicker they are, the more light they block out. This is why some clouds look dark and gray.

Once the water droplets become too heavy, they fall from the cloud in the form of precipitation. Precipitation comes in different forms like rain, sleet, hail, or snow.

So, as you added the drops of food color to the shaving cream, the food color needed to be more dense than the shaving cream in order to precipitate. This is the same way that water droplets behave. They must become more dense than the air molecules to precipitate.

So there you go! That's how precipitation happens. What are three facts you heard? What are 2 things you learned? What's I question you still have?

Name: _____

3 – 2 – 1

List 3 facts about clouds and precipitation. List 2 things you learned. List 1 question you have.

3 FACTS:

1.

2.

3.

2 THINGS I LEARNED:

1.

2.

1 QUESTION I HAVE:

1.