

Lesson 1: The Water Cycle Movement Activity

Concept to be learned:

The water cycle is a cycle that describes how water moves through our environment. It processes through the stages of ground water, evaporation, condensation, and precipitation.

Unit Outcomes:

Students will explore concepts of condensation and evaporation through experimentation and observation.

Students will differentiate the effects of energy change on weather. Heating and cooling of water, air, and land and its affect on wind, evaporation, condensation, freezing, thawing, and precipitation will all be considered through experimentation.

Lesson Objective:

To show the progression of a water droplet through the water cycle demonstrating an understanding of the stages of ground water, evaporation, condensation, and precipitation.

Time Allotment:

45 Minutes

Materials/Resources Needed:

- The Water Cycle Song: <http://www.watchknowlearn.org/Video.aspx?VideoID=20903&CategoryID=5363>
- Computer with projector, screen, and audio capabilities
- Water Cycle Tri-fold Board (created by me) *Could use a textbook, poster, or print of labeled water cycle*
- Water Cycle Review Sheet (created by me, picture copied from <http://www.kidzone.ws/water/cactivity1.htm>)
- Pencil

Introductory Activity (5 minutes) :

Introduce students to the water cycle by playing The Water Cycle Song video. Use the video of the song to get students interested and excited about learning about the water cycle.

Developmental Activity (25 minutes):

Tell the students that they will be learning about the stages of the water cycle. Present the water cycle tri-fold board to the class. Talk about the stages

and show the board to the class, discussing each stage of the water cycle. Ask the students to think about what it would be like to be a water droplet in the water cycle.

Students stand and form a large circle. Slowly, demonstrate the movement of a water droplet through the water cycle. Have the students start lying on the ground as ground water. Then, as the sun comes out and begins to heat up the water, the students slowly rise up from the ground and stretch up to the sky as they evaporate into the air. Then, as the air in the sky cools, the water droplets condense and begin to gather together with dust to form clouds. Have students bring their arms into their bodies and condense together as class with all of the other water droplets forming a large cloud around the teacher. As the water droplets become too heavy, they begin to fall back down towards the ground as precipitation. Have the students jump back to their original starting location and lay on the ground as they return back to the beginning of the cycle as ground water. Practice the cycle again with the students. Encourage them to name their stages as they physically move through the water cycle, pretending they are water droplets.

Concluding Activity (15 minutes):

Send students back to their seats. Pass out the Water Cycle Review sheet. Have students fill out the names of the stages as you demonstrate the physical movements of the water droplet through each water cycle stage.

Assessment/Evaluation Strategy :

Observation of students participating in the Water Cycle Movement Activity.
Water Cycle Review Sheet

Water Cycle Review

Name: _____ Date: _____

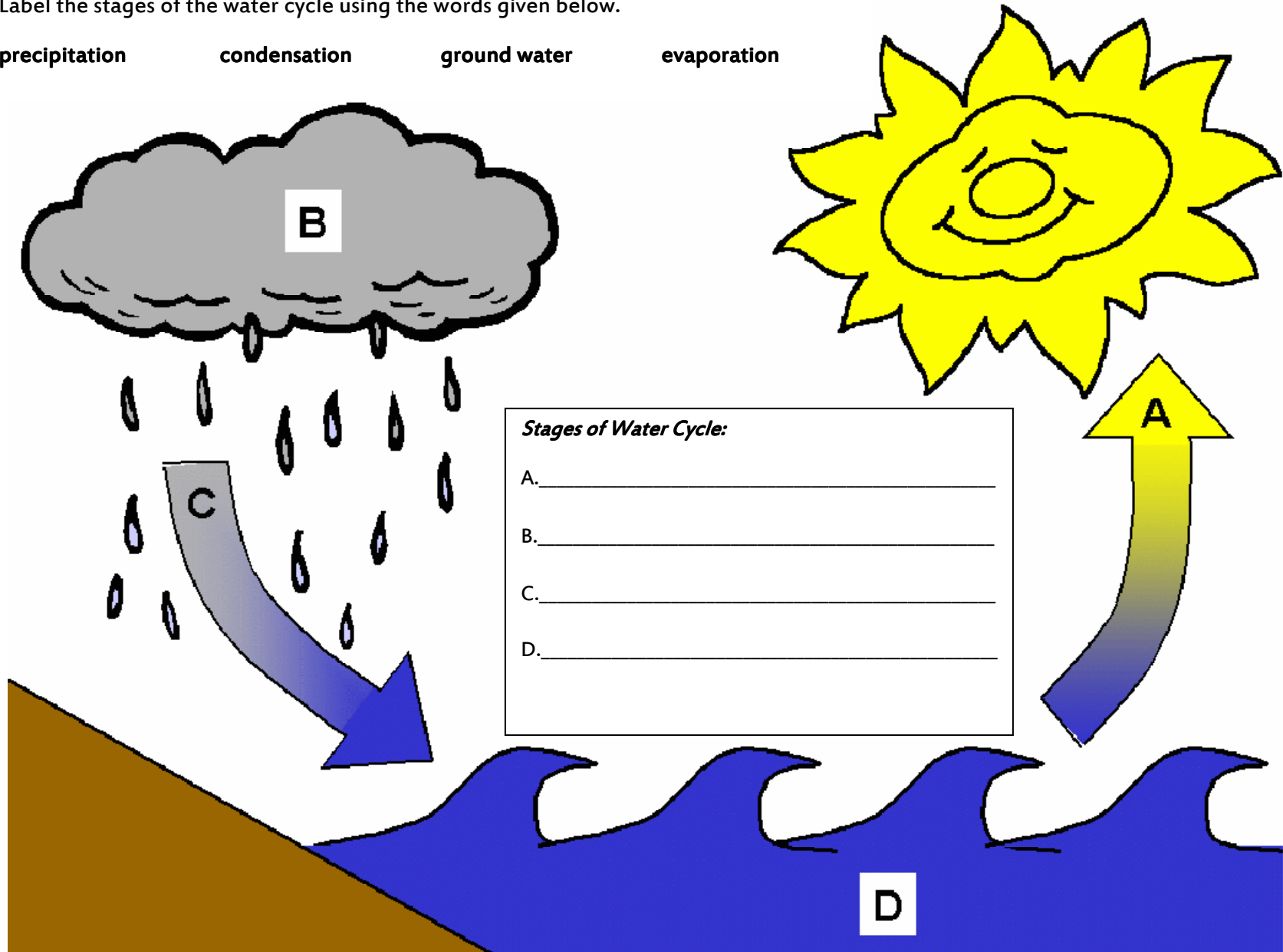
Label the stages of the water cycle using the words given below.

precipitation

condensation

ground water

evaporation



Lesson 2: Evaporation and Condensation Experiment

Concept to be learned:

The water cycle is a cycle that describes how water moves through our environment. It processes through the stages of ground water, evaporation, condensation, and precipitation.

Unit Outcomes:

Students will explore concepts of condensation and evaporation through experimentation and observation.

Students will differentiate the effects of energy change on weather. Heating and cooling of water, air, and land and its affect on wind, evaporation, condensation, freezing, thawing, and precipitation will all be considered through experimentation.

Lesson Objective:

The students will observe experiments involving evaporation and condensation and will be able to explain them.

Time Allotment:

45 Minutes

Materials/Resources Needed:

- Thirstin's Water Cycle Video: http://www.epa.gov/ogwdw/kids/flash/flash_watercycle.html
 - Computer with projector, screen, and audio capabilities
- Raindrop finger puppet
 - Raindrop clipart picture
 - Tongue depressor
 - Glue or tape
- Adventure of Randy the Raindrop story: http://www.proteacher.org/a/25892_Water_Cycle.html
- Plastic cups
- Pitcher of warm/hot tap water
- Experiment Reflection Sheet

Introductory Activity (10 minutes) :

Introduce students to the water cycle by playing [The Thirstin's Water Cycle Video](#). Use the video to get students interested and excited about learning about the water cycle.

Pass out a tongue depressor and water droplet picture to each student. Have them glue or tape the picture to the stick creating their own puppet.

Developmental Activity (25 minutes):

Have students gather at the carpet. Tell the students you are going to read a story about Randy the water droplet. Explain that they made a puppet of Randy. Tell them that as you read the story, they can use their Randy puppet to act out what happens to him during the story. First, have the students predict what they think will happen to Randy during his adventures. Then, read the story, Adventures of Randy the Raindrop. Next, have the students summarize and explain what happened to Randy during the story. Ask if they are making any connections such as text to self, text to text, or text to media.

Have students go back to their seats. Make sure they are grouped into sets of 3-4 students. Explain that they are going to conduct an experiment that will demonstrate the evaporation and condensation steps of the water cycle. Have each group gather 2 plastic cups and the Experiment Reflection Sheet. Go around to each group, pouring warm/hot tap water into one cup. Have them cover the cup with the remaining cup. Tell the students to observe what happens inside of the cup.

Concluding Activity (10 minutes):

Have the students individually document what they see happening inside the cups on their Experiment Reflection Sheet. Have them complete the sheet by explaining how this experiment relates to the water cycle. After their Experiment Reflection Sheets are complete, have the students pour the water into the sink and stack their cups onto the counter.

Assessment/Evaluation Strategy:

Participation and answers during the whole group activity of the story, Adventures of Randy the Raindrop

Experiment Reflection Sheet



Adventures of Randy the Raindrop

From: http://www.proteacher.org/a/25892_Water_Cycle.html

Randy the raindrop lived in a cloud,
the heat from the sun made him big, strong, and proud!
He got bigger and bigger until one day – Oh my!
He fell through the floor of his house in the sky!

Randy was scared, then he noticed more raindrops falling,
“Hey Randy, isn’t this fun?” they were calling.
Then onto a leaf with a splash Randy fell,
and what happened next is a strange thing to tell.

Randy was made up of water you know,
a part of him went to help the tree grow.
The rest of him went into a puddle so round,
then the sun came out and shone on the ground.

The sun warmed Randy and he started to change,
he became water vapor – my isn’t that strange?
Little drops of water, too tiny to see,
Floated into the sky – yes that was Randy!

Randy’s home once again was a cloud in the sky,
he was a raindrop once more, but then by and by...
The sun made him bigger and bigger and then...
He fell through the floor of his house once again!

Experiment Reflection Sheet

Name: _____ Date: _____

Experiment Directions: Gather 2 plastic cups. Place cups on the table with the edge of the cup facing upwards on your desk. Your teacher will pour warm/hot water into one cup. Place the other cup over the water-filled cup. Observe what happens inside of the cup.



What do you observe happening inside of the cups?

Explain how this experiment relates to our study of the water cycle.

Lesson 3: All about Clouds

Concept to be learned:

The water cycle is a cycle that describes how water moves through our environment. It processes through the stages of ground water, evaporation, condensation, and precipitation.

Unit Outcomes:

Students will identify cloud formation and types of clouds as they relate to weather, storm fronts, and changing weather.

Lesson Objective:

The students will create a cloud foldable that identifies and explains five basic types of clouds.

Time Allotment:

40 Minutes

Materials/Resources Needed:

- Water Cycle Song with Hand Motions
- The Cloud Book by Tomie dePaola
- 11x17 blue construction paper
- printed pictures of five basic types of clouds
- scissors
- glue
- pencil
- Cloud Pictures for foldable
- Cloud Matching Riddles Sheet

Introductory Activity (5 minutes) :

Have students gather on the carpet to learn a new Water Cycle Song with hand motions. First, sing the song to the students demonstrating the motions. Then, have the students join you in singing and doing the motions of the song.

Developmental Activity (25 minutes):

Tell the students that they are going to learn about the different types of clouds. Explain how clouds fit into the condensation part of the water cycle.

Read the book, The Cloud Book, by Tomie dePaola to the class. After reading the book, have the students share one new fact they learned with a friend on the carpet. Then, have the students go back to their desks for their cloud foldable project.

Pass out one blue 11x17 sheet of paper to each student in the class. Instruct them to fold the sheet in half like a hotdog. They are going to use their scissors to cut one half of the sheet to the fold line. They are going to make five equal sections on that half by cutting four slits to the fold line. The other half of the paper will not have any slits cut, it will be one whole half sheet. Next, pass out the Cloud Picture sheet. They will label the type of cloud on the top of each section, and glue the labeled picture on the back side of each cut section. They will then draw lines on the solid half showing the five section divisions. In these areas, they will write down descriptions about the cloud types. Do each type together, step-by-step, as a class.

- Fog-Cloud formed near the ground
- Cumulus-Large, white fluffy cloud
- Stratus-Layered, horizontal clouds extending over large areas
- Cirrus-Whispy white clouds at high altitudes
- Nimbus-Dark storm clouds that have precipitation

Concluding Activity (10 minutes):

After the students complete their foldable, they will use it to complete the Cloud Matching Riddles Sheet independently.

Assessment/Evaluation Strategy:

Cloud Matching Riddles Sheet

Water Cycle

By Lori-Ann Phelan

http://www.proteacher.org/a/12048_Water_Cycle_Song.html

(Sang to the tune of She'll be Coming Around the Mountain)

Water travels in a cycle, yes it does
(use pointer finger to make a big circle)

Water travels in a cycle, yes it does
(repeat finger circle)

It goes up as evaporation
(move hands up to sky)

Forms clouds as condensation
(make a cloud overhead with arms)

Then comes down as precipitation, yes it does!
(sprinkle with fingers while bringing down in front of you)

Cloud Pictures for Foldable

Cut out the labeled pictures below for your foldable.



Fog



Cumulus



Stratus



Cirrus



Nimbus

Cloud Matching Riddles

Name: _____ Date: _____

Use your Cloud Foldable to help you answer the cloud riddles below.

1. I am a large, white, fluffy cloud....who am I? _____

2. I am a dark storm cloud with precipitation, who am I? _____

3. I am a cloud that forms near the ground, who am I? _____

4. I am a layered, horizontal cloud that extends over large areas, who am I? _____

5. I am a wispy, white cloud that can be found high in the sky, who am I? _____

CHALLENGE: Which cloud do you think you'd find in a thunderstorm and why?

Lesson 4: Precipitation

Concept to be learned:

The water cycle is a cycle that describes how water moves through our environment. It processes through the stages of ground water, evaporation, condensation, and precipitation.

Unit Outcomes:

Students will distinguish water present in air as clouds, steam, fog, rain, ice, snow, sleet, or hail.

Lesson Objective:

The students will work in groups to create and present posters that identify and describe the five different types of precipitation.

Time Allotment:

65 Minutes

Materials/Resources Needed:

Precipitation Video: <http://www.youtube.com/watch?v=eTsoniyrGb0&feature=related>

Precipitation by Frances Purslow

Precipitation by Alan Rodgers

Eyewitness Weather by Brian Cosgrove

How the Weather Works by Michael Allaby

Rain by Marion Bauer

Snow by Marion Bauer

Rain, Snow, and Hail by Katie Sharp

Website: <http://www.kidsgeo.com/geography-for-kids/0114-precipitation-types.php>

-Computer

Poster Board

Markers

Cloud/Raindrop Graphic Organizer from <http://www.edhelperclipart.com/clipart/teachers/org-clouddrops.pdf>

Introductory Activity (5 minutes) :

Show the students the Precipitation Video. Have them talk about and summarize the different types described in the video. Tell the students they will

be learning all about the different types of precipitation.

Developmental Activity (30 minutes):

Break the students into 5 different groups. Assign jobs to the students in the group: researcher, artist, hand writer, and presenter. Give each group a different type of precipitation to research. Have books and/or websites available for them to use for their research. Give each group the Precipitation Poster Checklist. Have the groups work together to prepare a poster presentation to the class, teaching them about their assigned type of precipitation. Circulate the room checking on groups, answering questions, and making sure they are on task.

Concluding Activity (30 minutes):

When the groups have completed their posters and have organized their presentations, they will then present their posters to the class. Pass out the Cloud/Raindrop Graphic Organizer for each presentation to the audience members. They need to document the type of precipitation being presented in the cloud, and then list three new facts they discovered about that type of precipitation in the three raindrops.

Assessment/Evaluation Strategy:

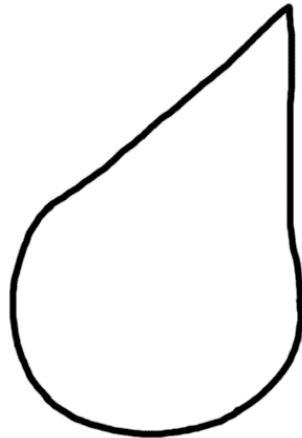
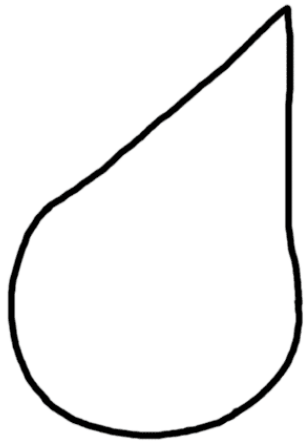
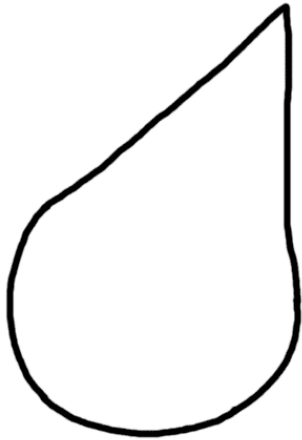
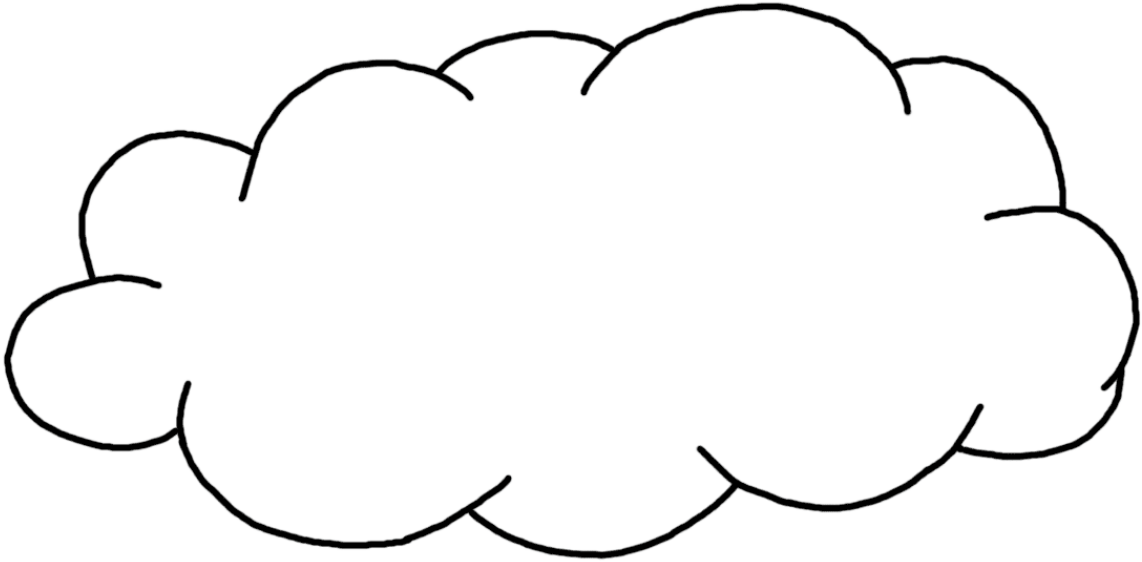
Group Posters and Presentations
Cloud/Raindrop Graphic Organizers

Name _____



edHelper.com

Date _____



Precipitation Poster Presentation Checklist

Poster is titled with type of precipitation assigned to your group

Definition is given that describes your assigned type of precipitation

Picture or illustration is showing your type of assigned type of precipitation

3-5 interesting facts are clearly marked and shown on your poster about your type of assigned precipitation

Your group member names are listed on the back of your poster

Handwriting is neat

Words are spelled correctly