

Hydrologic (Water) Cycle Experiment

MATERIALS:

pixie cup
plastic zip bag
tape
water

PROCESS:

Put a small amount of water in the pixie cup.

Put the pixie cup in the plastic bag and close the bag.

Tape the plastic bag with the cup of water inside of it to a window where the sun comes in.

What happens? With the heat of the sun, the water evaporates from the cup which you cannot see and condenses on the inside of the bag into little water droplets. These droplets eventually drip down to the bottom of the bag.

EXPLANATION:

This is what happens to the water in our creeks, streams, rivers, lakes and oceans. The water evaporates into the air and rises with the heat of the sun. It condenses into small droplets into what we see as clouds. When the droplets become too heavy, they fall to the ground as rain or snow.

Flood Safety Lesson

When it has been raining hard or raining for a long time, always check the weather before going out. Listen for WATCHES or WARNINGS for your area:

- Flash flood WATCH—Flash flooding is possible.
- Flash flood WARNING—A flash flood is occurring now or could occur immediately.
- Flood WATCH—Flooding is possible.
- Flood WARNING—Flooding conditions are occurring now or could occur immediately.

Safety Rules to Follow:

If you come upon floodwaters, stop, turn around, and go another way. Climb to higher ground. If it is moving swiftly, even water six inches deep can knock you off your feet. Many people are swept away wading through floodwaters, resulting in injury or death.

Stay away from flooded areas. Even if it seems safe, floodwaters may still be rising. **Never try to walk, swim, drive, or play in floodwater.** You may not be able to see on the surface how fast floodwater is moving or see holes and submerged debris.

If you are in a vehicle and become surrounded by water, if you can get out safely, do so immediately and move to higher ground. Vehicles can be swept away in two feet of water.

Watch out for snakes in areas that are flooded. Flood waters flush snakes from their homes.

Stay away from creek and stream banks in flooded and recently flooded areas. The soaked banks often become unstable due to heavy rainfall and can suddenly give way, tossing you into rapidly moving water.

Never play around high water, storm drains, ditches, ravines, or culverts. It is very easy to be swept away by fast moving water

The following are important points to remember when driving in flood conditions:

- **Six inches of water** will reach the bottom of most passenger cars causing loss of control and possible stalling.
- **A foot of water** will float many vehicles.
- **Two feet of rushing water** can carry away most vehicles including sport utility vehicles (SUV's) and pick-up trucks.

TURN AROUND DON'T DROWN!

Flood Safety Activities

Assemble A Disaster Supply Kit:

Ask your class what they would put in a Flood Disaster Supply Kit. Have them write their suggestions on the chalkboard. Discuss each item.

Some suggested items for the Disaster Supply Kit:

1. A 3-day supply of water (one gallon per person per day) and food that won't spoil, such as granola bars or peanut butter.
2. One change of clothing and footwear per person.
3. One blanket or sleeping bag per person.
4. A first aid kit, including prescription medicines.
5. Emergency tools, including a battery-powered NOAA Weather Radio and a portable radio, flashlight, and plenty of extra batteries.
6. An extra set of car keys and a credit card or cash.
7. Special items for infant, elderly, or disabled family members.

Kids Activity Supply Kit

Have your class think about what they would pack in a Kids Activity Supply Kit in the event that they have to leave their house because of a flood or disaster and they have to sleep or stay somewhere else for a while. They already know what items should be in the Flood Disaster Supply Kit so now it's time to put together their own "Kid's Activity Supply Kit". This kit will have things for them to do and share with other kids. All these items should be able to be stored in a backpack, duffel bag, or small suitcase. They want it to be easy to carry so the activity supply kit should be kept fairly light in weight. Ask your class what they would put in this kit.

Some suggested items for the Kid's Activity Supply Kit:

A few of your favorite books

Crayons, pencils, or marking pens and plenty of paper

Scissors and glue

Two favorite toys such as a doll or action figure

One or two board games

A deck of cards

A puzzle (one with lots of pieces is good – it takes a long time to do!)

Favorite stuffed animal or puppet

Favorite blanket or pillow

Pictures of the family and pets

A "keep safe" box with a few treasures that make you feel special

*Remind your class that taking electronic games would be fun but it may be difficult to get batteries and there may be no electrical outlets available to plug in your video game systems or chargers.

Hydrologic Cycle & Flood Safety Quiz

The Word Starts With This Letter	Hint	Answer
O	A large body of water on the surface of the earth.	
H	The process in which water circulates from the oceans to the clouds to the land to the rivers, and then accumulates back into the oceans.	
E	A process in which water from the oceans, rivers, and streams turns into water vapor.	
W	All life depends on this substance for survival.	
C	A fluffy looking object in the sky that is formed when water vapor is cooled and condenses.	
P	Water vapor is produced from these objects through the process of transpiration.	
S	Precipitation that flows over the ground.	
F	Occur when rainfalls over several days or intense rainfalls over a short period of time. It can be slow or fast rising.	
F	Most occur after an intense rainfall and can take only a few minutes to a few hours to develop. Can be caused by rain falling several miles upstream and moving downstream rapidly or by heavy rain falling on steep terrain.	
A	A storage area for underground water trapped between rock and clay layers.	
I	The process by which runoff water soaks into the ground.	
F	An alert issued by the National Weather Service that flash flooding is possible.	
F	An alert issued by the National Weather Service that flash flooding is occurring now or could occur immediately.	
F	An alert issued by the National Weather Service that flooding is possible.	
F	An alert issued by the National Weather Service that flooding conditions are occurring now or could occur immediately.	
P	Rain, sleet, snow or hail.	

Teacher's Answer Key to Hydrologic Cycle & Flood Safety Quiz

The Word Starts With This Letter	Hint	Answer
O	A large body of water on the surface of the earth.	Oceans
H	The process in which water circulates from the oceans to the clouds to the land to the rivers, and then accumulates back into the oceans.	Hydrologic Cycle
E	A process in which water from the oceans, rivers, and streams turns into water vapor.	Evaporation
W	All life depends on this substance for survival.	Water
C	A fluffy looking object in the sky that is formed when water vapor is cooled and condenses.	Clouds
P	Water vapor is produced from these objects through the process of transpiration.	Plants
S	Precipitation that flows over the ground.	Surface Runoff
F	Occur when rainfalls over several days or intense rainfalls over a short period of time. It can be slow or fast rising.	Floods
F	Most occur after an intense rainfall and can take only a few minutes to a few hours to develop. Can be caused by rain falling several miles upstream and moving downstream rapidly or by heavy rain falling on steep terrain.	Flash Floods
A	A storage area for underground water trapped between rock and clay layers.	Aquifer
I	The process by which runoff water soaks into the ground.	Infiltration
F	An alert issued by the National Weather Service that flash flooding is possible.	Flash Flood Watch
F	An alert issued by the National Weather Service that flash flooding is occurring now or could occur immediately.	Flash Flood Warning
F	An alert issued by the National Weather Service that flooding is possible.	Flood Watch
F	An alert issued by the National Weather Service that flooding conditions are occurring now or could occur immediately.	Flood Warning
P	Rain, sleet, snow or hail.	Precipitation