

Unit 4: FLOODS- FLOODS HAPPEN

H2O GO!

Floods are the most common and widespread of all natural disasters—except fire. The Boulder and St. Vrain watersheds provide an abundance of surface water from the Rocky Mountains. This surface water flows down the mountains and canyons into Boulder, Longmont and surrounding areas. As a result, the area is susceptible to flash floods. Although flooding normally occurs in the spring, flooding can happen any time of the year and can happen in any area where there is too much water on normally dry land.

BACKGROUND INFORMATION

WHAT IS A 100-YEAR FLOOD?

A 100-year flood is a very large flood that has a 1 percent chance of occurring in any given year. It takes only 5 inches of rain over a few hours to trigger a 100-year flood. A 100-year flood does not happen once every 100 years, but can occur more than once in a relatively short period of time. The last 100-year flood in Boulder Canyon. Water stretched up to a mile wide in some places. In July of 1976, the Big Thompson Canyon Flash Flood devastated the Fort Collins/Estes Park area and killed 144 people.

FLASH FLOOD ALERT

Floods that happen very quickly are called flash floods. Flash floods occur in creeks and canyons with a mountainous upstream water source. Flooding occurs in a watershed when the rate of rainfall or snowmelt is faster than the rate the water can sink into the ground, or infiltration rate. This is why soil type and land use are critical to flood risk. The excess water, or runoff, naturally flows to the lowest area of the watershed and enters stream channels. Flooding occurs when the excess water causes the stream to overflow its banks. The area of overflow is called the floodplain, where structures and people are most exposed to damage and danger. In a flash flood, it is imperative to move to higher ground immediately; there is no time to stop for personal belongings. Flash floods can come at you as a wave of water and are powerful enough to uproot trees and wash out roads and bridges.

HOW HAS HUMAN ACTIVITY INCREASED FLOOD RISK?

Human activity and our land use affect flooding immensely. Increased urbanization, agriculture, fire protection, road construction, dense development and the increase of non-permeable land uses, such as pavement used for parking lots, worsen flooding risks. Some of these land use changes reduce the amount of rainfall that soaks into the ground and increase the pace and quantity of runoff to rivers. Other transportation network necessities, such as bridges, restrict stream channels. Debris washed downstream in a flood easily clogs these restricted stream channels and can aggravate flooding upstream.



Unit 4: FLOODS- FLOODS HAPPEN ACTIVITY 1

H2O GO!



FLOOD! - TXT THIS!

Directions:

Imagine you are out of town on vacation. You see on the news that there is a big flood at home. You get a TXT message from your friend worrying about what to do. TXT her the following flood rules as efficiently and creatively as you can so she knows what to do. . . PLZ translate the following, THX!:

1.

If you are walking or biking, **do not try to cross through any flooded water**, even if it looks shallow. Water can be moving a lot faster than you think. Ankle deep water can easily knock you down.

2.

If you are in a car, **stay off bridges or roads that are under water**. Do not drive through a flooded area. It takes only 18 inches of water to carry a vehicle away.

3.

Move out of the waterway and low-lying areas and **get to higher ground immediately**.

4.

Stay away from power lines and electrical wires! Water carries an electric current.

5.

If you are at home, **turn off the electricity and gas in your house**. Water carries an electric current; gas lines could be damaged.

6.

Flood water can be contaminated with sewage and hazardous chemicals. **Do not eat or drink anything that has contacted flood water, even food that is still packaged.**



Unit 4: FLOODS- FLOODS HAPPEN ACTIVITY 2



WHERE RU? MEET U L8R . . .

Directions:

It is critical to be prepared for a disaster. Even though you think such an event is unlikely to happen, it can! Complete the Flood Action Plan on the right with your family and bring it back to class.

- 1. Meet with Your Family.** Review the information you have learned regarding floods.
- 2. Choose an "Out of Town" Contact.** Ask an out-of-town friend or relative to be your contact. After a flood, family members should call this central person and communicate your location and key information.
- 3. Decide Where to Meet.** In the event of a flood, you may become separated from family members and not have phone or communication service. Cell phone towers can get overwhelmed with emergency call traffic and even cell phones won't work. Choose a place right outside your home in case of a sudden emergency. Then, choose a location outside your neighborhood in case you cannot return home.
- 4. Complete the Contact Information.** Your plan should include contact information for family members, both at work and at school. Your plan should also include information for your out-of-town contact, meeting locations and emergency services.
- 5. Escape Routes and Safe Places.** You may need to evacuate on a moment's notice. Be ready to get out fast. Be sure everyone in your family knows the best escape routes out of your home, as well as where the safe places are in your home. Practice flood evacuation drills at least two times a year, but as often as you update your escape plan.



ELDORADO
CANYON FLOOD,
BOULDER COUNTY

FLOOD ACTION PLAN

IMPORTANT PHONE NUMBERS

Police, Fire, Ambulance: call 9-1-1

Family Doctor: _____

Phone #: _____

Poison Control: 1-800-222-1222

Visit **www.boulderfloodinfo.net** for more information.

EMERGENCY CONTACTS

Name: _____

Home Address: _____

Family Cell Phone #'s: _____

Work Phone #'s: _____

School Phone #: _____

Out of Town Contact: _____

Phone #: _____

MEETING PLACES

Neighborhood Meeting Place: _____

Outside Neighborhood Meeting Place:

Unit 4: FLOODS- FLOODS HAPPEN ACTIVITY 2

H2O GO!

GET YOUR KIT TOGETHER!

Should you need to evacuate at a moment's notice or are cut-off from town because of a flood or other disaster, you probably will not have the opportunity to shop for the supplies you and your family will need. Your household should assemble a disaster supply kit, including items your family would need to stay safe and comfortable for 3 to 4 days during and after a disaster.

Look up the disaster supply kit list at www.redcross.org or ask your teacher for a copy. Collect the kit items and store them in a portable container in an easily accessible location. Write the list of supplies below.

DISASTER SUPPLIES KIT

FLASHLIGHT



FIRST AID KIT



ONE GALLON OF WATER
PER PERSON, PER DAY

