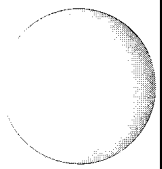


# Lightning



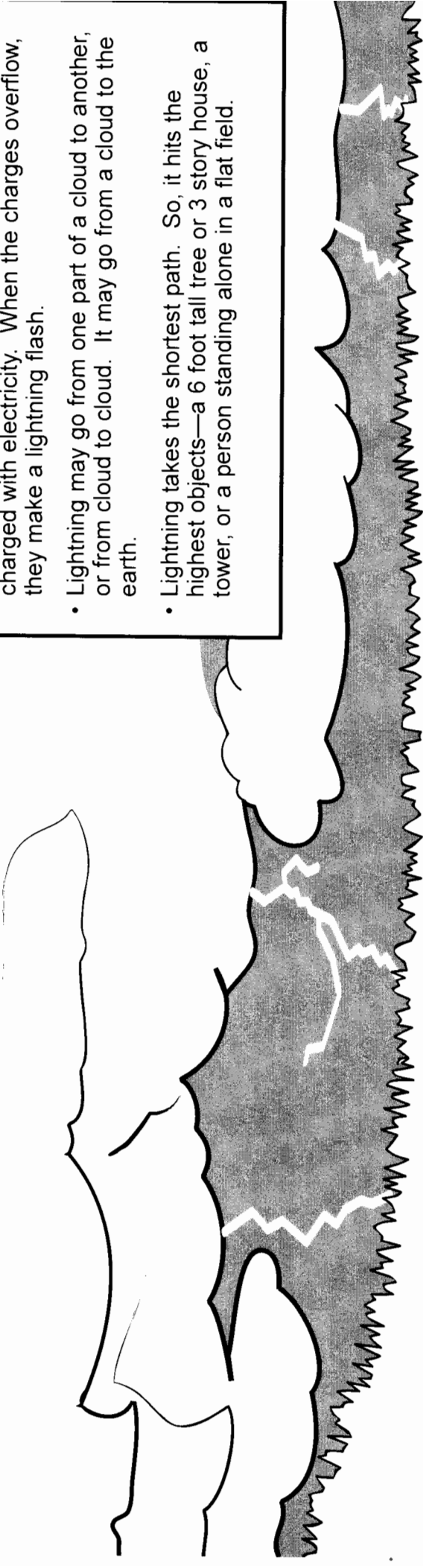
Lightning kills more people than hurricanes or tornadoes. At any moment, there are 2,000 lightning storms around the world.

Every day someone is struck by lightning. Most of these people survive—with lifelong health problems—but many are killed. In the United States about 100 people die each year from lightning or from fires caused by lightning.

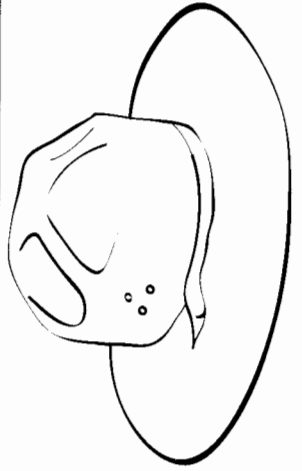
In addition to lightning, thunderstorms also produce strong winds and hail. Some hail may be as big as golf balls or baseballs. Thunderstorms may occur in winter but are most common in spring and summer.

# Before a Storm

- Keep an eye on the sky. On a hot day, clouds build up. They grow larger, towering higher and higher. They darken. The top of the clouds may be spread out by winds at high altitudes.
- As clouds develop, small bits in the clouds become charged with electricity. When the charges overflow, they make a lightning flash.
- Lightning may go from one part of a cloud to another, or from cloud to cloud. It may go from a cloud to the earth.
- Lightning takes the shortest path. So, it hits the highest objects—a 6 foot tall tree or 3 story house, a tower, or a person standing alone in a flat field.



**Lightning may hit the same place or person several times.**



Ray Sullivan, a retired National Park Ranger, was hit 7 times by lightning. He has been knocked down, picked up and thrown into the air. He has lost his shoes and a toenail, and he can't hear as well, but at least he's still alive.

Now he lives in a mobile home with lightning rods on each end and lightning rods on trees around his home. Hopefully, lightning will follow the rods and leave Ray alone.

# BOOM!

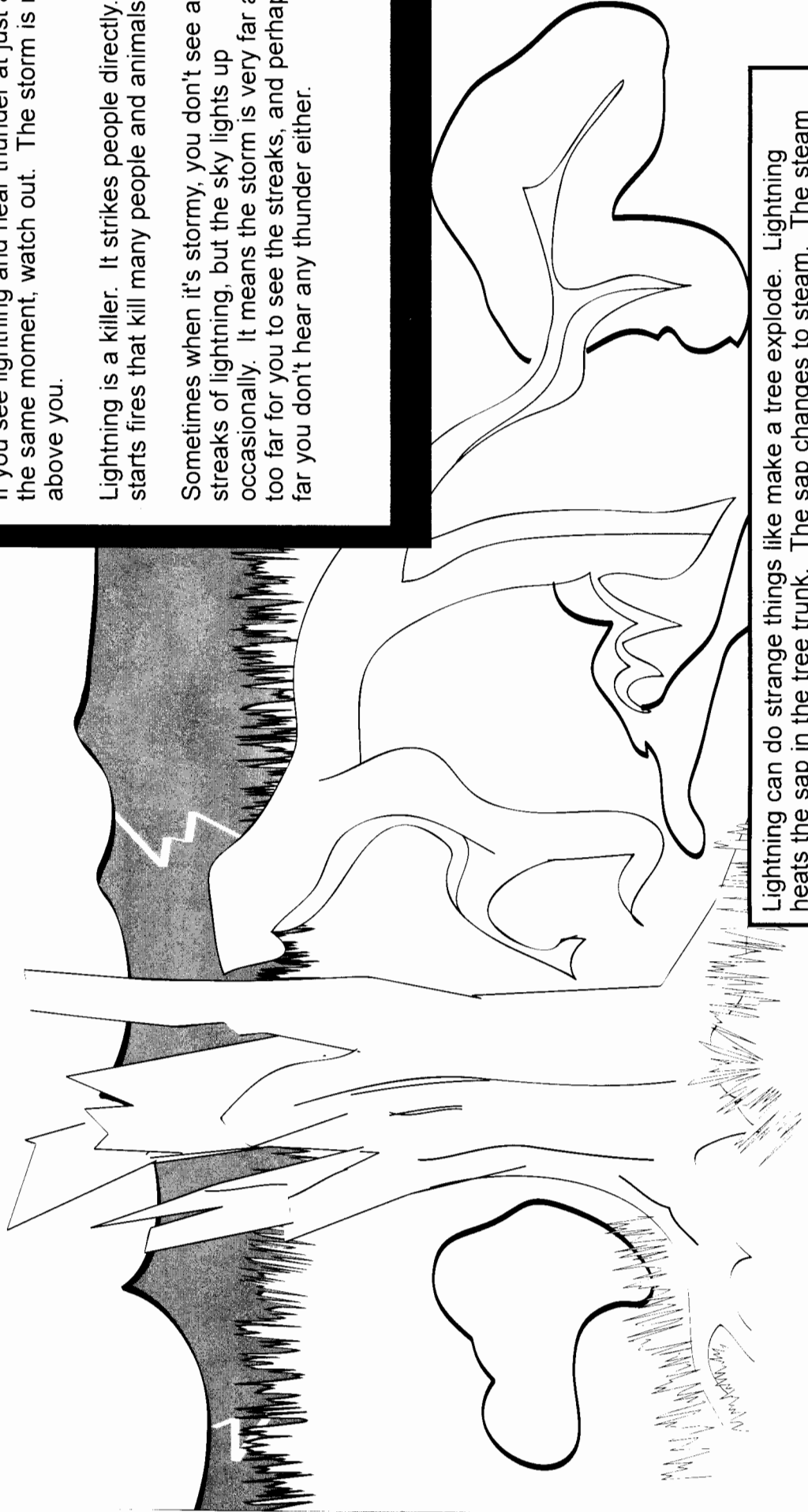
Thunder and lightning occur together. It just seems like you usually see the lightning first because light moves faster than sound.

As soon as you see lightning, count the seconds until you hear the thunder. If you count 5 seconds, the lightning was about a mile away. Sound goes about 1000 feet a second. In metric, if it takes three seconds to hear the thunder, the storm is about a kilometer away.

If you see lightning and hear thunder at just about the same moment, watch out. The storm is right above you.

Lightning is a killer. It strikes people directly. It also starts fires that kill many people and animals.

Sometimes when it's stormy, you don't see any streaks of lightning, but the sky lights up occasionally. It means the storm is very far away, too far for you to see the streaks, and perhaps so far you don't hear any thunder either.



Lightning can do strange things like make a tree explode. Lightning heats the sap in the tree trunk. The sap changes to steam. The steam expands and blows up the tree. In a herd of cows, one of a dozen might be struck. The others may be untouched. It can also kill a whole herd.

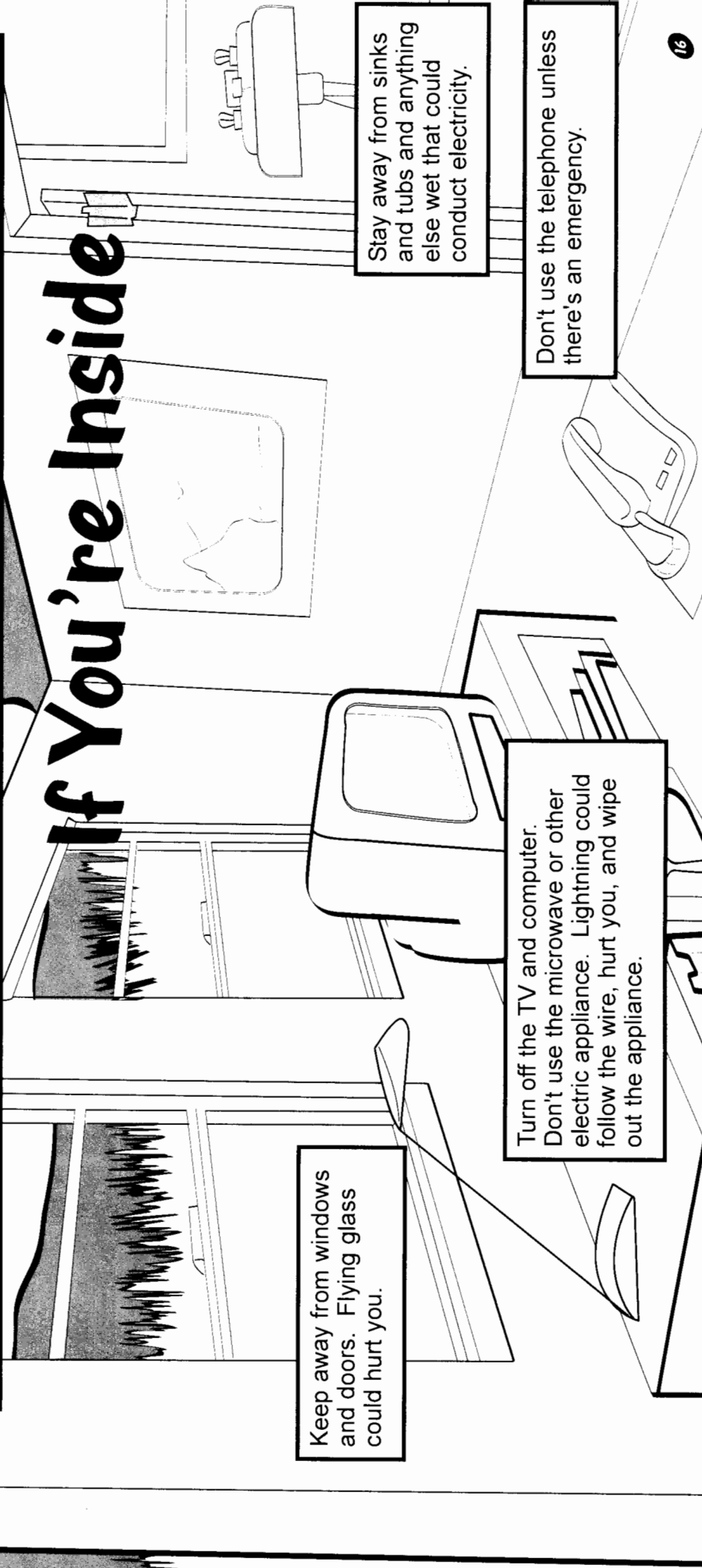
# What To Do When There is Lightning

- Get into your home or a large building.
- Get inside a hard-topped car.
- If you are in a field, crouch on your knees and bend over. Don't lie down because wet ground can carry electricity.
- If you are in water, get out. Get away from the beach.

## If You are Outside

- If outside, stay in the open, not under a tree or in a picnic shelter or shed. It's better to get wet than fried!
- Lightning hits the tallest object.
- Move away from anything made of metal like a framed backpack. Metal draws electricity.
- Get to the lowest point possible if you are on a hill or mountain.
- Get out of a boat and into a building.

## If You're Inside



Keep away from windows and doors. Flying glass could hurt you.

Stay away from sinks and tubs and anything else wet that could conduct electricity.

Turn off the TV and computer. Don't use the microwave or other electric appliance. Lightning could follow the wire, hurt you, and wipe out the appliance.

Don't use the telephone unless there's an emergency.

# Lightning

# Quiz

Fill in the blank with the correct words.  
Use these words:

- die
- electricity
- tree
- fire
- explode
- tallest
- shortest
- thunder
- water
- telephone

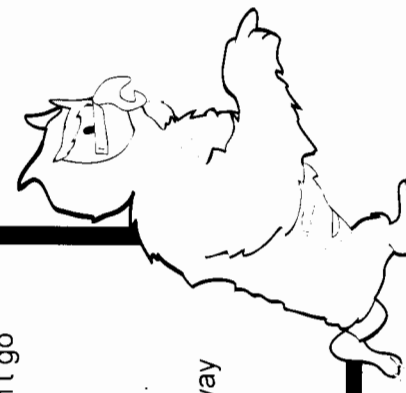
1. About 100 people \_\_\_\_\_ each year from lightning and the fires it causes.
2. Don't use a \_\_\_\_\_ unless there is an emergency.
3. \_\_\_\_\_ and lightning occur together.
4. Lightning can make a tree \_\_\_\_\_ by heating the sap in the tree.
5. Lightning hits the \_\_\_\_\_ objects.
6. Lightning takes the \_\_\_\_\_ path.
7. When lightning forms, clouds become charged with \_\_\_\_\_.
8. If you are outside when there is lightning, don't go under a \_\_\_\_\_.
9. When lightning strikes, it can start a \_\_\_\_\_ that kills people and animals.
10. If you are in \_\_\_\_\_ get out. Stay away from the beach.

Circle T (true) or F (false) for each sentence below.

- T F 1. When there is lightning, crouch under a tree.
- T F 2. When there is lightning, stay away from anything made of metal.
- T F 3. Stay by the window and watch for streaks of lightning.
- T F 4. In a storm, you usually see the lightning before you hear the thunder.
- T F 5. When the sky lights up, but you can't see the streaks of lightning, it means the storm is over.
- T F 6. When there is lightning, go to the highest spot on a hill and get out your umbrella for protection from the storm.
- T F 7. Every day someone is struck by lightning.
- T F 8. Lightning never strikes twice in the same place.
- T F 9. If there is lightning, call all your friends to make sure they are safe.
- T F 10. Lightning storms may occur in the winter but are most common in spring and summer.

List 5 rules for lightning safety.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



# Answers

## crossword puzzle (pgs 37-38)

### Answers: (Across)

4. Electricity, 6. Wind Chill, 7. Summer, 8. Floods, 14. Thunder, 15. Weather, 16. Hail, 17. Funnel

### Answers: (Down)

1. Forecasts, 2. Radio, 3. Eye, 5. Tornado, 7. Snowstorms, 9. Lightning, 10. Surge, 11. Shortest, 12. Warning, 13. Hurricane

## true & false (pg 36)

1. F-lightning, 2. T, 3. F-Flooding, 4. F, 5. F-anywhere, 6. F, 7. T, 8. F, 9. T, 10. F

## fill in the blanks (pg 34)

1. Tornado, 2. tornado, 3. lightning, 4. winter storm, 5. flash flood, 6. hurricane, 7. hurricane, 8. tornado, 9. hurricane, 10. tornado.

## flash flood quiz (pg 32)

1. roads, 2. flash flood, 3. ground, 4. streams, 5. car, 6. bridges -- 1. T, 2. F, 3. T, 4. T, 5. F, 6. F, 7. F, 8. T, 9. F, 10. T

## tornado quiz (pg 31)

1. tornado, 2. funnel and top, 3. black clouds, 4. watch, 5. warning, 6. train, 7. ditch, 8. basement, 9. hail, 10. bathroom, 11. windows, 12. mobile home, 13. sky, 14. radio -- 1. T, 2. F, 3. T, 4. T, 5. T, 6. F, 7. F, 8. T, 9. T, 10. F

## winter storm quiz (pg 30)

1. watch, 2. warning, 3. kitty litter, 4. antenna, 5. carbon monoxide, 6. layers, 7. mittens, 8. winter, 9. wind chill, 10. snowdrift -- 1. T, 2. F, 3. T, 4. F, 5. F, 6. T, 7. T, 8. T, 9. F, 10. F

## lightning quiz (pg 29)

1. die, 2. telephone, 3. thunder, 4. explode, 5. tallest, 6. shortest, 7. electricity, 8. tree, 9. fire, 10. water -- 1. F, 2. T, 3. F, 4. T, 5. F, 6. F, 7. T, 8. F, 9. F, 10. T

## hurricane quiz (pg 33)

1. air, 2. moving, 3. oceans, 4. hurricanes, 5. high tides and flooding, 6. watch, 7. warning, 8. radio, 9. inland, 10. eye -- 1. F, 2. T, 3. F, 4. F, 5. T, 6. F, 7. T, 8. F, 9. F, 10. T

## hazards (pg 35)

1. Tornado, 2. hurricane, 3. hurricane, lightning and tornado, 4. winter storm and lightning, 5. flash flood, 6. lightning, 7. hurricane, lightning, winter storm, and tornado, 8. hurricane, tornado, and winter storm, 9. hurricane, tornado, winter storm and flash flood, 10. tornado