

# AIM | Why does water fall from 19 | clouds?

Can you imagine our planet without rain? All the water would evaporate. All the oceans, rivers, lakes, and streams would dry up. There would be no water for plants or animals. Nothing could live.

Luckily, this doesn't happen. Water *does* evaporate. But, *it always comes back to earth!*

Water comes back to the earth from clouds. But why do clouds give up this water? Why does water fall back to earth? Here is an explanation.

A cloud is made up of billions of tiny droplets of water. Droplets are very light. Rising air keeps them bouncing around.

As they bounce around, the droplets collide. They *join up* and become *larger droplets*.

This happens over and over again. The droplets become larger and larger. Finally, they become the size of drops. Drops are much larger and heavier than droplets. Rising air no longer can hold them up. So they fall to earth.

Water that falls to earth from clouds is called *precipitation*. There are five kinds of precipitation: *rain, drizzle, snow, hail, and sleet*.

Rain and drizzle are *liquid precipitation*. They form when the temperature is above freezing. That is  $0^{\circ}\text{C}$  or  $32^{\circ}\text{F}$  at sea level. Rain is made of drops. Drizzle is a fine spray made of droplets.

Snow, hail, and sleet are *solid precipitation*. They form when the temperature is freezing or below.

## THE STORY OF "DROPS"

The Figures A, B, and C show how droplets grow and become drops. Complete the word story below and on the next page by filling in the blank spaces. Choose from the following terms.

over and over again  
cannot  
fall  
light in weight

water  
collide  
drops

precipitation  
heavier  
rising air

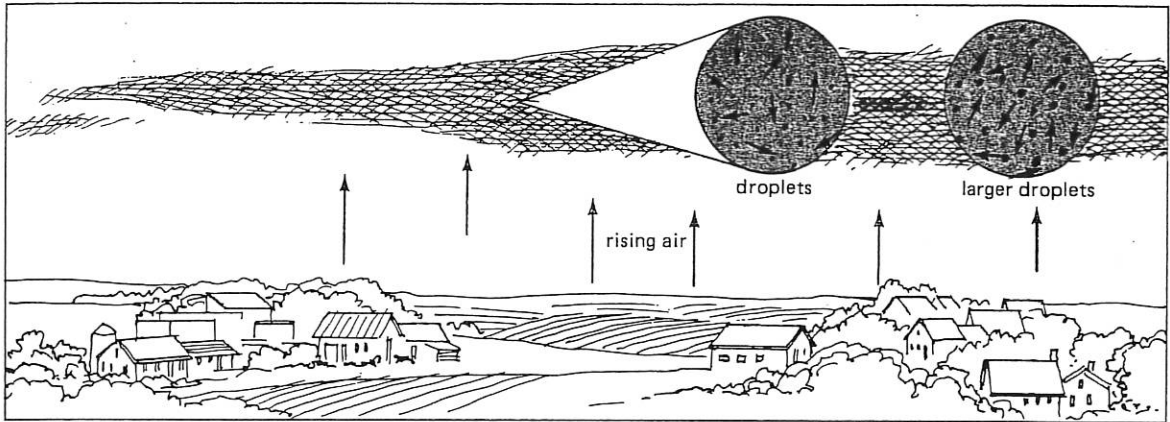


Figure A

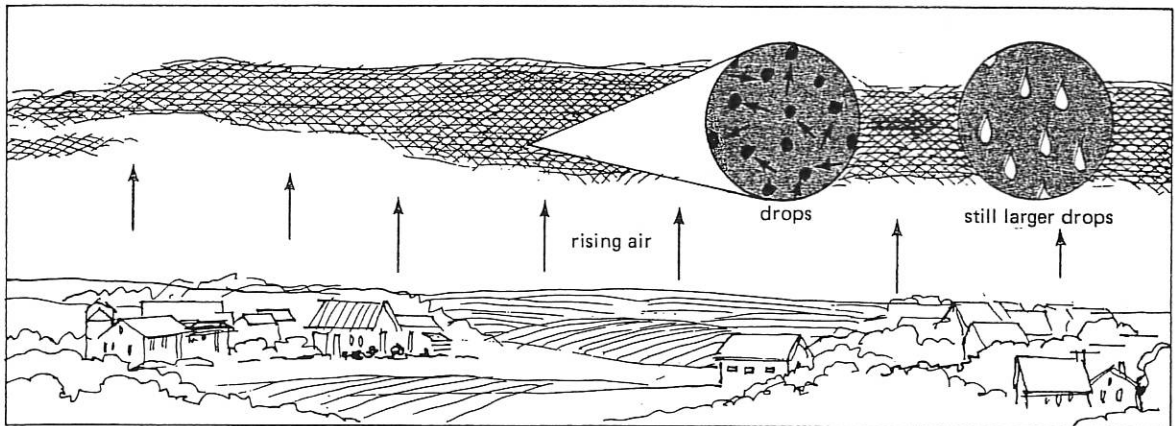


Figure B

1. A cloud is made up of billions of droplets of \_\_\_\_\_.
2. Droplets are very \_\_\_\_\_.
3. \_\_\_\_\_ keeps them from falling to earth.
4. Moving droplets \_\_\_\_\_. They join and become larger droplets.
5. The droplets collide \_\_\_\_\_.
6. The droplets become larger and heavier. They become the size of \_\_\_\_\_.

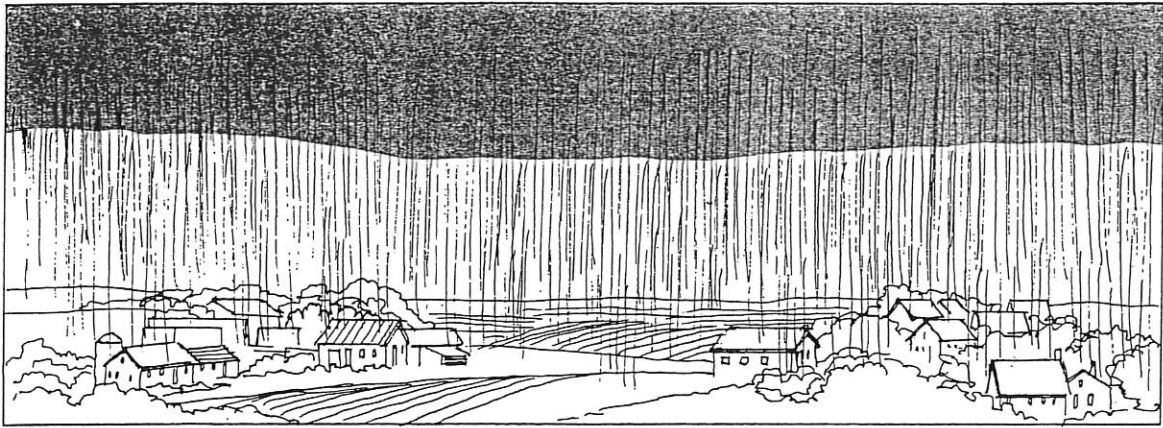


Figure C

7. Drops are much larger and \_\_\_\_\_ than droplets.
8. Rising air \_\_\_\_\_ hold them up.
9. The drops \_\_\_\_\_ to earth.
10. Water (in liquid or solid form) that falls to earth from clouds is called \_\_\_\_\_.

### HOW BIG IS A DROP?

It takes about one *million* droplets to make just *one* drop.

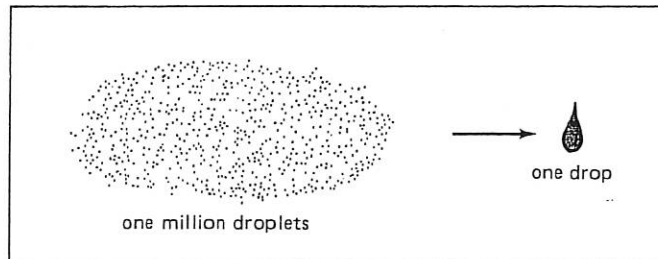


Figure D

A *rain gauge* tells us how much it has rained.

Rainfall is measured in *inches* or *centimeters*.

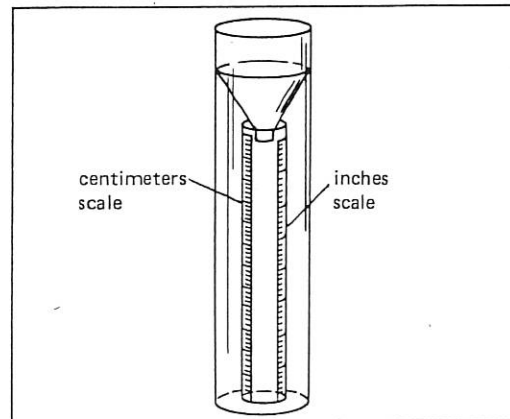


Figure E

## HOW MUCH DOES IT RAIN?

The graph below shows about how many centimeters of rain fall on some American cities in one year. Study the graph. Then fill in the chart below the graph.

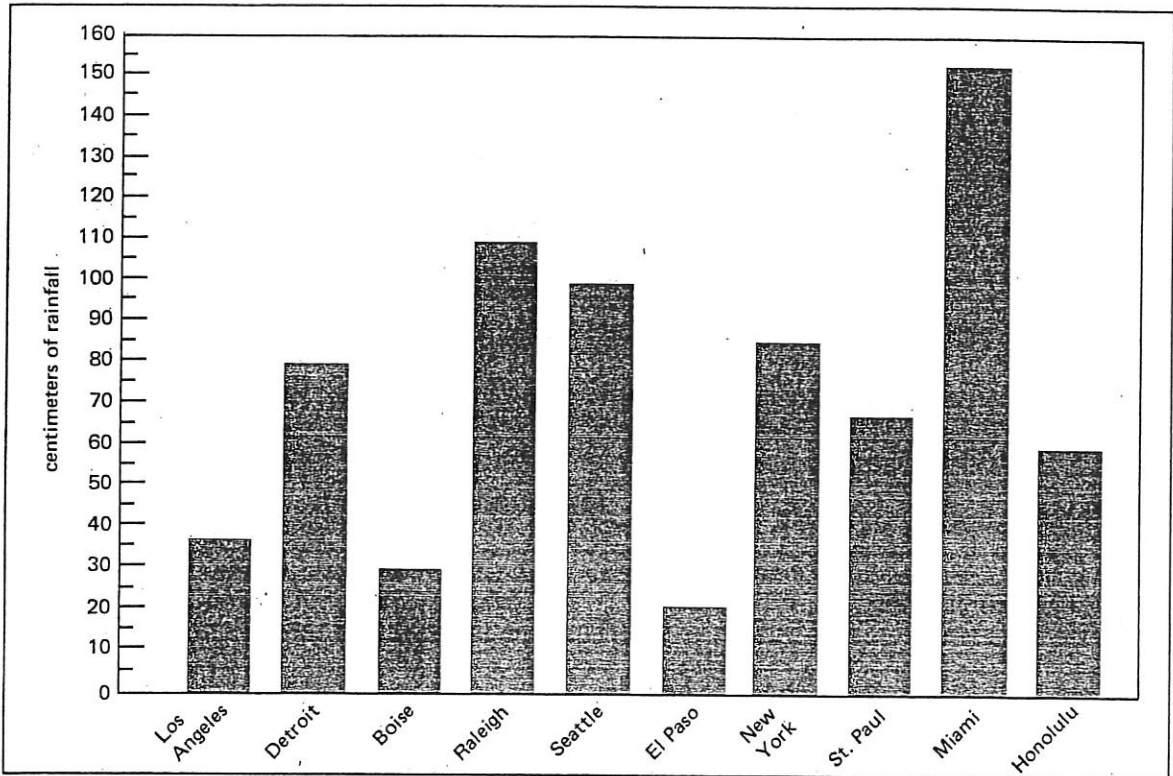


Figure F

	City	Average Yearly Precipitation (Approximate Centimeters)
1.	Boise (Idaho)	
2.	Detroit (Mich.)	
3.	El Paso (Texas)	
4.	Honolulu (Hawaii)	
5.	Los Angeles (Calif.)	
6.	Miami (Florida)	
7.	New York (N.Y.)	
8.	Raleigh (N.C.)	
9.	Seattle (Wash.)	
10.	St. Paul (Minn.)	

# RECORD RAINFALLS

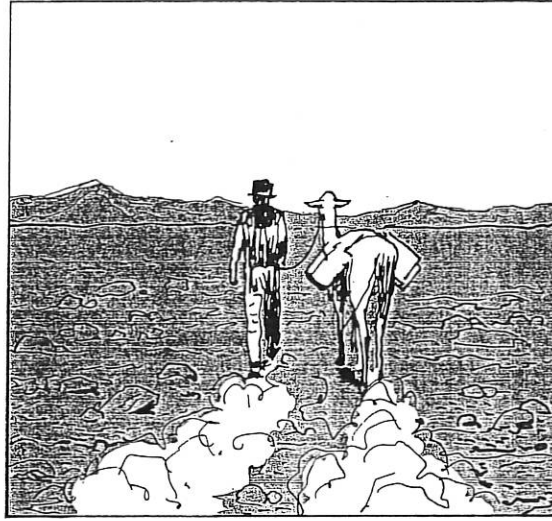
## THE MOST



**Figure G**

In one year, 2,647 cm (1,042 inches) of rain fell in Cherrapunji, India.

## THE LEAST



**Figure H**

In Arica, Chile, just .08 cm (.03 of an inch) fell over a period of 59 years. For 14 years in a row there was no rainfall at all!

**TRUE OR FALSE** Write T on the line next to the number if the sentence is true.  
Write F if the sentence is false.

1. \_\_\_\_\_ Precipitation comes from clouds.
2. \_\_\_\_\_ About a million droplets make up a drop.
3. \_\_\_\_\_ Rain is the only kind of precipitation.
4. \_\_\_\_\_ Drizzle drops are bigger than raindrops.
5. \_\_\_\_\_ Sleet is liquid precipitation.
6. \_\_\_\_\_ Sleet and hail need freezing temperature.
7. \_\_\_\_\_ A barometer measures rainfall.
8. \_\_\_\_\_ Rainfall is measured in inches and centimeters.
9. \_\_\_\_\_ All places get the same amount of precipitation.
10. \_\_\_\_\_ We can live without precipitation.

**COMPLETING SENTENCES**

Complete the sentences with the choices below. One of these may be used twice.

heavier  
drizzle  
drop  
fall to the ground  
sleet

hail  
cloud  
above freezing  
rain  
precipitation

freezing  
rising air  
snow  
larger

1. A \_\_\_\_\_ is made up of billions of droplets of water.
2. Droplets are held in the air by \_\_\_\_\_.
3. When droplets collide, they become \_\_\_\_\_ in size.
4. About one million droplets make up a \_\_\_\_\_.
5. Drops are much \_\_\_\_\_ and \_\_\_\_\_ than droplets.
6. Drops \_\_\_\_\_.
7. Water in any form that falls to earth is called \_\_\_\_\_.
8. There are five kinds of precipitation. They are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
9. It rains or drizzles when the temperature is \_\_\_\_\_.
10. It hails, sleet, or snows when the temperature is \_\_\_\_\_.

**MATCHING**

Match the two lists. Write the correct letter on the line next to each number.

- 
- |                        |                              |
|------------------------|------------------------------|
| 1. _____ precipitation | a) like a fine spray         |
| 2. _____ rain gauge    | b) measures rainfall         |
| 3. _____ vapor         | c) change from gas to liquid |
| 4. _____ condensation  | d) any water from the sky    |
| 5. _____ drizzle       | e) gas                       |