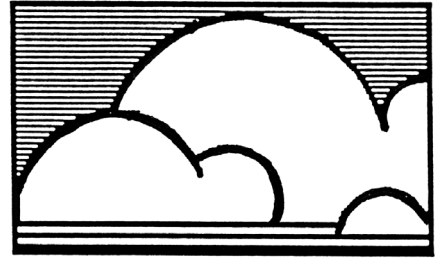


Clouds and What They Mean

name _____



Vocabulary and Writing Worksheet

1. Choose the best vocabulary word for each sentence and write it in the blank.

dew point

evaporation

fog

gas

precipitation

relative humidity

- a. _____ refers to the percentage of water vapor in the air at a specific temperature compared to the amount it could hold.
- b. Water vapor is a _____. You can't swim in water that is in this form.
- c. Water vapor, which helps create clouds, gets into the air by means of _____.
- d. The bottoms of clouds show us where the _____ has been reached.
- e. When clouds rest on the ground, they are known as _____.
- f. Rain, snow, sleet, and hail are all types of _____, which comes from some—but not all—kinds of clouds.

2. *Proverbs and poems are two different types of writing that people can use to express themselves creatively. A proverb always teaches a lesson and can be a catchy way to memorize a rule. A poem can do these things, too, but it can also just be a creative way of talking about the world and your experiences in it. Many poems rhyme, but not all.*

On a separate sheet of paper, write a proverb about a weather observation you have made, and then write a poem about clouds. Share your writing with the rest of the class.

Clouds and What They Mean

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Identifying Cloud Types

Match the cloud name to its description. Remember that the altitude of a cloud is important to what kind of cloud it is.

Altostratus
Altostratus
Cirrocumulus
Cirrostratus

Cirrus
Cumulonimbus
Cumulus

Nimbostratus
Stratocumulus
Stratus

1.	The highest clouds. They are made up of ice crystals and float in the chilly air more than four miles above you. The name for these wispy-looking clouds comes from the Latin word for <i>curl</i> . Some people call them mare's tails.
2.	Layered but puffy clouds that occur at middle and lower elevations.
3.	Thick, puffy clouds that can be found at middle altitudes.
4.	Low-lying clouds that are generally producers of rain and snow.
5.	Small cottony rows of cloud tufts that are made of ice crystals and found at high elevations.
6.	The big rain cloud, part of its name means <i>clouds</i> , signifying rain to the ancient Romans. These clouds can rise to heights of more than 50,000 feet. When their tops reach the fast-moving jet stream, they become cirrus-like and are called <i>anvil heads</i> . Some people also call these clouds <i>thunderheads</i> , because they can bring heavy rain, lightning, and thunder.
7.	The lowest clouds, they hang like a ceiling at less than 6,000 feet. Their name comes from the Latin word <i>to spread</i> , as in layers. These clouds appear as a general overcast and can produce widespread rain and snow.
8.	Wispy clouds that are found at middle elevations.
9.	Clouds of vertical development, they get their name from the Latin word for <i>pile</i> or <i>heap</i> . The lowest are the puffy clouds of a summer day.
10.	Wispy, thin sheets of clouds that are made of ice crystals and found spreading at high elevations.

Clouds and What They Mean

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Understanding Temperature Scales

Temperature Worksheet 1

Did you know? Two common scales for measuring temperature are Celsius and Fahrenheit, which are both based on the freezing and boiling points of water. On the Celsius scale, which is part of the metric system and is used in most parts of the world, the freezing point of water is set at 0 degrees and the boiling point at 100 degrees; on the Fahrenheit scale, which is used in the United States, the freezing point of water is set at 32 degrees and the boiling point at 212 degrees. By using a mathematical formula, you can convert Fahrenheit temperatures to Celsius temperatures—and vice versa.

- ✓ **Formula 1:** If you know the temperature in degrees Celsius (C) and you want to find out what it is in degrees Fahrenheit: **Multiply C x 9. Then, divide your answer by 5. Finally, add 32.**
- ✓ **Formula 2:** If you know the temperature in degrees Fahrenheit (F) and you want to find out what it is in degrees Celsius: **Subtract 32 from F (F-32). Then, multiply your answer by 5. Finally, divide that answer by 9.**

Let's plug the freezing point of water in degrees Fahrenheit and Celsius into the formulas to see if they work.

We know that water freezes at 0 degrees Celsius. Therefore, in this example $C=0$. Using **Formula 1**, we can find out the freezing point of water in degrees Fahrenheit.

$$\begin{aligned}\text{Formula 1: } C &= 0 \\ 0 \times 9 &= 0 \\ 0 \div 5 &= 0 \\ 0 + 32 &= 32 \\ F &= 32\end{aligned}$$

As we already know, water freezes at 32 degrees Fahrenheit.

Let's check our answer by using **Formula 2**.

$$\begin{aligned}\text{Formula 2: } F &= 32 \\ 32 - 32 &= 0 \\ 0 \times 5 &= 0 \\ 0 \div 9 &= 0 \\ C &= 0\end{aligned}$$

As we know, water freezes at 0 degrees Celsius.

Give it a try!

Use the back of this page and try a few conversions yourself.

$^{\circ}\text{F}$ = degrees Fahrenheit
 $^{\circ}\text{C}$ = degrees Celsius

1. $68^{\circ}\text{F} = ?\text{C}$
2. $104^{\circ}\text{F} = ?\text{C}$
3. $30^{\circ}\text{C} = ?\text{F}$
4. $10^{\circ}\text{C} = ?\text{F}$

Find out for yourself.

Look up the words Fahrenheit and Celsius in an encyclopedia and find out how these temperature scales were named.

Clouds and What They Mean

name _____

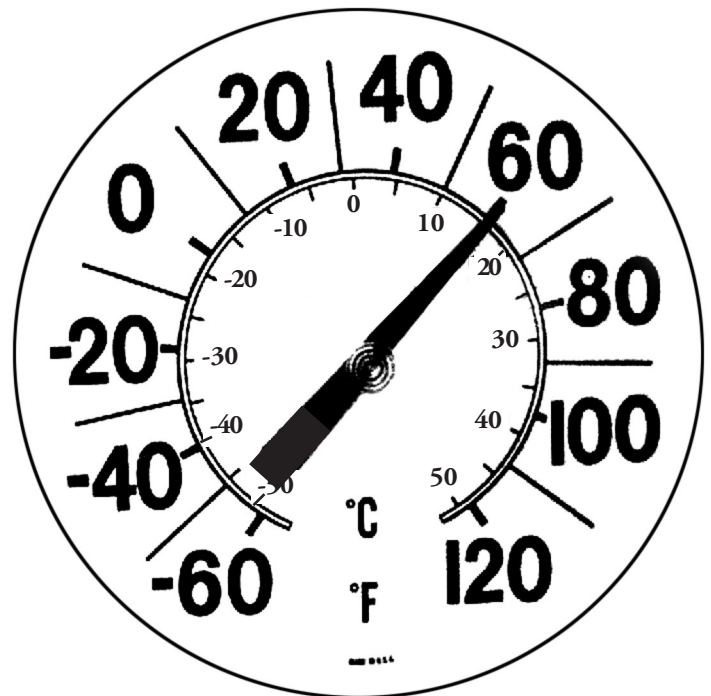


Reading a Thermometer

Temperature Worksheet 2

Answer the following questions, using the thermometer below. On the thermometer, the bigger numbers on the outside circle indicate degrees Fahrenheit; the smaller numbers inside indicate degrees Celsius.

1. When the temperature is 32 degrees Fahrenheit, what is the temperature in degrees Celsius? What do you know about this temperature?
2. What is the temperature on the thermometer below in degrees Fahrenheit? degrees Celsius?
3. Your Canadian pen pal writes you a letter in June and tells you that the temperature—where she lives—has already reached 35 degrees Celsius. What is the equivalent temperature in degrees Fahrenheit? Would you expect that kind of temperature in June? Why or why not?
4. What is the temperature outside today in degrees Celsius? in degrees Fahrenheit?
5. It's 5 degrees Celsius outside. What is the approximate temperature in degrees Fahrenheit? Should you dress for warm or cold weather?
6. One winter morning, you look out the window and see a dark nimbostratus cloud blanketing the sky. Then, you turn on the radio and the weather forecaster tells you to expect rain, sleet, and snow all day and a high temperature of 40 degrees Celsius. Which piece of information in this forecast seems wrong? Why?



Clouds and What They Mean



name _____

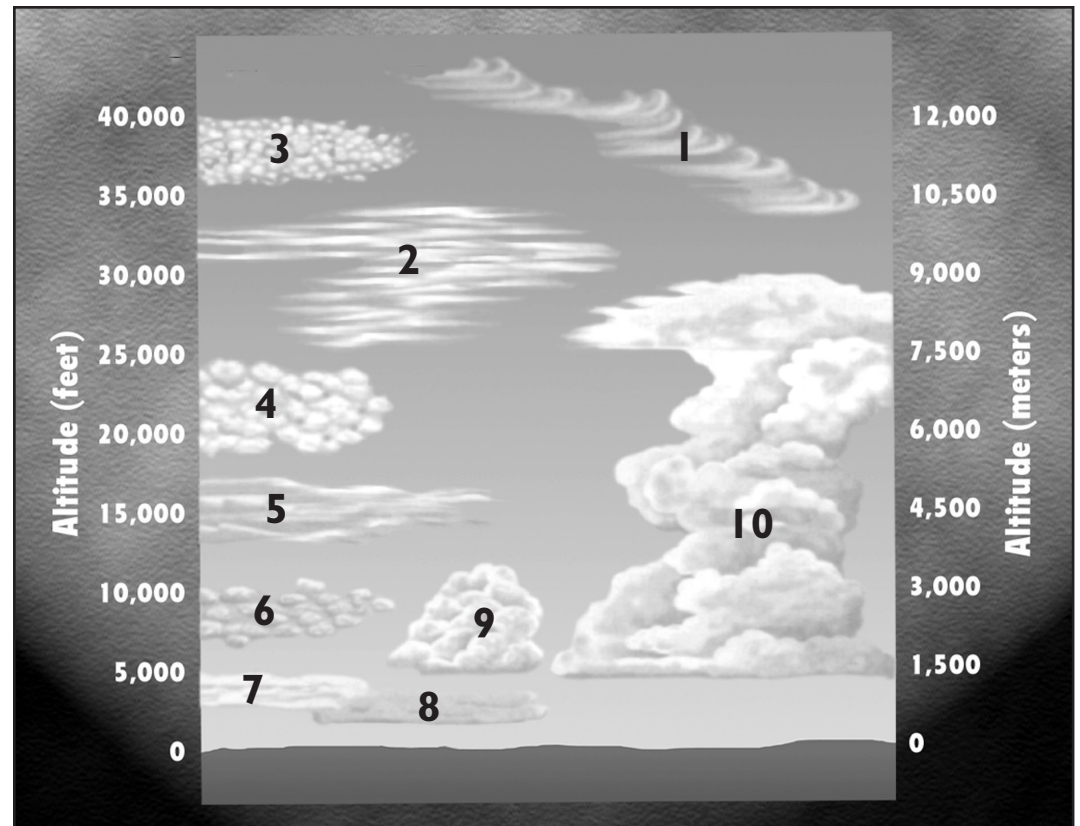
Recognizing Cloud Types

Recognizing Clouds-Worksheet 2

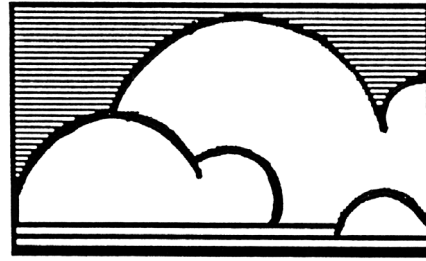
Using the Cloud Bank, write the name of each cloud next to the right number below. Remember that it's important to consider a cloud's altitude, or height above ground, when identifying cloud types. In addition, think about the word origin worksheet you just completed. Use the Latin meanings in the clouds' names to figure out what they look like or where they are located in the picture.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Cloud Bank	
Altostratus	Cumulonimbus
Cirrocumulus	Cumulus
Cirrostratus	Nimbostratus
Cirrus	Stratocumulus
	Stratus



Clouds and What They Mean

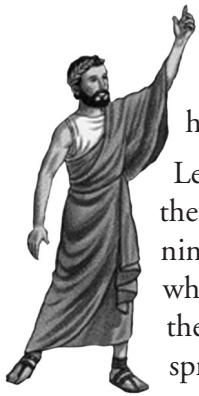


name _____

Using Word Origins to Identify Clouds

Recognizing Clouds-Worksheet 1

Did you know? Latin originated more than 2,500 years ago in ancient Rome and was the primary written language of western Europe for hundreds of years, until about 600 years ago when people began using their own local languages for writing. But even then, Latin continued to be used as the language of scientists and scholars for another 350 years. As you might imagine, the words of a language used for so long and by so many people would creep into many languages. In fact, about half of the words in the English language are of Latin origin.



Let's take a closer look at how Latin and English words are related. Our word *nimbostratus*—as in the nimbostratus cloud—for example, is made up of two Latin words. To find out exactly what a nimbostratus cloud is, we can break apart the word into its Latin parts. In Latin, *nimbus* means *cloud*, which signified rain and water to the ancient Romans. *Stratus* means *to spread*, as in layers. If we put these two meanings together, we might reason that a nimbostratus cloud is a gray rain cloud that spreads across the sky as a general overcast. In fact, our guess is right on target. Nimbostratus clouds are low-lying clouds that are generally producers of rain and snow.

Latin words can be found in many of the names of the cloud types you are studying. First, look up the five Latin words below in the dictionary and write the meaning next to each word. Then, using the Cloud Bank at the right, write the names of the clouds that use the Latin root word(s) in them.

Remember: Each Latin word will have more than one cloud type next to it. Some of the cloud types may be used twice.

1. alto

2. cirro

3. cumulus

4. nimbus

5. stratus

Cloud Bank

Alto cumulus	Cumulonimbus
Altostratus	Cumulus
Cirrocumulus	Nimbostratus
Cirrostratus	Stratocumulus
Cirrus	Stratus

Clouds and What They Mean

name _____

Quiz

If you need more room to answer the following questions, write on the back of this sheet or attach an additional paper to the back of this sheet.



1. What is *evaporation*?
2. Define *dew point*.
3. What is *relative humidity*? How can it be increased?
4. What are clouds made of? How high off the ground are they?
5. Dew point and relative humidity are both important to the creation of clouds. What is the third scientific principle that is essential to cloud formation? How does this principle work—in terms of cloud formation?
6. Looking up at the sky one afternoon, you see a big, tall cloud that is puffy and white—and looks like it won't produce any rain. What type of cloud are you observing?
7. As you are getting ready for school one morning, you notice that the sky is gray. Your mother makes you take a raincoat “just in case” it rains. What types of clouds are in the sky?
8. What type of clouds are known as *thunderheads*, and why do some people call them that?
9. Sometimes, part of a cloud's name is derived from a Latin word. If you know what this Latin word means, then you can easily figure out certain characteristics of that cloud type. What do these three Latin words mean? With which cloud types are they associated? Why?
 - a. *nimbus*—
 - b. *alto*—
 - c. *stratus*—
10. Name three types of precipitation.