Seasonal Changes

(page 170 Weather)

Fill out the chart on each

Spring weather (March, April and May)

Weather words (describe)	Clothing	Outdoor activities
sunny	sweater.	bike riding
rainy	rubber boots	play outside
wet	umbrella	puddle jumping
chilly-cool	slicker jacket	making mud pies
dew	wind pants	
yellow-growing		

Summer weather (June, July and August)

Weather words (describe)	Clothing	Outdoor activities
sunny	bathing suits	surf wakeboarding
hot	light jacket-sweater	water-ski tubing
warm	shorts	swimming
thunder-storms	T-shirts	beach sports
tornadoes	thong-flip-flops	plant garden
	Sunscreen hats	harvesting

Fall or autumn (September, October, and November)

Weather words (describe)	Clothing	Outdoor activities
falling leaves	sweaters	biking
frost	long sleeves	skateboarding
windy	hoodies	Trick or treat
cool	jackets 2-lined	raking leaves
slushy		jump in leaf piles

Winter weather (December, January and February)

Weather words (describe)	Clothing	Outdoor activities
cold	mitts scarf	tobogganning
freezing	toque	build snowman
Snowy	parka-jacket	snowballs eat home
blizzard	winter boots (-25)	Sledding ski-doos
ice-wet	ski pants	hockey skating
gross-deadly	layers	pile snow snow forts
		Curling

Draw a picture of the weather in Saskatoon today. What are people doing outside? What are they wearing?

What weather do you prefer? Explain why.

Autumn - not too hot or cold most years (and no ticks!)

Communicate (page 172/173)

Describe a time when you had to change your plans because of the weather?

We had to postpone Gym on Wednesday to Friday because of rain.

Why do you think people often check the forecast?

To be prepared of how to dress or if they need extra gear.

What are some ways you can collect information about the weather?

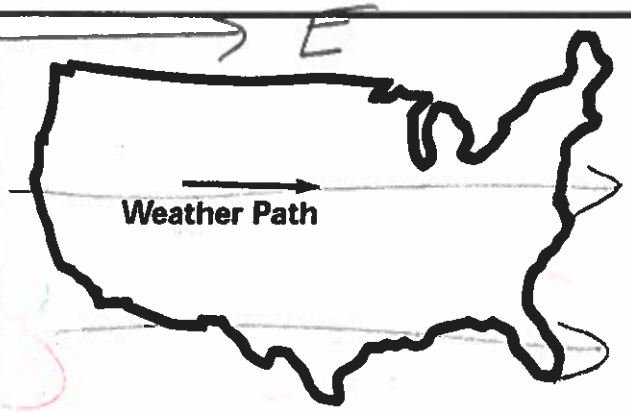
- look online at the forecast or listen to the radio
- farmer's almanac - historic records for average temp.

What are the advantages and disadvantages of Saskatchewan weather?

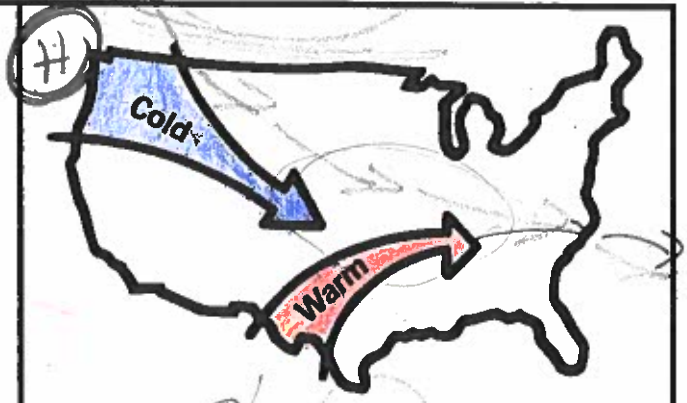
- Too many changes throughout day - hard to dress and its unpredictable
- There are fun things to do in all seasons

Name _____ Date _____

WEATHER MAP SYMBOLS



Weather moves from west to east, about 500 miles a day. It moves faster in the winter.



High, cold air travels faster than low, warm air. Both follow the general paths shown here.

Isobars: Lines drawn through points of equal barometric pressure.

Isobars far apart mean mild winds

Isobars close mean strong winds

Rain Scattered Showers

Snow Flurries

clear cloudy high pressure area

partly cloudy rain low pressure area

FRONTS

A cold air mass is moving in the direction of the arrows. It often brings storms and cooler weather.

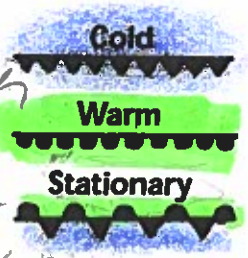
A warm air mass moving in the direction of half circles is usually preceded by rain or snow.

A line between two air masses when there is little or no movement means unsettled weather—often prolonged rain.

Low pressure cells move in a counterclockwise direction. They usually forecast cloudiness and precipitation.

High pressure cells move in a clockwise direction. They usually forecast clear skies.

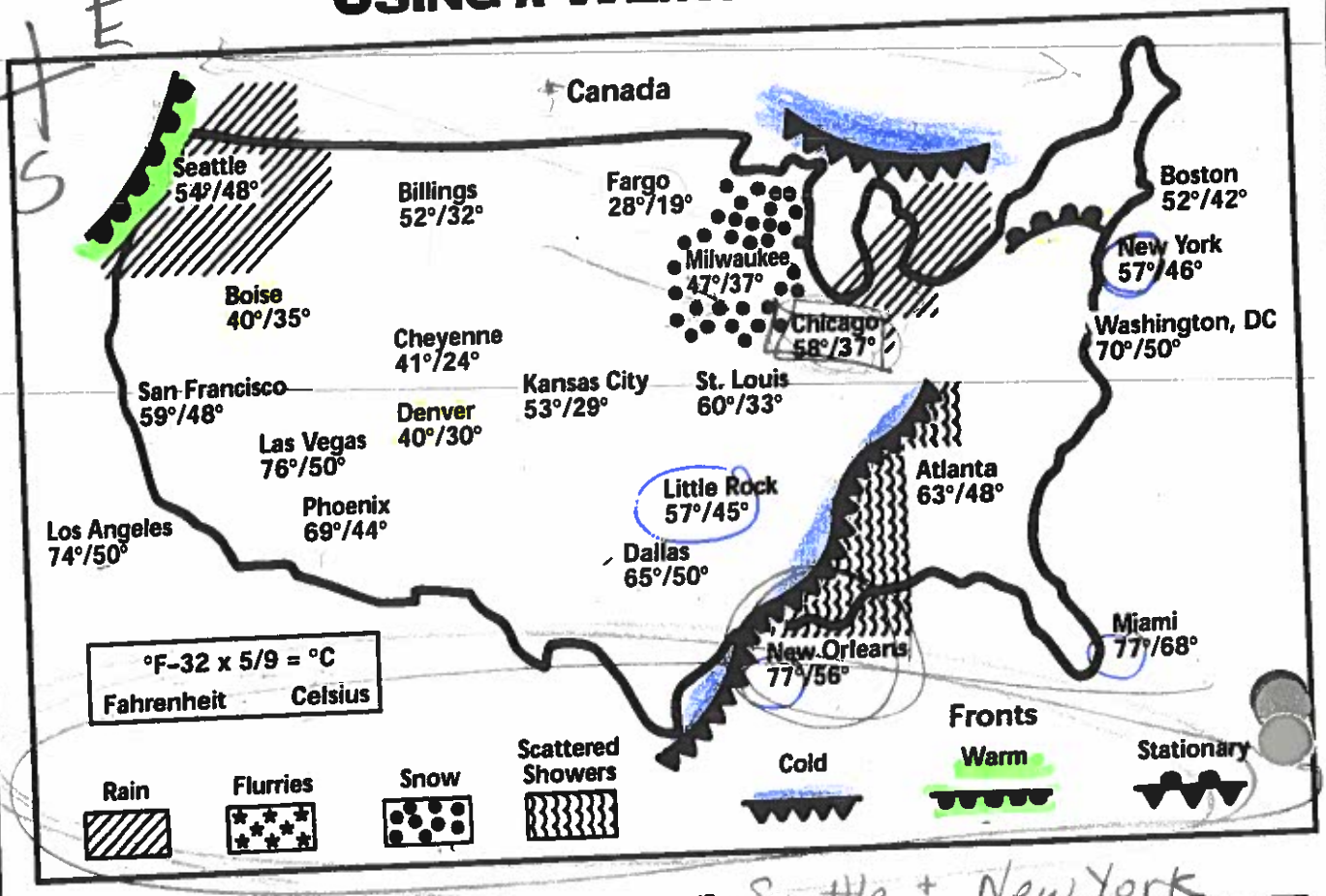
The line of contact between air masses of different temperatures is a front.



Name _____ Date _____

WEATHER

USING A WEATHER MAP



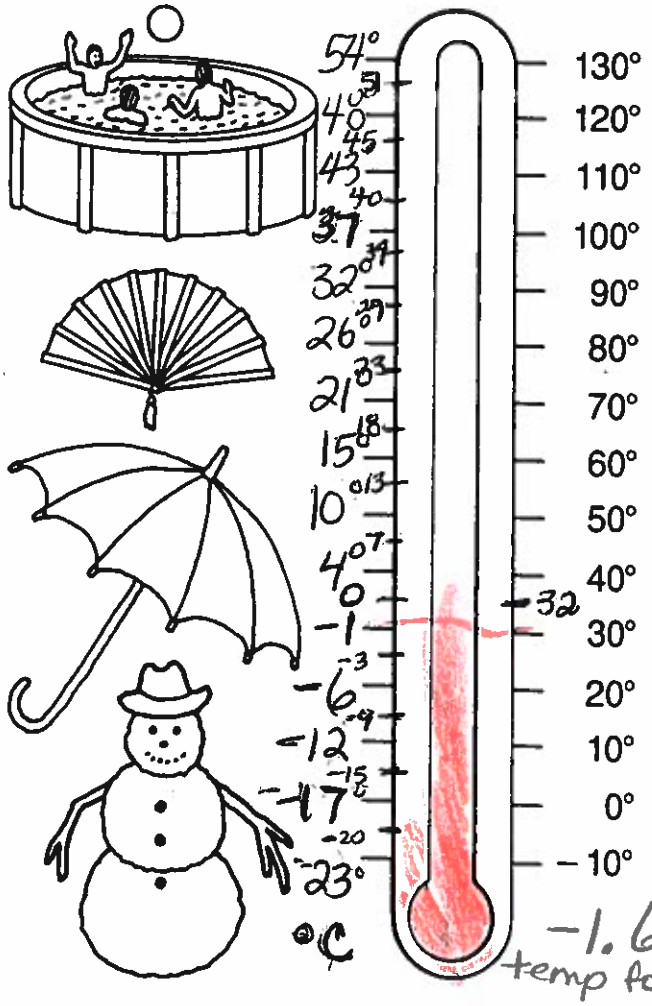
1. Near what cities are the two warm fronts located? Seattle + New York
2. What type of weather is associated with these warm fronts? warm + rainy
3. Draw the symbol used on the weather map to indicate a warm front.
4. Draw the symbol used on the weather map to indicate rain.
5. What kind of precipitation did the New Orleans area have? scattered showers
6. If you lived in Chicago, what type of weather might you expect in the next day or two? snow
7. What type of weather is moving with the cold front east of St. Louis and Little Rock? scattered showers
8. Which city had the coldest temperature? What was it? Fargo 28°F
9. Which two cities had the same high temperature? What was it? Denver + Boise 70°F, Little Rock + New York 57°, New Orleans + Miami 77°
10. What type of weather is Los Angeles having? warm no rain

Name _____

How Hot Is It?

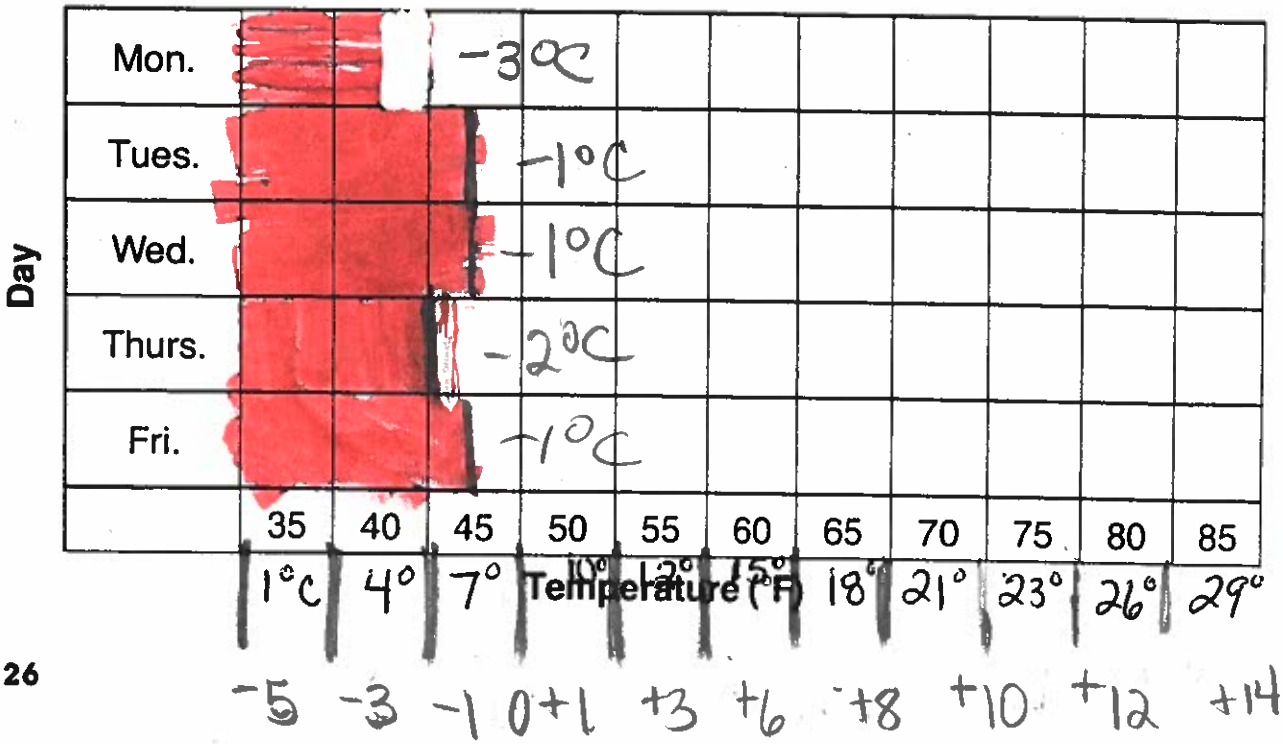
Look at the outside thermometer.
Write the temperature on the chart.

Day	Temperature
Monday	-3°C feels like +6
Tuesday	-1°C
Wednesday	-1°C
Thursday	-2°C
Friday	-1°C



-1.6°C
temp for week

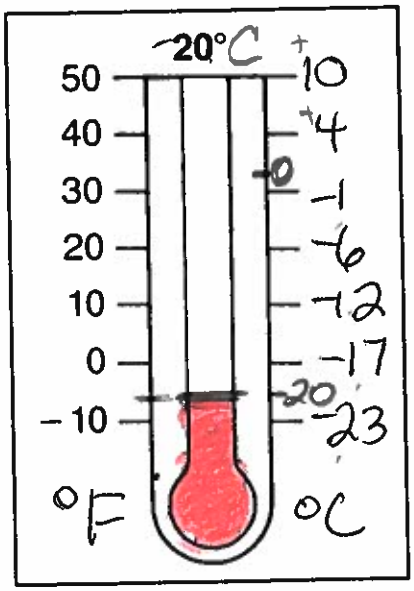
At the end of the week, fill in the graph.
Color the boxes to show how hot it was each day. March 16-20/2020

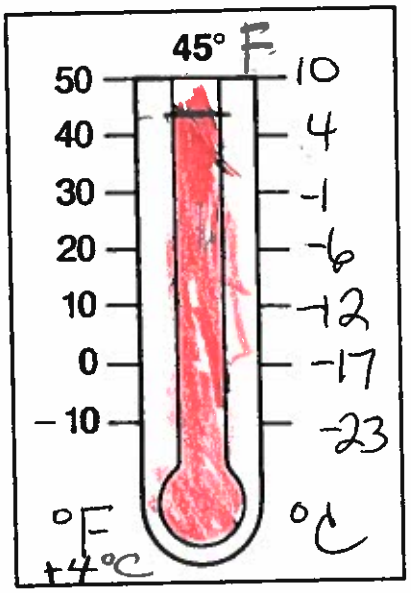


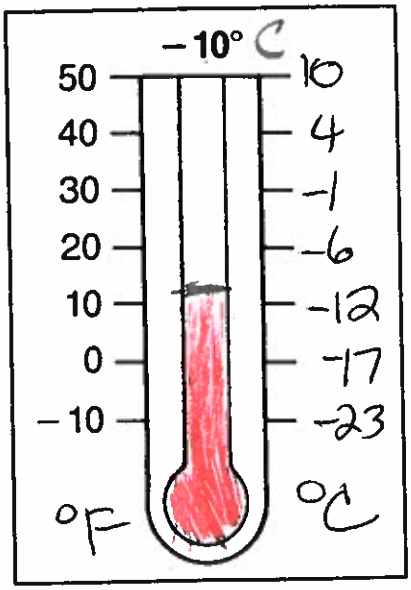
Hot and Cold

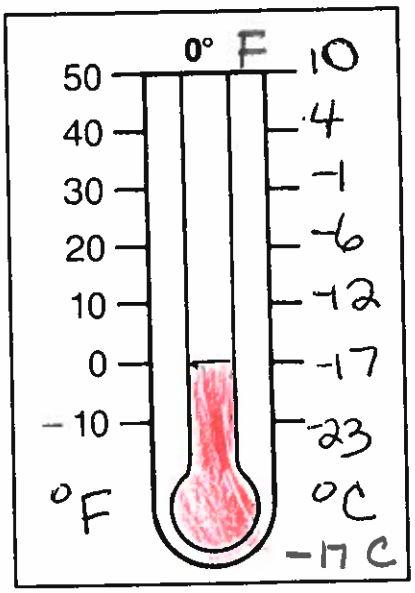
Name _____

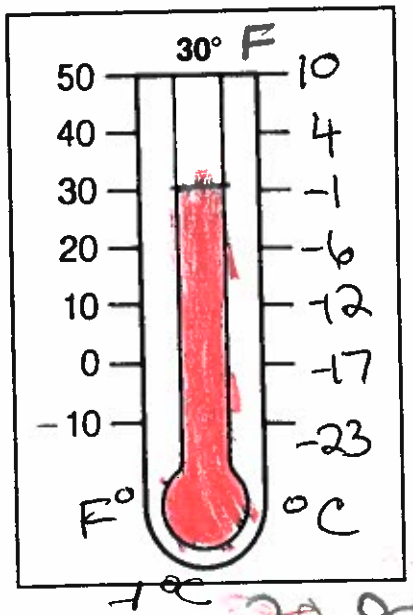
Look at the temperature above each thermometer.
Use a red crayon to mark the temperature on each thermometer.

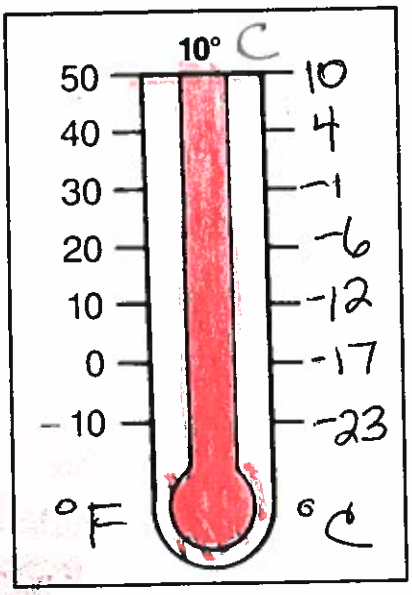












Which is the coldest temperature? -20 °C

Which is the hottest temperature? 10 °C

Is the red line higher or lower when the temperature is hotter?

higher

Is the red line higher or lower when the temperature is colder?

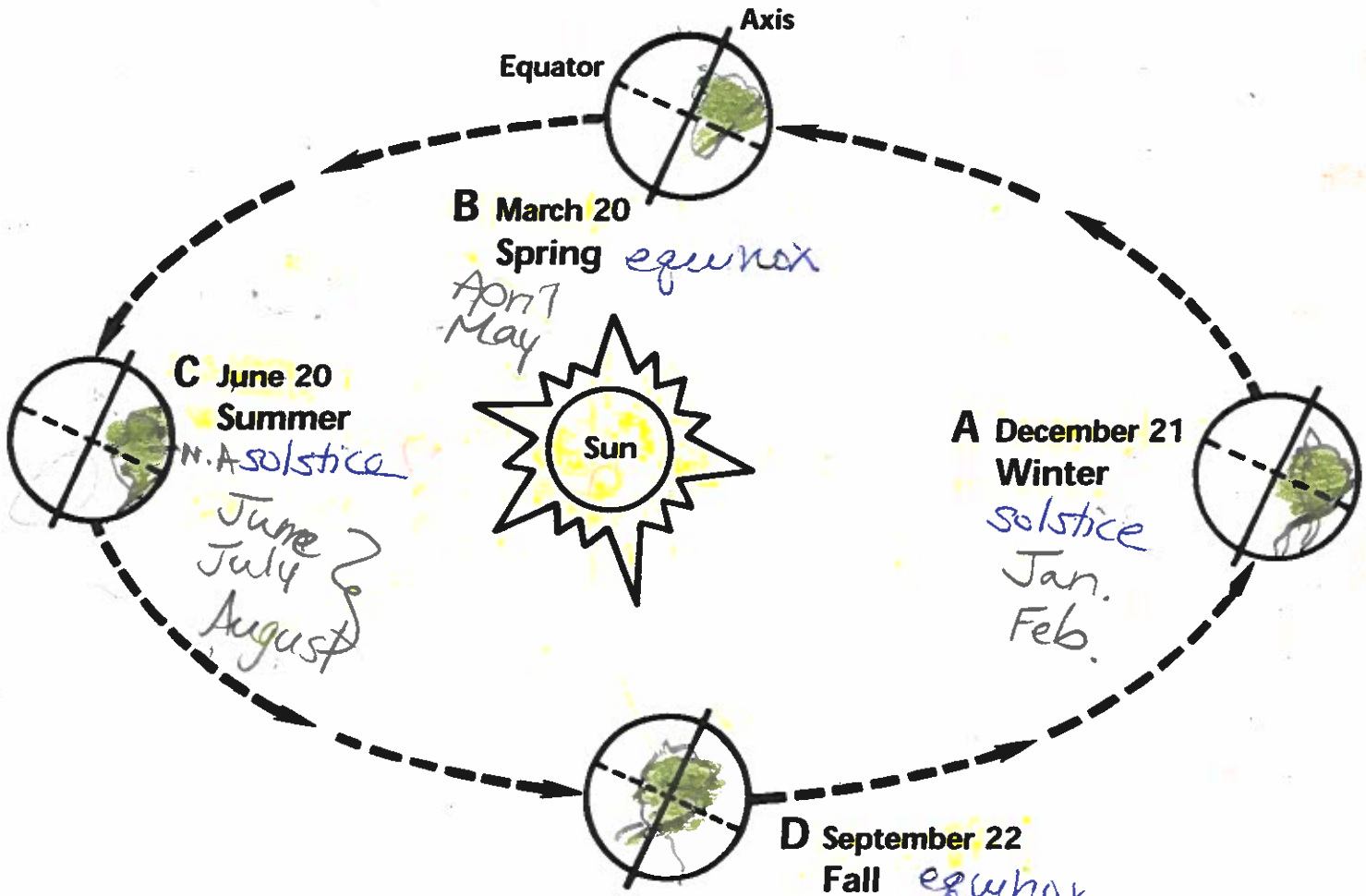
lower

Name _____ Date _____

WEATHER

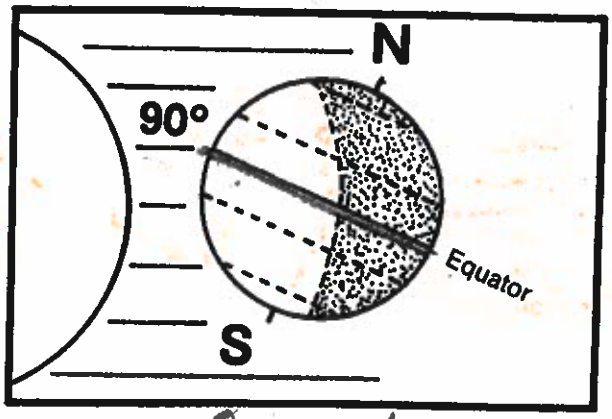
SUN AND THE EARTH

The tilt of the Earth's axis and Earth's revolution around the Sun cause the amount of sunlight striking the Earth to change continually from day to day.



Changing of the Seasons on Earth

The earth's axis always has the same tilt and points toward the North Star. In the year it takes the earth to revolve around the sun, the sun's rays strike the North and South Hemisphere at different angles. The more directly the sun's rays strike the surface of the earth, the more heat energy is delivered. The difference in heating of the earth's surface produces our seasons.



1. In the place you live, on what date is the sun highest in the sky? Canada - June
2. Is this a warm or cool season? warm
3. At the same latitude in the Southern Hemisphere, where is the sun in the sky on that day? away from the sun
4. In the place you live, six months later, would the sun be high or low in the sky at noon? low
5. Is this a warm or cool season? winter - cool - December

When the sun is directly over the equator, it is called the EQUINOX. This happens twice a year, at the beginning of Fall and Spring seasons.

6. What is the date of the Fall Equinox? Sept. 22
7. What is the date of the Spring Equinox? March 20

When the sun is directly over the Tropic of Cancer or the Tropic of Capricorn, it is called a SOLSTICE. This begins the Summer or Winter seasons.

8. What is the date of the Winter Solstice? December 21st
9. What is the date of the Summer Solstice? June 20th
10. How many months does each season last? 3 months
11. The change of the sun's position in the sky causes the seasons. Will this affect your daily weather, as well as the season?

Yes, because in winter we get snow

Explain it's cold. In summer it is warm.

Factors of Weather: Air Pressure

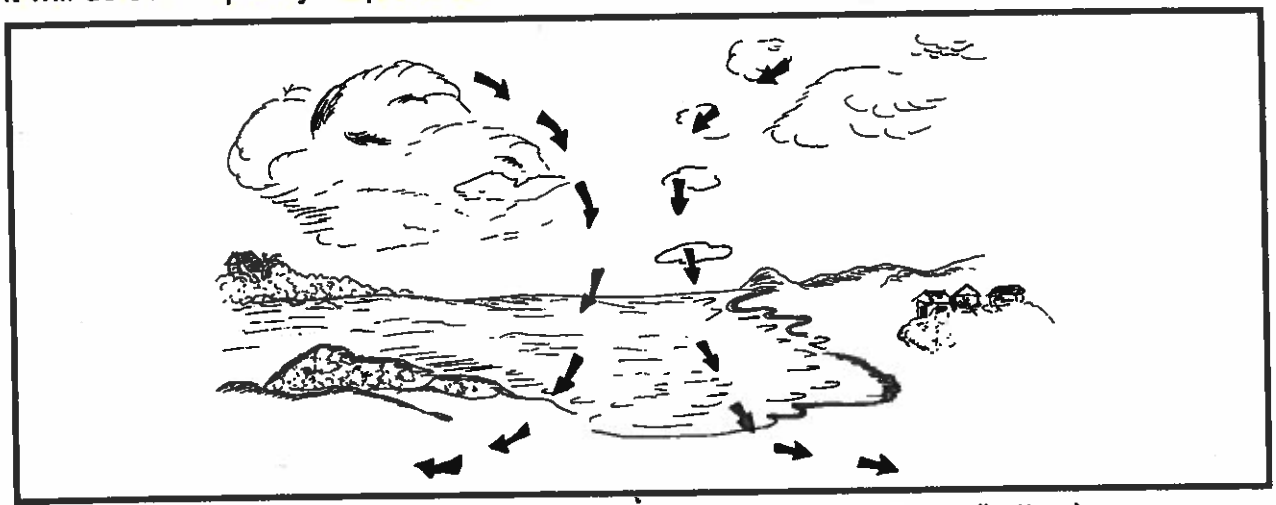
Weather is the condition of the air around the Earth. It develops in the atmosphere that surrounds the Earth. Weather changes from day to day and even from hour to hour. There are several factors that determine the weather. Let's take a look at one of these factors: air pressure.

Remember that air is matter. All matter has mass and takes up space, so air has mass and takes up space. (You proved that fact if you did the experiment on page 6.) Weight is the measure of gravity acting on matter. Gravity acts on air by pulling it and holding it as close to the Earth's surface as possible. The weight of the air being pulled down on an area of the Earth's surface is called air pressure.

Air pressure is affected by two things. First, it is affected by the amount of air above it. Imagine that you are lying on the floor. Someone puts a book on your stomach (a science book, of course). You feel the weight of the book. We will call that "book pressure." If someone adds two more books, you feel more "book pressure." If someone adds ten more books, you feel a lot more "book pressure." The same idea is true for air pressure. If you are at the top of a mountain, there is not much air above you, so the air pressure is low. If you move down into a valley, there is a lot more air above you, so the air pressure is greater.

Air pressure is also affected by temperature. Warm air weighs less than the same amount of cold air because the particles of air are farther away from each other. Cold air weighs more than the same amount of warm air because the particles of air are closer to each other. Because warm air weighs less, warm air has less air pressure. Because cold air weighs more, cold air has greater air pressure.

Air pressure changes, sometimes very quickly. Imagine that you are in a very small room with many classmates. You are all standing elbow-to-elbow, pushed against each other and against the walls. You are in an area of high pressure. Suddenly, someone opens a door to a very large room. You would want to move into the larger room where you would have enough space to be comfortable. You would want to move to an area with less pressure, and the sooner you could get there the better! The same idea is true for air particles. Air wants to move from an area of high pressure to an area of low pressure, and it will do so as quickly as possible.



Air moves from an area of high pressure (top) to an area of lower pressure (bottom).

Name _____ Date _____

For the student:

1. What is air pressure?

Gravity acts on air by pulling it and holding it to the Earth's surface - this is called air pressure.

2. What are two factors that affect air pressure?

1) The amount of air above it - if there is not much air above - there is low pressure

2) The temperature - cold air has more air pressure

3. Why would air pressure be greater at sea level than it would be on the top of a mountain?

Because there is lots of air at ground level there would be more pressure. There isn't a lot of air above a mountain so there would be less air pressure.

4. Would air pressure be greater at the South Pole or at the equator? Why?

The South Pole would have more air pressure because cold air is heavier, the equator is hot so has less air pressure.

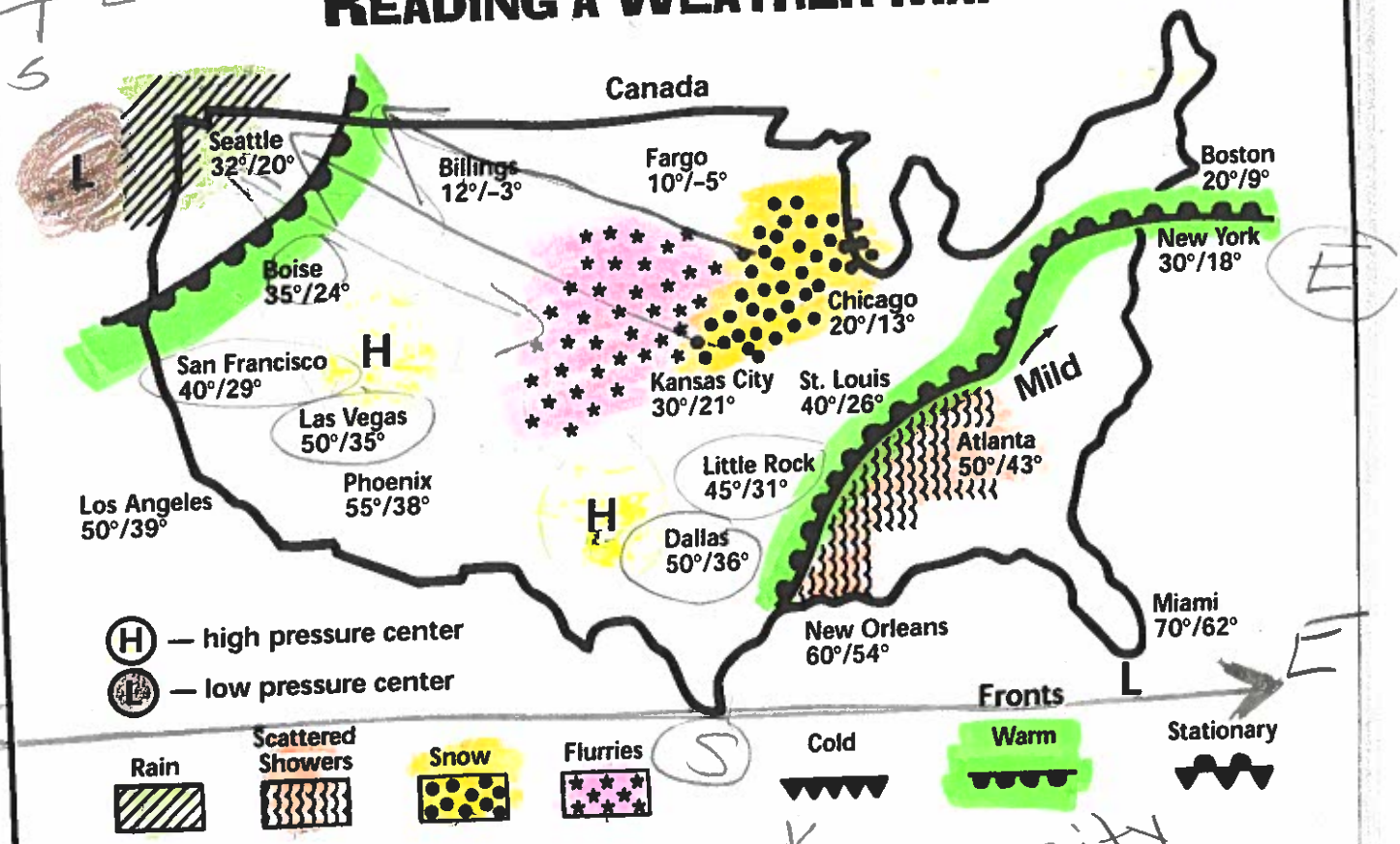
5. How does the force of air pressure move air particles?

Air wants to move from an area of high pressure to low pressure, so it moves to find more space

Name _____ Date _____

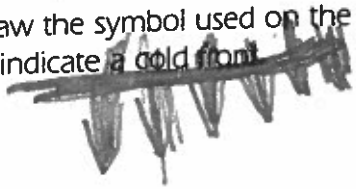
WEATHER

READING A WEATHER MAP



1. In what cities is it snowing? Chicago Kansas city
2. What cities are near high pressure centers? Seattle Little Rock Dallas Boise San Francisco Las Vegas
3. What type of weather is forecast for the southeastern area of the United States? Scattered showers
4. What kind of weather would you forecast for the midwest? Rain
5. What type of weather is moving with the warm fronts? Scattered showers
6. Which city recorded the highest temperature? Miami, 70°F
7. Where is the lowest temperature found? Fargo, ST
8. Where might the snow north of Kansas City have been two days ago? Seattle
9. Draw 2 symbols used on the weather map that indicate precipitation.

10. Draw the symbol used on the weather maps to indicate a cold front.

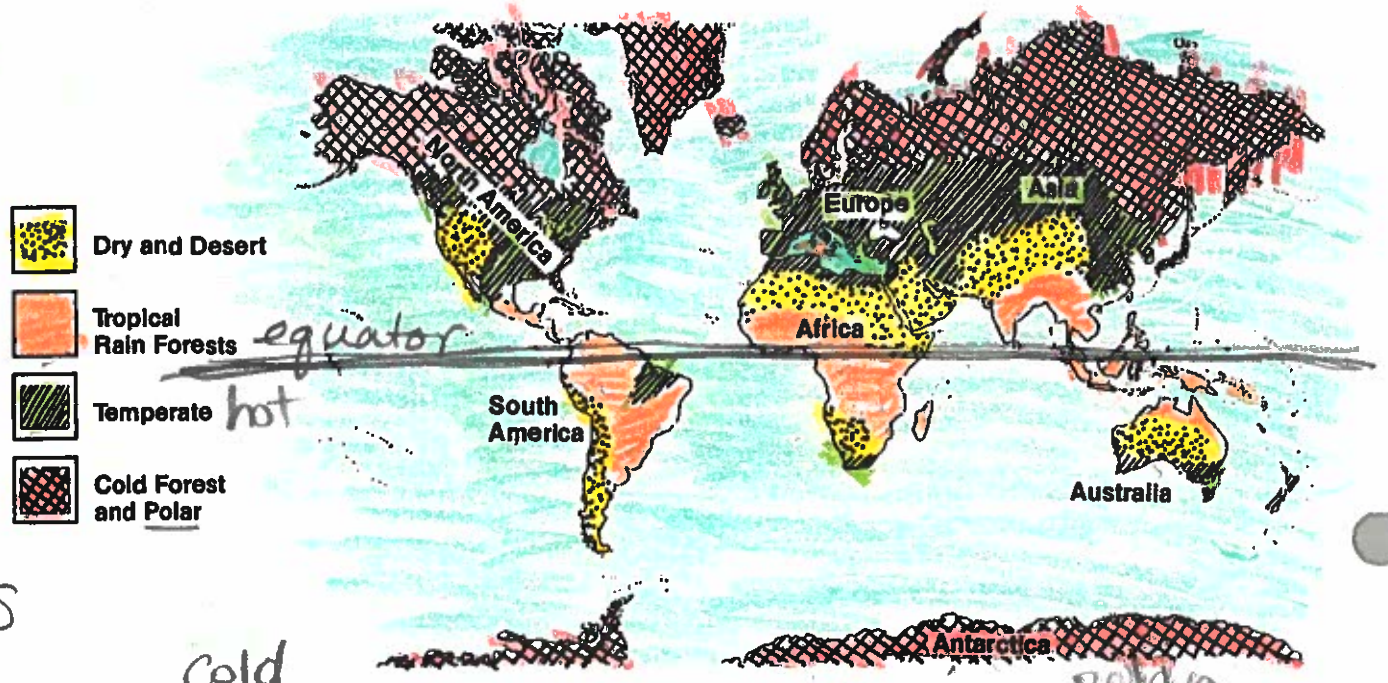


MP3411 We

Weather Makes a Climate

Weather is the state of the air at a certain time and at a certain place. Conditions may be clear, cloudy, fair, rainy, humid, cold, windy, etc. The type of weather that exists from day to day depends on what kind of air masses are moving above.

Different places in the world have different kinds of weather for extended time periods. These differences make weather zones called climates. Climates vary according to their latitudes and altitudes and also are affected by the same factors as weather, but may be thought of as localized. For the most part climate zones circle the earth in belts. Use the following map to answer the questions below.



1. What climate zones circle the northern and southern portions of the world? polar
2. In what type of climate do you live? polar Circle all the climates in the world that are the same as yours. Arctic, Antartica, northern Asia and Europe
3. How many climates does Australia have? 3 What are they? desert Rain Forests and temperate
4. Which continents have deserts? North America, S. America, Africa, Asia, Australia
5. Draw the equator on your map. What climate(s) appear along the equator? tropical rain forests
6. Which continent has only one climate? Antartica - polar
7. What will the amount of sunlight and rainfall determine in different climates? it decides if it is dry like a desert, or rainfall

Underline the following words if they are weather words. Circle them if they are climate words.

temperate zone	polar regions	hurricanes	air masses
rain forests	precipitation	deserts	cold front
cold forests	jungles	drought	monsoon

Name: _____

Umbrellas

Umbrellas have been around for thousands of years. They were first designed to provide shade from the Sun. Eventually they were also used to shield people from the rain.

1. Look at the umbrellas below.
   a) In what kinds of weather would each umbrella be used?
   b) What kinds of materials might each umbrella be made of?

individual use
1 person

A. vinyl umbrella
Where: lots of wind - strong wires but keeps out rain. Canada, North America, Europe (North)
what kind of climate
weather - rainy but windy
keep dry

fibres + string

B.
bamboo + paper
paper umbrella - Japan, China,
- glue tapioca, coated with linseed oil makes it waterproof - good in drinks with condensation -
can be used in rain, snow or sunshine. Japan island - lots of variety of weather.
- also used for decor in ceremonies - wedding, funerals etc.

Keeps the heat out

C. Bamboo Thatched umbrella
grass-bamboo umbrella
~~used at the beach~~ to keep out hot sun rays for protection + shade
Mexico, Africa
where in world climate - Australia
hot-beach places.
what kind of weather by water body
Mexico, Brazil, Thailand, New Zealand
surrounded by an ocean, ~~Florida~~
hot temperatures.

D. Patio umbrella made from fabric
farmers market outside in the summer
in Canada U.S. - keeps produce from overheating; any place that has hot summers but rainy weather
England, parts of Europe + Asia

2. Which umbrella(s) do you use where you live?

The Patio vinyl and hand held umbrella because we have some rain, and wind and temp. changes - unpredictable weather.

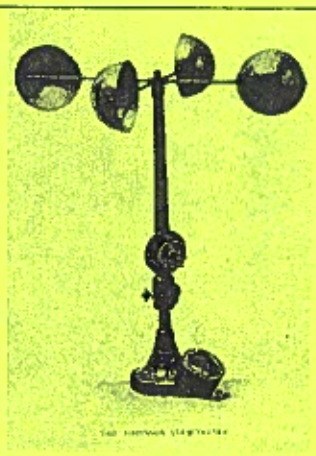
3. Where in Canada do you think you would see a lot of each umbrella? Why?

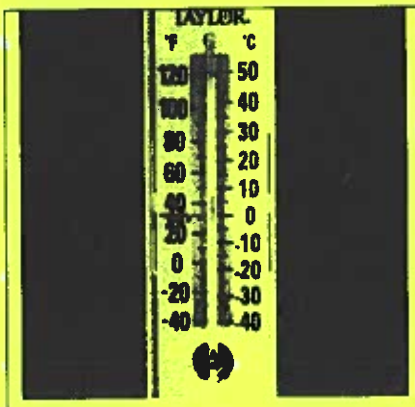
→ Places around ocean in the summer - BC, Nova Scotia, PEI Newfoundland → Bamboo Thatched.

→ Saskatchewan Alberta, Manitoba - provinces have a lot of rain and wind

→ Territories - just in summer - patio umbrella or hand held - not alot of rainfall

Weather Tools Name: _____

Images of Weather Tools	Name of equipment:	Uses:
	Weather vane or wind vane	it shows which direction the wind is blowing.
	anemometer	it shows the wind speed and direction
	barometer	it measure air pressure

	thermometer	measure temp. hot or cold.
	Rain gauge	It measures rain fall mL
	weather balloon	they gather information about weather, temperature, air pressure, humidity, speed of wind
Draw a hygrometer: 	measures humidity + water in the air	hygrometer

Factors of Weather: Moisture
Basic Types of Clouds

Clouds are collections of tiny droplets of water or particles of ice that float in the air. Clouds form when water vapor molecules condense.

Meteorologists classify clouds into three basic groups according to their shapes and the heights at which they form: stratus, cumulus, and cirrus.

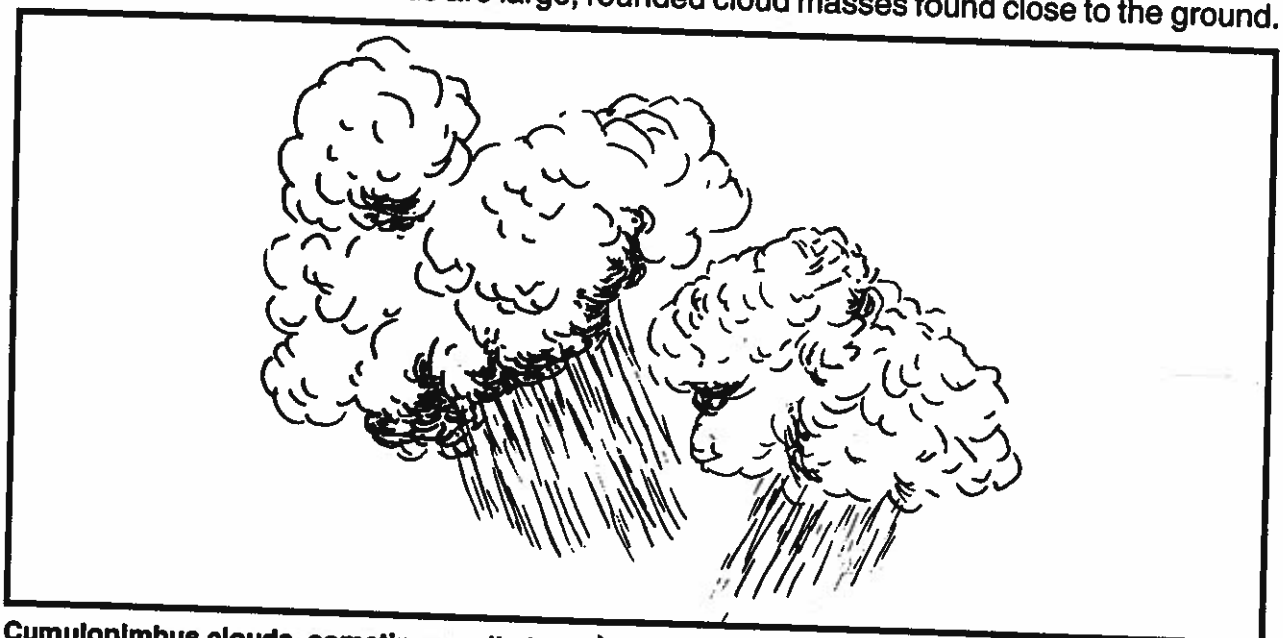
Stratus clouds form at altitudes below two kilometers. They are flat layers of gray clouds that are made of water droplets. Stratus clouds may be only a few hundred meters thick, but they may cover great distances. Stratus clouds do not form individual cloud units. They seem to blanket the Earth, allowing almost no sunshine to get through. These clouds may be responsible for long periods of drizzling rain or snow.

A stratus cloud that forms close to the ground is called fog. Fog is common near large bodies of water, which, of course, contain large amounts of moisture. If the air temperature falls below the dew point and the air is still, the water vapor condenses and becomes fog. Fog may also form when warm, moist air layers move over cold surfaces.

Cumulus clouds are large, puffy, white clouds that may have gray centers. They have bases that form below two kilometers, but they may go upwards for thousands of meters into the atmosphere. Cumulus clouds often have interesting shapes that change continuously. Cumulus clouds may be associated with fair weather or with snow showers and thunderstorms.

The highest clouds are known as cirrus clouds. They are feathery, white clouds made of ice crystals. They form above six kilometers in the atmosphere and may be seen during any season. They are usually associated with fair weather.

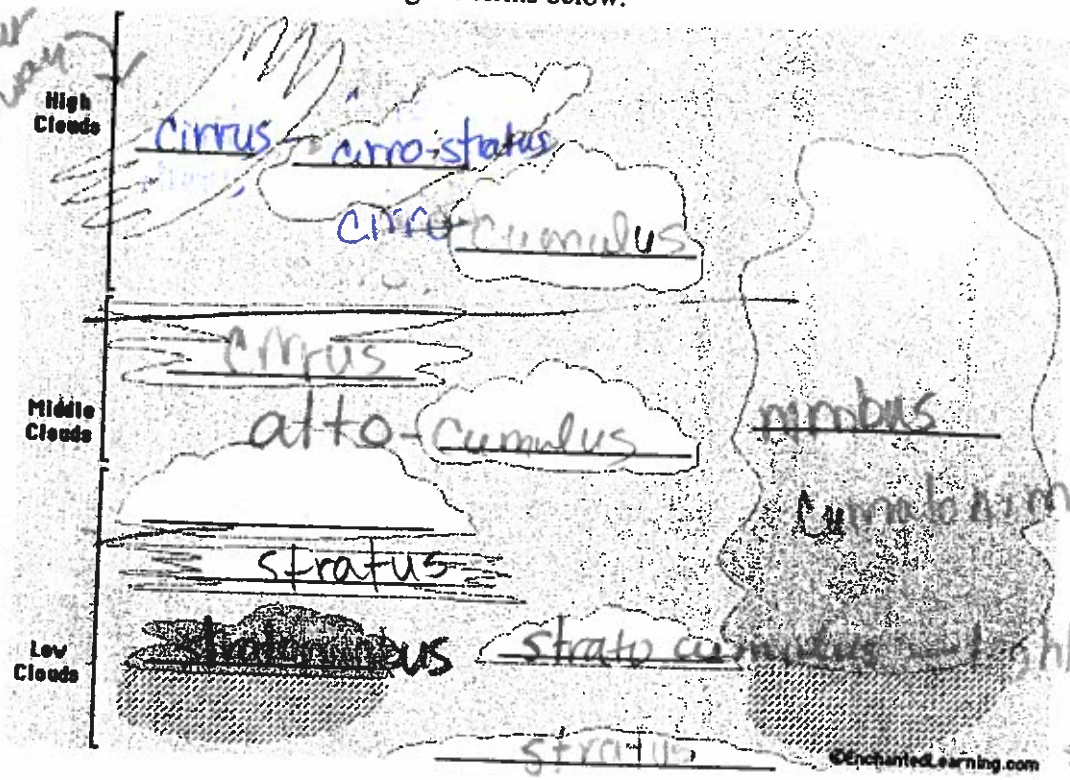
Any cloud that produces precipitation is called a nimbo or nimbus. Some clouds are combinations of the three basic cloud types. Cirrocumulus clouds are puffy clouds found at high altitudes. Cumulonimbus clouds are puffy "thunderheads" that produce thunderstorms. Stratocumulus clouds are large, rounded cloud masses found close to the ground.



Cumulonimbus clouds, sometimes called "thunderheads," produce thunderstorms that precipitate large amounts of rain, and often, hail.

Label the Clouds

Label the clouds using the terms below.



alto-cumulus - Middle-level, medium-sized puffy clouds.
alto-stratus - Middle-level, layered clouds.
cirro-cumulus - High-altitude, small, wispy, patchy, puffy clouds.
cirro-stratus - High-altitude, thin, wispy clouds in layers.
cirrus - High-altitude, thin, wispy clouds.
cumulo-nimbus- Large, dense, towering clouds that cause thunderstorms.
cumulus - Low, puffy clouds.
fog - Ground-hugging clouds.
nimbo-stratus - Low, dark, rain cloud.
stratus - Low, layered, horizontal, wispy clouds with a flat base.
strato-cumulus - Low clouds, broad and flat on the bottom, puffy on top (higher than cumulus and lower than altocumulus).

Other types of clouds:
Mammatus clouds are dark clouds shaped like sagging pouches. These clouds often appear after a tornado.

Orographic clouds are clouds that are formed as moist air rises over mountains or other major geographic features. The air floats up the side of the mountain and cools quickly, condensing and turning into a cloud.

A **pileus cloud** is a smooth cloud that is found over or on the top of a major geographic feature, like a mountain.

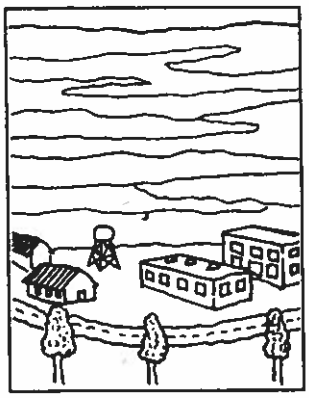
A **contrail** (short for **CON**densation **TRAIL**) is a cloud-like vapor trail that forms behind some aircraft when flying in cold, clear, humid air. The contrail forms from the water vapor contained in the jet's engine exhaust.

Cloudy Days

Name _____

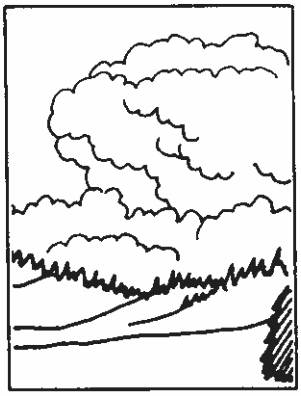
Use one of the names to tell what each cloud is.
Write the name below the cloud. Explain why underneath.

cumulus **cirrus** **stratus**



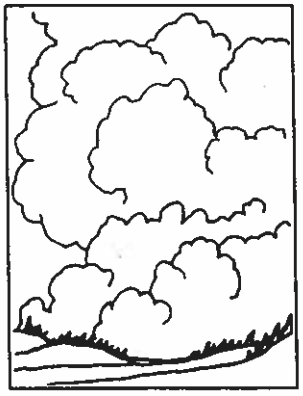
stratus

means layer clouds

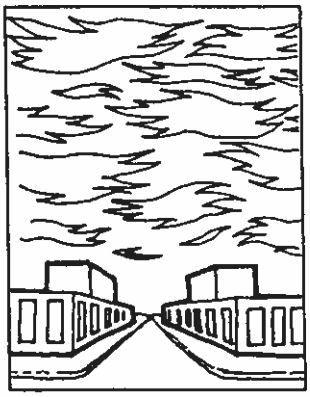


cumulus

heap or puffy

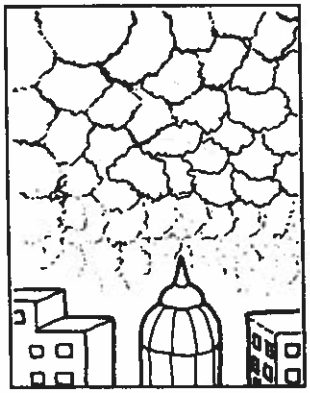


cumulus

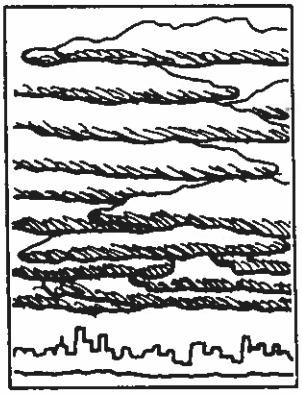


Cirrus

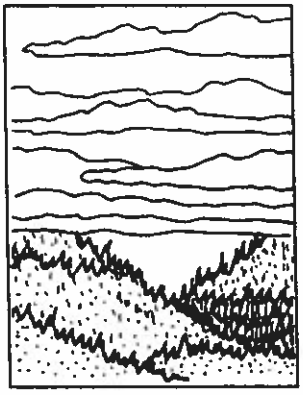
curls
thin, wispy white



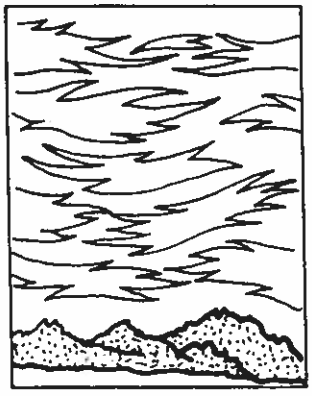
Cumulous



Stratus



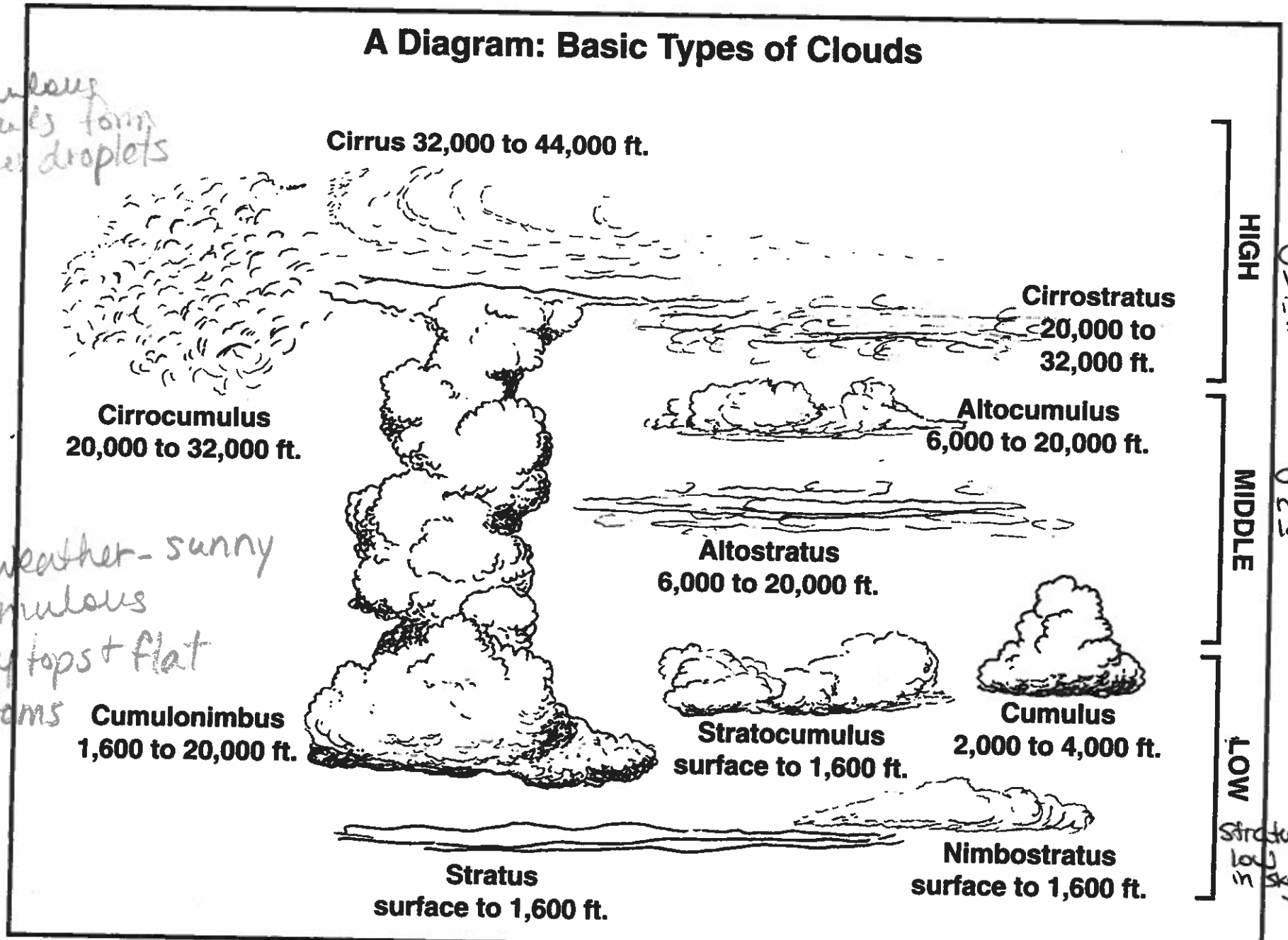
stratus



Cirrus

cumulous - good weather "fair" - sunny + warm
stratus - thick gray blanket - low - means drizzle (fog)
(low)
(high) Cirrus clouds means weather is going to change in a day (ice crystals high in air)

* Nimbus- clouds with the word nimbus in their name bring precipitation



Cumulous clouds form water droplets

cirro high in sky

alto mid layer

fair weather- sunny cumulous puffy tops + flat bottoms

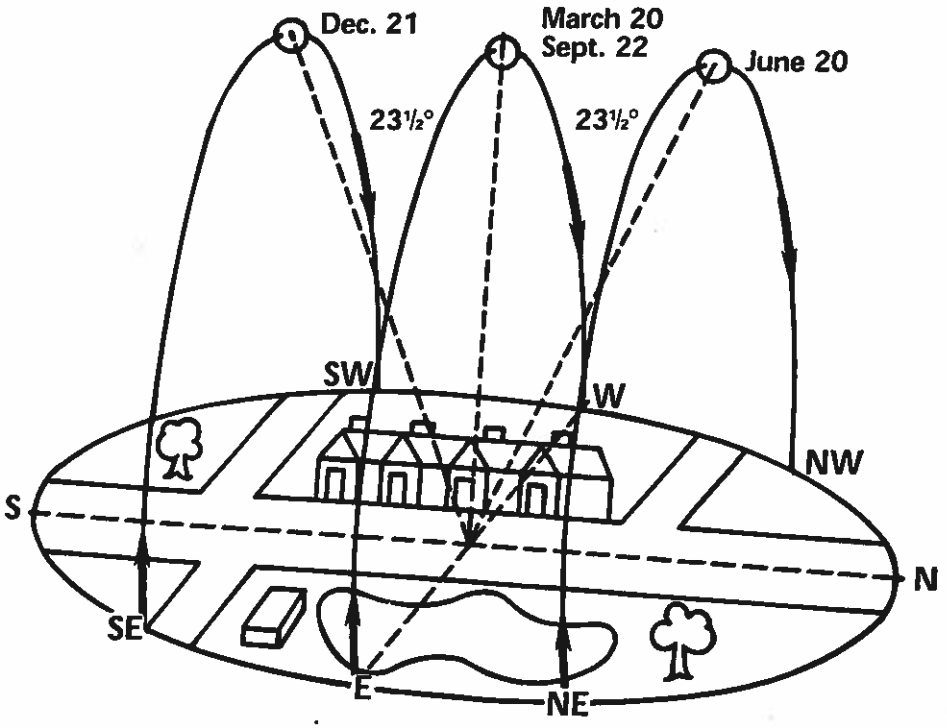
stratus low in sky

Cumulus- look puffy, like a pile of cotton balls, and have flat bottoms (clear days with blue skies)

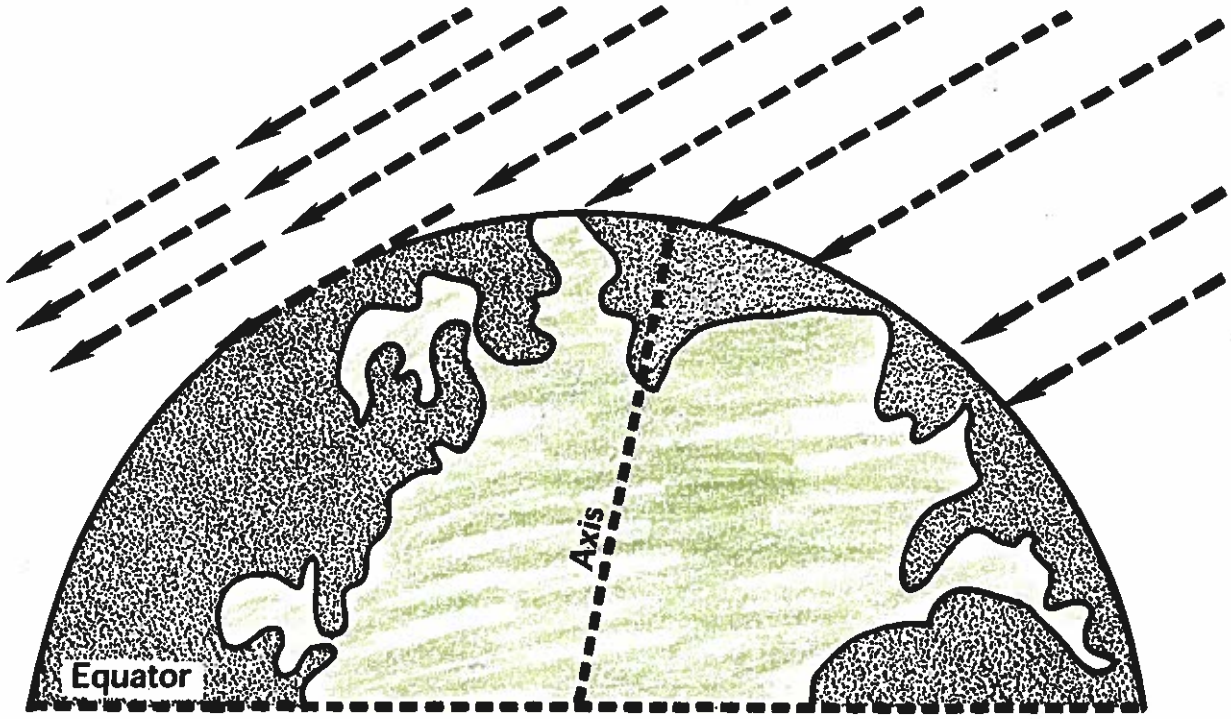
Cirrus- are thin and look like curls of hair, they are usually high in the sky (usually means change of weather

Name _____ Date _____

CURVATURE AND CHARACTERISTICS OF EARTH



Curvature and characteristics of Earth result in uneven heating from the Sun's rays.



Name _____ Date _____

WEATHER

Quiz

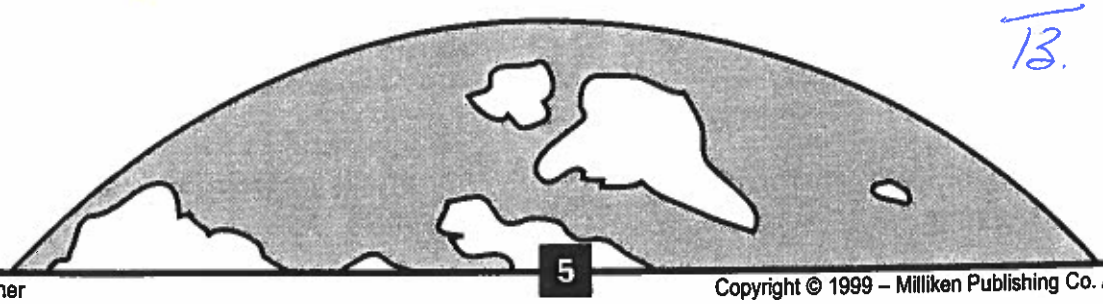
REVIEW

Write the correct letter on the blank lines.

A. Earth's surface is curved
B. near the poles
C. heat up evenly in the sunlight
D. days and nights would be 6 months long
E. weather
F. heat
G. year
H. winter
I. summer
J. the sun-heated surface of the Earth
K. seasons would not change as they do now
L. much of the sunlight that strikes them
M. more heat energy to the water than to the soil

1. G The Earth travels around the Sun once every 365 days.
2. K If the Earth were not tipped on its axis, ~~seasons~~ would not change
3. I If the Sun shines 13 or 14 hours, the season is probably Summer
4. H In the Northern Hemisphere, the Sun's rays strike the Earth at a slant during the winter
5. D If the Earth stopped rotating on its axis, ~~days~~ + nights would be 6 months long
6. A One of the reasons the Earth is not heated evenly by the Sun is because the surface is curved.
7. F Some of the energy from the Sun is absorbed by the Earth and changed to ~~heat~~
8. J Dark colored surfaces of the Earth absorb the sun-heated surface of the Earth.
9. L Air receives most of its heat from sunlight
10. B The area where the air gets very little energy from the Sun is ~~near~~ the poles
11. C The surface of the Earth is dark in some places and light in others, therefore the Earth does not heat evenly
12. M If you wanted soil and water to be heated at the same rate of speed, you would need to add energy to water.
13. E The condition of the atmosphere is called Weather

13.



Lab # **Cloud Formation to Forecast weather**

Name and Partners: Date: May 29th ✓

Purpose: to forecast the weather by observing the height at which clouds form the sky and the type of clouds formed stratus, cirrus, nimbus, and cumulus

Hypothesis: I can predict that the weather conditions will be fair weather over the week ✓ over the next by observing cloud formations in the sky.

Materials:

-paper -pencil
-science text book -pencil crayons
-cloud classification

Procedure:

1. Go outside and sit where you can observe the clouds in the sky.
2. Sketch the sky and all the clouds you see on paper.
3. Write down the date, temperature, classify the clouds (as cumulus, cirrus, stratus, or other,) and make a prediction of short term weather patterns based on your cloud observations.
4. Colour the sky and clouds
5. Write detailed observations and record the clouds in the sky and the weather conditions. What weather conditions can you predict based on the types of clouds in the sky

Observations:

Date: May 29 Friday

Temperature: 19°C

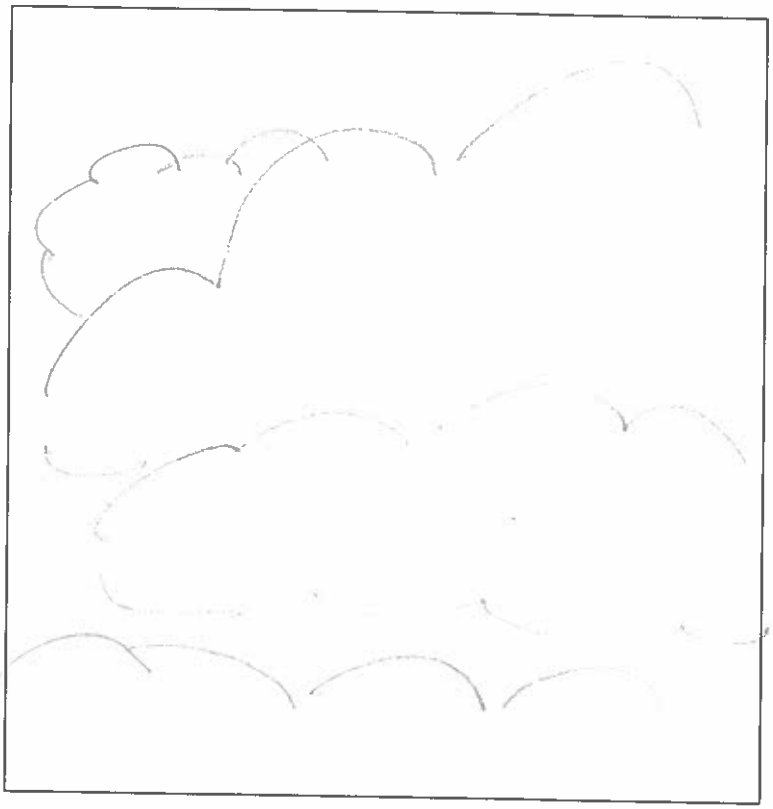
Cloud type(s): cumulous

Colour & White and grey

shape of clouds: puffy

24 hour Prediction: fair weather Clouds- no rain in the next day

Chance of rain 0%



Date: June 1st Monday

Temperature: 23°C

Cloud type(s): Cirrus clouds high in sky, white not many

Colour &

shape of clouds: wispy, curly & thin

24 hour Prediction: no rain tomorrow but later in the week.

0% of precipitation

Date: June 3 Tuesday

Temperature: 22°C

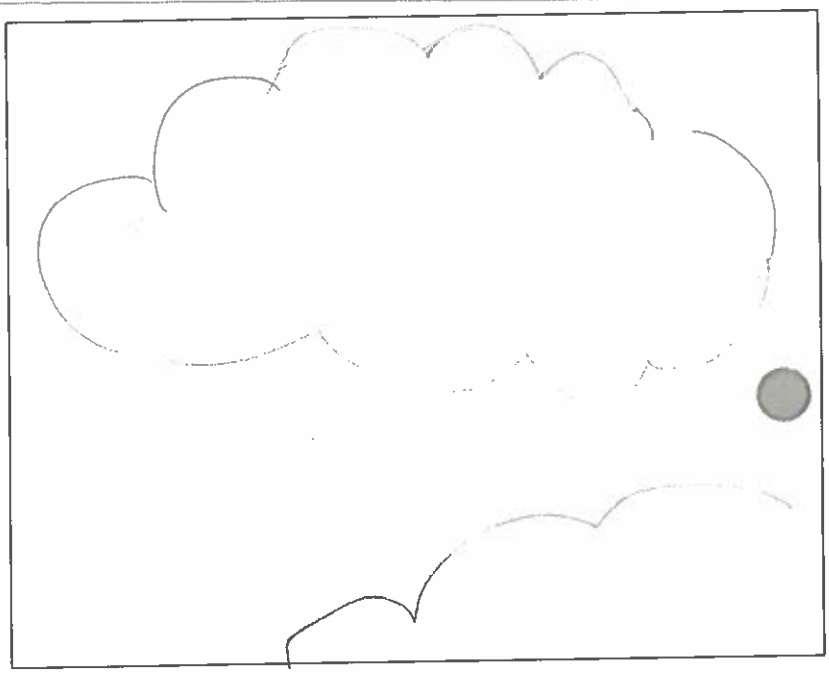
Cloud type(s): cumulus

Colour & alto-mid sky

shape of clouds: puffy, white

24 hour Prediction: fair weather clouds, sunny no rain

0% of rain



Summary of observations:

Most of the clouds were Cumulous clouds, puffy, white and big. There was some Cirrus clouds high in the sky which means there may be rain later in the week. So for my prediction was correct because cumulous bring fair weather and 0% chance of rain but maybe later in the week because of Cirrus clouds high in the sky

Conclusion:

My prediction was correct, cumulous clouds means fair weather, sunny no rain!

Weather Forecasting: The Tools

Weather forecasts have become an important part of the lives of many people. They are able to plan their clothing, their activities, their work, and their travel based on the forecasts. How do meteorologists develop these forecasts? They collect weather information from three basic sources: observation stations, weather balloons, and satellites.

Observation stations are set up all around the world. There are more than 3,500 such stations. On an hourly basis, special instruments are used to collect weather data. Thermometers measure air temperature, barometers measure air pressure, and weather vanes and anemometers measure wind direction and speed. Hygrometers measure relative humidity, while rain gauges measure precipitation in the form of rainfall. Radar may also be used to track precipitation. It will indicate the direction and speed at which storms are traveling. Radar is also helpful in determining the type of precipitation.

There are more than 800 stations that send up two weather balloons each on a daily basis. These balloons contain hydrogen or helium and carry radiosondes to measure air temperature, air pressure, and humidity at various levels in the atmosphere. Wind direction and speed may also be determined by tracking the weather balloons. These balloons rise to approximately 90,000 feet (27,000 meters), and then they burst. Small parachutes open and bring the radiosondes back to Earth.

Many weather satellites are equipped with television cameras. They are able to photograph cloud patterns as well as large areas of snow and ice. Satellite data is analyzed to identify hurricanes and other dangerous storms as they develop. Satellites are also able to gather data on temperature and humidity. They are able to follow cloud movements to determine wind directions and speeds.

There are two types of weather satellites: polar-orbitting and geosynchronous or geostationary. Polar-orbitting satellites maintain an altitude of 500–900 miles (800–1400 kilometers) above the Earth's surface. They orbit the poles and view different parts of the planet with each orbit. Geosynchronous satellites are in orbit at an altitude of approximately 22,300 miles (35,890 kilometers). These satellites move along with the Earth, always focusing on the same portion of the planet. At that height, only four correctly placed satellites are needed to view the entire surface of the planet.

Meteorologists may also use weather planes and ships to gather important data for developing their forecasts.

Name: _____

Create Your Own Weather Saying

Now that you know about weather sayings, you can create your own.

1. What type of weather would you like to create a saying for? Is there a type of weather that you know a lot about or have a lot of experience with?

sunny ~~skies~~ in winter skies are still freezing

2. What have you observed usually happens before or after this type of weather?

I noticed it can still be sunny and bright even when it's freezing cold in temperature.

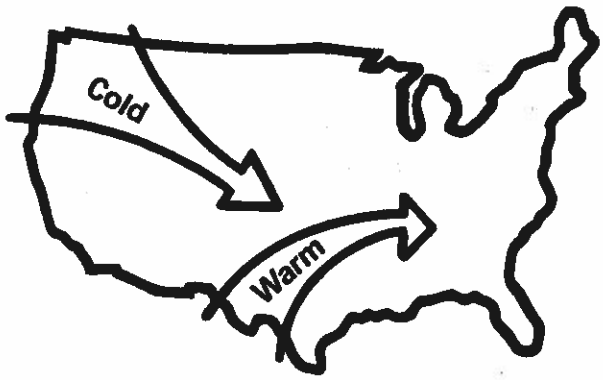
3. Weather sayings are usually short and easy to remember. They often have rhyming words. Write out what you would like to say. Can you change it so that it is only a few lines long? Try to add words that rhyme at the end of each phrase or sentence.

when the sun is out on a winters day, still the frost bites me as prey.

Name _____ Date _____

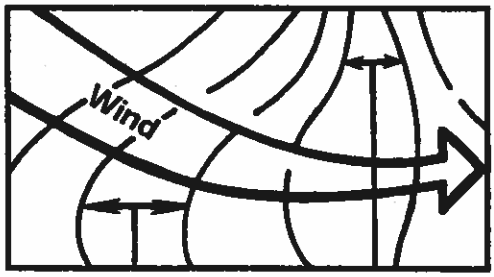
Weather Map Symbols

Weather moves from west to east, about 500 miles a day. It moves faster in the winter.



High, cold air travels faster than low, warm air. Both follow the general paths shown here.

Isobars: Lines drawn through points of equal barometric pressure.



Isobars far apart mean mild winds

Isobars close mean strong winds

Rain Scattered Showers

Snow Flurries

clear cloudy high pressure area

partly cloudy rain low pressure area

Fronts

A cold air mass is moving in the direction of the arrows. It often brings storms and cooler weather.

A warm air mass moving in the direction of half circles is usually preceded by rain or snow.

A line between two air masses when there is little or no movement means unsettled weather—often prolonged rain.

Low pressure cells move in a counterclockwise direction. They usually forecast cloudiness and precipitation.

High pressure cells move in a clockwise direction. They usually forecast clear skies.

The line of contact between air masses of different temperatures is a front.

Cold

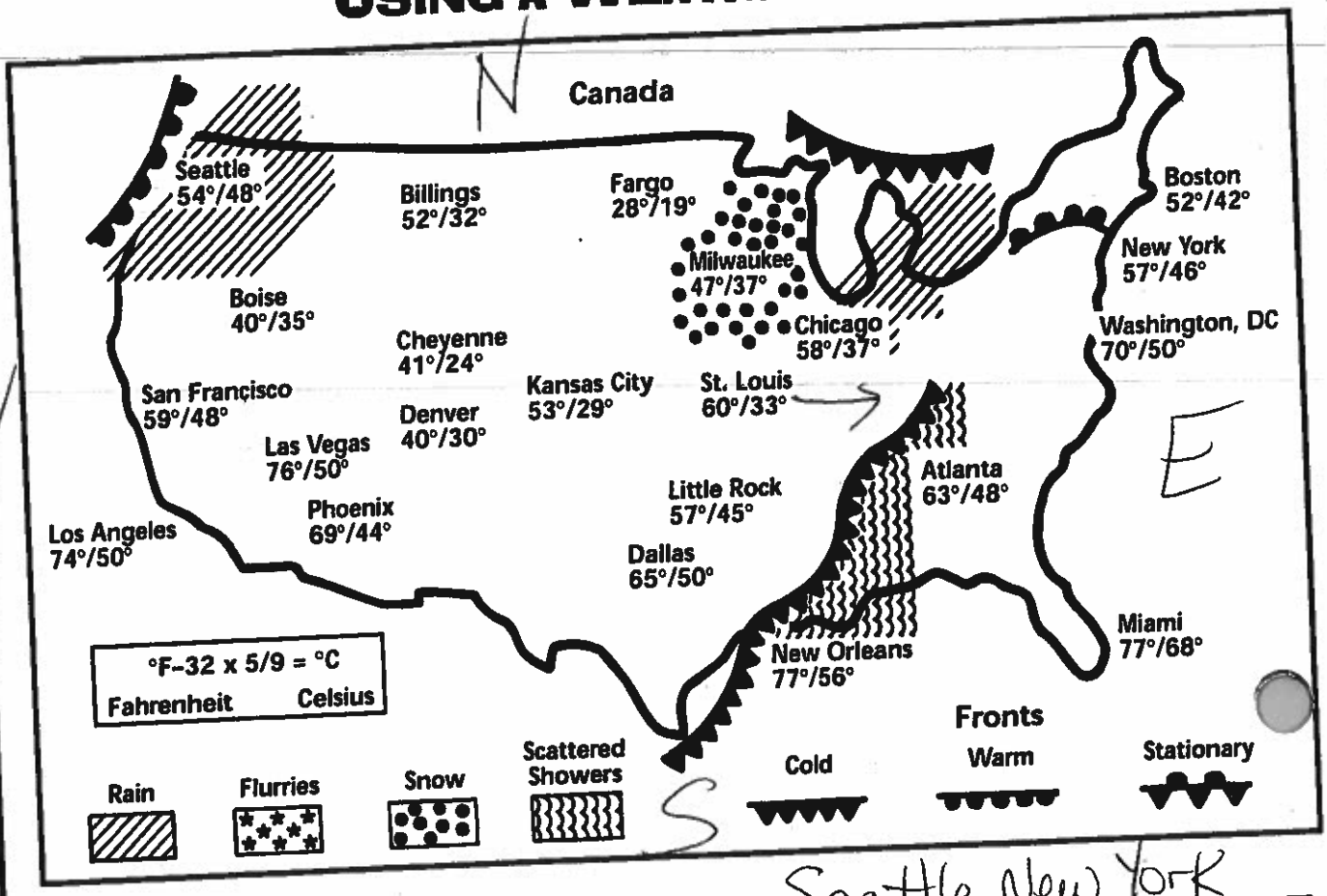
Warm

Stationary

Name _____ Date _____

WEATHER

USING A WEATHER MAP

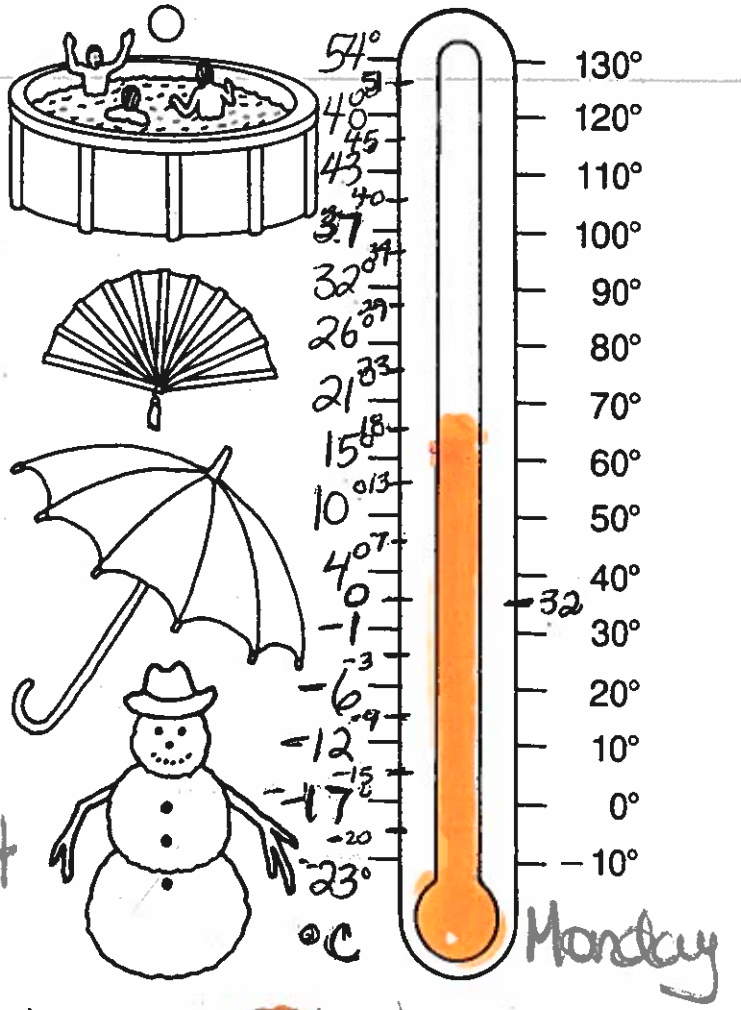


1. Near what cities are the two warm fronts located? Seattle New York
2. What type of weather is associated with these warm fronts? rain and/or snow
3. Draw the symbol used on the weather map to indicate a warm front.
4. Draw the symbol used on the weather map to indicate rain.
5. What kind of precipitation did the New Orleans area have? scattered showers
6. If you lived in Chicago, what type of weather might you expect in the next day or two? snow or rain
7. What type of weather is moving with the cold front east of St. Louis and Little Rock? scattered showers
8. Which city had the coldest temperature? What was it? Fargo, 19°
9. Which two cities had the same high temperature? What was it? Miami and New Orleans 77°
10. What type of weather is Los Angeles having? clear and mild

Name _____

How Hot Is It?

Look at the outside thermometer.
Write the temperature on the chart.

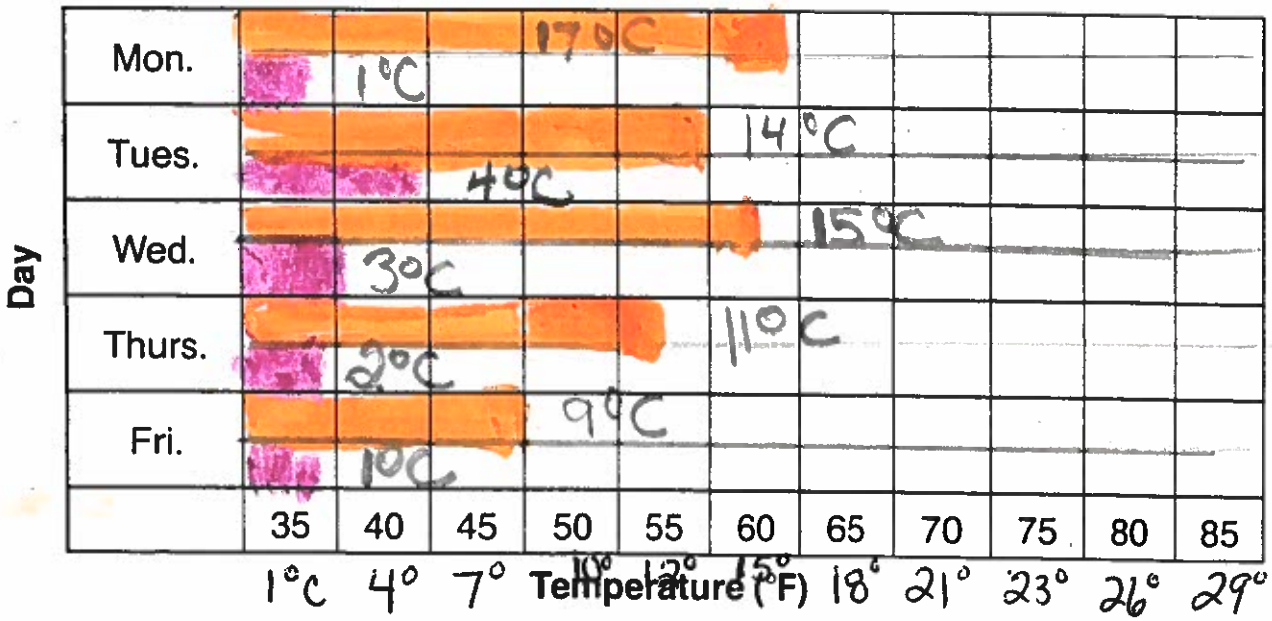


Day	Temperature
Sep 10 Monday	low 1°C → High 17°C
Sep 11 Tuesday	4°C → 14°C
Sep 12 Wednesday	3°C → 15°C
Sep 13 Thursday	2°C → 11°C
Sep 14 Friday	1°C → 9°C

Sept. 10 - Sep. 14

At the end of the week, fill in the graph.
Color the boxes to show how hot it was each day.

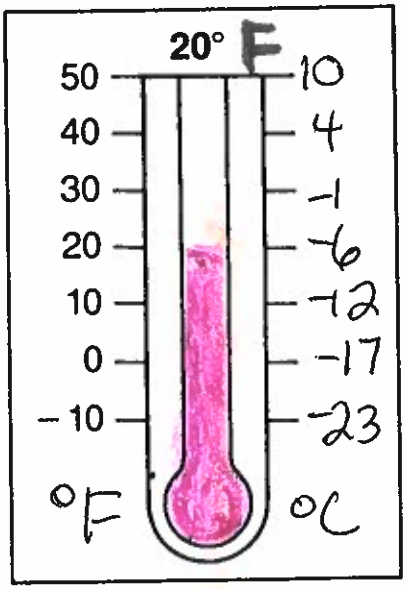
high
low

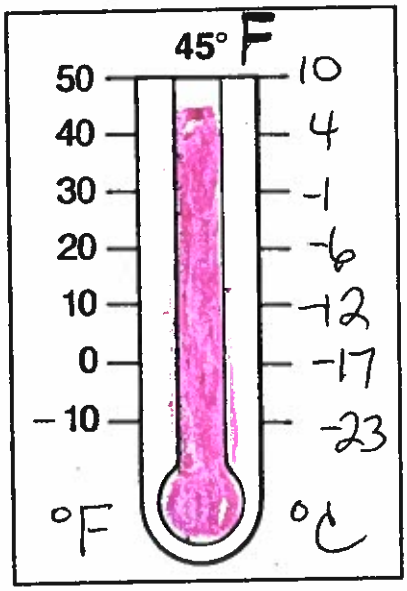


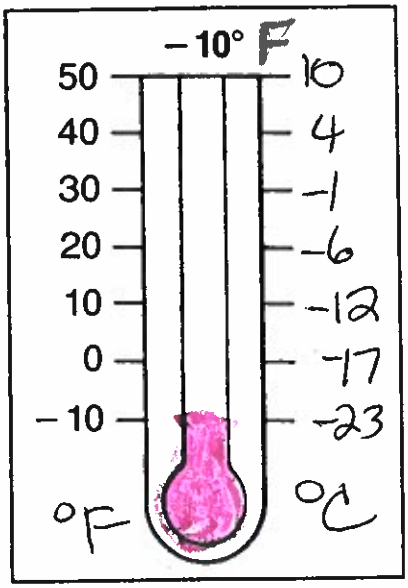
Hot and Cold

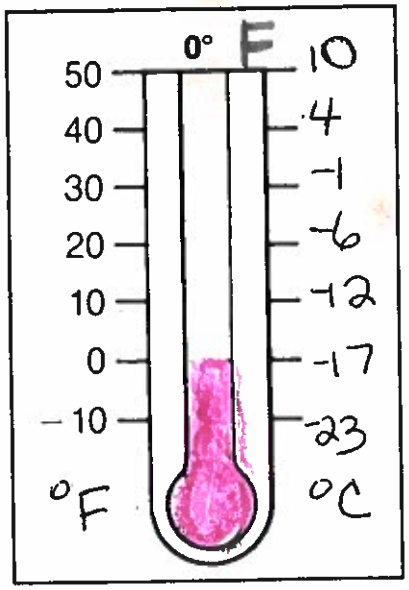
Name _____

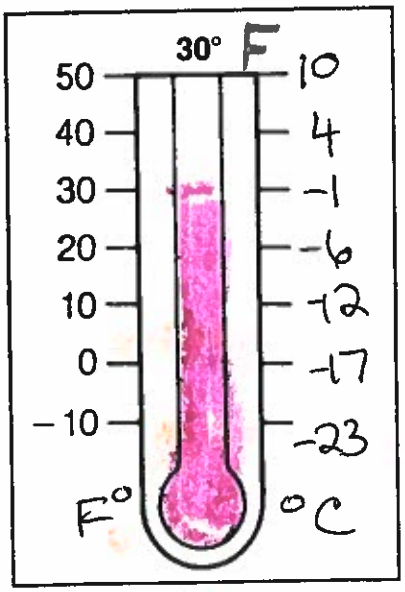
Look at the temperature above each thermometer.
Use a red crayon to mark the temperature on each thermometer.

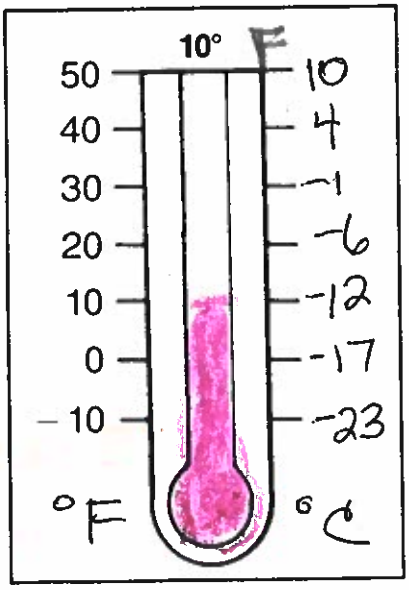












Which is the coldest temperature? −10°F or −23°C

Which is the hottest temperature? 45°F or 7°C

Is the red line higher or lower when the temperature is hotter?

higher

Is the red line higher or lower when the temperature is colder?

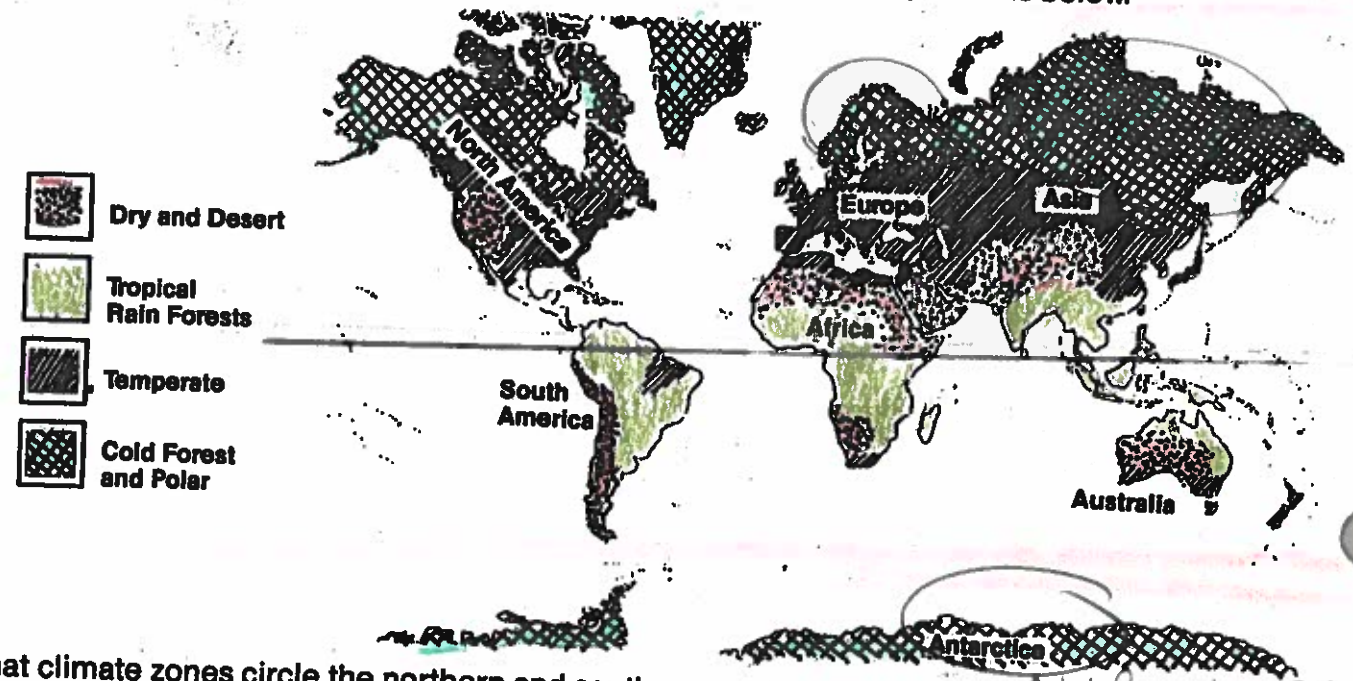
lower

Name _____ Climate vs. Weather

Weather Makes a Climate

Weather is the state of the air at a certain time and at a certain place. Conditions may be clear, cloudy, fair, rainy, humid, cold, windy, etc. The type of weather that exists from day to day depends on what kind of air masses are moving above.

Different places in the world have different kinds of weather for extended time periods. These differences make weather zones called climates. Climates vary according to their latitudes and altitudes and also are affected by the same factors as weather, but may be thought of as localized. For the most part climate zones circle the earth in belts. Use the following map to answer the questions below.



1. What climate zones circle the northern and southern portions of the world? Cold forest + Polar
2. In what type of climate do you live? Cold Forest Polar Circle all the climates in the world that are the same as yours. Europe and Asia
3. How many climates does Australia have? 3 What are they? Temperate, Tropical Rain Forest and Dry/Desert
4. Which continents have deserts? all except Antarctica
5. Draw the equator on your map. What climate(s) appear along the equator? Tropical rain forests
6. Which continent has only one climate? Antartica - Cold and Polar
7. What will the amount of sunlight and rainfall determine in different climates? What kind of plant life and animals can live there. What kind of clothing/shelter

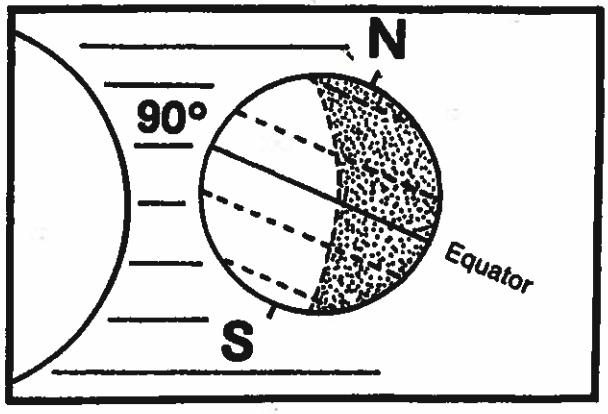
Underline the following words if they are weather words. Circle them if they are climate words.

temperate zone	polar regions	hurricanes	air masses
rain forests	precipitation	deserts	cold front
cold forests	jungles	drought	monsoon

Name _____

Changing of the Seasons on Earth

The earth's axis always has the same tilt and points toward the North Star. In the year it takes the earth to revolve around the sun, the sun's rays strike the North and South Hemisphere at different angles. The more directly the sun's rays strike the surface of the earth, the more heat energy is delivered. The difference in heating of the earth's surface produces our seasons.



1. In the place you live, on what date is the sun highest in the sky? _____
2. Is this a warm or cool season? _____
3. At the same latitude in the Southern Hemisphere, where is the sun in the sky on that day? _____

_____

4. In the place you live, six months later, would the sun be high or low in the sky at noon? _____
5. Is this a warm or cool season? _____

When the sun is directly over the equator, it is called the EQUINOX. This happens twice a year, at the beginning of Fall and Spring seasons.

6. What is the date of the Fall Equinox? _____
7. What is the date of the Spring Equinox? _____

When the sun is directly over the Tropic of Cancer or the Tropic of Capricorn, it is called a SOLSTICE. This begins the Summer or Winter seasons.

8. What is the date of the Winter Solstice? _____
9. What is the date of the Summer Solstice? _____
10. How many months does each season last? _____
11. The change of the sun's position in the sky causes the seasons. Will this affect your daily weather, as well as the season?

_____

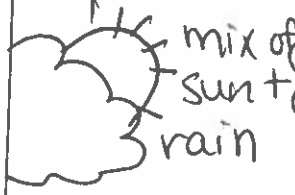
Explain _____

_____

Name: _____

Weather Forecasts

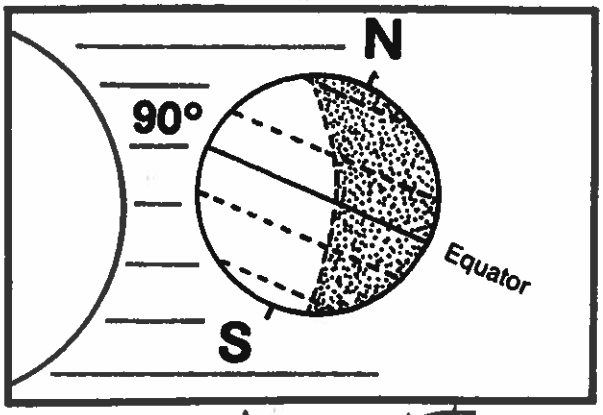
Location: Saskatoon Sept. 2018.

	Monday	Tuesday	Wednesday	Thursday	Friday
Forecasted weather	Sept. 17 precipitation  7° - 2°C high low	Sept. 18 Cloudy  8°C - 1° high low	Sep. 19  10°C - 1°C high low	Sep. 20  °9°C - 2°C high low	Sept 21  °6 - 1°C high low
Actual weather	 mix of sun + rain 9°C - 3°C high low	 9°C - 1°C high low	 mix 13°C - 1°C high low	 12°C - 1°C high low	 * * * * snow 2°C - 0°C high low

Name _____

Changing of the Seasons on Earth

The earth's axis always has the same tilt and points toward the North Star. In the year it takes the earth to revolve around the sun, the sun's rays strike the North and South Hemisphere at different angles. The more directly the sun's rays strike the surface of the earth, the more heat energy is delivered. The difference in heating of the earth's surface produces our seasons.



Saskatoon.

1. In the place you live, on what date is the sun highest in the sky? June 21st
2. Is this a warm or cool season? Warm - Summer
3. At the same latitude in the Southern Hemisphere, where is the sun in the sky on that day? D
   lower - they have winter when we have summer
4. In the place you live, six months later, would the sun be high or low in the sky at noon? low
5. Is this a warm or cool season? December is cold

When the sun is directly over the equator, it is called the EQUINOX. This happens twice a year, at the beginning of Fall and Spring seasons.

6. What is the date of the Fall Equinox? September 23
7. What is the date of the Spring Equinox? March 21st

When the sun is directly over the Tropic of Cancer or the Tropic of Capricorn, it is called a SOLSTICE. This begins the Summer or Winter seasons.

8. What is the date of the Winter Solstice? December 22
9. What is the date of the Summer Solstice? June 21st
10. How many months does each season last? 3
11. The change of the sun's position in the sky causes the seasons. Will this affect your daily weather, as well as the season?

    Weather depends on temperature, wind

    Explain air pressure - more than the sun's place