Weather Permitting 2019 – Student Response Sheet

School: _____ V JV1 JV2 JV3 JV4

Student Names: _____

For each answer, fill in the blank or circle the correct response

Station 1

1. A B C D E
2. A B C D E
3. A B C D E
4. A B C D E
5. A B C D E

Station 2

	Picture	Weather Type
6.		
7.		
8.		
9.		
10.		

Station 3

11. A B C D
12. _____
13. _____
14. _____
15. _____
16. _____

Station 4

17. A B C D
18. A B C D
19. A B C D
20. A B C D

Station 5

21. _____
22. _____
23. _____
24. (3 pts) _____

_____

_____

_____

_____

Station 6

25. A B C
26. _____
27. A B C
28. A B
29. _____
30. _____
31. _____
32. _____
33. _____
34. A B C D

Station 7

35. _____
36. _____
37. _____
38. _____
39. _____
40. _____

Station 8

41. A B C D
42. A B C D
43. (3pts)_____

_____

_____

Station 9

44. _____
45. _____
46. _____
47. _____
48. _____
49. _____
50. _____
51. _____
52. _____

Station 10

	Picture or object	Description of what it measures
53.		
54.		
55.		
56.		
57.		
58.		

Station 11

59._____
60. A B C D
61. A B C D

tape your circle to the next page

Weather Permitting 2019

Station 11

Weather Permitting 2019 – Student Response Sheet

School: ___ANSWER KEY EACH QUESTION 1 PT UNLESS NOTED TOTAL PTS:

Student Names: Tie breakers: Best at Station 5, 1, 10, 4, 11, 3

For each answer, fill in the blank or circle the correct response

Station 1

1. A B C D E
2. A B C D E
3. A B C D E
4. A B C D E
5. A B C D E

Station 2 1 PT EACH RIGHT LETTER

	Picture	Weather Type
6.	R	J
7.	O	I
8.	Q,T	H
9.	P	G
10.	S	K

Station 3

11. A B C D
12. _CLOCKWISE_
13. _COUNTERCLOCKWISE__
14. _WARMER__
15. _COLDER___
16. _ALTITUDE__

Station 4

17. A B C D
18. A B C D
19. A B C D
20. A B C D

Station 5

21. ___DOWN____
22. ___UP_____
23. __INCREASES____
24. (3 pts) PT FOR EACH POINT LISTED:

__EARTH IS TILTED ON AXIS_

SUN'S RAYS HIT AT AN ANGLE___

PLACES CLOSER TO EQUATOR GET

MORE DIRECT SUNLIGHT AND

THEREFORE GET WARMER

Station 6

25. A B C
26. _ACCEPT 5 – 7"_
27. A B C
28. A B
29. _LAND_____
30. __RISES_____
31. __OCEAN_____
32. __LAND_____
33. __OCEAN_____
34. A B C D

Station 7

35. __K__
36. __J__
37. __M____
38. __I____
39. __L____
40. __N_____

Station 8

41. A B C D
42. A B C D
43. (3pts)_1 PT FOR EACH PART: TEMPERATURE WILL VARY MORE AT A; B WILL GENERALLY BE WARMER, B WILL GET MORE RAIN__

Station 9

44. _SOIL MOISTURE_
45. _GROUNDWATER_
46. _RUNOFF_
47. __SURFACE WATER___
48. __PRECIPITATION__
49. __SNOW___
50. __CONDENSATION___
51. __EVAPORATION__
52. __THE SUN__

Station 10

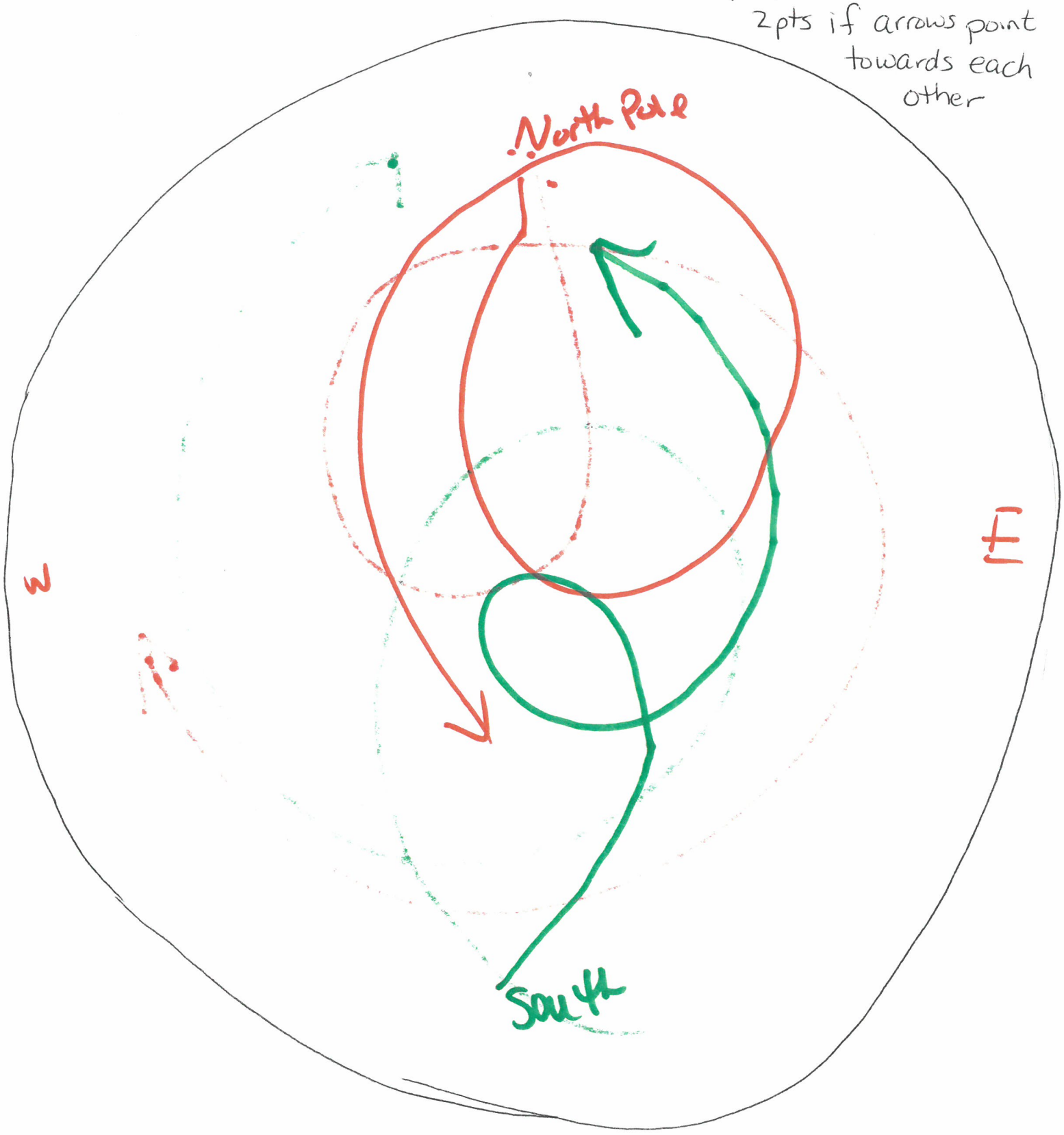
	Picture or object	Description of what it measures
53.	E	Y
54.	B	U
55.	F	W
56.	A	X
57.	C	Z
58.	D	V

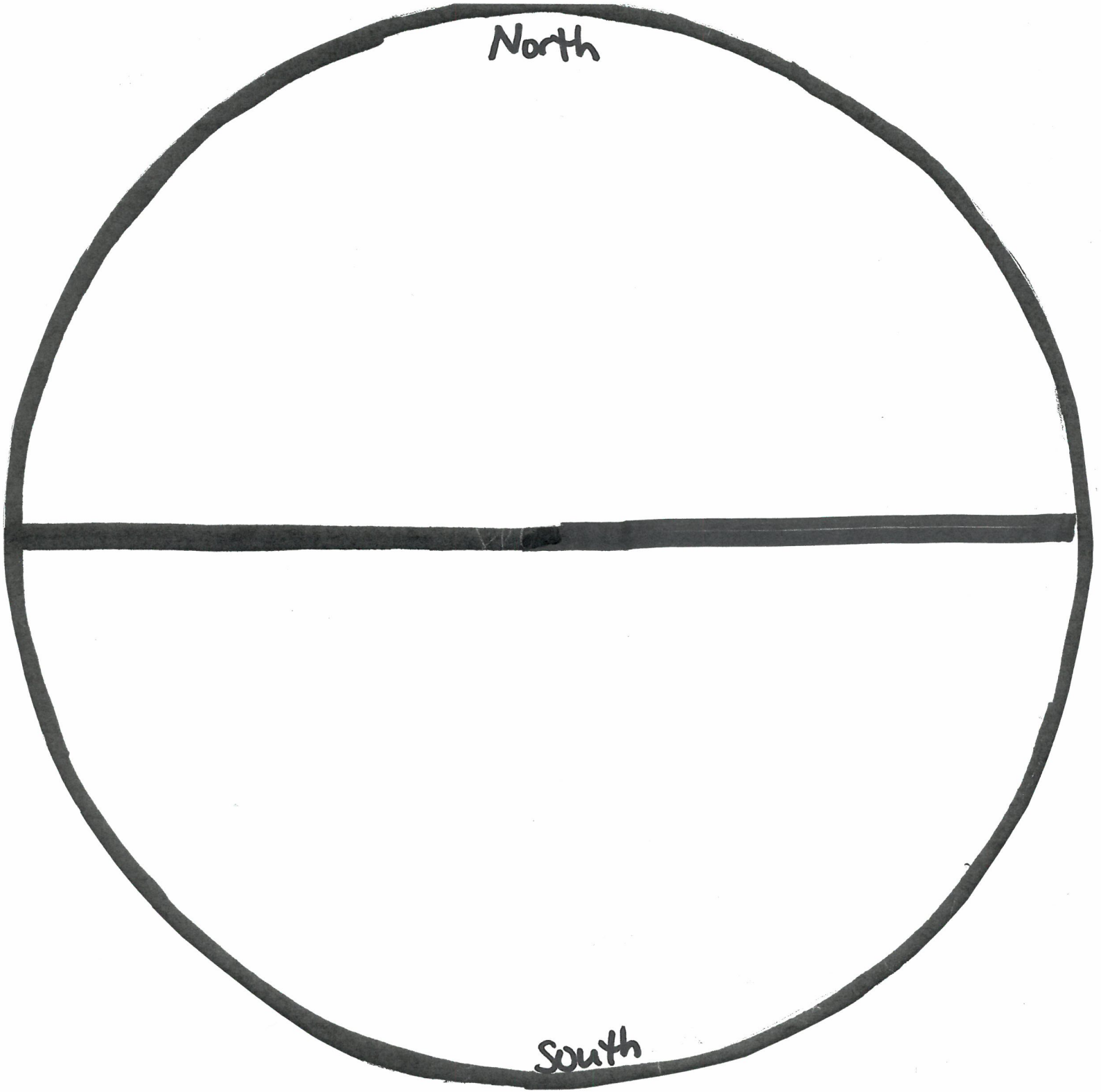
Station 11

59._EQUATOR__
60. A B C D
61. A B C D

Weather Permitting 2019

5pts
- 1 pt for having the circle
- 1 pt for 2 lines
- 1 pt for 2 colors
- 2 pts if arrows point towards each other





Cut these
Out before
the tournament

Station 1

Using the Koppen Classification System, match the description of the climate with the classification.

1) Known for their high temperatures year-round and for their large amounts of perennial precipitation. These regions are found near the equator.

2) Dominated by land/water differences. The eastern seaboard of the U.S. would be an example of this class, with cool winters and mild summers.

3) Areas covered by permanent ice and tundra. Here, average temperatures reach above freezing only about one third of the year
.

4) Found in the interior regions of landmasses of exceptional size (i.e., Denver, in the middle of the U.S.A). Total precipitation is not very high in amount, and seasonal temperatures vary greatly.

5) Characterized by little precipitation and huge daily temperature range.

A. Humid Tropics
B. Arid Climates
C. Humid Mid-Latitude Climates
D. Continental Climate
E. Cold Polar Climates

Station 2

Match these clouds with their pictures and the type of weather they are usually associated with. There may be more than 1 of the same cloud type shown in the pictures, list all that apply.

6) Cumulonimbus

7) Stratus

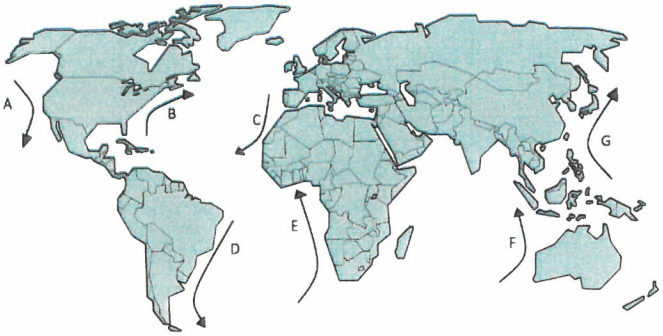
8) Cirrus

9) Cumulus

10) Fog

Station 3

Use the map below to answer questions 13 - 18



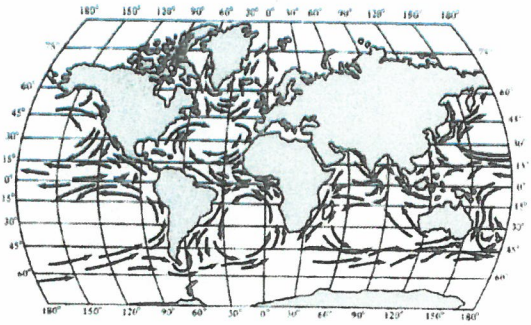


Figure 3.3. Major surface currents of the world's oceans.
Source: http://msmurraybiology.weebly.com/uploads/2/5/5/6/25563258/ocean_currents_ws.pdf

11) Current B is the Gulf Current. Which of the following statements is most accurate about Current B?
   A. It is a cold-water current that flows from north to south.
   B. It is a cold-water current that flows from south to north.
   C. It is a warm water current that flows from north to south.
   D. It is a warm water current that flows from south to north.

The ocean currents on your map generally travel in either a clockwise or counterclockwise direction.

12) In the Northern Hemisphere the general direction is _____.

13) In the Southern Hemisphere the general direction is _____.

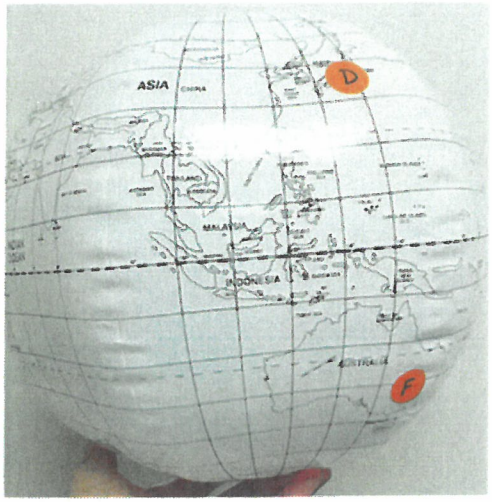
14) Worldwide, the east coast climates will generally be _____ (warmer or cooler) than they're supposed to be.

15) Worldwide, the west coast climates will generally be _____ (warmer or cooler) than they're supposed to be.

16) In the case of high mountains, which is a more important factor: latitude or altitude?

Station 4

Use the globe at this station to answer questions 17-20. You will not use all the labeled locations.



17) On the globe, where would you expect to see a rainforest?
   A. Location A
   B. Location B
   C. Location C
   D. Location D

18) On average, which location would you expect to see the lowest overall annual temperatures?
   A. Location A
   B. Location E
   C. Location F
   D. Location D

19) Which location has its summer December - February?
   A. Location E
   B. Location B
   C. Location C
   D. Location F

20) Which of the following locations would have a humid subtropical climate?
   A. Location E
   B. Location B
   C. Location C
   D. Location D

Station 5

How does a location's latitude affect each of the following?

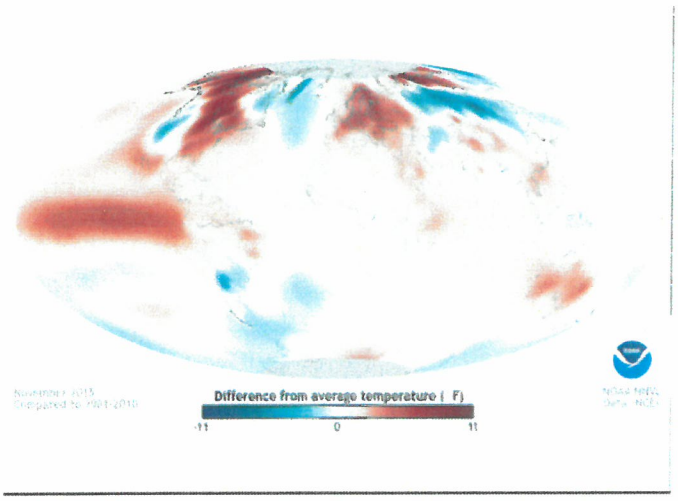
21) As you move away from the poles, the cost of home heating goes (up or down).

22) As you move away from the poles, the need for home air conditioning goes (up or down).

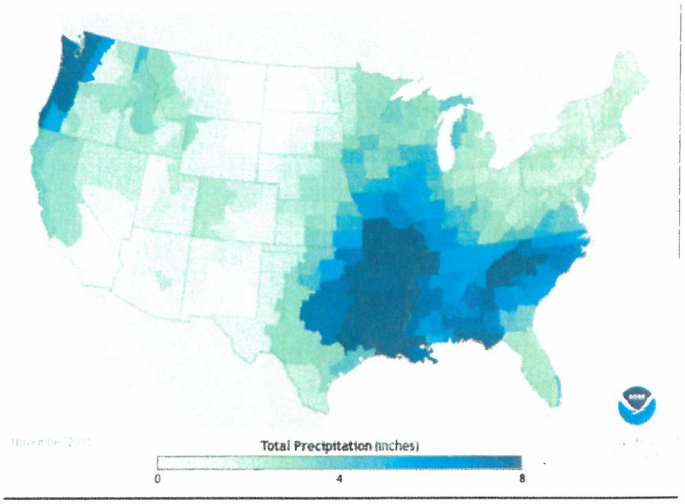
23) The number of fruit and vegetable farms (increases or decreases) as you move away from the poles.

24) WHY does latitude affect the temperature of a region? (3 pts)

Station 6



Graph A



Graph B

Climate Data North Carolina

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F:	89	87	81	72	62	53
Average low in °F:	68	67	60	49	39	32
Average precipitation in inches	3.66	4.21	3.23	3.39	3.15	3.27

The graph on the left shows the difference from the average area temperature to the actual temperature in November 2015. The graph on the right shows the total precipitation in the US by state for November 2015. The table above shows average climate data for North Carolina.

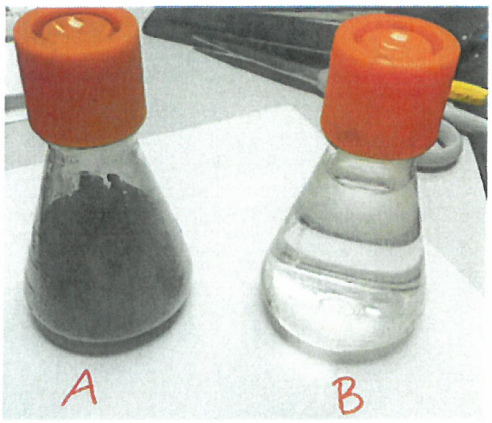
25) Which statement below is true?
   A. NC was warmer than average in Nov 2015.
   B. NC was colder than average in Nov 2015.
   C. NC's temperature was average for November 2015.

26) How much rain fell in NC in Nov 2015?

27) Rainfall was _____ compared the average November in NC.
   A. Lower
   B. Higher
   C. The same

Station 6 – Page 2

28) Which of the containers at this station (shown below) would warm up more quickly if placed in the sun?



If "A" is land and "B" is the ocean near the land, explain how this creates convection currents.

As the **#29** (land or ocean) warms up quickly and the hot air **#30** (rises or sinks). The cooler air from the **#31** (land or ocean) moves in to take its place. At night, the opposite happens. The **#32** (land or ocean) cools down quickly, so the air over the **#33** (land or ocean) stays warm longer.

34) This process is called:

A. Convection
B. Radiation
C. Conduction
D. Evaporation

Station 7 – page 1

Use the map of the imaginary continent on the next page to match the descriptions here with the correct letter on the map.

35) Due to its high latitude, this location receives weak insolation. The sun never gets high in the sky. Winters are bitter cold and summers are cool. Although the ground is usually covered by snow, there is very little precipitation.

36) The highest temperatures occur at this station in January & February. July and August are cool. The climate is temperate, but there is not much precipitation.

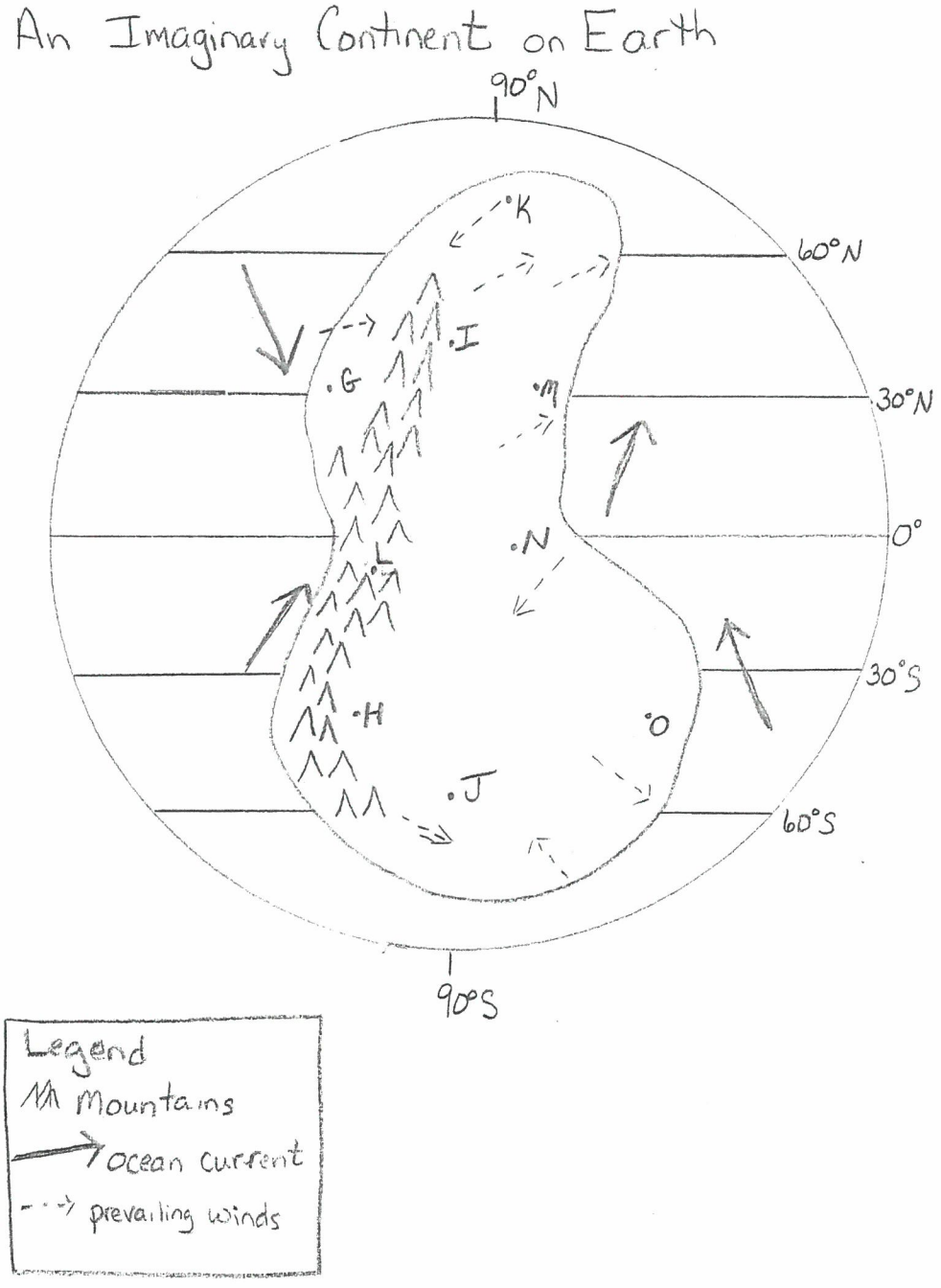
37) This station in influenced by a nearby warm ocean current. The climate is temperate and seasonal variations are moderate. There is good precipitation throughout the year.

38) This station also has a temperate climate, but the seasonal variations are much greater. Winters are very cold and summers are very hot. There is not much precipitation.

39) The latitude of this location might make you think that it would be a very hot place. But the winds that blow across this high-altitude area make is cool and comfortable with some rainfall.

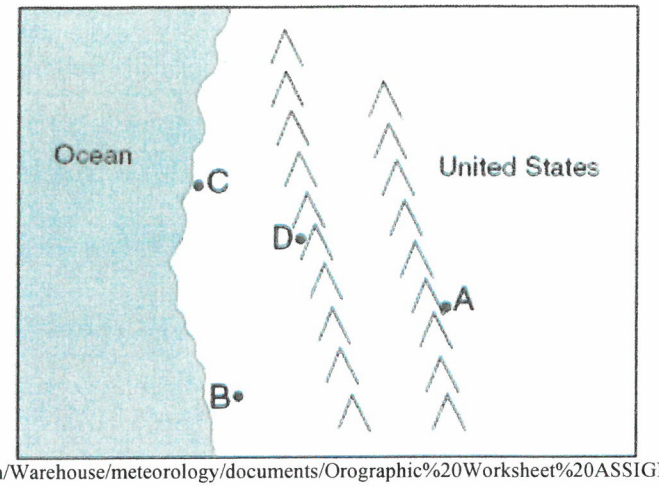
40) Warm temperatures and daily rainfall make this this climate tropical. This location never has frost.

Station 7 – page 2



Station 8

The map below shows the location of 4 cities, A, B, C and D in the western United States where prevailing winds are from the southwest.



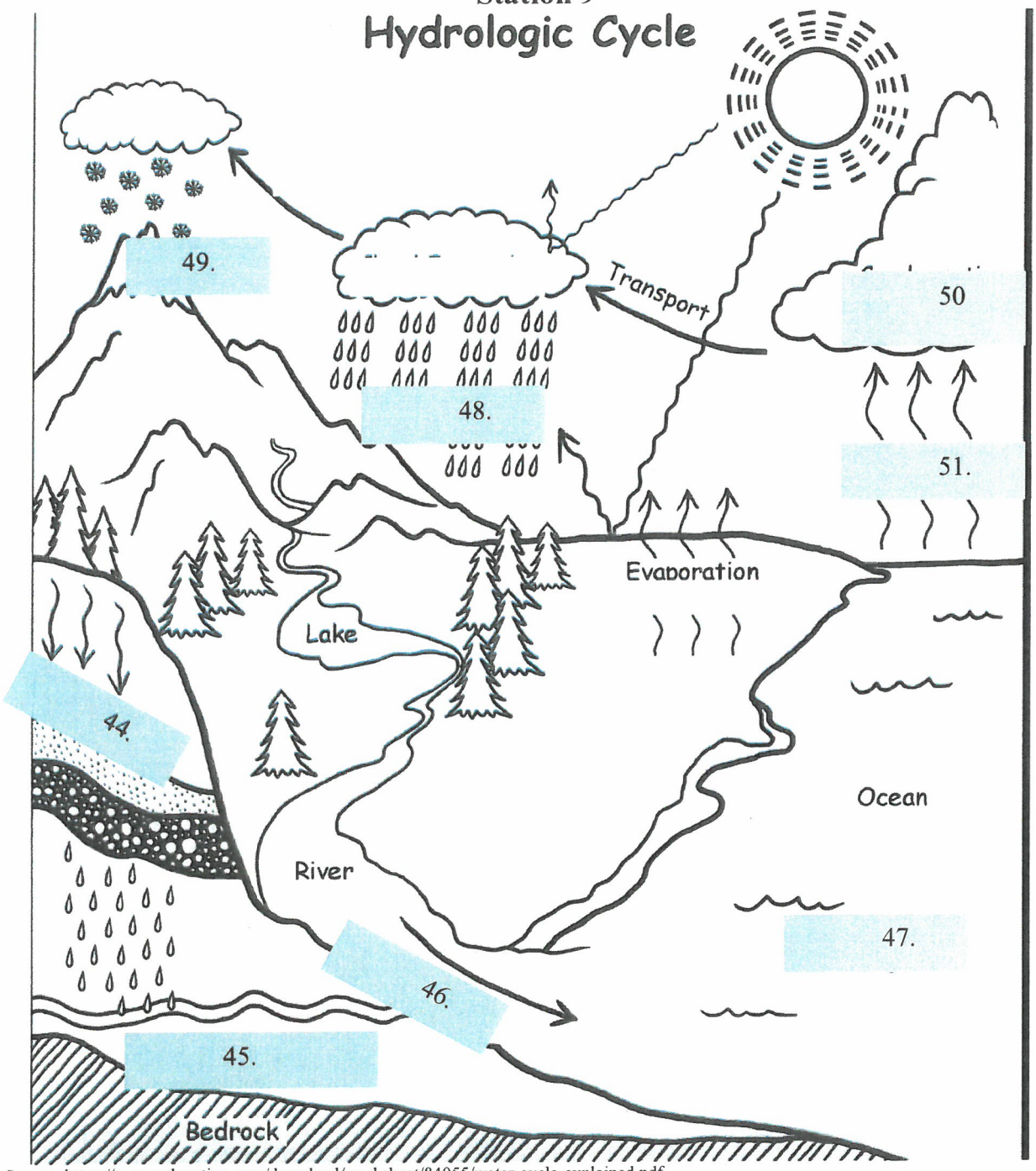
Source: http://hmxearthscience.com/Warehouse/meteorology/documents/Orographic%20Worksheet%20ASSIGNMENT.pdf

41) Which city on the map is located in a rainshadow?

42) Which city is on the windward side of the mountain range?

43) Compare the general climates (temperature ranges, precipitation amounts) for cities A & B. (3pts)

Station 9



Source: https://www.education.com/download/worksheet/84055/water-cycle-explained.pdf

Use this word bank to match the words to the numbered parts of the water cycle in the diagram.

condensation	precipitation	snow
evaporation	runoff	soil moisture
groundwater		surface water

52) What provides all the energy to make the water cycle happen?

Station 10

Match the name of each object with its picture and a description of what it is used to measure or observe.

53) Weather vane

54) Anemometer

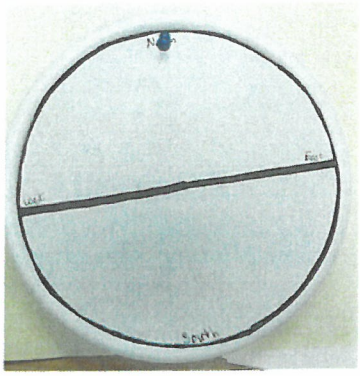
55) Weather Balloon

56) Thermometer

57) Rain Gauge

58) Barometer

Station 11



You only get ONE piece of paper, so read the directions before you start!

- Set up the turntable at your station with a piece of paper to look like the picture above. Use the pushpin to hold the paper in place, with North at the top. This is a model Earth.
- One of you open a marker (any color) and lightly touch the paper at North.
- Have your partner slowly rotate the turntable to the RIGHT.
- Slowly, while the turntable is rotating, draw a line straight down from the top of the turntable to the center.
- When you stop, put an arrow on the end of your line showing which direction it was going.
- Get a different colored marker.
- Now draw a line from the BOTTOM of the turntable straight up to the center as your partner rotates the turntable the same way – to the RIGHT.
- Put an arrow on the end of that line showing which way it was going as well.
- Write your team name on the back of the circle and tape it to the last page of your test.

59) What does the line in the center represent?

60) Does this activity model the motion of:

A. The global winds
B. The ocean currents
C. Both
D. Neither

61) What does this activity model?

A. Jet Stream movement

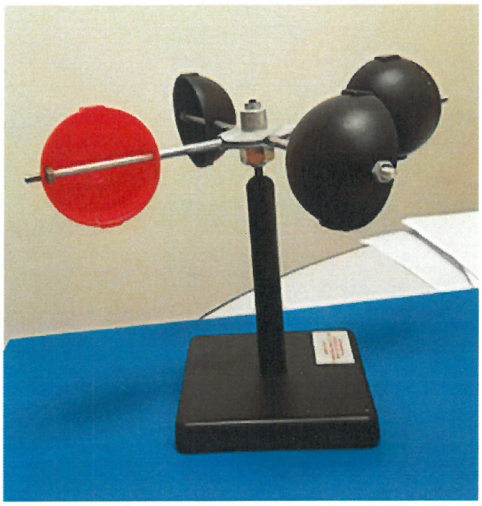
B. Coriolis Effect

C. Polar Vortex

D. Hurricane paths

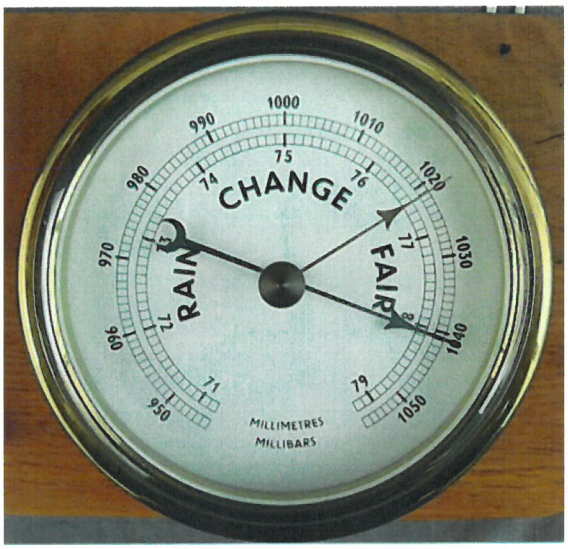
Station 10 – laminate and cut out the picture (keep letter attached)

A

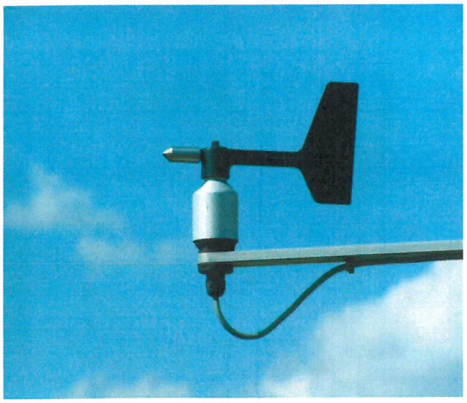


B

C



D



E

F

E F

Station 10 – laminate and cut out the squares (keep letter attached)

Z Used to measure the amount of liquid precipitation collected during a 24 hour period.	**Y** Used to measure the direction of the wind.
X Used to measure the temperature of the air.	**W** Used to collect many different kinds of information about the weather in the atmosphere
V Used to measure the atmospheric pressure	**U** Used to measure the speed of the wind.

Station 2– laminate and cut out the pictures (keep letter attached)

Source: commons.wikimedia.org

Q

Source: https://coclouds.com

O

Source: https://coclouds.com

P

urce: https://coclouds.com

T

1 set

S

R

Station 2– laminate and cut out the squares (keep letter attached)

G Associated with pleasant days and fairly sunny skies.	**H** These clouds often look pretty, but can signal a storm is coming!
I Can lead to dreary, gray days and drizzle, but not hard rain.	**J** Associated with thunderstorms and severe weather.
K Low to the ground, forms when humidity is near 100% and might cause a drizzle.	