

REVIEW ATMOSPHERE, SEASONS, TEMPERATURE CONTROLS

NAME _____

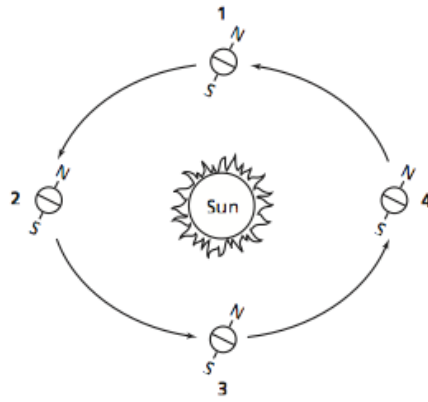
1. What are the 4 layers of the atmosphere? Describe each

Layer	description

2. Which layer has all the weather?
3. Auroras?
4. Ozone layer?
5. Meteors being burned up?
6. Highest pressure?
7. Least density?
8. What is the composition of the atmosphere?
9. In class we tested the heat capacity of water and sand.
- a. Which substance has a high heat capacity? (takes a long time to heat up, and a long time to cool down)
- _____
- b. Which substance has a low heat capacity? (heats up fast, cools down fast) _____
10. What is solar intensity? _____
11. What makes sunlight more intense? (stronger, more concentrated) _____
12. As your location increases in latitude (farther from the equator going north or south), solar intensity does what?
- _____
13. Where is solar radiation most intense? _____
14. Where is solar radiation the least intense? _____
15. How much is Earth's tilt? _____
16. If it's summer in Michigan (Northern Hemisphere), what season is it in Argentina (Southern Hemisphere)?
- _____
17. Which Hemisphere is receiving more intense solar radiation when Michigan has summer? _____
18. Why is one hemisphere receiving more intense solar radiation? _____

19. Label the seasons:

1. _____
2. _____
3. _____
4. _____



20. Why does the Earth have seasons?

FILL IN THE CHART

	calendar name	start of what season?	hours of day-light	Tilt is pointed how? (toward sun? away?)	latitude with greatest solar intensity?	location on earth with 24 hrs of sunlight	location on earth with 24 hrs of darkness
JUNE 21							
SEPT 21							
DEC 21							
MARCH 21							

21. How does the angle of the sun affect the intensity of sunlight hitting Earth?

22. What is the difference between climate and weather?

23. Describe the difference between 0 degrees latitude, 45 degrees latitude, and 90 degrees latitude. How is the solar radiation different? How is the temperature different?

	0 degrees	45 degrees	90 degrees
Solar radiation			
temperature			

24. What is the difference between direct and indirect sunlight?

25. If a prevailing wind is passing over a large stretch of land, will that air tend to be more dry or wet?

26. How about a prevailing wind passing over an ocean?

27. What is a rain shadow?

28. Michigan is surrounded by large bodies of water. How does this affect Michigan's climate compared to other states at the same latitude?

Electromagnetic waves hit objects and particles constantly. If they soak into something causing those molecules to vibrate and thus heat up, we call this _____. If a large wave gets broken into many smaller waves, we call this _____. Radiation can simply pass right through, hitting nothing, a process called _____. If a plant benefits from the waves by being able to do photosynthesis, then we say the waves are being _____. Finally, some waves simply bounce off objects and we call this being _____.

29. Greenhouse gases do which of the above processes?

30. Why is the greenhouse effect good?

31. Why is the greenhouse effect bad?

32. How does latitude affect the temperature of a region?

33. What is a continental climate?

34. If you wanted milder winters (warmer) and milder summers (cooler), where would you decide to live?

Look at the michigan map.

35. Which city is on the windward coast?

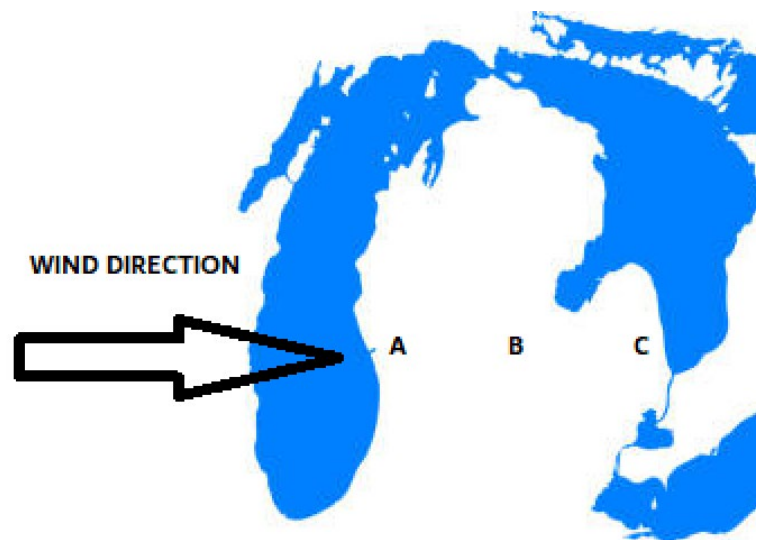
36. The leeward coast?

37. Which cities would you expect to get more rain/snow?

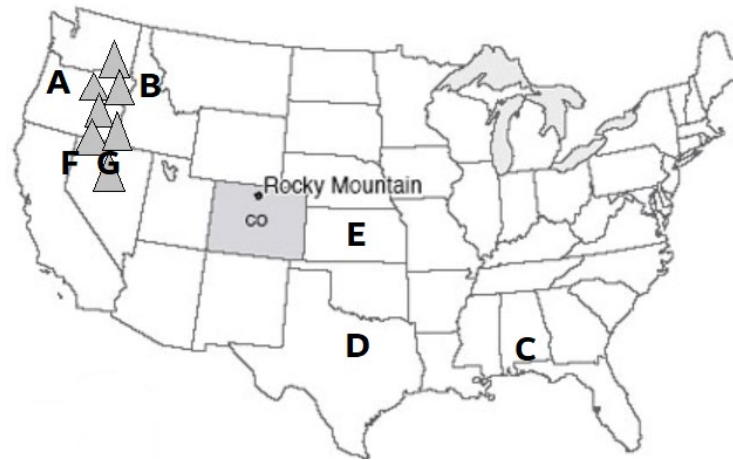
38. Which city would you expect to have harsher winters?

39. Which city would you expect to have milder summers?

40. If it were summer time and you wanted to drive to a city that was cooler, which city would be best?



Look at the USA map—the wind moves from west to east.



41. Which city is the windward side of the mountain?
 42. Which one is the leeward side of the mountain?
 43. A and B are both at the same latitude. Which one would have hotter temperatures?
 44. Which one would have more rain?
 45. C and D are at the same latitude. Which one would have hotter temperatures?
 46. Which one would have more rain?
 47. D and E are at the same longitude. Which one would have a colder average temperature in winter? Why?
 48. F city is in the valley and G city is on the mountain. Which one has a warmer average temperature? Why?
 49. What is albedo?
 50. Which has a higher albedo— clouds or land?
 51. If waves are reflecting, are they warming up a surface?
 52. If waves are absorbing, are they warming up a surface?
- What will the clouds do in each of these pictures?

