

MAP ACTIVITY: Prevailing Winds

NAME: _____

(*Use sentences.)

1. Look at the prevailing winds map (attached). During what season, in the Northern Hemisphere, do the wind patterns shown on this map happen? (Hint: Look at what's going on in India and think about the direction of the monsoon winds. _____)

2. List the prevailing winds that are found in the following locations. Keep in mind that the Doldrums and the Horse Latitudes are not winds:

- a. _____ : between the North Pole and 60 degrees north latitude
- b. _____ : between the Equator and 30 degrees south (Pacific Ocean)
- c. _____ : between 30 degrees north and 60 degrees north (Pacific Ocean)
- d. _____ : between the South Pole and 60 degrees south latitude

3. ***Winds blow from regions of high pressure toward regions of low pressure.** How can you tell by looking at the arrows on the map that the Doldrums are an area of low pressure?

4. Determine whether each of the following is high-pressure area, or a low-pressure area. Remember, **winds blow from regions of high pressure toward regions of low pressure.**

- a. _____ : South Pole
- b. _____ : Horse Latitudes
- c. _____ : Equator in the Pacific Ocean
- d. _____ : North Pole
- e. _____ : 60 degrees south latitude

Separate the maps from this sheet. When you are finished, you do not need to hand the maps in. Keep them in your folder.

5. In the area called "the Doldrums" (a.k.a. Intertropical Convergence Zone), is the air rising or sinking? Your recent "Notes: Global Circulation" handout may help.

Does this help clouds to form, or do they hinder cloud formation?

Would this cause high pressure, or low pressure at the surface?

6. In the area called the Horse Latitudes, is the air rising, or sinking?

Does this help clouds to form, or do they hinder cloud formation?

Would this cause high pressure, or low pressure at the surface?

7. Look at the winds map (attached). Do the Southwesterlies curve to the right, or the left?

Do the Northwesterlies curve to the right, or do they curve to the left?

8. *You will notice that the Southeast Trade Winds are continuous across the Earth in the Southern Hemisphere. Why don't the Northeast Trade Winds form a similar continuous belt across the Northern Hemisphere?

9. *Explain how the winds in India would be different if this map showed wind patterns for January?

10. Which monsoons would bring the rains to India . . . the summer monsoons (July), or the winter monsoons?

*Explain why there is so much water vapor with the winds that bring rain.

11. Compare the map of winds (attached) with the map showing ocean currents (also attached). Name the prevailing winds that influence the following ocean currents. NOTE: The Doldrums and the Horse Latitudes are not winds.

- a. _____ : South Equatorial
- b. _____ : North Pacific
- c. _____ : Benguela Current
- d. _____ : Gulf Stream
- e. _____ : North Atlantic
- f. _____ : West Wind Drift

12. Which winds did Columbus depend on to sail from Europe to the Americas?

13. Which winds took him back to Europe?

14. *Sailing ships used to "get stuck" in the Doldrums and Horse Latitudes. What is the air doing in each of these locations.

15. Use the maps on page 539 of your text to determine the **direction** (not the name) of the prevailing winds for each location. The wind direction tells which direction the wind is coming from.

- a. _____ : Montana in January
- b. _____ : Northwestern Africa in January
- c. _____ : Western Africa near the Equator in July
- d. _____ : India in January
- e. _____ : India in July

16. According to the maps on page 539 of the text, do winds blow clockwise, or counterclockwise around areas of high pressure in the Northern Hemisphere?

17. Do winds blow clockwise, or counterclockwise around areas of high pressure in the Southern Hemisphere?

18. *Find the area of low pressure on the bottom map on page 533 of the text. Describe the flow of air around this "low". (toward or away from the center? and CW or CCW?)

Separate this sheet from the other one. Do not hand this one in with the other sheet. Keep it in your folder.

