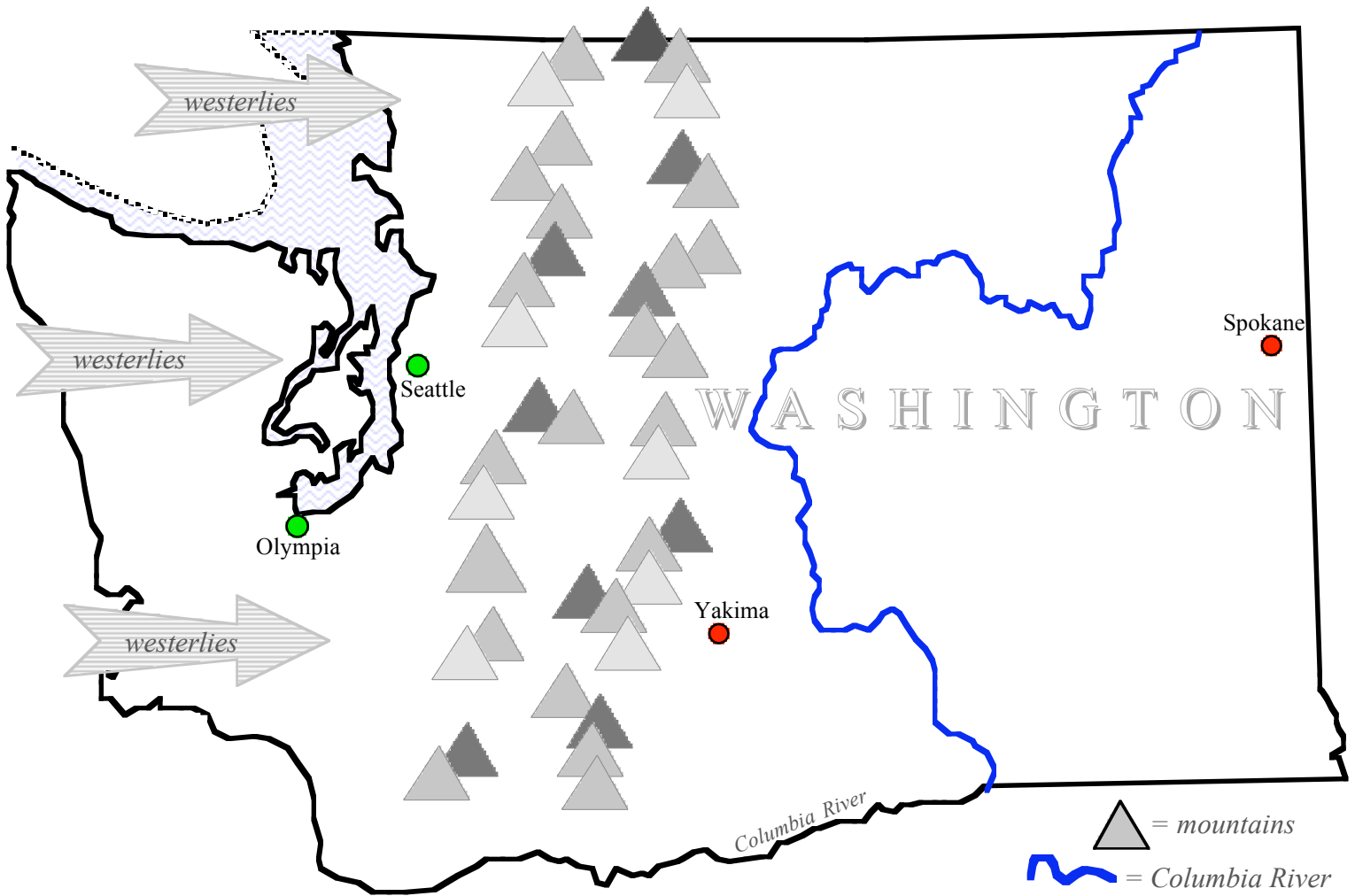


Name _____

Bell _____ Date _____

ACTIVITY: "Do Mts. Affect the Weather?"

Rain Forests & Rain Shadows



DATA TABLE: Average Inches of Rainfall

| MONTH | Olympia | Seattle | Yakima | Spokane |
|-----------|---------|---------|--------|---------|
| January | 7.54 | 5.24 | 1.17 | 1.82 |
| February | 6.17 | 4.09 | 0.80 | 1.51 |
| March | 5.29 | 3.92 | 0.70 | 1.53 |
| April | 3.58 | 2.75 | 0.53 | 1.28 |
| May | 2.27 | 2.03 | 0.51 | 1.60 |
| June | 1.78 | 1.55 | 0.62 | 1.18 |
| July | 0.82 | 0.93 | 0.22 | 0.76 |
| August | 1.10 | 1.16 | 0.36 | 0.68 |
| September | 2.03 | 1.61 | 0.39 | 0.76 |
| October | 4.19 | 3.24 | 0.53 | 1.06 |
| November | 8.13 | 5.67 | 1.05 | 2.24 |
| December | 7.89 | 6.06 | 1.38 | 2.25 |

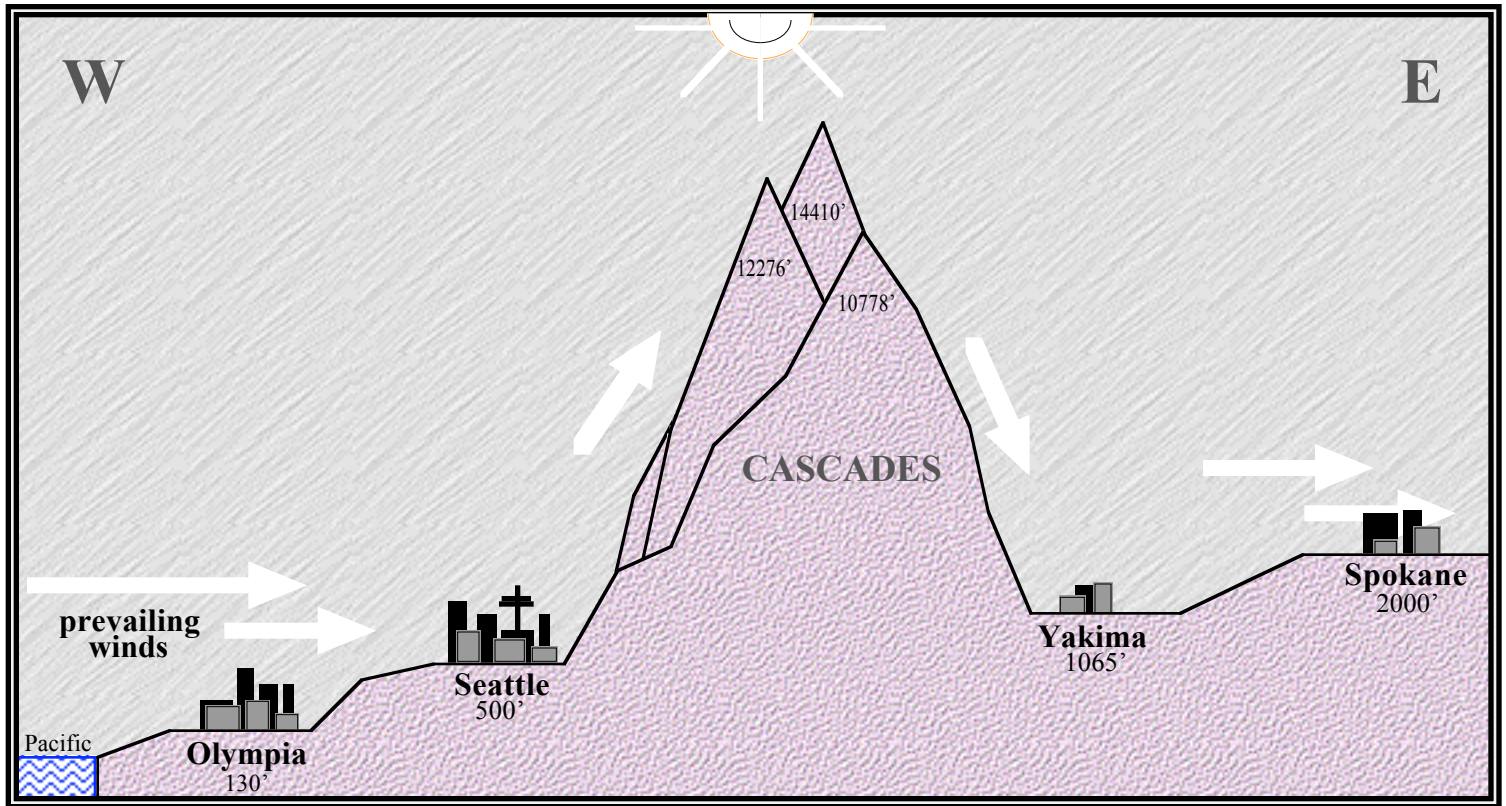
QUESTIONS:

1. What is the average Oct-Mar rainfall for Seattle?
2. What is the average Oct-Mar rainfall for Yakima?
3. What is the avg. Apr-Sept rainfall for Seattle?
4. What is the avg. Apr-Sept rainfall for Yakima?
5. How does Seattle's rainfall compare to Yakima's?

NOTE:

* In previous exercises we looked at the temperature changes in air as it was forced to rise and descend at fronts or at mountains. We learned that air cools when it rises and warms when it descends. Mountains and fronts intensify the rate and degree to which these occur.

* In this exercise we look at data to determine the effects of mountains on actual communities. The cities of Olympia, Seattle, Yakima, and Spokane are located in the state of Washington. Two of these cities are on the windward side of the Cascade volcanic range and two are on the leeward side. The prevailing westerlies blow across the Pacific and then across the continent from west to east. How are these cities affected by the Cascades?



SHORT ANSWER:

6-7. Based on the diagram above, how is air forced to rise up and then back down as it moves from West to East?

8-9. Would you expect air passing over Olympia and Seattle to be “wet” or “dry”? Explain your thinking.

FILL-IN:

10. The cities of _____ and _____ are on the **leeward** side of the Cascade Mts.

11. The cities of _____ and _____ are on the **windward** side of the Cascade Mts.

12. Prevailing winds bring much moisture to Olympia and Seattle due to the nearness of the _____.

13. The prevailing winds shown in the diagram contain much **invisible** water vapor. This invisible vapor will change to visible water _____ if the air is cooled to its dew point temperature.

14. If prevailing winds encounter a mountain, they must go up. When air _____ up a mountain, it cools.

15. After rising up a mountain, air must go back down. When air _____ down a mountain, it warms.

QUESTIONS:

1. What is the average Oct-Mar rainfall for Olympia?
2. What is the average Oct-Mar rainfall for Spokane?
3. What is the avg. Apr-Sept rainfall for Olympia?
4. What is the avg. Apr-Sept rainfall for Spokane?
5. How does Olympia's rainfall compare to Spokane's?

TASK: Construct a bar graph showing avg Oct-Mar & avg Apr-Sept rainfall for each of the four cities.

