

EXAMPLES: Three Levels of Questions

1. Knowledge (facts): define, list, name, where, which, when, who, what, when, how many, etc.

- a. How many seismograph stations are needed to determine the epicenter of an earthquake?
- b. Who is credited with developing the Theory of Continental Drift?
- c. Define "latent heat".
- d. What is the term for rocks that were formed as magma or lava cooled?
- e. List three minerals commonly found in granite.
- f. What specific type of rock did Native Americans in north-central Montana prefer to use for boiling stones in the centuries before European contact?

2. Comprehension (understanding): explain, summarize, describe, classify, etc.

- a. Explain how convection contributes to cloud formation?
- b. Describe a scenario that might lead to high levels of nitrates in groundwater.
- c. Explain how technology developed in WWII contributed to our current understanding of plate tectonics?
- d. Summarize the differences between granite and basalt.
- e. Describe the climate in Helena without using numbers.
- f. How did Fujita come up with the hypothesis that led to our understanding of microbursts?
- g. Why is coal used to produce so much of the electricity used in the USA?
- h. What challenges are there to using wind as our primary source of electricity?
- i. Why do earthquakes on sliding plate boundaries tend to be shallow whereas those that happen along zones of subduction can be very deep?
- j. Why does the county want to require inspections of septic systems in the Helena Valley?
- k. If society decided to reduce the level of carbon dioxide in the atmosphere to 350 ppm or less, what challenges would make this goal difficult to achieve?

3. Critical Thinking: analyze, compare, contrast, develop, justify

- a. Justify the position that society should continue using coal to generate electricity.
- b. In what ways is the global warming issue similar to the ozone depletion issue of the 1980's and 1990's?
- c. What would you choose as criteria for selecting the top 10 storms of the decade?

- d. If you were a Lewis and Clark County commissioner, how would you handle the septic system controversy?
- e. Why do you think NASA should (or should not) send a manned mission to Mars?
- f. What do you think would be the 5 most important qualities to consider when selecting astronauts for a lengthy mission to Mars?
- g. Design (and describe) a system that could be used to warn residents of Orting, WA that a mudflow from Mt. Rainier is headed toward their town.
- h. As settlers moved west, what do you think were the three most important considerations in deciding where to establish communities?
- i. What do you think is the worst type of hazard associated with volcanoes? Justify your position.
- j. Design a law or incentive that would reduce consumption of electricity in the United States.
- k. Think about (analyze) the current political climate surrounding the global warming/climate change issue. What do you believe are the factors that have caused there to be such strong disagreement on this issue?