## **Geologic Change Assignment**

- 1. The stream behind the school is gradually wearing away its bed.
  - a. Does it wear away exactly the same amount every day? Explain.
  - b. During which season of the year will the rate be the greatest? Explain.
  - c. Describe a method which you could use to measure the rate of wear.
- 2. How long will it take to wear away 0.1 mm of rock if it is eroding at a rate of 0.0001 mm per year?
- 3. How fast are the Coast Mountains rising if their average altitude has increase 1.5 m in 10 000 years?
- 4. If the Atlantic Ocean is widening by 1.2 cm/year, how much wider has it become in your lifetime?
- 5. Unit conversions: Convert each unit as requested. Some of these calculations require more than one step.
  - a. 15 km = \_\_\_\_\_ m
  - b. 15 km = \_\_\_\_\_ cm

- c. 3.0 m = \_\_\_\_\_ cm
- d. 2.5 m = \_\_\_\_mm
- e. 1.2 m/year = \_\_\_\_\_ cm/year
- f. 2.5 m/100 years = \_\_\_\_\_ cm/year
- g. 28 cm/year = \_\_\_\_\_ cm/day
- h. 65 cm/3 years = \_\_\_\_\_ mm/day
- 6. The Grand Canyon in Arizona is 1.6 km deep. The rock at the bottom is 1500 million years old, while at the top it is 250 million years old.
  - a. How many years did it take to form these layers of rock?



b. What was the average rate of rock formation in mm/year?

c. Does the principle of uniformitarianism tell us that exactly this amount of rock was formed each year? Explain your answer.