

PART 1 - Topography Basics

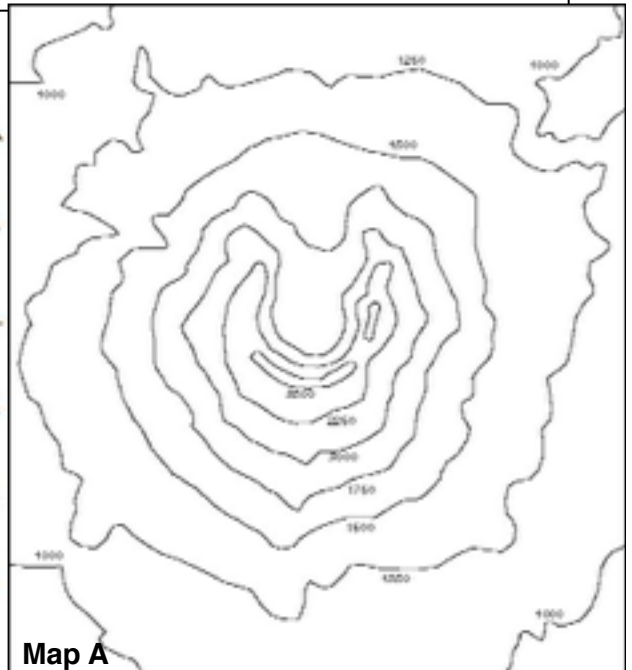
A. Match the definition to the vocabulary word.

- _____ contour interval
- _____ topographic maps
- _____ elevation
- _____ contour line
- _____ index contour
- _____ upstream
- _____ depression
- _____ steep slope
- _____ gradual slope
- _____ hilltop
- _____ sea level

- a. shows the shape, surface features & elevation of the land
- b. evenly spaced contour lines
- c. a closed loop with no further contour lines
- d. a low point in the ground, represented by a closed contour line with dashes or tick marks
- e. another name for 0 elevation
- f. imaginary lines that connect points of equal elevation
- g. the change in elevation from one contour line to another contour line (the distance between contour lines)
- h. the height above sea level
- i. darker and heavier contour line, labeled with the elevation
- j. contour lines that make a "V"
- k. closely spaced contour lines

B. Match up the following

1. _____		A	
2. _____		B	
3. _____		C	
4. _____		D	
5. _____		E	
6. _____		F	



C. Why do contour lines never cross?

D. Use the topographic map above to answer the following:

- a. What is the highest elevation on Map A?
- b. What is the lowest elevation on Map A?
- c. What is the contour interval on Map A?

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PART 2 - Topography & Earth's Structure

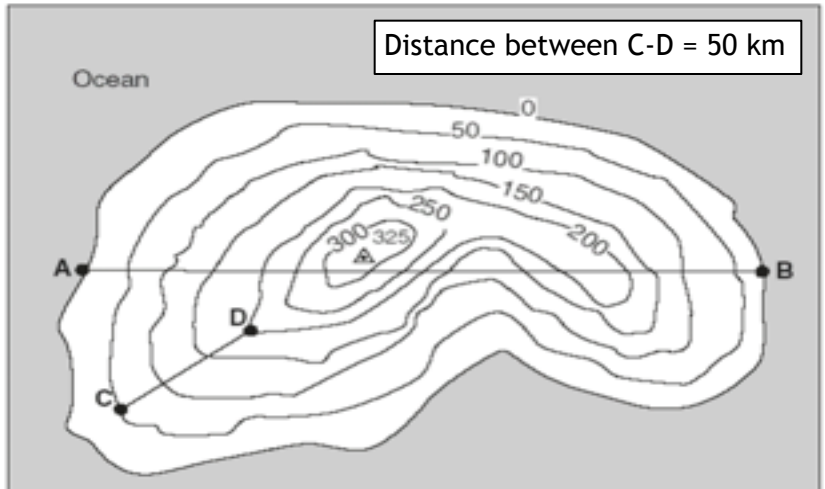
A. Use the topographic map to the right to answer the following questions.

- a. What is the contour interval?
- b. Draw a profile that describes the elevation across line A-B.

B. What is a gradient between C-D?

C. How do you calculate a gradient? What is the equation?

D. You're driving a car that can climb a maximum gradient of 500m/km. The hill in front of you starts at an elevation of 20m and reaches 500m. The total distance up the hill is 0.5km? What is the gradient of the hill and will your car make it? **SHOW WORK!**



E. Fausto is riding his bike and comes to the bottom of a hill. He has two roads to choose from to get to the top, so he pulls out his topographic map to determine which road will be easier to ride up. The hill has an elevation of 500m. **Road A** is 5km long, while **Road B** is 50km long. Calculate the gradient of BOTH roads and determine which road will be easier to ride up. **SHOW WORK!**

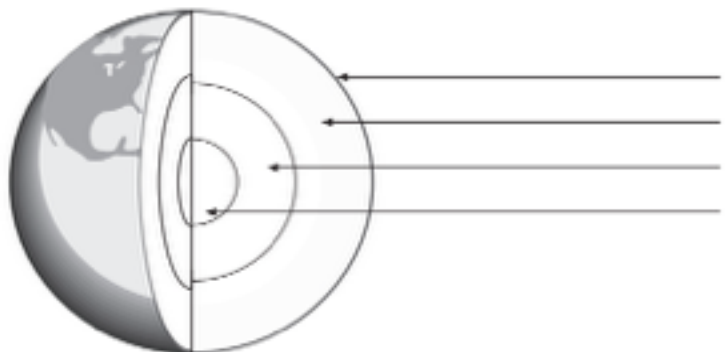
F. What is geology? (p. 478)

I. Label the layers of the Earth to the right.

G. What is uniformitarianism?

H. Give an example of a geologic process that is still going on today?

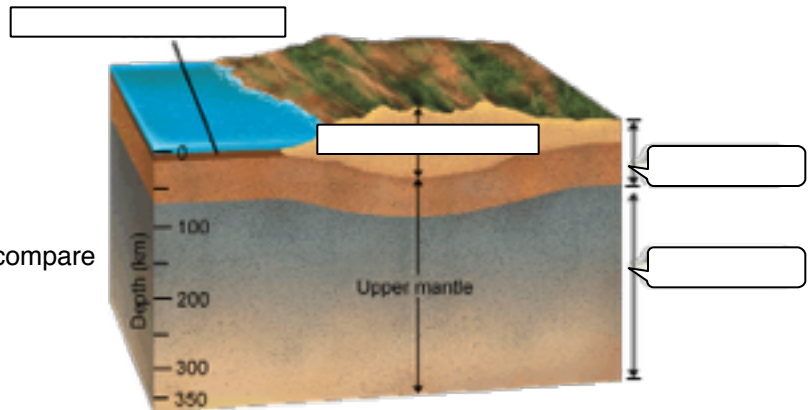
J. The crust is a rocky outer layer made mostly of what?



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- K. What are the two types of crust?
- L. Which layer of the Earth is the thickest?
- M. What causes the mantle to flow like a thick liquid?
- N. The core is a large sphere of _____ (mostly _____ and small amounts of _____)
- O. Why is the outer core a liquid?
- P. As the Earth rotates, the liquid outer core rotates creating what?
- Q. What is the lithosphere? (p. 480)
- R. What is the asthenosphere? (p. 480)

S. Label the diagram to the right.



□ PART 3 - Minerals

- A. How does the density of continental crust compare to that of oceanic crust?
- B. What is a rock? (p. 483)
- C. What is a mineral?
- D. What is meant by the term, "inorganic?" Would a plant be considered inorganic? Why or why not?
- E. Why are minerals so important to rocks? (It is the same reason why cells are so important to us!)

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- F. Each mineral has a characteristic set of properties that result from its chemical composition (elements that it is made of) and crystal structure. The properties by which minerals can be identified include the following, summarize each. Give examples where appropriate.
- a. Crystal structure:

 - b. Color:

 - c. Streak:

 - d. Luster:

 - e. Density:

 - f. Hardness:

 - g. Fracture & Cleavage:

 - h. Other properties:
- G. Use the data table on page 485 to answer the following:
- a. Which mineral has the lowest density? _____ Highest density? _____
 - b. Which two minerals have the lowest percentage of silicon and oxygen?
_____ & _____
 - c. Olivine and augite, types of minerals, are abundant in oceanic crust and the mantle. Quartz, muscovite, and hornblende are abundant in continental crust. Formulate a hypothesis to explain why continental crust floats higher on the mantle than oceanic crust.
 - d. How is a mineral's density related to its silicon and oxygen content?

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▣ PART 4 - Magma Composition & Rock Cycle

- A. How are magma and rocks related?

- B. Not all magma is the same. Below are a few ways that magma differs. Explain how each effects magma composition and therefore the minerals/rocks that are made.
 - a. SILICA:

 - b. DISSOLVED GASES:

- C. Rocks are classified into three major groups. What are these groups? (p. 488)

- D. How does igneous rock form?

- E. Compare and contrast intrusive rock and extrusive rock.

F. Label where you would find **intrusive igneous rock** and **extrusive igneous rock** on the diagram to the right.

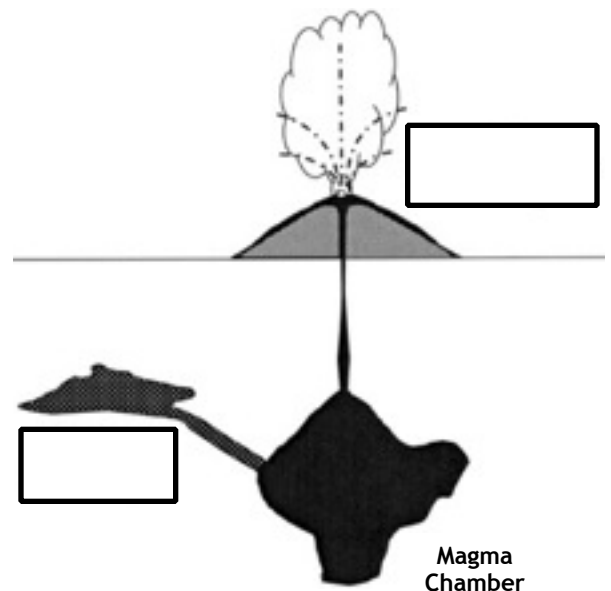
G. How does a sedimentary rock form?

H. What is sediment?

I. How does sediment form?

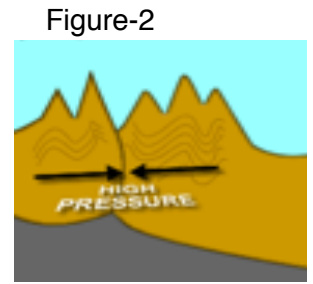
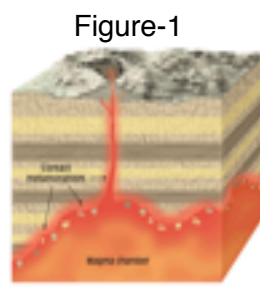
J. How does a metamorphic rock form? What is recrystallization?

K. Compare and contrast contact and regional metamorphism?



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- L. _____ Figure 1 is an example of:
a. contact metamorphism b. regional metamorphism
- M. _____ Figure 2 is an example of:
a. contact metamorphism b. regional metamorphism
- N. What is a **foliated rock**?



- O. Draw the COMPLETE **rock cycle** below. Use figure 21 page 493 as a guide.

▣ PART 5 - Weathering

- A. How does compaction cementation create sedimentary rocks?
- B. Compare and contrast **Transport & Deposition**.
- C. What is erosion? (p. 527)
- D. What is weathering?
- E. Compare and contrast mechanical weathering, chemical weathering and biological weathering.
- F. Describe frost wedging.
- G. Describe abrasion
- H. What is the main agent of chemical weathering?