Topographic Maps

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Lesson 2.4: True or False

Write true if the statement is true or false if the statement is false.

1. Each contour line on a topographic map represents a specific elevation.  
2. Every other contour line is labeled.  
3. The contour interval is a horizontal distance.  
4. If land is almost flat, contour lines will be close together.  
5. The innermost concentric hatched loop on a topographic map encloses the lowest point of a depression.  
6. Contour lines can be used to determine the direction that a stream is flowing.  
7. Contour lines on a bathymetric map represent distance from shore.  
8. Topographic maps show three dimensions of Earth’s surface.  
9. The horizontal distance between adjacent contour lines is constant.  
10. On a bathymetric map, the lowest-numbered contour lines represent the deepest ocean floor.

Lesson 2.4: Critical Reading

Read this passage based on the text and answer the questions that follow.

Reading Topographic Maps

A topographic map uses contour lines to show the three-dimensional shape of the land. Contour lines reveal the locations of hills, valleys, and other surface features. To read a topographic map, you should know that:

- Each contour line represents a specific elevation and connects all the points that have that elevation. Every fifth contour line is bolded and labeled with its elevation.
- Contour lines run next to each other but never intersect.
- Adjacent contour lines are separated by a constant difference in elevation, called the contour interval. The map legend gives the contour interval.
- Closely-spaced contour lines indicate a steep slope. They show that the elevation changes quickly over a short horizontal distance. Contour lines that seem to touch indicate a very steep rise, such as a cliff or canyon wall. Broadly spaced contour lines, in contrast, indicate a gentle slope.
- Contour lines that form concentric closed loops indicate hills. Smaller loops represent higher elevations.
- Hatched concentric loops indicate depressions. Hatch marks are short, perpendicular lines inside a loop. Smaller hatched loops represent lower elevations.
- A group of V-shaped contour lines indicates a stream valley. The narrow part of the Vs point uphill. Water always flows from higher to lower elevations, so the Vs also tell you the direction the water is flowing.
Questions

1. What do contour lines represent?
2. What can you learn from the spacing of contour lines?
3. How can you identify hills and depressions on a topographic map?
4. Explain how contour lines show the location and direction of streams.

Lesson 2.4: Multiple Choice

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Circle the letter of the correct choice.

1. The distance between adjacent contour lines indicates
   a. slope.
   b. rock depth.
   c. horizontal distance.
   d. none of the above

2. If you could walk along a contour line, you would be walking
   a. up and down hill.
   b. down a gentle slope.
   c. continuously upward.
   d. always at the same elevation.

3. Contour lines can be used to reveal the locations of
   a. hills.
   b. valleys.
   c. level areas.
   d. all of the above

4. V-shaped contour lines always point
   a. north.
   b. uphill.
   c. downhill.
   d. two of the above

5. On a contour map, a cliff is represented by contour lines that
   a. seem to touch.
   b. actually intersect.
   c. are equally spaced.
   d. are perpendicular.

6. The smallest closed contour line of a hill represents the
   a. top of the hill.
   b. lowest elevation.
   c. bottom of the hill.
   d. two of the above

7. What could you learn from a bathymetric map?
   a. depth of ocean water
Lesson 2.4: Matching

Match each definition with the correct term.

Definitions

1. landform represented by contour lines that form closed loops
2. type of map that shows depths below sea level
3. difference in elevation between adjacent contour lines
4. type of map that shows rock units and other rock features
5. line representing elevation
6. type of map that shows terrain
7. landform represented by hatched contour lines that form closed loops

Terms

a. bathymetric map
b. contour interval
c. contour line
d. geologic map
e. topographic map
f. depression
g. hill

Lesson 2.4: Fill in the Blank

Fill in the blank with the appropriate term.

1. A contour line connects points that have the same __________.
2. Closely spaced contour lines represent a __________ slope.
3. The scale of a topographic map represents __________ distance.
4. A group of V-shaped contour lines represents a(n) __________.
5. Higher-numbered contour lines on a bathymetric map represent greater __________.
6. Structural features such as folds and faults are shown on a __________ map.
7. A geologic map represents different rock units with different __________.
Lesson 2.4: Critical Writing

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Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.

Explain how a bathymetric map would show a ridge, a trench, and a flat plain on the ocean floor.