

AIM: What factors affect a stream's velocity?

Unit 4: Weathering and Erosion: What happens to rocks once they've formed?

By the end of class you should be able to:

- Identify and describe 3 factors that will change a stream's velocity
- Calculate velocity and gradient
- Predict where a stream will have the greatest velocity
- Draw the cross section of a stream depending on where it is in a stream

Do Now:

- 1) What is the formula for velocity?

- 2) Solve the following problems using your formula for velocity (show your work and include your units)
 - a. Distance=14 meters and Time=2 meters



A ball was dropped into a stream at point A and it was transported to point B. The velocity of the stream is 5m/s. The distance between point A and B is 20m. How long did it take the ball to get from point A to point B?

- 3) The velocity of a stream at a particular location is controlled mainly by the:
 - a. elevation of the stream at the location
 - b. distance of the location from the source
 - c. slope of the stream channel at the location
 - d. amount of sediments carried at the location

	<p>1) The beginning of a stream is called its _____ and it empties into another body of water at its _____</p> <p>2) Velocity= _____; velocity is _____</p> <p>3) 3 factors affect the velocity of a stream</p> <ol style="list-style-type: none"> 1. Gradient: the gradient of a stream is how steep it is <ol style="list-style-type: none"> i. gradient= <u>change in field value</u>= _____ ii. as the gradient/slope of a stream increases, the stream's velocity _____ <p>In your own words:</p> <ol style="list-style-type: none"> 2. Discharge: _____ <ol style="list-style-type: none"> i. Stream's with a higher discharge will have a _____ velocity <p>In your own words:</p> <ol style="list-style-type: none"> 3. Stream channel shape: the shape of the channel created by _____ <ol style="list-style-type: none"> i. The stream will have a <i>greater</i> velocity if _____ ii. Shallow streams will have a _____ velocity because _____ iii. Deeper streams will have a _____ velocity because _____
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4) A stream can have different velocities depending on the location in the stream

1. The greatest velocity is right _____
2. In a straight stream, the velocity is greatest near the _____
3. In a meandering stream (curvy), the velocity is greatest _____

Cross section: a **cross section** is when you draw what the bottom of the stream looks like if you're looking at the stream while it's flowing towards you

Cross section from A to a

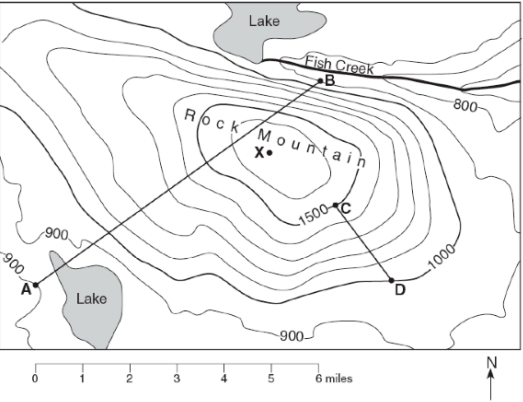
Cross section from B to b

Cross section from C to c

Did you get it?

1) What are 3 factors that affect the average velocity of a stream? (List them then explain what will have a greater velocity)

2) Use the diagram below to answer the questions.



- 1) What is the gradient of the line CD? [Show your work, include your units]
- 2) Which direction is Fish Creek flowing toward?

Homework: 1) Complete all class work from today (lab)
 2) Study for quiz on Monday (stream velocity, how to calculate gradient and velocity)

Summary and Reflection: