Geology 12 AERIAL AND STEREOSCOPIC MAPS OF STREAMS

Aerial Maps

These are overhead maps taken from a plane. The detail is pretty good, both of the town of Squamish (you can see and identify many buildings) and of the waterways.

Map #061

1. Find Valleycliffe and our school on the map. Has Squamish changed much since 1990?
2. Find the area of the Squamish River just north and west of our school (the highway runs north-south) where it makes a big curve. This is not part of the original river anymore. *What is the proper name given to a feature like this?*
3. *As the river curves around and makes a large reverse "S" shape, where does it look like it is depositing the majority of the sediment - the inside or the outside of the curve?*
4. *Where would the greatest amount of erosion of the riverbank take place - on the inside or the outside of the curve? How is this related to the speed of the river at the inside and the outside of the curve?*

Map #866:81

1. This is the same view as the previous map, but taken from a higher altitude. In what year do you think this photo was taken? *Look at the path of the Squamish river. From this picture, would you say the Squamish river is a young river, a middle-aged river, or an old river? Briefly explain why.*
2. Every so often, the Squamish River will flood. *What is a flood plain? What is the name of the structure that was built to try and stop the river from overflowing its banks onto the flood plain?*
3. ~~Use the colored dots from the front and cut each one in half or quarters. Stick them on your map to indicate where you think the boundaries of the natural flood plain of our area are. Show me when you are finished (then clean off your map!)~~
4. *Does it look like the mouth of the Squamish River forms a delta? What conditions are necessary for the formation of a delta?*
5. Look at where the Squamish River enters Howe Sound. *Do you think the water speeds up or slows down as it empties into a larger body of water (such as the head of Howe Sound)?*
6. *How do you think the sediment at the bottom of Howe Sound compares in size to the sediment of the point bars in the river?*

Stereoscopic Maps

These are the cool 3D maps! They are not always easy to use, but spend some time adjusting your viewing glasses, and ask for help.

Plate #40

7. *Do you think this river is young, middle-aged, or old? Explain why.*
8. *What is an oxbow lake? How does one form?*

Plate #38

1. Look at the curves of the stream. Where is the most deposition taking place? Where is the most erosion taking place? (this should agree with what you observed in the other aerial photos)

Plate #21

1. Find an example of an alluvial fan in the photo. *What is an alluvial fan? How does one form? have you ever seen one around here before?*

Geology 12 AERIAL AND STEREOSCOPIC MAPS OF STREAMS

Aerial Maps

These are overhead maps taken from a plane. The detail is pretty good, both of the town of Squamish (you can see and identify many buildings) and of the waterways.

Map #061

1. Find Valleycliffe and our school on the map. Has Squamish changed much since 1990?
2. Find the area of the Squamish River just north and west of our school (the highway runs north-south) where it makes a big curve. This is not part of the original river anymore. *What is the proper name given to a feature like this?* oxbow lake (Cattermole Slough
3. *As the river curves around and makes a large reverse "S" shape, where does it look like it is depositing the majority of the sediment - the inside or the outside of the curve?*
4. *Where would the greatest amount of erosion of the riverbank take place - on the inside or the outside of the curve? How is this related to the speed of the river at the inside and the outside of the curve?* Faster outside slower inside

Map #866:81

1. This is the same view as the previous map, but taken from a higher altitude. In what year do you think this photo was taken? *Look at the path of the Squamish river. From this picture, would you say the Squamish river is a young river, a middle-aged river, or an old river? Briefly explain why.*
2. Every so often, the Squamish River will flood. *What is a floodplain? What is the name of the structure that was built to try and stop the river from overflowing its banks onto the floodplain?* A flat or gently sloping area around a stream channel Dykes
3. Use the coloured dots from the front and cut each one into halves or quarters. Stick them on your map to indicate where you think the boundaries of the natural floodplain of our area are. Show Ms Flynn when you are finished (then clean off your map!)
4. *Does it look like the mouth of the Squamish River forms a delta? What conditions are necessary for the formation of a delta?* stream flows into body of standing water, velocity to 0 all but dissolved load deposited
5. Look at where the Squamish River enters Howe Sound. *Do you think the water speeds up or slows down as it empties into a larger body of water (such as the head of Howe Sound)?*
6. *How do you think the sediment at the bottom of Howe Sound compares in size to the sediment of the point bars in the river?* smaller

Stereoscopic Maps

These are the cool 3D maps! They are not always easy to use, but spend some time adjusting your viewing glasses, and ask for help.

Plate #40

7. *Do you think this river is young, middle-aged, or old? Explain why.*
8. *What is an oxbow lake? How does one form?*

Plate #38

1. Look at the curves of the stream. Where is the most deposition taking place? Where is the most erosion taking place? (this should agree with what you observed in the other aerial photos)

Plate #21

1. Find an example of an alluvial fan in the photo. *What is an alluvial fan? How does one form? have you ever seen one around here before?* decrease in velocity
   A wedge shaped sediment deposit left where a tributary flows into a more slowly flowing stream or where a mountain stream flows into a desert