

The Hjulstrom Diagram

Use the diagram to answer the following questions:

1. What is the most easily eroded material?
2. What is the minimum stream velocity at which material is eroded?
3. What is the first material to be deposited?
4. What is the speed at which this starts to happen?
5. What is the smallest grain size (approximate) that will be deposited?
6. What happens to particles smaller than that?
7. At what speed do the smallest particles erode?
8. Why do you think it takes as much energy to erode clay as it does to move 5.5cm rocks?

Some practical problems:

Assume that a stream is flowing at 2 m/s.

- What range of particle sizes will it erode?
- What size of particles would it already be transporting at that velocity?

Assume the slope changes and the river velocity drops to 1 m/s.

- What change is there in the size of material that the river will erode?
- What size of particles will the river be transporting?
- Will there be any deposition, if so what kind?
- Try to describe what the bed of the river would look like?

What will happen to 2mm grains on the river bed if the river flow is 0.2 m/s?

What size of particle will be eroded at a river flow of 2cm/s?