

Vocabulary to Introduce:

Transport: to carry solid material in the stream current

Erode: to remove or wear away soil or rock by water, wind, or other processes

Deposition: sediment that comes to rest in a stream channel after being transported by water

Questions to ask afterwards:

What did you notice about traveling through the river?

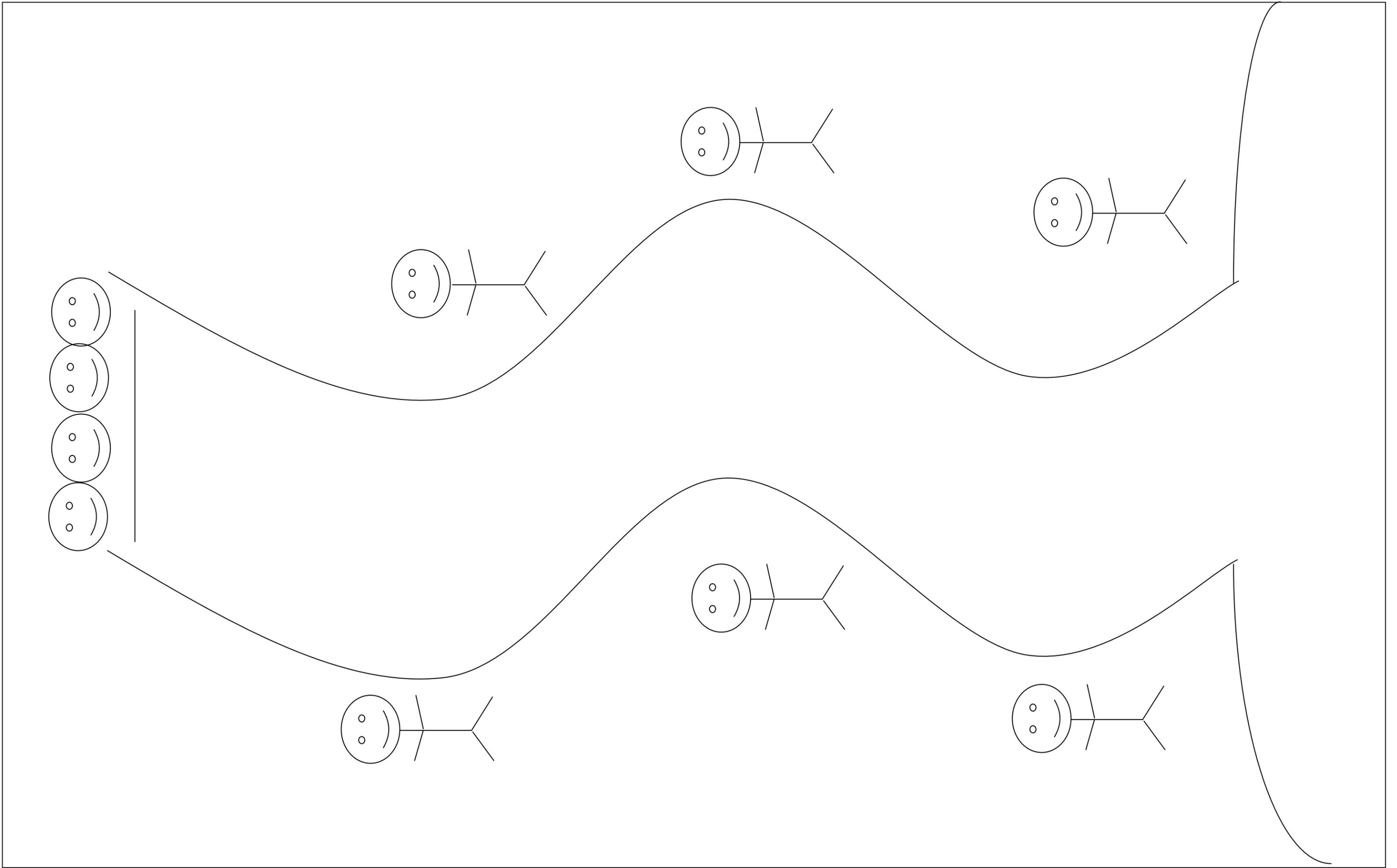
At what points did you have to go fast?

At what points were you going slower?

In those places you were going faster, what kind of “picking up power” do you think the water has? *Remind students to think back to the warm-up activity.*

In those places you were going slower, what kind of “picking up power” do you think the water has? *Remind students to think back to the warm-up activity.*

Phase 1—Move Like A River: Place the two ropes next to each other on the floor in a formation similar to the image above. Have the ends of the ropes widen out into a “lake.” Ask students to line up four across and hold the pool noodle perfectly straight among them. Have them make observation about where they had to walk slowly and where they have to walk quickly.



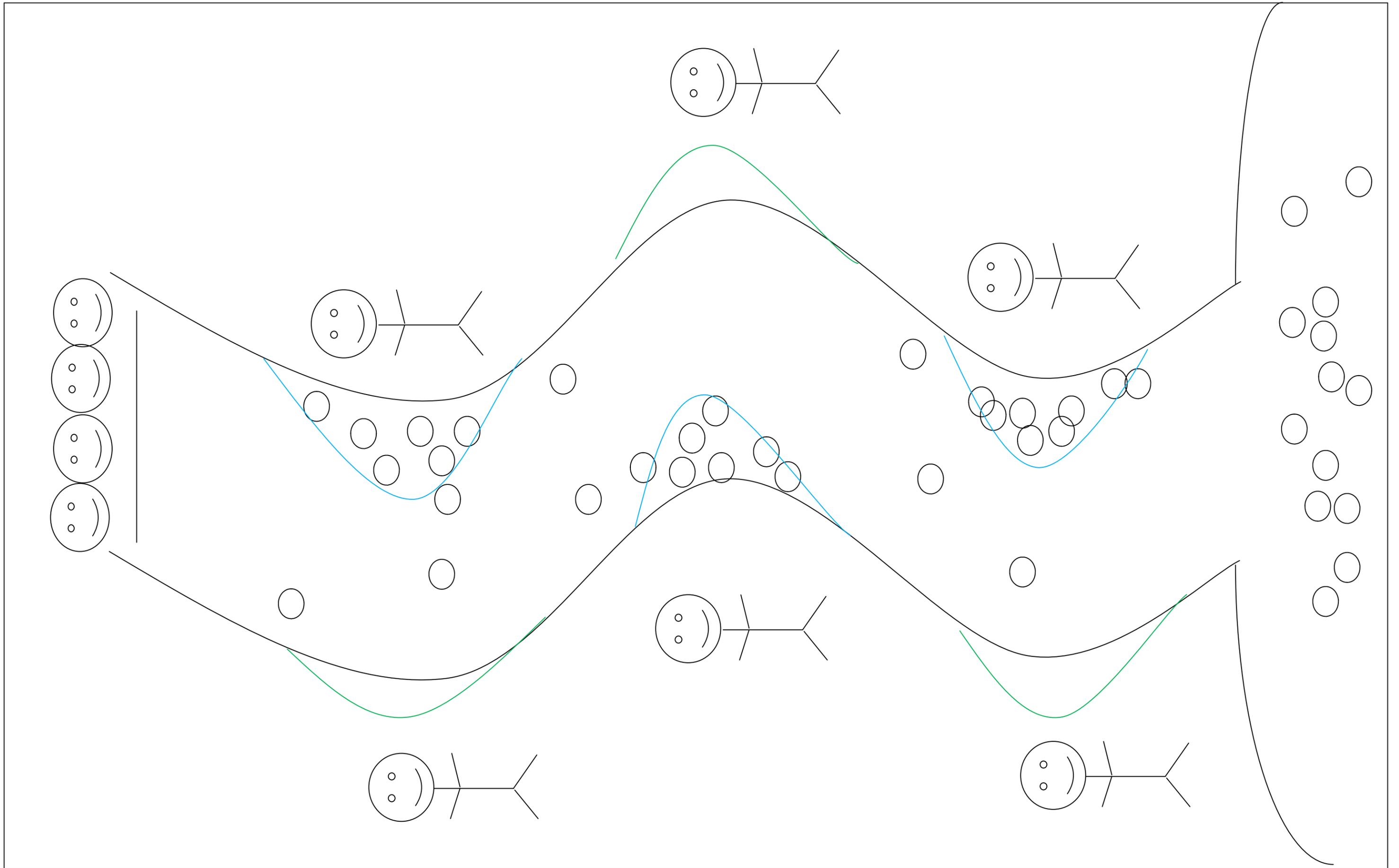
Vocabulary to Introduce:

Cut bank: the area of erosion across from a point bar at the bend in a stream

Scour: erosive action of flowing water in streams that removes and carries away material from the stream bed and banks

Point bar: the area of deposition across from the cut bank at the bend in a stream; sometimes called a gravel bar.

Phase 2—Sediment Transport: Have “sediment” students stand along the river to simulate sediment transport and deposition by handing out sediment pieces and reminding “water” to drop sediment pieces. At the fastest points in the river, have the “sediment” student hand 4 sediment pieces to the end person. At the slowest points in the river, have “sediment” remind “water” to deposit pieces. Each member of the “water” group will begin with 4 sediment pieces to simulate sediment acquired from upstream.



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Questions to ask afterwards:

In which part of the river is a lot of sediment being picked up and transported?

Note: We might see so much sediment being transported away that erosion is evident. If we keep taking sediment away, the river bank will erode. To symbolize the erosion, move the rope out beyond its original location. *Move the rope.*

*What kind of sediment would students expect to erode easiest?

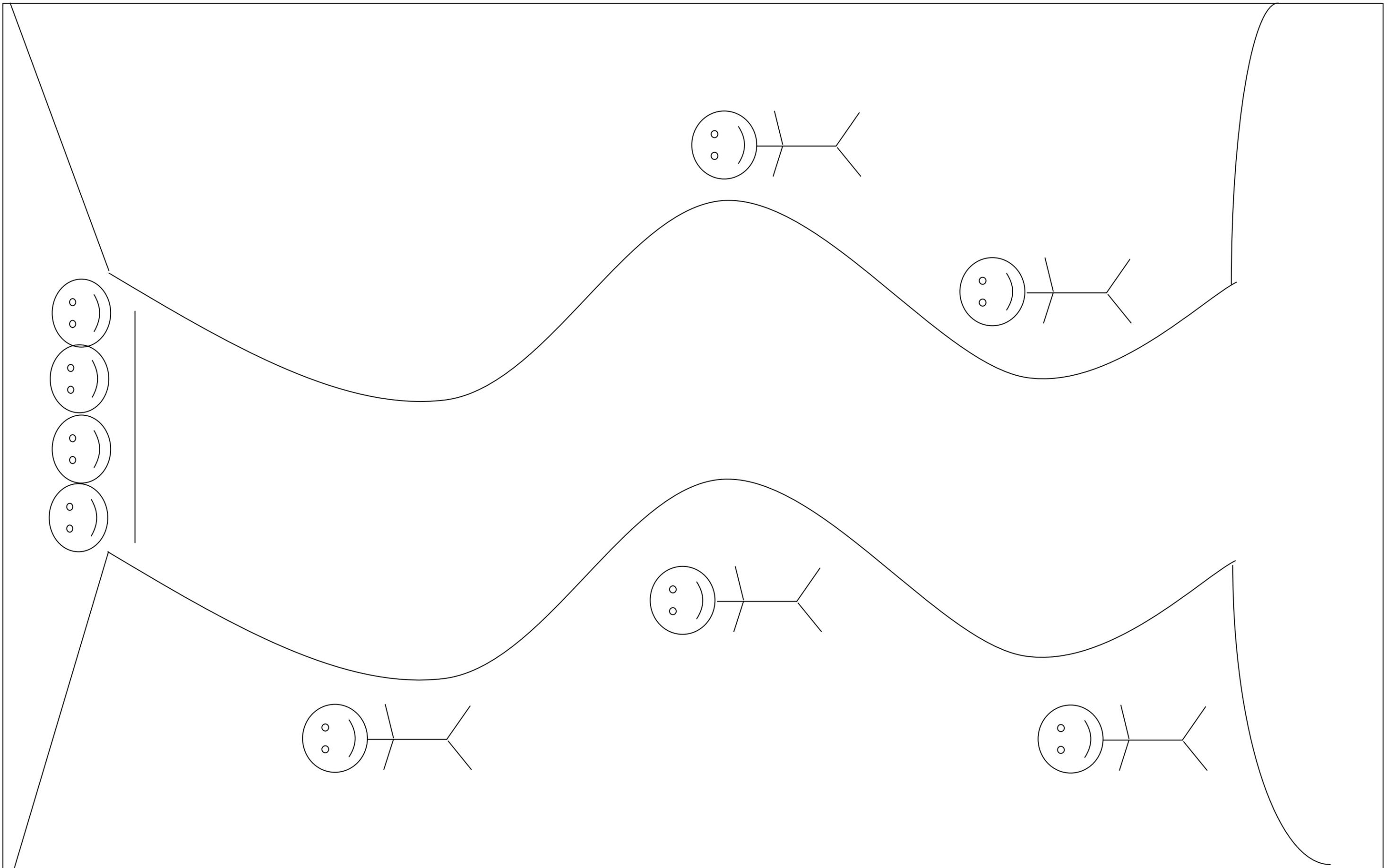
In which part of the river is a lot of sediment being deposited?

What do you think might happen to this side of the river if we keep taking sediment away?

Note: As more and more sediment gets deposited on the inside of the curve, it may build up enough to push the water over. This deposition may change the bank.

Move the rope

Phase 2—The Changing River: After a few rounds, there should be a pile-up of sediment in the slowest parts of the river. This can cause the river to shift. Additionally, if the river keeps taking sediment from the other side, the river will shift in that direction also. Pick up and move the rope to simulate this shift. The tape on the floor will help you remember the original location of the river.



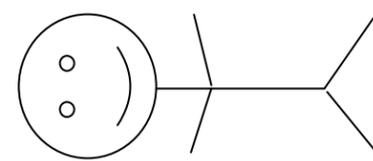
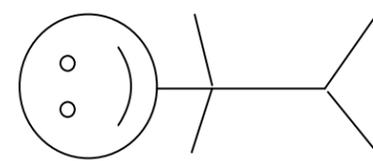
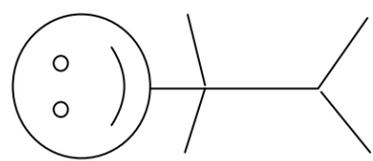
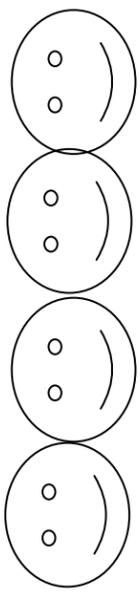
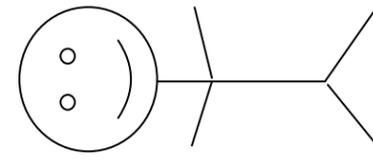
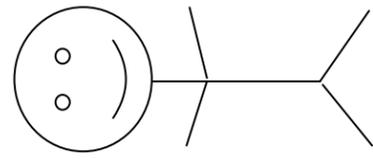
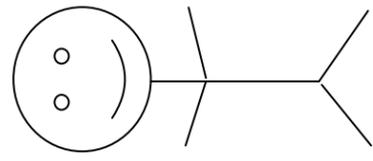
Questions to ask afterwards:

How did the dam change sediment erosion, transportation, and deposition in the river?

How did the dam change the amount of sediment that was deposited into the lake?

How do you think this might change how the river works?

Phase 3—Damming the River: This time, do not give “water” sediment before beginning—only water gets through dams. Notice how this changes where and how much sediment is deposited along the river.



Vocabulary to Introduce:

Channelization: engineering a stream to move in a relatively straight line

Questions to ask afterwards:

Where did you move faster or slower in a channelized river?

Considering your speed, did you erode or transport or deposit a lot of sediment?

Where did most of the sediment you picked up get deposited?

Phase 4—Channelizing the River: Water in a channelized river has nothing to slow it down; therefore, the water moves fast. Have students have out 4 chips to each end person as they pass. Water finally slows down when it hits the lake; this is when all of the sediment is dropped.