



Rivers Instructional Case: A series of student-centered science lessons

Unit Timeline

Lessons	Class Time	Lesson Objective(s)	Lesson Prep	Key Vocabulary
1 Down by the River Probe	30-45 min	<ul style="list-style-type: none"> Engage students by having them think about a possible real world erosion situation. Provide students with an overarching question to refer back to through these lessons. Have students engage in the practice of asking questions. 	<ul style="list-style-type: none"> Make duplicate double sided copy of lesson probe. One side of the probe is to be administered at the very beginning of the lesson. Collect probes and re-administer at the end of the lesson and notice any shifts in thinking. 	<ul style="list-style-type: none"> Erosion Sediment Deposition
2 Rivers, Rocks and Sand!	50 min	<ul style="list-style-type: none"> Students will investigate sediment tubes to learn about river systems and how river erosion shapes the California landscape. 	<ul style="list-style-type: none"> Place one sediment tube for each pair or group of students. Make individual copies of the student worksheet. 	<ul style="list-style-type: none"> River source River mouth Upstream Downstream Tributary

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3 River Vocabulary Card Sort	20-25 min	<ul style="list-style-type: none"> Students will match river vocabulary to its geographic picture. Students will summarize how the specific feature is created. Students will engage in discourse using the Quiz, Quiz, Trade protocol to learn the vocabulary and content. 	<ul style="list-style-type: none"> Create one set for each group of four students. Optional: students cut/paste/summarize the formation into a science notebook to use as personal reference. 	<ul style="list-style-type: none"> Meander Alluvial fan Run off Flood plain Sediment Oxbow lake Delta River
4 River Erosion Lab	2 - 50 min periods or 1 block period	<ul style="list-style-type: none"> Students will investigate stream tables to learn about river systems and how river erosion shapes the California landscape. 	<ul style="list-style-type: none"> (see <i>River Erosion Set Up.ppt</i>) Teacher demo of lab setup will include either a live demo of setting up the lab materials or a video example of the setup. Student roles will be defined as: water pourer; sand/clay mixer and sculptor, data recorder, materials collector, communicator of data, angle adjustor/flow adjustor. Lab setup will include: buckets containing all station materials, all labeled with a designated number for each station. Quantities of sand, clay, and water will be pre-measured. 	<ul style="list-style-type: none"> Saturation