



# *River Cutters*

## Summary of Sessions

Session	Description of Activity
1	In this session, students create a river model through the use of diatomaceous earth in a tub serving as the “continent” and by constructing a dripper system as the “rainstorm.”
2	Students set up their river model and allow it to run for 5 minutes. They record data on the river and draw its course. They may add blue food coloring to the river at its source to better visualize the run and other features.
3	Students can increase their knowledge of geologic vocabulary and river features by talking about the rivers they constructed in the prior session. This session also introduces the concept of erosion. This plays out through classroom exchange and reflection on the effects seen while running the rivers. Students end the session by making small flags emblazoned with river features, such as “waterfall.”
4	Teams of students make two river runs. One lasts for 5 minutes (a “young” river) and the other for 10 (an “older” river). As features appear, students place an appropriately-labeled flag by the event and log it on their data sheets. Students also diagram the two rivers, pinpointing the varying river features. In planting the river features flags, students can determine the sequence of events in their river courses and discover features of younger and older rivers.
5 (Optional)	Here the challenge lies in determining the effects of slope on river formation. Students create two runs; one with the tub level and the other with the tub sloped at an angle. The teams make observations and report their findings.
6 and 7 (Optional)	Two engineering challenges are given: Students must first construct a dam and then determine the best location for a toxic waste dump. Working in teams, students decide on dam placement during an initial river run. After turning off the river, they construct a dam and dig a reservoir uphill from the dam. Then, they resume the river flow and draw results. Finally, students place two toxic waste dump simulators close to the river, before beginning its flow. In preparing for the toxic waste dump scenario, the teacher is instructed to secretly insert three or four waste dump simulators in each tub. If students encounter a secret dump, they are encouraged to investigate. Students plot the movement of toxic waste on their data sheets.

*GEMS: River Cutters is available from Lawrence Hall of Science, University of California, Berkeley, CA 94720; 510/642-7771.*