

Experimental trace fossils for Paleo (and maybe Seds)

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Mystery tracks using Hexbugs®

The critters: **Their tracks:**



The Set Up: it takes about 45 mins to make sets of tracks in a thin veneer of sand (done **BEFORE** students get to class).



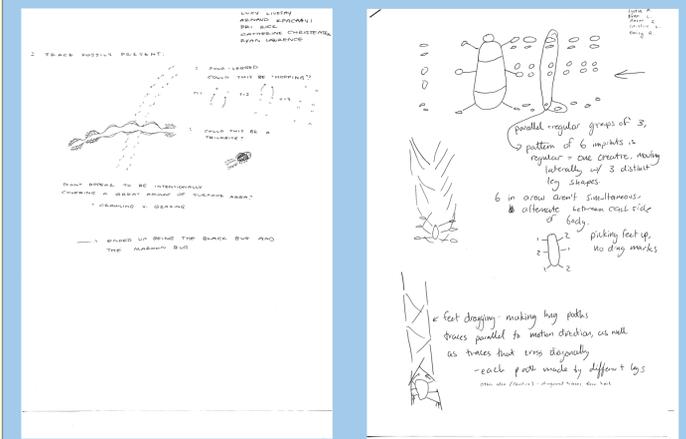
Teams of students then analyze and interpret the tracks



The reveal: after they see the bugs, they have a chance to reinterpret (and attribute)

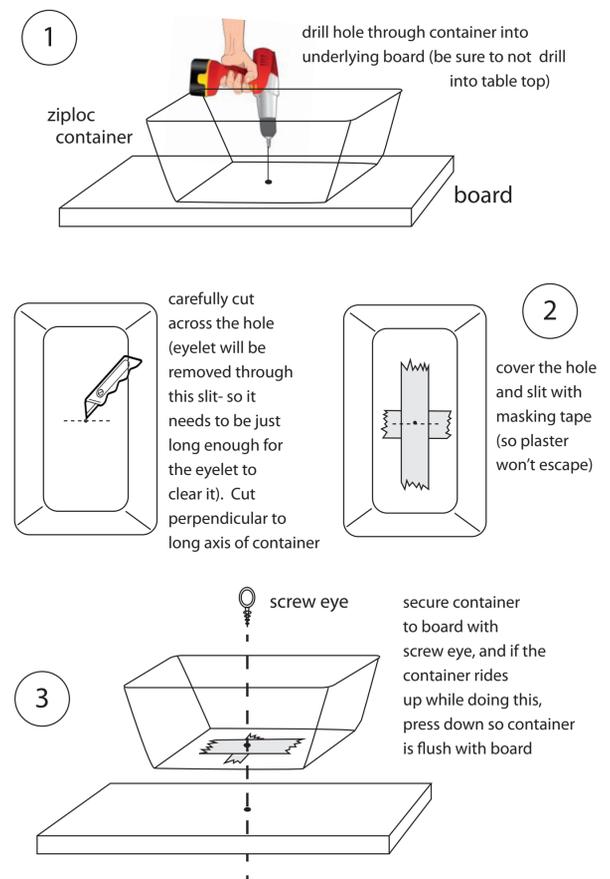


Examples of their notes

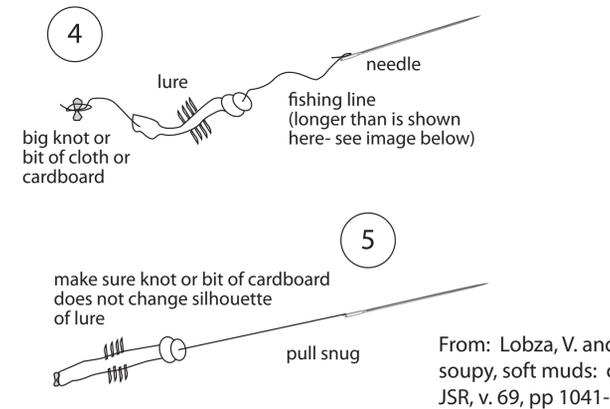


Prompts, goals, and other comments
I set up the exercise by asking teams to make **basic observations and sketch** critical features. Then they make interpretations. What sorts of **behaviors** are indicated? walking, crawling, feeding... What are the **mechanics** involved (peristaltic motion? gait?) Can they infer anything about the **anatomy** of the creature? **Variations:** this can be expanded by including changing the substrate consistency (damp sand, hairsprayed (biofilm), etc.), and casting of the sand to get negative (tricky to do). So far great success!

Prompts, goals, and other comments
This lab explores different sorts of traces in soup-ground environments. Variables: anatomy, speed, type of motion, substrate consistency, etc. Resulting traces are photographed and graphically compacted in Adobe Illustrator to simulate real compaction. Student teams swap their results and interpret each others' traces. Mixed success!

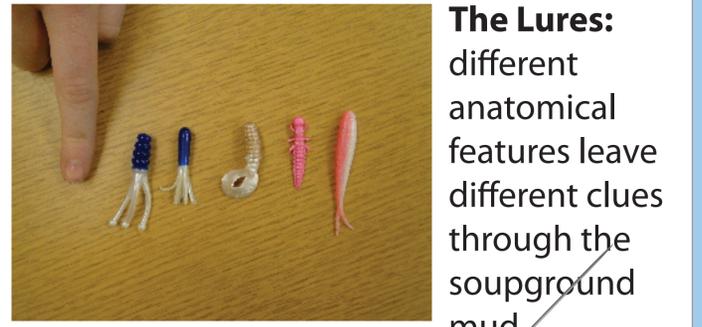


Select lures to test different hypotheses:

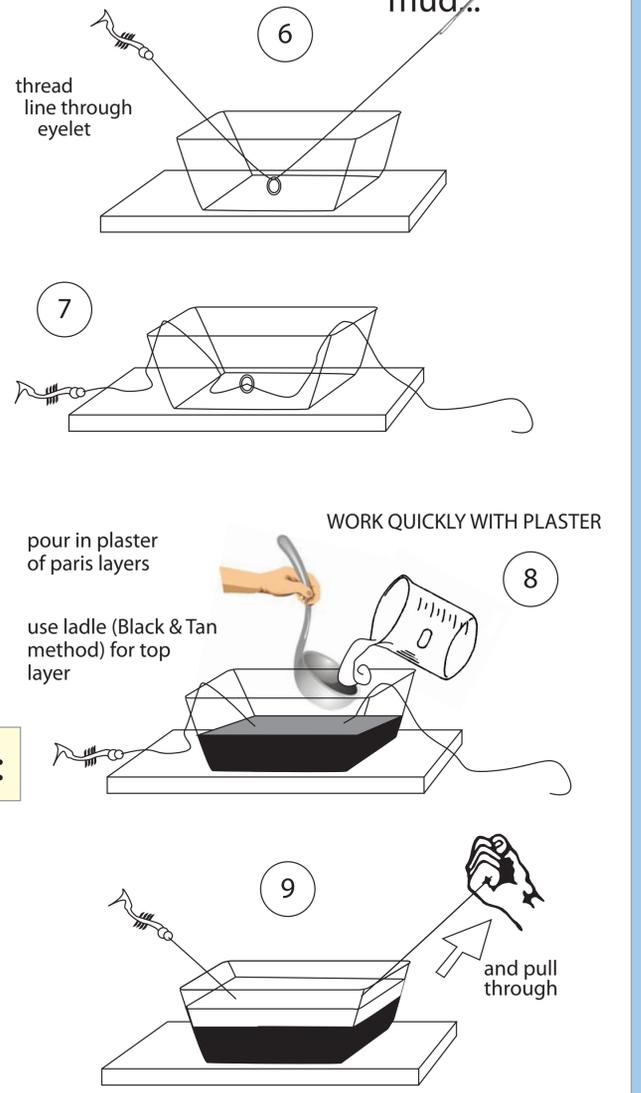


Traces in 'soupgrounds'

(after Lobza & Schieber, 1999)



The Lures: different anatomical features leave different clues through the soupground mud...



From: Lobza, V. and Schieber, J., 1999, Biogenic sedimentary structures produced by worms in soupy, soft muds: observations from the Chattanooga Shale (Upper Devonian) and Experiments. JSR, v. 69, pp 1041-1049