Deep Sea Worm Collection Lab

Name:

Period:

Scientists can use models for experiments if using the real thing is too expensive. There is a huge variety of animals that live on the ocean floor, way too deep for scientists to study them easily. Instead of the scientists going there themselves, ROVs (Remotely Operated Vehicles) are often used to collect animal specimens. However, using an ROV is quite expensive, costing upwards of tens of thousands of dollars a day! That means it is much cheaper to build and test ROV parts in a lab first, before sending them to the bottom of the ocean. Use the items provided to determine which kind of tool would be best to use to collect worms from cracks in the ocean floor.

Background

Worms have been discovered living in some very strange places on the ocean floor [as if the ocean floor is not weird enough!] This includes zombie worms that have been found off the coast of Monterey, living in the bones of dead whales that have sunk to the bottom.

Imagine that you work in a lab that builds ROVs. You have been sent footage from a research expedition that shows a previously-undiscovered kind of worm that lives in cracks between rocks on the ocean floor. It was very difficult, but the expedition was able to bring back a few specimens. Before spending thousands of dollars building an ROV collection arm that may or may not work to collect these worms, your lab needs to test a variety of tools. Your job is to test out different kinds of tools to determine which would be best to use to gently extract worms from these cracks for study.

Observations

First, you need to observe the characteristics of the worms that will be collected. Analyze the sample worm that has been provided for you. Write your observations in the table below.

width	
length	
surface texture	
density (hard or soft)	

Testing

You have several kinds of tools, as well as a box that duplicates the size of the cracks where the worms like to live. You will drop the worm through the crack in the box, then try to figure out which of the tools you have would be best at removing the worm intact and undamaged.

Warnings

1) DO NOT FORCE THE TOOLS THROUGH THE CRACK IN THE BOX. If the tool does not fit, it is not the right tool for the job.
2) DO NOT CRUSH OR STAB OR TEAR THE WORMS. If the tool is damaging the worm, it is not the right tool for the job. As the expedition was only able to collect a few worms, you must treat them very carefully.

Lab: 15 points

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As you experiment with the different types of tools, keep track of your findings below. Remember that you are trying to find the best tool for extracting the worms gently from the cracks.

TOOL	GOOD? YES/NO	BECAUSE...
spoon		
tongs		
small pliers		
large pliers		
chopsticks		
tweezers		

Based upon your experimenting, which of the tools was the most effective at gently collecting worms from the cracks?

The tool that was most effective was the _____ .

Why was this tool the most effective at collecting the worms?

Summarize your observations by finishing the sentence below:

I would recommend designing an ROV arm that worked like _____ because...

Lab: 15 points