



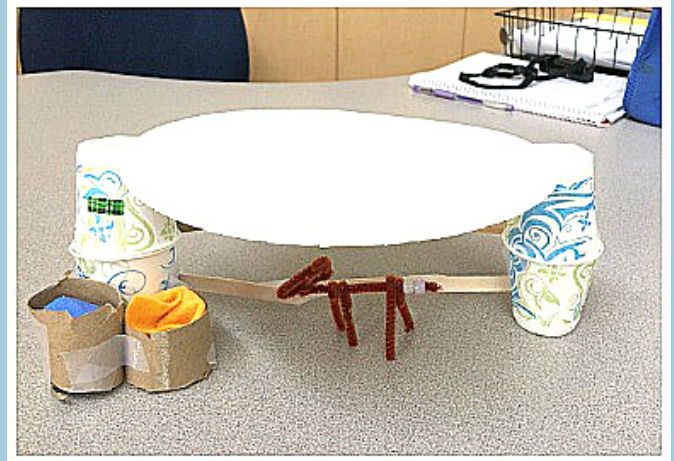
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STEAM STOP: SURVIVAL SHELTER

SCAVENGER HUT

SUPPLIES

- a variety of items found around the house. Recyclables work great! For example, popsicle sticks, plastic cups, bags, straws, foil, paper, string, tape, cardboard, paper plates, etc.



STEP 1: use items you find around the house to construct a shelter that would protect you from the elements (sun, rain, wind, snow).

CHALLENGE: only use objects for which you can imagine a corollary in nature. For example: play dough could be mud/clay, string could be long blades of grass or wheat, skewers could be long sticks or branches, etc.

EXPERIMENT & OBSERVE

Different parts of the world experience different climates.

Pick a place somewhere in the world and find out what kind of climate it has. Is it cold? Windy? Does it rain often? Once you understand what kind of weather you will need to be protected from, design a shelter for this location.

Use the challenge to build shelters designed for several different climates. What kind of materials would be available in the rainforest? How about a desert? What kind of materials protect you from different kinds of weather? What kind of materials would be available in each climate?



References

Chelsey. (2016, May 1). *STEM Challenge for kids: Build a shelter from the sun and test it with UV-sensitive beads*. Buggy and Buddy. Retrieved May 26, 2020 from <https://buggyandbuddy.com/sun-shelter/>



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STEAM STOP: SURVIVAL SHELTER

ADOBE (CLAY) HOUSE

SUPPLIES

- 3/4 cup water
- 1 1/4 cup flour
- 1 1/4 cup table salt
- 1 tbsp cooking oil
- mixing bowl
- large spoon



STEP 1: place ingredients in the bowl and mix together until you have a soft ball of clay. If the clay seems too dry, add a little more water. Mix. Repeat until good dough consistency.

STEP 2: sprinkle some flour on counter and knead the clay until smooth and stretchy.

STEP 3: use the clay you've made to build a shelter. You may assemble the shelter out of dough and let it dry as one piece or you may construct individual pieces of the shelter, let them dry, and then assemble the structure. Use **ONLY** clay to make your shelter.

NOTE: The clay takes 3-4 days to dry out, depending on the thickness of the shape it is molded into.

EXPERIMENT & OBSERVE

Try both construction strategies! Use one batch of clay to assemble the shelter before it dries and another to build pieces, let them dry, then assemble the shelter.



Which process creates a stronger structure? Which way makes it easier to build?

What type of climate would an adobe house be good for? What kind of weather would be bad for an adobe house?

References

Kate in Ontario. (n.d.). Easy modeling clay. Food.com. Retrieved May 26, 2020 from <https://www.food.com/recipe/easy-modelling-clay-51816>



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EXTREME WEATHER

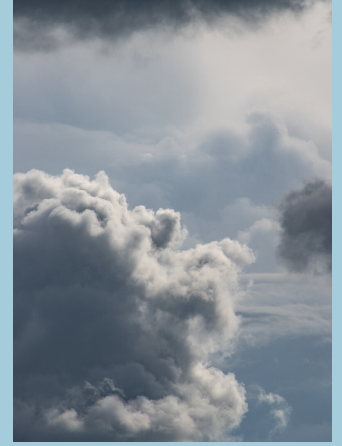
SUPPLIES

- items found around the house for building: popsicle sticks, plastic bags, straws, string, etc.
- cookie sheet or cake pan

- items found around the house for testing: flour, marbles, a fan, rice, spray bottle, sand, etc.

OPTIONAL SUPPLIES

- homemade modeling clay (see previous activity)



STEP 1: choose three types of extreme weather events. Collect items from around the house to substitute for each weather event. For example, you could use a fan to simulate a tornado, beads for a hailstorm, a watering can to create a monsoon, flour for a snow storm, etc. These are your test materials.

STEP 2: think about what kinds of materials you would have available to you in nature *and* what kind of materials would best protect you against the weather events you have chosen. Collect items from around the house to substitute for these materials. For example, pieces of wax paper as leaves, skewers as sticks, string as blades of grass, etc. You may also use the clay recipe in the previous activity. These are your building materials.

STEP 3: make your shelter out of the building materials you collected.

STEP 4: place your shelter on the cookie sheet or inside the cake pan.

STEP 5: use the test materials you collected to test each weather event.

EXPERIMENT & OBSERVE



Does your shelter survive extreme weather? What changes could you make to improve it?

CHALLENGE: build a shelter that can withstand all of the extreme weather events.

References

Tracy, Kerry. (2018, May 1). *Wild weather shelter STEM challenge*. Feel-good Teaching. Retrieved May 26, 2020 from <https://www.feelgoodteaching.com/product/wild-weather-shelter-stem-challenge>