STEM core
STEM Careers through Outreach, Research, & Education

UNIVERSITY OF OREGON

Hidden at Home (Camouflage)

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Synopsis of the Activity: This activity will include a terrarium in which hard to find animals live, helping to demonstrate the effectiveness of camouflage for animals. There will also be a matching activity in which visitors match animals to the environments they belong in. There could also be costumes and backgrounds, so visitors may pretend to be animals employing camouflage to blend in. Another segment could be videos of different types of camouflage (mimicry, blending, intimidation). The goal is to provide a basic understanding of how camouflage works and why animals have developed it.

Audience: The target audience for this activity is in the preschool to elementary age, although it could be modified to include adaptation strategies for older audiences.

Activity (Learning) Goals OR **Learning Objectives**:
-Basic understanding of different types of camouflage and what kinds of animals employ it and how they use it (to hide from prey, to hide from predators, etc).
-How camouflage functions and how animals have evolved to have certain kinds of camouflage, if the audience is slightly older.
-Basic concepts of survival tactics in different environments
-Interest the audience in the study of animals and their environments.
-Exemplify how scientists make hypotheses and use trial-and-error to find results.

Materials:
-Terrarium with camouflaged animals
-Pictures of environments (with velcro spots for animals) and corresponding animals (animals should be cut out with velcro on back)
-Costumes and backgrounds of corresponding animals
-Laptops with video abilities

Preparation and Set-up: Set up terrarium in foreground to interest visitors. On the table have animal cutouts stacked and environments lying across table. On either side have video of camouflaging animals such as octopi, butterflies, chameleons, and sand dabs so as to make table accessible to multiple visitors. Optional: Have backgrounds set up with costumes nearby, so visitors may choose costume then choose corresponding environment.

Guiding Questions:
Engage:
-"Do you think you can find the animals, match the pictures, etc?"
-"Have you ever seen an (octopus, chameleon, etc) change color?"
-"Have you ever wondered why certain animals are colored in certain ways?"
Assessment:

-"Why do you think the animals are so hard to find?"
-"Why do you think [animal] does this(changes color, looks a certain way, acts a certain way)?
Extend:
-"How do you think that helps them?"
-"What kinds of animals do you think camouflage helps?"
-"Do you think they have always done [certain method of camouflage]?"
Evaluation:
-"Can you think of any examples of camouflage you've seen?"

Activity Description:
Visitors would attempt to find the animals in the terrarium after being prompted by a sign challenging them to find the hidden animals, match the animals cutouts to their corresponding environments, and view the videos. These activities would hopefully spur them to hypothesize about camouflage in practice and concept. Visitors could do any combination of activities depending on time constraints and I wouldn't need to ask too many guiding questions throughout the activities themselves.

Teaching Strategies: By asking visitors to actively seek animals, match cards, and observe camouflage in action I would be engaging them to employ the scientific method. This activity will spur visitors to explore their understanding of animal behavior and attempt to explain it. This will provide a few examples to visitors, inspiring them to take their science to the next level and leave wanting to know more. After they explain what they already know about the topic, expand and explain it. In the best scenario, guests will connect the topic to examples they have seen in real life. To promote real life connections, I can provide certain examples of camouflage to look for when they go home that are common to the area.

Vocabulary:
camouflage- the act or means of obscuring or disguising oneself to deceive an enemy (prey or predators)
adaptation- changing over time in order to better survive in ones environment and ensure survival
evolutionary theory- adaptations, or changes in alleles, over time in a population (remember to use theory as it is more scientific and may help to ease disagreement)
predators- hunters of animals (may be necessary for younger crowds)
prey- animals that are typically hunted (may be necessary for younger crowds)

Science Content Background and Additional Resources:
http://www.nsta.org/about/positions/evolution.aspx (The official stance on evolution in the classroom)

http://www.neok12.com/video/Natural-Selection/zX50624f5e5b6b6f63637a7b.htm (Carl Sagan explaining natural selection) (helpful for older audiences)