

School:	Normal Park Museum Magnet School	Author(s):	Jessica Bagwell
Lesson Title:	Tube Feet Experiment	Grade Level(s):	2 <sup>nd</sup> Grade
Standard:	<p><b>GLE 0207.5.1-</b> Investigate the relationship between an animal's characteristics and the features of the environment where it lives.</p> <p><b>CCSS.ELA-Literacy.W.2.7-</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).</p> <p><b>CCSS.ELA-Literacy.W.2.8-</b> Recall information from experiences or gather information from provided sources to answer a question.</p>	State:	Tennessee
Content Area:	Science and Writing	Time Duration:	45 minutes
Learning Target:	My learning target will be for students to determine if a sea star's (tube feet) adaptation is best for its underwater habitat. This will help students better understand adaptations for ocean animals.	Materials:	Recording sheets, suction cups, cups of water, flat and hard surfaces
Key Vocabulary:	adaptations hypothesis	Technology Connection:	Flipchart containing characteristics of sea stars and up-close pictures of tube feet.

Engage Now: <i>Opening</i>	TTW introduce the students to the sea star on the Activboard. TSW talk about different characteristics that they notice on the sea star's body. TTW pose the problem "How do you think sea stars can stick to surfaces?" TTW introduce the students to the specific adaptation of tube feet on the sea star's body. TTW show students a suction cup and explain that tube feet are like little suction cups on a sea star's body.
Teach Now: <i>Mini Lesson</i>	TSW get with a partner for "turn and talks". TTW ask the students if they think that tube feet are good adaptations for living underwater. TSW choose a hypothesis on their recording sheet and explain to their partner why/why not they think these "tube feet" (suction cups) are better for underwater living. TTW give the students a task of using suction cups (representation of tube feet) around the room on hard surfaces first without water then with water. TSW discover if the suction cup worked better with water or without water.
Explore Now: <i>Independent Practice</i>	TSW travel around the room with a partner and stick their "tube feet" (suction cups) to 5 hard surfaces. TSW talk about how easy or hard it was to pull the suction cup off of the surface. Then TSW stick the suction cups to the same 5 surfaces with the wet suction cup. TSW discuss with their partners if the suction cup worked better when it was wet or dry. TSW discover that suction cups stick to surfaces easier and are harder to pull off when they are wet.
Closing:	TCW discuss that tube feet are a good adaptation for sea stars because of their underwater habitat. TSW share if their hypothesis was correct or incorrect and they will explain how they figured it out through their experiments. TCW discuss what it would be like if sea stars did not have tube feet and the importance of adaptations in water habitats.

Show Me Now: <i>Assessment</i>	TSW write on their recording sheets about the conclusion of their experiment. TSW write about their hypothesis and the support for their final conclusion. TSW have to describe why tube feet are good adaptations based on the sea stars habitat.
Differentiation Opportunities:	<p>The teacher can give sentence starters on post-it notes for students who struggle with recording their thoughts</p> <p>The teacher will allow students who finish early to look through ocean books to find more animal adaptations. TSW flag the adaptations they find with post-it notes and write on the post-it why the adaptations are good for underwater animals.</p>
Class/Home Extensions:	TSW continue learning about adaptations of other ocean animals.
Expedition Opportunities:	Aquarium or zoo to observe animal adaptations in different habitats.