Bug Biomimicry Engineering Challenge:
Water Strider Inspired Boats

Your Challenge: Observe water striders and notice all the ways they're able to stay on top of even rough waters. Then, design, build, and test a model boat based on what you noticed about the water striders.

Step 1: Study water striders and think of all the ways they stay afloat.

Remember:

- Water striders have six legs that spread out wide to help them keep their balance.

- Water striders sit low and flat to the water so they don't tip over very easily.

- Water striders have special hairs at the ends of their legs that push away water.

Keep this in mind when you design. Can you add parts to your boat that stick out wide to help it balance? Can you design a boat that is wider than it is tall so it's not too tippy? Can you find materials that repel water rather than soak it up to put on the bottom of your boat?

You can watch videos of water striders online for inspiration: **bit.ly/WaterStrider1**

Step 2: Gather materials from around your house to build your boat. A great place to start would be your recycling bin. Old plastic cups are great. So are bits of string and tinfoil. Other great materials include pipe cleaners, clean toothpicks, plastic forks, bits of foam used to package fragile things, and small plastic plates.

Step 3: Use scissors to cut up your materials into the pieces you need to build your boat. Then build away! You can use tape to hold it all together if you need to. Your mission is to create a boat that is inspired by water striders.

Step 4: Time to test your design! Make sure you have an adult around to help you with this part. Fill a wide bucket or your bathtub with water and place your boat inside. Create some waves in the water by shaking the bucket or splashing in the tub.

Step 5: How did your design do in the stormy conditions? If it sank, what can you do to keep it from sinking next time? Remove your design and try improving it, then test again.
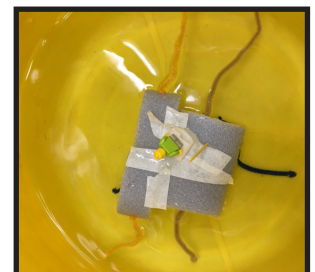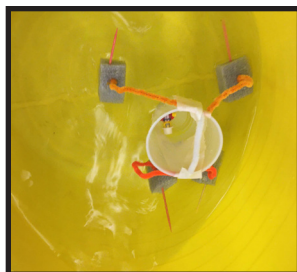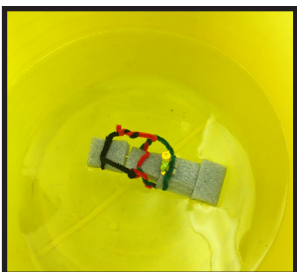
*Vocabulary Word: **Biomimicry** - when people solve problems with ideas from nature.*