Quick Overview: Using items found in your recycling bin and around the house, your student will test which will float, and use this knowledge to build a boat!

Objectives (students will be able to):

- Identify objects that float, and recognize common characteristics
- Create a simple chart and record data
- Form hypotheses about outcomes
- Use basic building techniques to construct a boat

Age Range: All ages (see adaptations)

Activity Time:

- Part 1: 20 minutes
- Part 2: 20 + minutes

Materials + Tools:

- A large tub of water, such as a bathtub, sink, or bucket.
- Paper and a pencil
- Materials pulled from the recycling bin (such as plastic containers, corks, cardboard, cans, etc.)
- Materials pulled from the junk drawer (such as rubber bands, clothes pins, marbles)
- Supplies for connecting, such as tape, hot glue, white glue, etc.
    - NOTE: water-proof materials may be best suited for this project, such a duct tape or hot glue. But regardless of the material used, it will be a great learning experience.

Preparation:

1. Fill your sink, bathtub, or bucket with at least 6" of water. This is a great bath time activity!
2. Create a collection of approved materials from your junk drawer, recycling bin, and from around your house. These are the items that will be "tested" for floating (so make sure you

are OK with them getting wet. Do not use electronic items). Your student will choose 10 objects, so it is best to have more than that for them to select from.
3. Print out the Will It Float? chart.

Topics for Discussion/Lesson:

- Vocabulary:
    - Hypothesis
    - Outcome
    - Buoyancy
- Concepts to discuss:
    - Waterproof
    - Floating versus sinking
    - What makes something float?
    - How long does something need to stay on the surface of the water for you to consider it floating?
    - Do humans float?
    - What are things you have seen in real life that float? What do you think helps them float?

Instructions:

Part 1: Will It Float?

1. Allow your student to choose 10 objects from the recycling bin, junk drawer, and around the house (or from your pre-selected collection).
2. Help your student fill out the Will It Float? chart, with the name of each object, the material it is made from, and their hypothesis about whether or not it will float.
3. Move to your pre-filled container of water. One at a time, set each object on the surface of the water and see if it will float. Give each object the same amount of time in the water (you can slowly count to 10!) After each object either floats or sinks, record the outcome in the chart.

Part 2: Build Your Boat!

1. Create a building station for your student, with all of the approved building materials they can use and a flat surface.
2. The objective: build a boat that can float!
    a. If they have a lego figurine or some other small toy, they can specifically build a boat for that.
    b. Encourage them to use the information they learned from the Will It Float? experiment. During the building process, if they want to use a new material, encourage them to do another quick floatation experiment.
3. Questions to ask while they are building:
    a. What material are you using there? Why did you choose to use that material?
    b. Where will you go on this boat? How long will it take to get there?
    c. How many people can your boat hold?

    d. What can we use to connect these two pieces? How do you think that will work when it gets wet?
4. Once their boat is complete, it is time to test it! Place it on the surface of the water and see if it floats. If it does not float, encourage them to go back to their building station and re-work their design. If it does work, they can play with their boat or spend time decorating it.
    a. If their boat does not float on the first try, this is a great opportunity to talk about how scientists, engineers, builders and artists often have to revisit their designs many times.

Take a photograph of the student working on this project, or with their completed boat and post it with the hashtag #craftinplace or email it to tuesdaytumbleweedllc@gmail.com.

Extensions (ways to keep going…):

- What is another experiment we could do?
- Test how much weight their boat can hold before it begins to sink.
- Draw your boat.
- Write a story about an adventure that your boat goes on.

Will it Float?

Object	Material	Hypothesis: Will It Float (Yes/No)	Outcome: Did it float? (Yes/No)
Marble	glass	No	No

Craft in Place is designed to stretch one's imagination in the potential of what skill can be developed with the materials that are available at hand.

Craft in Place is a collaborative effort between:

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