Dancing Rice

WHAT ARE WE INVESTIGATING?

Can you make your rice dance? Why is the rice dancing?

MATERIALS:

- Clear container
- Water
- Baking soda
- Vinegar
- Rice (We used a short grain brown rice.)
- Spoon
- Strive Academy's Engineering Design Process Handout (found at www.striveacademy.org)
- Pencil or Pen

EXTENSION:

* Try this experiment again with a different type of rice. See if you get the same results or if the type of rice is a variable.

* Try this experiment again with a different type of food such as fruit snacks, raisins, or pieces of spaghetti. How do your results compare?

* Check out this video to see why some objects sink and some objects float: https://www.youtube.com/watch?v=eQuW8G2QV_Q

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DIRECTIONS:

1. Choose the materials that you want to use to build your structure. Our materials are just suggestions - feel free to add other things too!

2. On your handout (found at www.striveacademy.org), fill in the title of your experiment (Dancing Rice).

3. On your handout, fill in your hypothesis. You want to answer the question: Do you think rice is more dense or less dense than water? Based on this, will your rice sink or float?

4. On your handout, draw a picture of what you think will happen when you add the rice to the water/baking soda liquid.

5. Pour one cup of water into your clear container.

6. Add 1 teaspoon of baking soda to the water and stir.

7. Sprinkle some rice into the mixture. What happens? Record this under "Data Collection/Observations".

8. Add 1 tablespoon of vinegar to the water. What happens? Record this under "Data Collection/Observations".

9. Watch what happens for the next few minutes. Your rice should start "dancing". Record any observations under "Data Collection/Observations".

10. Under "Results", draw a picture to show the process of what happened to your rice during this experiment.

11. Once it slows down, you can add more baking soda and vinegar to watch it dance again!

12. Answer the "analysis" questions on your handout:
    - When you first added the rice, you noticed it sank. Does this mean that the rice is more or less dense than water?
    - When you added the vinegar to the water, you should have noticed bubbles forming. These were carbon dioxide bubbles. What do humans do with carbon dioxide? What organisms need carbon dioxide for the process of photosynthesis?
    - When the carbon dioxide bubbles attached to the rice, they began to rise to the top. Does this mean that carbon dioxide gas is more or less dense than water?

** Try the extension activities on the first page for more fun! **