SCIENCE

Year 5/Primary 6

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Chemical Sciences

Gas-powered Boat

TASK:

Design and make a gas-powered boat.

CRITERIA:

- The boat can only be powered by the gas that occurs from mixing bicarbonate of soda and vinegar.
- The gas from the reaction should be channelled using straws in order to propel the boat forward.
- A small container must be secured to the back of the boat, which will hold the bicarbonate of soda to which the vinegar will be added.
- The size of the boat will determine how much vinegar and bicarbonate of soda will be required.
- The boat must move across water for a distance of 50 cm.
- The boat must be lightweight and no bigger than 10 cm high and 20 cm long.

SUGGESTED MATERIALS:

- recycled plastic materials, cans and milk cartons
- craft supplies such as aluminium foil, plastic lids and tape
- glue gun *(supervision)*
- Blu-Tack®
- straws
- bicarbonate of soda
- vinegar
- large tub or tray of water

Box 5 (Year 5)

STEM PROJECTS

Chemical Sciences

Gas-powered Boat

- Research what happens when bicarbonate of soda and vinegar are mixed together. Explore how the gas created can be used to propel an object forward and what kind of design would channel the gas the best. Search for images of boat designs to serve as inspiration for your boat design.

- Plan and draw a diagram of the boat and contraption to expel the gas to create movement.

- Collect the materials you will need, including craft materials to make the body of the boat, straws, a glue gun, Blu-Tack®, a large tub or tray of water to test the boat's ability to float and move, bicarbonate of soda and vinegar.

- Create the boat to look like the plan.

- Check that the boat meets the criteria and consider any improvements that you could make.

- Present the boat to the class and explain how it uses the bicarbonate of soda and vinegar reaction to propel it forward. Demonstrate its ability to move over a distance of 50 cm and whether any changes had to be made to the design to meet the criteria.