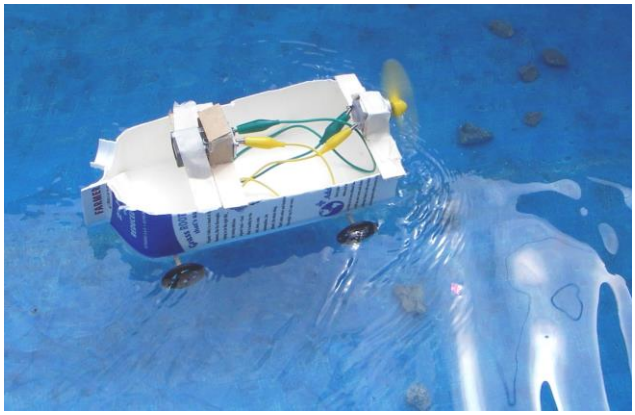

Messing Around with Model Boats

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Northwest Invention Center

Kids learn the concepts of physics through building, testing, and improving model boats. You show them how to start and they generate creative ideas, solve problems, and learn in the process.

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Encouraging creative learning worldwide
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Aluminum foil boats – 12” square, formed into a boat. Test to see how many pennies or nails it can hold.

Gravity-powered boat – styrene or paper cup mounted on 1 or 2 styrene or paper plates. Straw(s) inserted into the base of the cup. Pour water into the cup to make the boat move. Test to see what you can do to make the boat go fast.

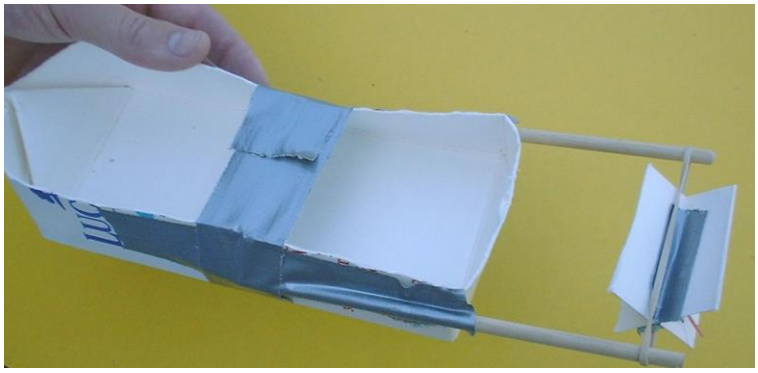
Boat hulls – paper milk or juice cartons cut in half lengthwise. Cut along one side (flat-bottom hull) or along an edge (V-hull) – each carton makes 2 boats.

Add sails – paper, plastic bags, or cloth mounted on ¼” dowel

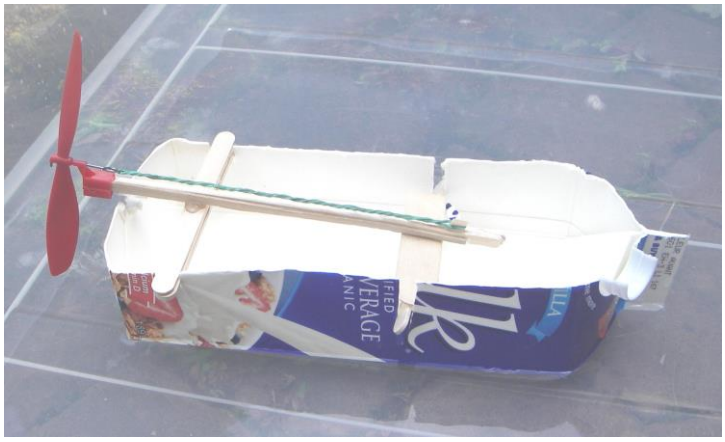
Balloon-powered – use 12” round balloons and a straw (milk shake straw works well) or piece of vinyl tubing. Test to see how far it travels.

Rubber band powered – make paddle wheels by dove-tailing two rectangles of milk carton. Use craft sticks or dowels to hold the paddle – either as a stern wheel boat or side wheel boat.

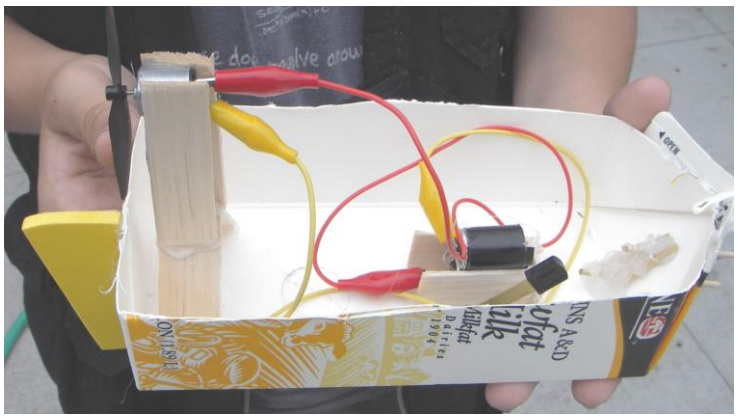
Stern wheeler



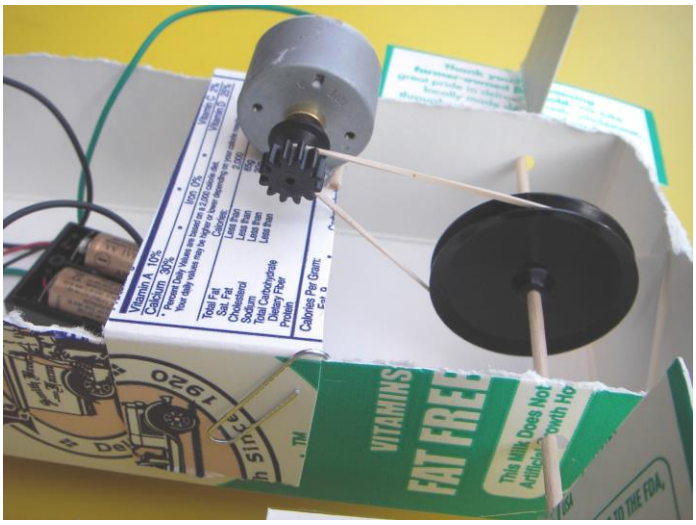
Rubber band powered boat using “nose hook” propeller from an airplane model.



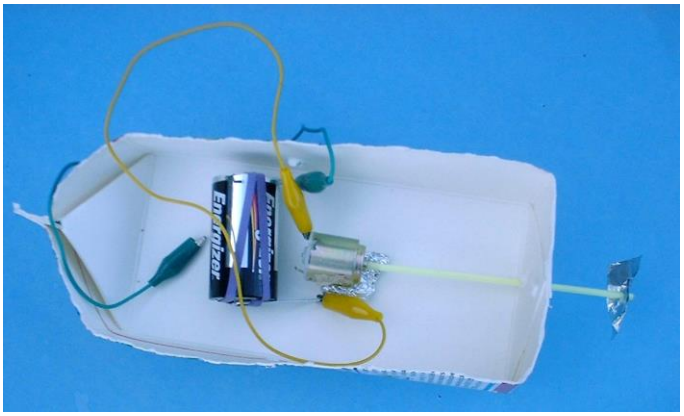
Electric boat – toy motors powered by 9-volt battery, connected with alligator clip leads. Air propeller, water propeller, or paddles



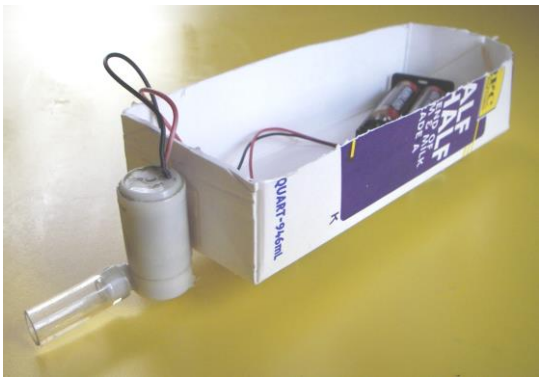
Electric belt drive. Or substitute a gear drive for the paddle boat.



Make a propeller out of aluminum foil and power it with a 1.5 volt battery.



Pump boat using small water pump powered by a battery.



Make an ocean with a tarp and four walls that won't fall down.

Make a carrot submarine. Power it with baking powder. The wood dowel provides buoyancy and keeps the sub upright.

References:

Motorboat Book, Ed Sobey
Wacky Water Fun with Science. Ed Sobey.
Locomotion – physics models for the classroom. Ed Sobey