

STEM Kit - Water Rockets!

NASA Connection:

Bottle Rocket resources to introduce rocketry and rocket construction.

<https://spaceflight systems.grc.nasa.gov/education/rocket/BottleRocket/about.htm>

<https://spaceflight systems.grc.nasa.gov/education/rocket/rktbot.html>

https://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Water_Rocket_Construction.html

http://www.grc.nasa.gov/WWW/k-12/bottlerocket/br2d_b.swf

Materials:

Water Rocket launcher

Bike Pump

Plastic bottles

Foam for fins

Water

Hot Glue Guns and glue sticks from Thermal Energy

Rationale:

This kit will be used to teach rocketry, flight, energy transformations, gas laws, vectors, projectile motion, and Newton's laws. This kit will also be used during STEM Family Nights and STEM Summer camp programs.

Total Cost: @\$200.00 not including hot glue guns/sticks from STEM Kit #1

Curriculum Alignment:

5th grade

P.1.1 Explain how factors such as gravity, friction, and change in mass affect the motion of objects.

P.1.2 Infer the motion of objects in terms of how far they travel in a certain amount of time and the direction in which they travel.

P.1.3 Illustrate the motion of an object using a graph to show a change in position over a period of time.

P.1.4 Predict the effect of a given force or a change in mass on the motion of an object.

7th grade

P.1.1 Explain how the motion of an object can be described by its position, direction of motion, and speed with respect to some other object.

P.1.2 Explain the effects of balanced and unbalanced forces acting on an object (including friction, gravity and magnets).

P.2.1 Explain how kinetic and potential energy contribute to the mechanical energy of an object.

P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples).