

# At Home Science

## Science for Families: using what you have at home

The Patagonian Cavy, also known as a Patagonian Mara are found in the deserts, shrubs, and grasslands of Argentina. He may look like a rabbit, but he is actually, the fourth largest rodent in the world!



Cavies have long, strong back legs which are used to take off, running at speeds up to 20 – 30 mph. They are able to run, walk, hop, and jump. All of which, will aid him in escaping predators.

### Fun With Learning

#### Newton's Third Law of Motion

For every action (force) there is an equal and opposite reaction (force).

**Example:** If your legs are bent and squatting like a rabbit or frog, you can apply an action (force) to the ground with your legs. The reaction (force) from the ground will send you high into the sky!

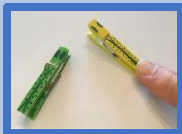


**Challenge:** Using a measuring tape, measure 6 ft along the ground. Although, you cannot jump 6 ft in the air, you can use your legs to jump as far as possible. Challenge yourself to jump as far as a Cavy can high!

### Cool Science

#### Let's make hopping bugs!

Materials are: clothespins (any size), and markers. Design a bug, using your markers. Don't forget to give him bug eyes and if you want, add legs using pipe cleaners or construction paper. These are mine. Now, let's get hopping! Place your bug on a flat area, use your finger to press down the open side while you slide your finger off. How high did your bug fly? How does Newton's Third Law apply?



#### Give it a try!

#### Scientists use Newton's Laws of Motion to launch rockets here on the Space Coast

Materials are: any empty plastic bottle (Dawn, soda, or water bottle), paper, and markers or crayons. Decorate and design your paper. Roll it into a tube that fits snugly over the top of your bottle and tape it together, making a rocket. Cut out a circle with a slit cut half-way to make a cone. Tape. Add plenty of glue to the top edge of your tube. Place cone on top. Let this dry. Place rocket on top of bottle and squeeze hard. Explore and redesign your rocket to discover what will make it fly the highest.



**Got vinegar and baking soda?** Give this one a try! <https://www.ingridscience.ca/node/70> Adult and safety goggles are a must! I've done this one myself and I found it works best to turn it around and make the cork your rocket. Try it both ways and discuss Newton's 2nd Law of Motion!