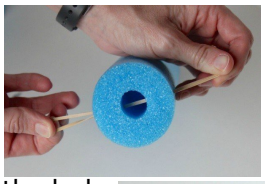
Pool Nodle Rocket Flinger

TAILS AND TALES™

15-minute STEAM
2021 Summer Reading

Supplies:

Pool noodle | 2 elastics | 2 paper clips | Unsharpened OR Bluntly sharpened pencil
Duct Tape | White glue or Hot Glue | Poster board OR Craft Foam OR Cardboard
Scissors or a knife for cutting the pool noodle (ensure adult supervision at all times when cutting)



1. Use the serrated knife to slice about a 12 inch section off of the pool noodle. (can be a bit shorter or a bit longer)
2. Use the pencil to poke the rubber band through the pool noodle as shown. The rubber band should stick out on both ends.

3. Use paper clips to temporarily hold rubber band so it doesn't slip back through the hole.
4. Reach into the pool noodle & grab the rubber band
5. Attach a second rubber band which will be used to fling the rocket. (Like you're attaching a luggage tag.)
6. Remove the paper clips and loop each end of the rubber band around the pool noodle. This holds it on very securely.
7. Wrap duct tape around the top of the rocket. This makes it look cool, and keeps the rubber band secure.
8. Make the rocket fins out of poster board/craft foam/cardboard. Score notches in the noodle and glue the fins in the grooves.

9. It takes a little bit of practice to get the best distance out of the rocket flinger. We found that it's important to pull back firmly and then let go without trying to push it forward. Put your finger in the rubber band (pointing away from you), pull back the foam rocket, and let go.

The Science

Make observations about the flight of your rocket: How far does it go? What is the shape of the rocket's path? Does it speed up or slow down the higher it goes?

This rocket's thrust is all produced by the rubber band, unlike real rockets that use fuel. When you stretch the rubber band, the force of it contracting back to its original size when released causes a pull on the rocket body and an opposite pull against your finger, thus, propelling your rocket forward.

The rocket's motion and course is affected by gravity and by drag or friction with the atmosphere. The foam rocket is stabilized by its fins which, like feathers on an arrow, keep the rocket on track in the desired direction.

What happens if you use different material for the fins? What happens if the fins were thicker, thinner or a different shape? What happens when you change the number of fins or use none at all? What happens if you use thicker/thinner or longer/shorter rubber bands?

Taken in part from frugalfun4boys.com

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