



Make a bottle rocket

Materials

- A4 sheets of paper
- 1 or 2 litre bottles depending on how large you want the rockets to be
- duct tape
- thick cardboard
- playdoh or blu-tack
- glue
- a bike pump with a needle valve
- corks (pre-drill hole for needle valve)
- water
- scissors
- pliers

Instructions

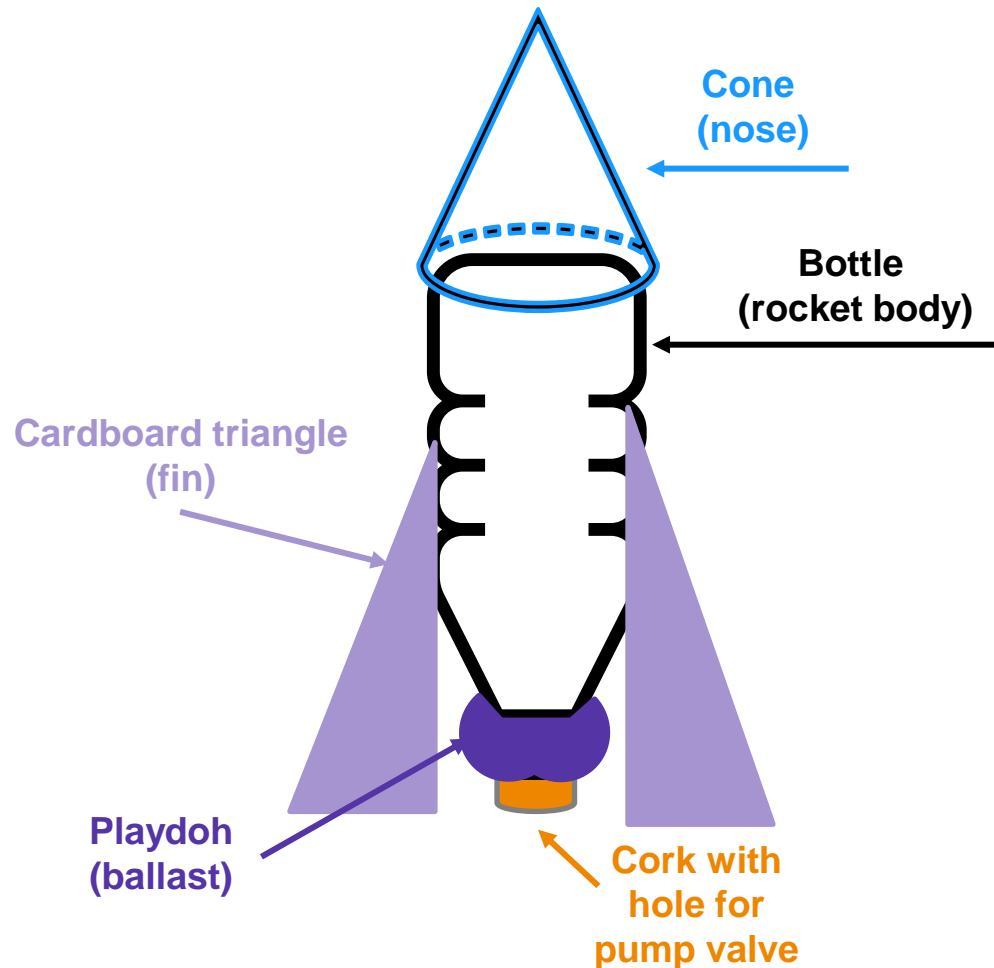
Students will build, decorate and then launch their very own bottle **rocket**. This can be an individual or group task.

1. Take a piece of construction paper and roll it into a cone. Completely cover the cone in duct tape. This will be the **nose** of the rocket.
2. Take the nose cone and tape it to the bottom of the bottle. Keep the nose cone pointing as straight as possible; this will make the rocket fly higher and straighter.
3. Using playdoh or blu-tak, mould a handful around the ridges of the bottle opening (where the lid screws on) creating a rounded base on the outside of the bottle. Secure to the bottle with duct tape. This is a **ballast**; it adds a small amount of weight to improve stability. The **ballast** can be added anywhere as long as it's even and above the **fins** so not to weigh the rocket to one side.
4. Using the thick cardboard, cut equal sized, right-angle triangles. These will serve as the **fins** of the rocket. Aim to have 3 or 4 fins this should allow it to stand up by itself.
5. Tape the **fins** to the lower body of the rocket at equal distance from each other. This will give the rocket stability.
6. Once all above steps are complete and the rocket have been decorated, fill the rocket roughly halfway with water. If they are completely full, they won't launch properly.
7. Push the cork into the bottle opening as tight as possible, pliers can be used to help.
8. Move everyone and their rockets outside to a safe place to launch.
9. Plug the hole of the cork with the bike pump valve and stand it upright. When ready begin using the bike pump to increase the pressure in the bottle until you have **LIFT OFF!**



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Below are the components of a bottle rocket



IMPORTANT NOTES:

- Make sure rockets are launched in an open outdoor area.
- Warn everyone around before launching the rocket.
- Be prepared to get a little wet.
- Do not approach the rocket once you start pumping, it will shoot up fast and high.

Original source link: <https://www.wikihow.com/Build-a-Bottle-Rocket>