

Activities at Home

Screaming Balloon

Materials needed:

- Balloon
- Hex nut

Instructions:

1. Insert the hex nut into the balloon. Ask an adult to help you blow up the balloon. Be careful to not over inflate it, and then tie the end.



2. Hold the balloon in the palm of your hand. With your palm facing down, begin to swirl the balloon in a circular motion. Don't worry if the hex nut bounces around at first. It will quickly begin to roll around inside.



3. Listen to the sound. What creates the noise?
4. Once the hex nut begins to spin, hold the balloon still with both hands. The hex nut should continue to spin for about another 10 seconds.

The science behind the sound:

What makes the balloon scream? The six, flat edges of the hex nut cause it to vibrate inside the balloon. The scream is caused by the vibration of the hex nut against the curved wall of the balloon.

The science behind the motion:

Because the balloon is round, the shape of the balloon causes the hex nut to move in a circular motion. Centripetal force is the force on a body that causes it to move in a circular motion.

Next steps:

Explore what happens when you change the size of the balloon or the size of the hex nut. Try replacing the hex nut with another item, like a marble. How does the screaming sound change?