

Flying Tea Rockets

Material:

- Empty Tea Bags
- Lighter
- Plate

Procedure:

1. Stand the empty tea bag upright (it should look like a cylinder). You might need to use a glass or ceramic plate for a solid base.
2. Have the children stand back as you light the tea bag.
3. Watch what happens!



How Does This Work?

As the flame burns down the cylinder, it heats the air inside of the tea bag. When air's temperature increases, so does its volume. Consequently, if the mass of air stays the same but the volume increases, the pressure will have to decrease, making the air less dense. Faster moving air molecules in the hot air will rise and the cooler air will settle beneath them. This flow of rising hot air within the cylinder creates a convection current of air, generating an upward force. At the same time, the tea bag's mass keeps decreasing as it burns, and the ashen skeleton that remains is much less massive than the original tea bag. Once the flame has burned to the bottom, the convection current provides enough force to lift the remaining ash into the sky.