

Hot & Cold Air Balloon



Theme: Blowing up a balloon using hot and cold water

Curriculum Area: Science

Activity: Children will put a balloon around a soda bottle and then put the bottle in either hot or cold water. We will assess what happens when the balloons are put in the different temperature waters.

Age of Children: 6th grade (approx. 12-13 years of age)

Materials Needed:

1. One balloon
2. Empty bottle with narrow neck (soda bottle)
3. Two tubs for water
4. Ice water
5. Hot water

Developmental Objectives: By the end of this activity, children will:

1. Understand that the temperature of water changes the air in the bottle (cause and effect)
2. Learn about thermal expansion and contraction (balloon inflating and deflating)
3. Understand air molecules heating up and cooling down and the effect this has on the balloon

- Procedure:**
1. Stretch balloon over soda bottle
 2. Set up two tubs: 1 with hot water, 1 with cold water
 3. Put the bottle in hot water and push it down – watch what happens to the balloon
 4. Put the bottle in cold water and push down – watch what happens to the balloon



References: [NGSS Preferred Integrated, Grade Six - Science \(CA Dept of Education\)](#)

Science Standard: MS-PS3-3 Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer

<https://curiodyssey.org/learn-explore/science-experiments-for-kids/how-to-blow-up-a-balloon-with-hot-air/>