Balloon Hovercraft
Lesson Plan

Amount of time Demo takes: 2-5 mins.
Try this at home!

Materials

- Balloons (1 per demo)
- CDs (1 per demo)
- 1 hot glue gun and replacement glue
- 2 inch strips of paper (1 per demo)
- Scissors (to cut paper as needed)
- paper clips (2-3 per demo)
- Clorox Wipes or isopropyl alcohol with paper towels
- No electricity needed
- Table needed to hold supplies

Set-up Instructions/Instructional Procedure

1. Hot glue bottle cap to the center of CD so the cap covers the hole in the center. Make sure the glue has set (about 30 secs.) and the seal is good. Prepare a few bases in advance for your day in case one breaks.
2. Roll a strip of paper into a cylinder (about 2 inches tall and diameter wider than the CD’s center) and place it on the CD. Use paper clips to secure paper into a cylinder – this will help prop the balloon up and keep the craft hovering upright.
3. Pop the bottle cap down (close it). Blow up balloon and secure the open end over the bottle topper.
4. Release the balloon and pop the bottle cap up (open it). The craft should hover for a few seconds!
5. If re-using the hovercraft bases for the next student, be sure to wipe down the bottle top with a Clorox wipe or isopropyl.

SAFETY!

- Make sure demo users and workers are alert as the crafts move around!
- Use proper judgement with hot glue guns.
Lesson’s Big Idea

● The air-flow from the balloon causes a cushion of moving air between the disc and the surface below it (the table). This air cushion is what lifts the CD slightly and reduces friction, allowing the disc to hover.
● Air flow from the balloon lifts the CD and reduces friction, which is the resistance of two objects rubbing together. In this case since the hovercraft isn’t touching the table, it glides!
● Friction: the resistance that one surface or object encounters when moving over another.

Assessment/sample questions you can ask

● What do you think would happen if we used a different gas such as helium?

Clean Up

● Recycle used strips or save them to be used for future hover crafts if they are in good shape.
● Wipe down all hovercraft bases thoroughly if you plan to keep them for another event.
● Pack everything away neatly in the bin. If anything was used up, damaged, or broken, let someone know so it can be replaced.

References


Next Generation Science Standards

● K-5
  ○ K-PS2
  ○ 3-PS2
  ○ 4-PS3-1
  ○ 5-PS2-1
● 6-8
  ○ MS-PS2-2
  ○ MS-PS3
● 9-12
  ○ HS-PS2-1
  ○ HS-PS3