Balloon Hovercrafts

Sections

Joey Scouts | Cub Scouts | Scouts | Venturer Scouts | Rover Scouts

Scouts VICTORIA

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Challenge Areas

COMMUNITY | CREATIVE | OUTDOOR | PERSONAL GROWTH

Scout Method Elements

COMMUNITY INVOLVEMENT | LEARNING BY DOING | NATURE AND THE OUTDOORS | PROMISE AND LAW | PERSONAL PROGRESSION | PATROL SYSTEM

SYMBOLIC FRAMEWORK | YOUTH LEADING, ADULTS SUPPORTING

SPICES Growth Areas

CHARACTER | EMOTIONAL | INTELLECTUAL | PHYSICAL | SOCIAL | SPIRITUAL

The Adventure

Let’s make a simple hovercraft out of an old CD, a balloon and a pop-top lid. Then watch it glide over the floor on a cushion of air. Why not make some with your friends and have a race? Investigate the science behind it and make some predictions about how you could improve it.

Plan

1. Investigate hovercrafts - what are they and how do they work? You may like to watch a video of an actual hovercraft or this video which explains how hovercrafts work.
2. Investigate principles of friction - what is it and how does it impact the world around us?
3. Investigate air flow and air pressure - how might this impact our hovercrafts?
4. Read the safety information and discuss with your leaders or another appropriate adult what safety equipment, precautions, and supervision may be required. Ensure that you have these safety measures in place before starting the ‘Do’ section.
5. Gather all the equipment you need to make your hovercraft. You will need the following equipment: a balloon, an old CD or DVD that you aren't using any more, blue tack (or a hot glue gun with adult assistance), a pop-top bottle lid, a balloon pump (optional).

Do

1. Begin working on a smooth surface.
2. Roll the blue tack into a blue tack snake. Make it long enough to wrap around the base of the pop-top lid.
3. Stick the pop-top lid to the CD. Try to keep it as centred as possible.
4. Close the pop-top lid.
5. Blow up the balloon and stretch it over the lid. If the lid is closed, there should be no air rushing out of it.
6. Place the hovercraft onto a smooth surface. Open the lid (this is easier to do with 2 hands) and give the hovercraft a push. It should glide across any smooth surface.
7. Have a go at racing your hovercrafts against your patrol members.

Review

1. Did your hovercraft successfully glide? Why do you think this is? If your hovercraft didn't glide, what do you think went wrong?
2. What do you think you could do differently to improve your hovercraft?
3. What did you enjoy most about making and playing with your hovercraft? What did you learn?

Safety

• Allergy risk: This activity uses balloons which contain latex. Make sure to check allergies of participants and use in a well ventilated area.
• Burn risk: If using a hot glue gun, adult supervision and assistance, as apporopriate for the section, should be provided. You may also like to look at some information on hot glue gun safety.

Variations

• Try adjusting different factors of the hovercraft. What happens if you use a bigger base or something other than a CD/DVD? What happens if you use a bigger or smaller balloon.
• Try gliding the hovercraft over different types of surfaces such as cotton sheets, a tarpaulin, a shower screen, a plastic table and see how it changes the flight.
• This activity pairs well with other challenge cards on an air and flight theme such as 'Paper Whirlybird', 'Paper Aeroplane', and 'Hoop Gliders'.