# Hovercraft

**This short-term challenge comes from the Creative Challenge guide entitled "Relevez le défis", published by the Conseil de développement du loisir scientifique (CDLS)**
**All secondary-school students**
**Key words: potential energy; kinetic energy**
**Space: a school corridor is an ideal location**

## Your mission

A team of biologists in the Great North have lost their boat in a swamp. They have to find a variety of objects on site to build a hovercraft that will take them back to their base camp.

## The challenge

You have 1 hour to design and build a hovercraft propelled by a balloon that can travel the longest distance in a given direction.

## Materials

- 1 plastic lid only, of any size (e.g. yogurt or ice cream container)
- 6 straws
- 1 sheet of craft paper (8 in. x 11 in.)
- 50 cm of fabric tape (e.g. duct tape)
- 2 elastic bands
- 3 balloons whose circumference does not exceed 100 cm when they are filled with air
- 1 flexible tape measure for measuring the circumference of the balloons
- 1 regular tape measures for measuring the distances traveled

## You are not required to use all the above-mentioned materials, but no substitutions are allowed.

## A few rules

- Design and build your hovercraft.
- You cannot test your hovercraft before the competition.
- The circumference of any of the balloons used cannot exceed 100 cm.
- Designing and building can be done alone, but the testing will be easier in teams of 2 to 4, because of the measures involved: the circumferences of the balloons and the distances traveled by the hovercrafts.

## Testing

- Once the balloons have been inflated, measure their circumference using a tape measure.
- Once this inspection is completed, you can launch your hovercraft.
- You cannot intervene once the hovercraft has been launched.
- You have 2 tries and the longest distance traveled will be recorded.
- It doesn't matter whether your hovercraft travels in a straight line; only distance counts in this challenge.

## Scientific principle

This challenge takes an original approach to the potential energy of an inflated balloon used to propel a small platform. Since this is a short-term challenge, take the time to research the topic of potential energy before gathering the materials. Find examples of hovercrafts and if you take on this challenge with friends, start a discussion. This activity could even be carried out as part of a science club.

## Want to know more?

Make a library or on-line research using the Key words at the beginning of this challenge.