

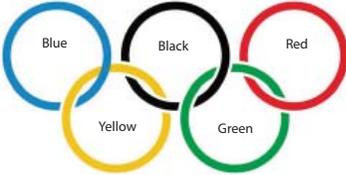


Robo Olympics : Day 1
Introduction

Welcome to Brain Builder's Robo Olympics! We will be engineering many different "bots" in order to compete in different Robo Olympic events. Make sure you pay attention in class so you can build the best "bot" ever!
**bot* - Short for Robot*

Here are just some of the bots you will be engineering:

- High Jump Bot
- Boxing Bot
- Basketball Bot



Fun Facts about the Olympics:

- The first modern Olympic Games were held in Greece in 1896.
- The colors on the Olympic rings were chosen because at least one of them appeared on the flag of every country in the world.
- Olympic Games are held every 2 years, rotating from Summer to Winter Games.
- The last Olympic gold medals that were made entirely out of gold were awarded in 1912.



Get ready, good luck, and remember to have great sportsmanship and FUN!



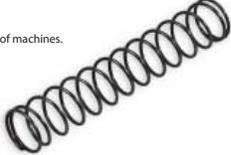


Robo Olympics : Day 1
Jumping Bot 1000

The Jumping Bot 1000
Before we engineer a jumping bot, we have to learn what makes them jump!

Spring -
A spring is metal wire that is wound in a circular shape. There are different types of springs, and they are used in a lot of machines.

Compression Spring -
This is the type of spring we will be using in class. When you squeeze it, the spring will want to return to its original resting shape very quickly.



How does a Compression Spring work?
Compression springs have **elastic potential energy** when they are squeezed. That means that it has stored energy that is waiting to be released! Once you let go, all that energy comes out.

Imagine if you were in a tiny room with hundreds of people, and you can barely move. When the door is opened, everybody will want to get out and move away from each other. Just like in a metal spring, all the molecules are getting squeezed closer and closer, then once you let go they all want to move away from each other quickly. So quickly that the spring will often "spring" out of your hands!

Challenge 1: Can you build J.Bot 1000 and have it clear the high jump challenge?

J.Bot 1000



Challenge 2: Team up and combine your projects to build your own J.Bot 2000 and see how high it can jump!



Interactive Questions:

- Who has ever watched the Olympics?
- What is your favorite event?

Pass out this weeks worksheets

- Pass out Intro worksheet and read through with students.
- Pass Out Jumping bot worksheet and read through with students.

Make sure to show the students your example and how it works.

Set up a High Jump pole made out of LEGO's that the students will be using their bots to jump over.

Challenge 1 - Individual build

Build jumping bot 1000 using one spring and jump over the high jump pole. Set the high jump pole according to how the students do in class.

Challenge 2 - Team of 2

Partner up and combine your projects to build your own Jumping Bot 2000 and see if it can jump even higher!

Challenge 3 - Team of 2

What team can jump their bot the highest!