

## The Jumping Bot 1000

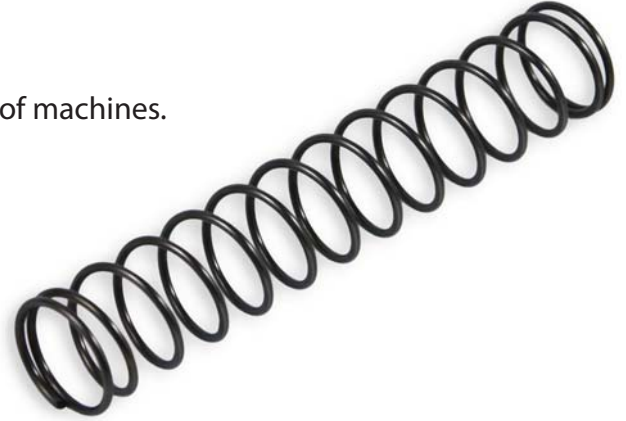
Before we engineer a jumping bot, we have to learn what makes them jump!

### 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.



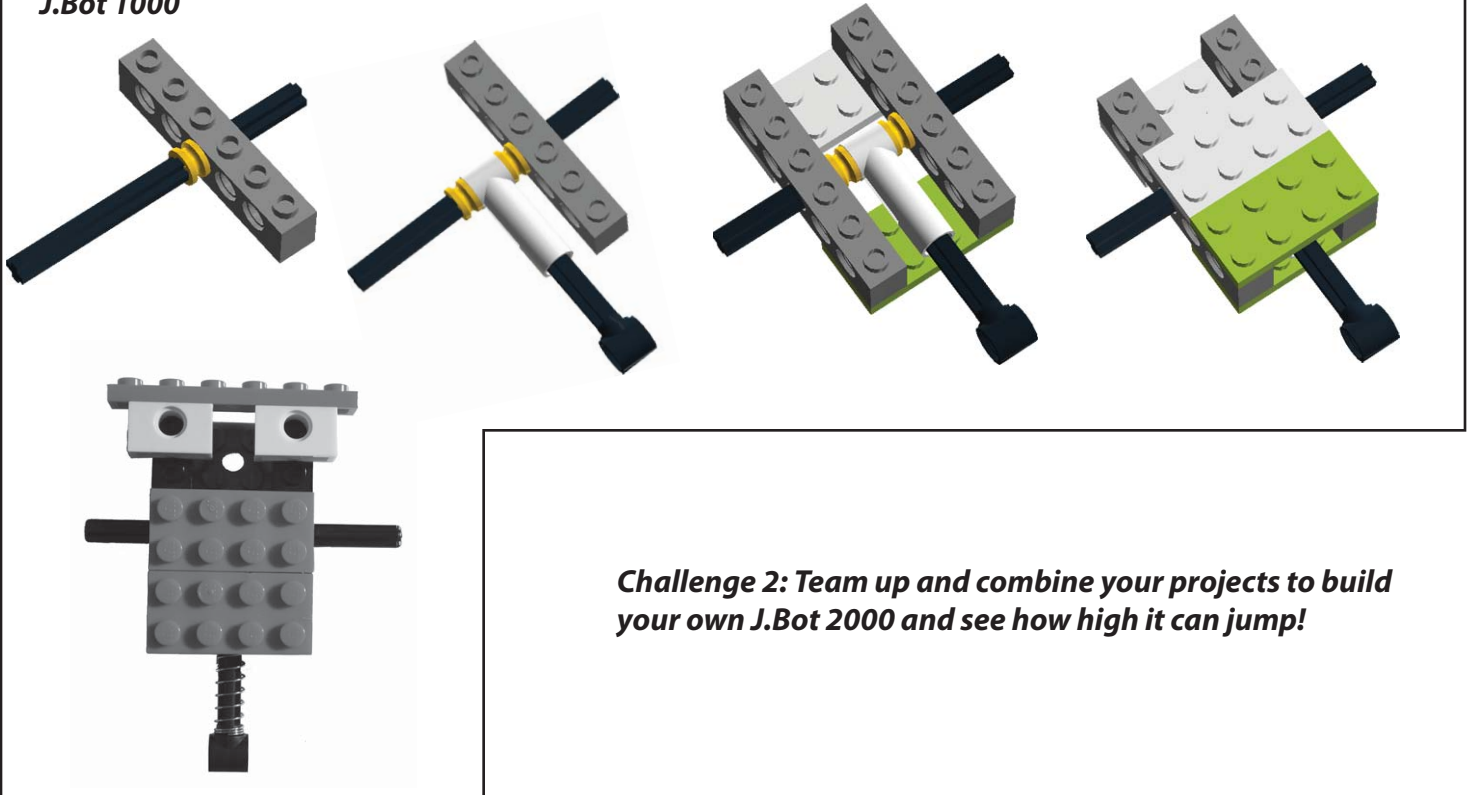
### How does a Compression Spring work?

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!**