#### SCIENCE, TECHNOLOGY, ENGINEERING & MATH



# **ROBOTICS (6-8)**

#### **KEY CONCEPTS:**

- Robots all have three major components:
- The **control** tells the robot what to do. This is usually a remote control or a computer and program.
- The **machine** the moving parts that do work.
- Sensors these parts tell the robot about the world around. These can be cameras, motion detectors, sound detectors, etc.
- Artificial intelligence (AI) the ability of a computer program to learn. This means a robot works on its own and makes changes without being encoded with commands.
- **Coding** the process of translating from one language to another.
- > **Programming** the process of building commands.

To explain: coding is a part of a bigger program. Comparison: individual trees make a forest



### **LITERACY CONNECTION:**

Isaac Asimov is an icon in the world of science fiction. His book, <u>I, Robot</u>, combines a series of short stories that take place in a future world where robots are a part of everyday life.

Don't have the book at home? There are free online <u>resources to read</u> or <u>listen to</u> the series.

Click on each robot part. The definitions will help

you plan how to design a

## **ACTIVITY: Design a ROBOT**

OPTIONAL materials: build a robot kit (This <u>DIY</u> <u>Spider-Bot</u> is \$5)

Robots can help humans do a variety of jobs from taking samples near active volcanoes to cleaning up the ocean.

Design your own robot and test it with National Geographic's <u>RoboWorks interactive challenge</u>! This activity goes through the process of robotic engineering:

- 1. Define the problem you want to solve
- 2. Plan how to solve the problem
- 3. Build your solution
- 4. Test your solution-bot to see how well it works

For examples of robots in action, watch the video at: Robot STEM Activity

This at-home educational activity is from the Literacy Coalition of Palm Beach County's literacy-based Stories & STEM program. Stories & STEM is made possible with support from Prime Time Palm Beach County, Inc., which receives significant funding from the Children's Services Council of Palm Beach County, Inc.

Having fun? Send pictures or video links of you and your Stories & STEM projects to csharkey@literacypbc.org

