**Sensing Your Surroundings Worksheet**

**Exploration and Data Collection**

1. Build the robot design as described in the *Sensing Your Surroundings Building Instructions*.
2. Explore the sensors, referring to the chart below. Fill out the chart as you go.

|  |  |  |  |
| --- | --- | --- | --- |
| **Program** | **Sensor Used** | **External Stimulus** | **Response** |
| **Detect Color** |  |  |  |
| **Detect Distance** |  |  |  |
| **Detect Sound** |  |  |  |
| **Detect Touch** |  |  |  |

1. Brainstorm with your team: For what real-world purposes might these sensors be used?

**To detect color:**

**To detect distance:**

**To detect sound:**

**To detect touch:**

**Creative Thinking**

1. For each sensor used, analyze its external stimuli. To what human sense is each robot sensor similar? Is each robot sensor similar to a human sense?
2. Do any animals have senses similar to the ultrasonic sensor? Name them.
3. What are some applications of these technologies? In biosensing? In engineering? In performing any specific tasks?
4. How can engineers use sensors to create technologies that are helpful in society? What are some examples of existing engineered technologies that use sensors?