

Student Activity 8: Create an Obstacle Course

Did you know that Tuff-Bot can avoid things before running into them? It has an Avoidance button that you can turn on. Tuff-Bot can detect objects about 8 inches in front of it. When Tuff-Bot encounters an object in its way, it beeps (if sound is on), flashes its lights red, backs up, turns, and goes forward in the new direction.

In this activity you will create an obstacle course for Tuff-Bot to go through.

Turn on Tuff-Bot and then press the Avoidance button, located next to the left rear wheel. It will turn green when activated.



Find objects that are heavy enough to trigger the Tuff-Bot's Obstacle Avoidance. They also have to be at least as tall as the headlights (where the sensors are located). If the object is too light or too short, Tuff-Bot will just push it out of the way, as it did in the Mini-Golf game.



Try this: Find some small boxes and fill them with things in your classroom. Test its weight and height by placing Tuff-Bot in front of it and press the Forward button. Did it push the box or try to avoid it? You may need to add more items to make the obstacle heavier or find a taller box.

If you are outside, find rocks and test them in the same way.



When you have several items, place them far enough apart from each other so that Tuff-Bot has room to maneuver around them. Place Tuff-Bot at the beginning of a route you imagine it will take.

Give commands to Tuff-Bot and see what happens!

Take turns with a partner. See which one of you can:

- Complete the course in the fastest time.
- Complete the course with the fewest commands.

Then try a course with different objects.