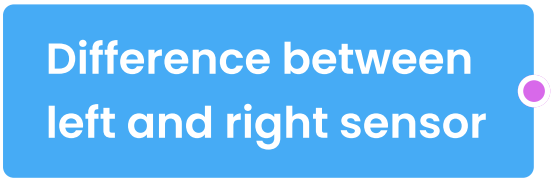
SENSING ACTION WITH BLOCKS

SENSING BLOCKS

Sensors are devices that are used to detect information about its surroundings. They send new information 60 times every second. For example, the distance to an incoming object may be 4.9, then 4.7, and 4.5 after that, and so on.

(HINT: For this reason, it may NOT be a good idea to use the Equals block with sensing blocks!)

Difference between left and right sensor



This block compares the value between the right and left sensors. A positive value indicates a higher reading in the right sensor, and a negative means the left sensor has a higher reading.

Is robot on line?

Checks whether either right or left sensors are on the line.

Returns true if either is on the line and false if none of the sensors is on the line.

Is front on line?

Is front on line?

Checks whether the front middle sensor is on the line.

Returns true if it is on the line, and false otherwise.

Is Fire Near?

Is Fire Near?

Checks if the fire is at a close enough distance to extinguished by the fire hose.

Returns true if it is close and false otherwise.

SENSING BLOCKS (HARD)

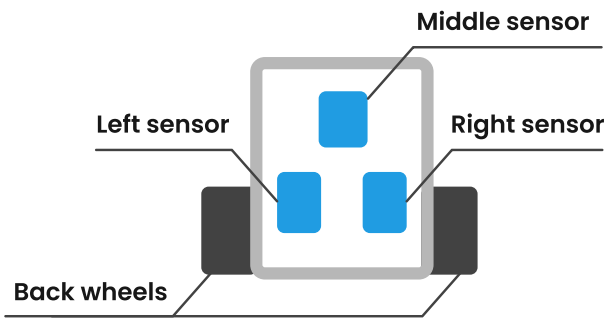
Left Line sensor / Right Line Sensor/ Middle Line sensor

Left line sensor

Right line sensor

Middle line sensor

These blocks detect the light reflected from the ground from the position of the sensor. The sensor reading goes from 0 (outside the Line) to 1 (inside the Line).



Fire Sensor

Fire Sensor

This block detects the fire in front of it. The sensor reading is 0 with no fire, and as you get closer, the reading gets higher.

ACTION BLOCKS

Move Forward

This block instructs both wheels to move forward. A correction could be added by inputting a non-zero value. If the input number is positive, the left wheel moves faster, while if the number is negative the right wheel would move faster. If the input is zero, they will move at equal speeds.

Move Backward

This block instructs both wheels to move backward. A correction could be added by inputting a non-zero value. If the input number is positive, the left wheel moves faster, while if the number is negative the right wheel would move faster. If the input is zero, they will move at equal speeds.

Turn

This block instructs the robot to turn in position, with turn direction dictated by the input through the switch

Stop

Instructs both wheels to stop moving.

Water Hose

This block instructs the water hose to start pumping water out or stop according to the setting.

ACTION BLOCKS (HARD)

Left Wheel/ Right Wheel

This block instructs the specified wheel (according to the name) to rotate.

A positive input moves the wheel forward, a negative value would move the wheel backward. An input of zero would stop the movement of the wheel.