



# RCAP CoSpace Autonomous Driving (Move Steering)

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# Move Steering

- Cospace lets us control speed of left and right wheels
- Changing speed of one wheel will change both the...
  - Robot movement speed
  - Robot curvature of turns
- It's often useful to have a function that lets us control speed and turns independently (ie. Make the robot move slower but still turn the same amount)

# Move Steering

- Separates “steering” (curvature of turn) and “speed”
- Allows you to change speed without changing how much the robot turns
- Found in Lego EV3 and Spike Prime software

# Working Principles

- Curvature of turn depends on the ratio of left wheel speed to right wheel speed
- As long as the ratio is the same, the robot will make the same turn even if the speed is different
- Use negative number for left turns and positive number for right turns
- Steering range from -100 to 100

# Move Steering

```
void moveSteering(int speed, int steering)
{
    if (steering > 0) {
        WheelLeft = speed;
        WheelRight = speed - (2 * speed * steering / 100);
    } else {
        WheelLeft = speed - (2 * speed * -steering / 100);
        WheelRight = speed;
    }
}
```

## Right turns

Left wheel move at full speed, Right wheel slows down depending on steering value.

## Left turns

Right wheel move at full speed, Left wheel slows down.

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