

Intro to LEGO Robotics

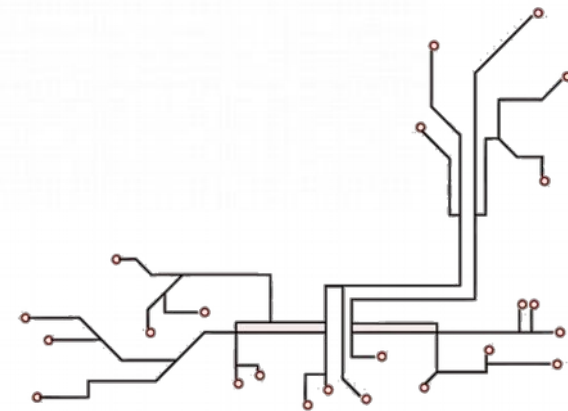
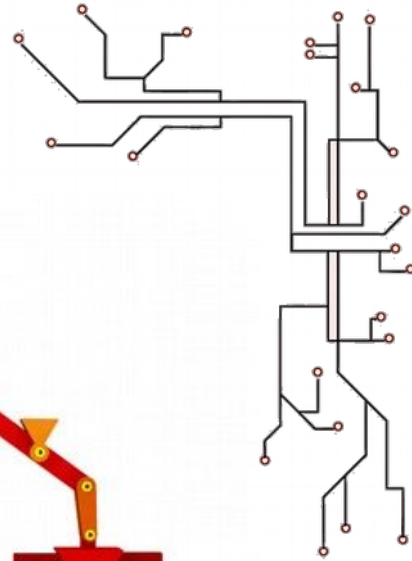
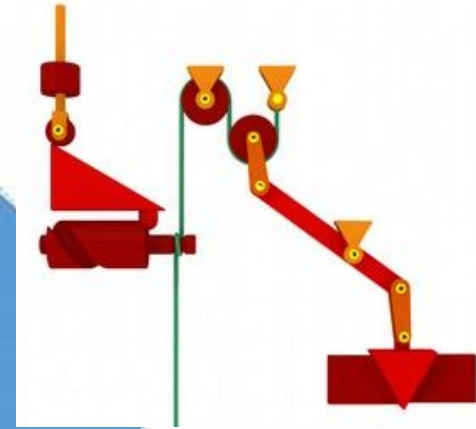
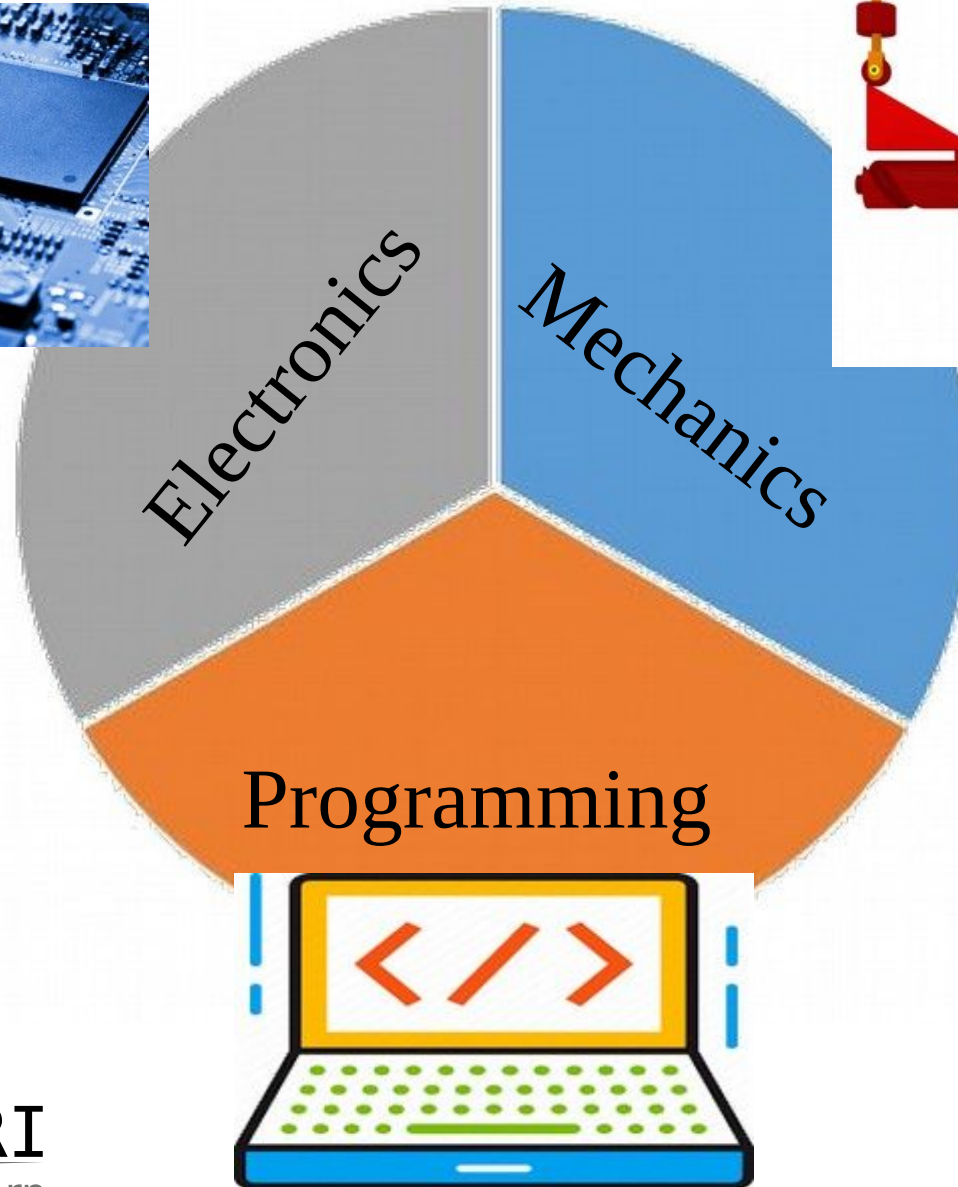
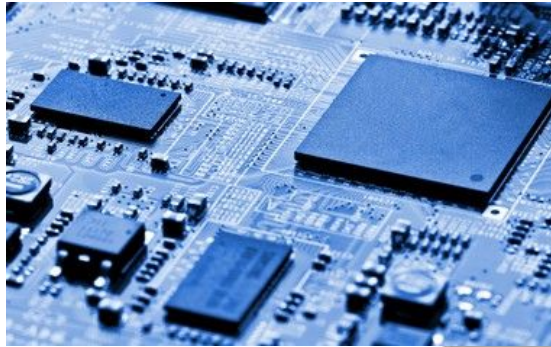
- What is Robotics?
- What is EV3 and Spike Prime
- 2-Wheel Robots
- Robot Basic Build



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What is Robotics?



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What is a Robot?



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What is a Robot?

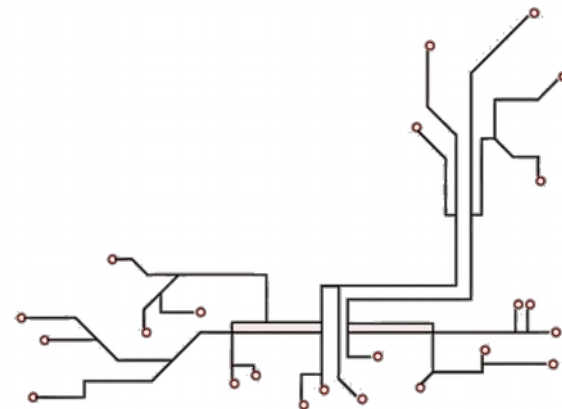
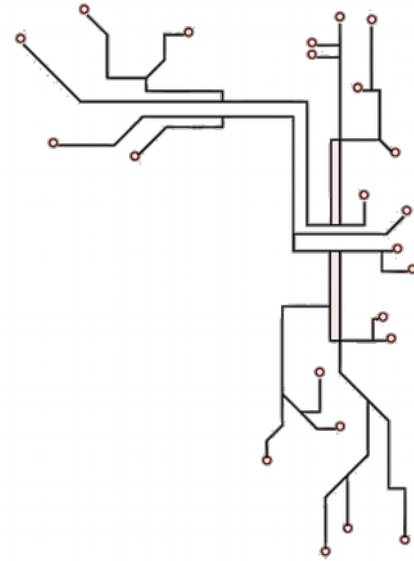
Almost anything automated...

But, physical robots usually have these:

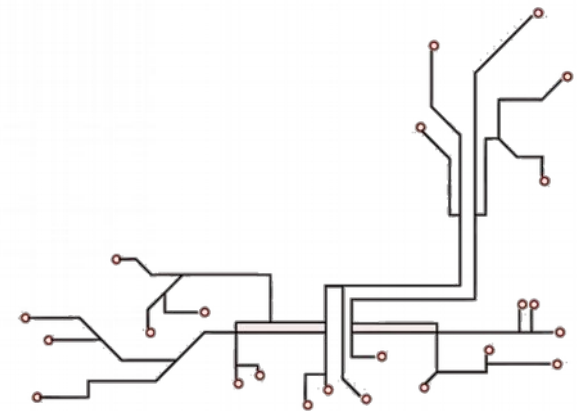
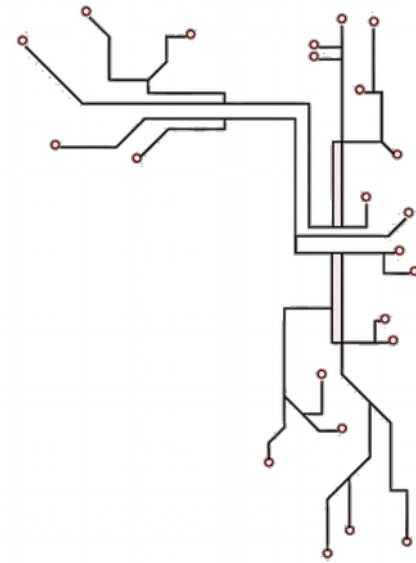
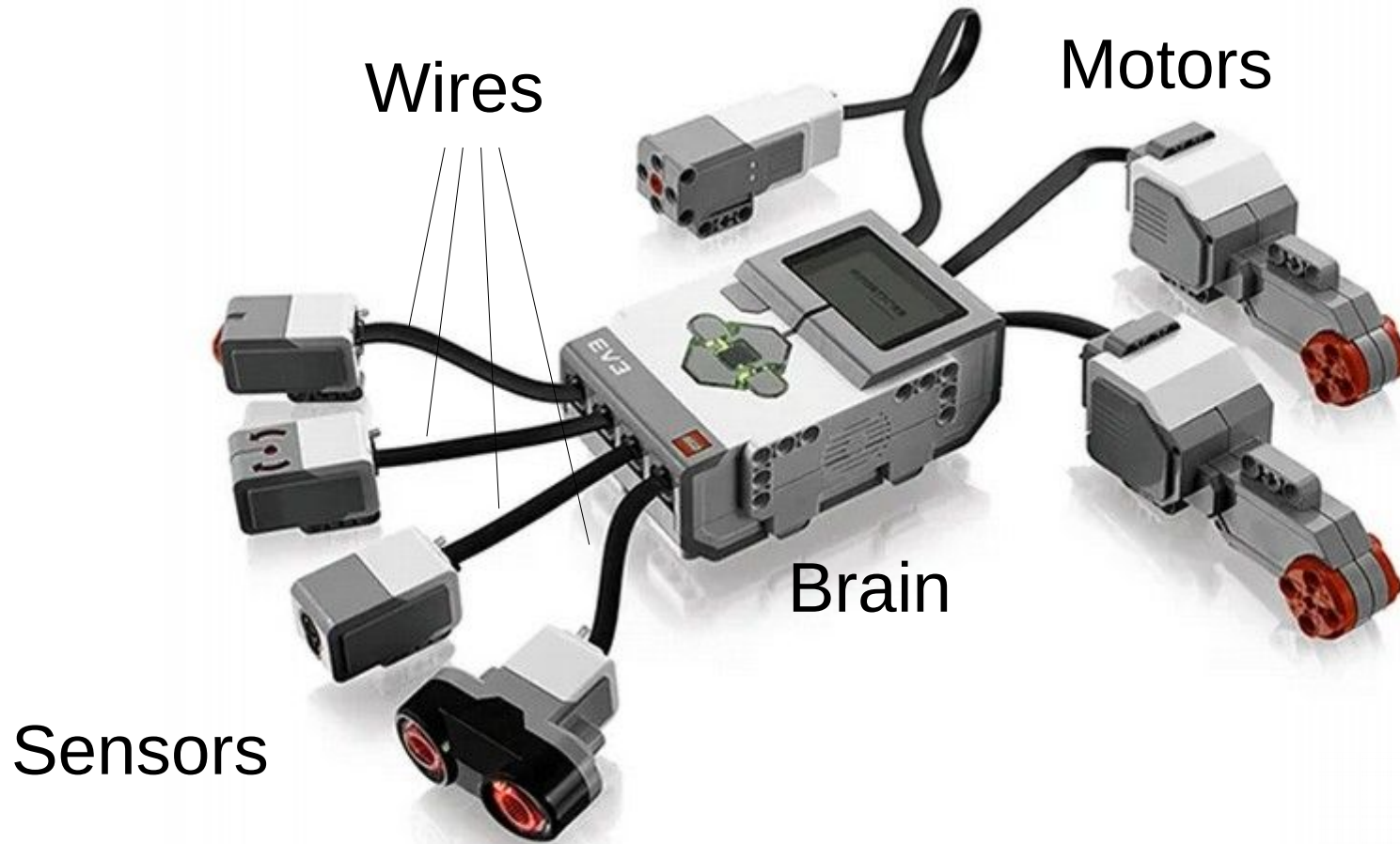
- *Computer Brain*
- *Body / Frame*
- *Motors*
- *Sensors*
- *Wires*

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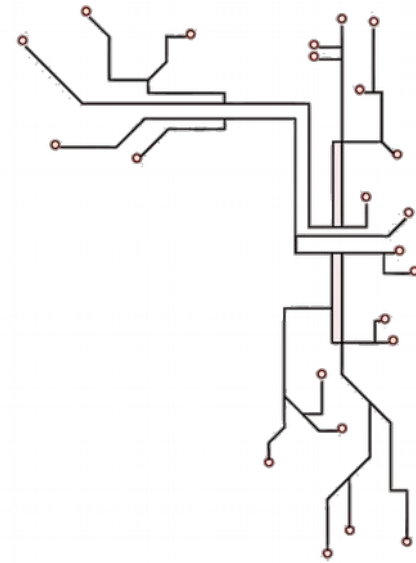
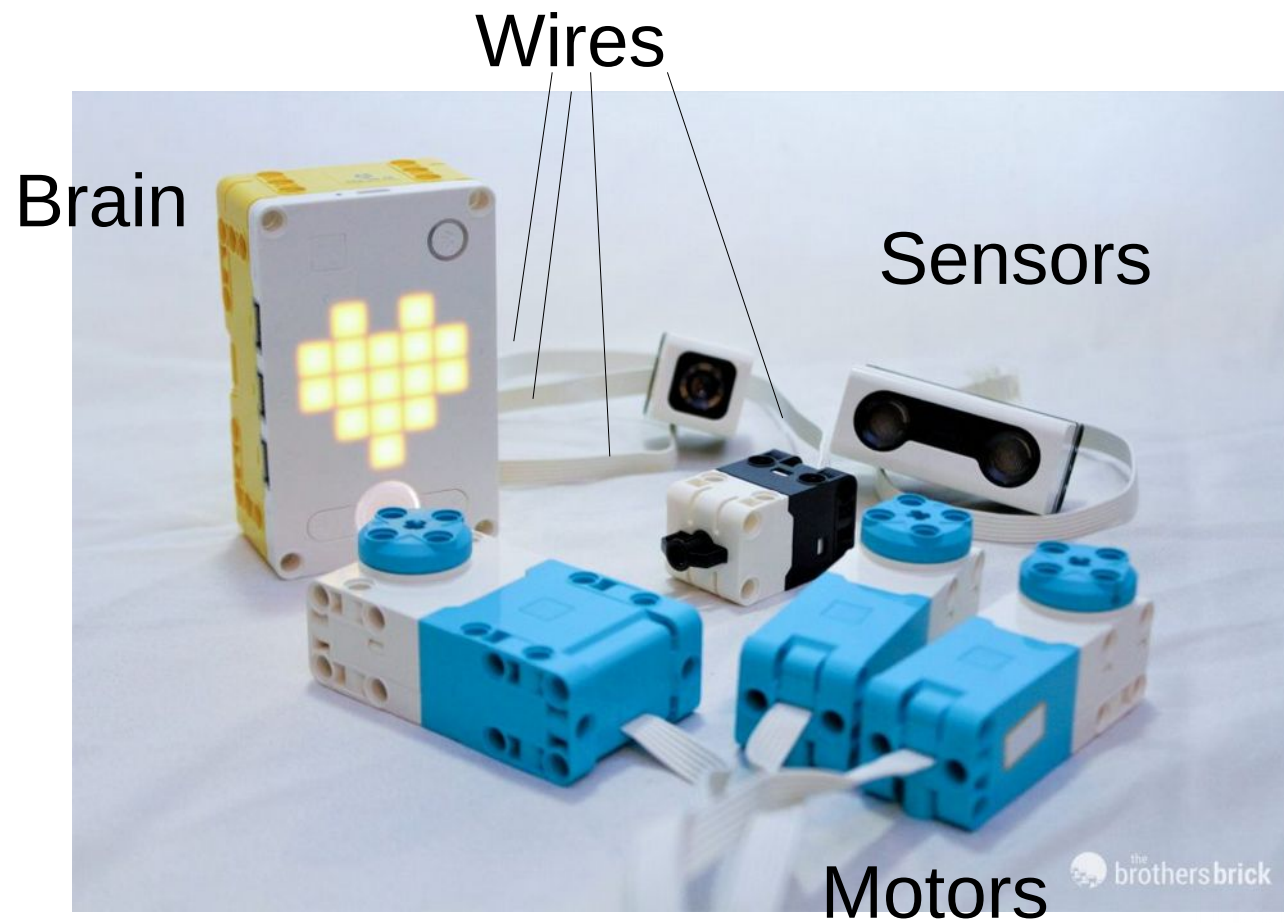


What is EV3?

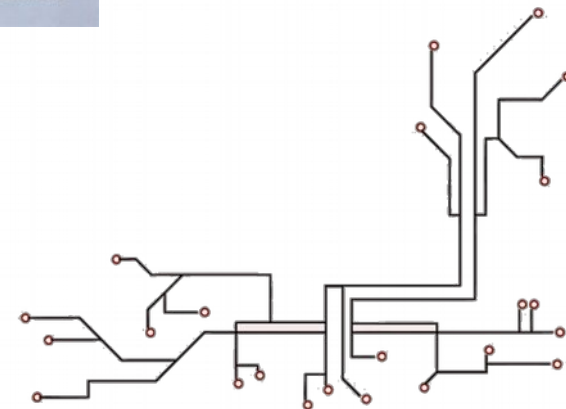


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What is Spike Prime?

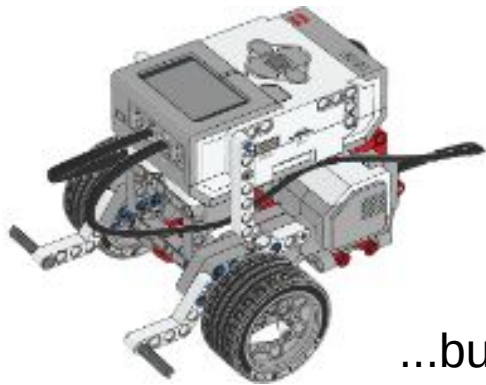


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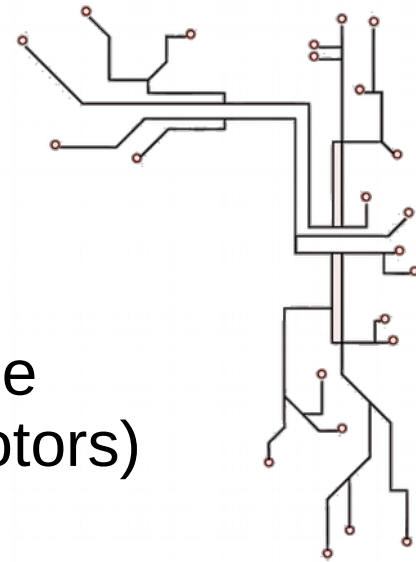
EV3

- Older Model
- Can connect more devices (4 sensors + 4 motors)
- A bit bigger

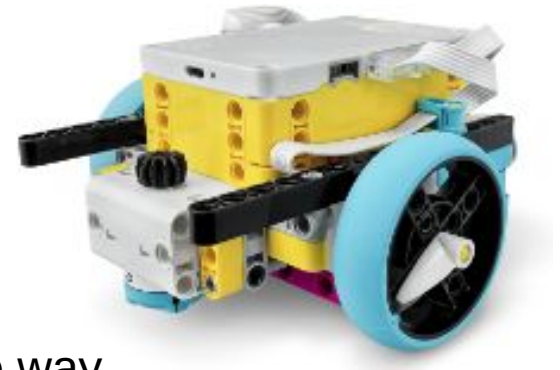


Spike Prime

- Newer Model
- Fewer but more flexible devices (6 sensors/motors)
- A little smaller



The robots may look different...

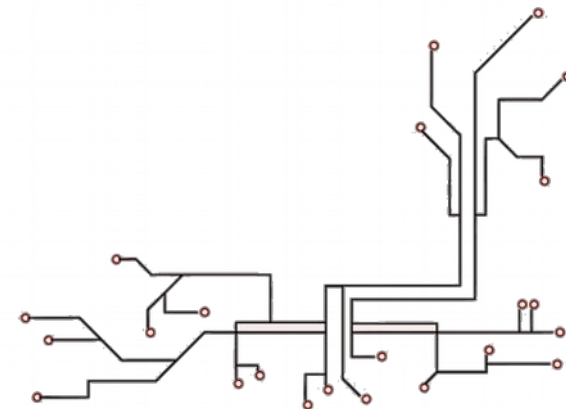


...but they work and are programmed the same way



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Programming

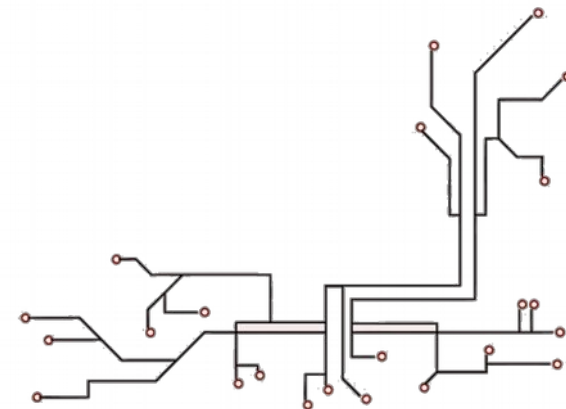
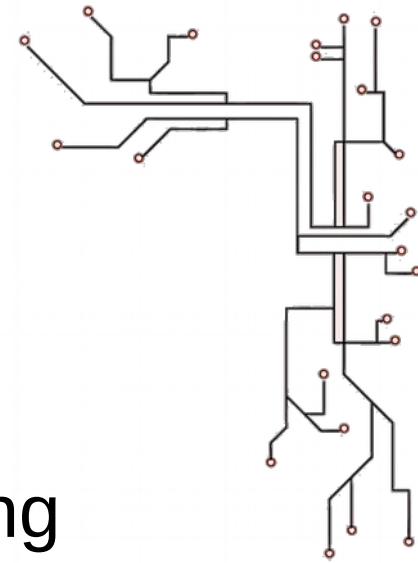


Block Programming

- Easy to learn
- Similar to GearsBot, Scratch, microbit, etc...

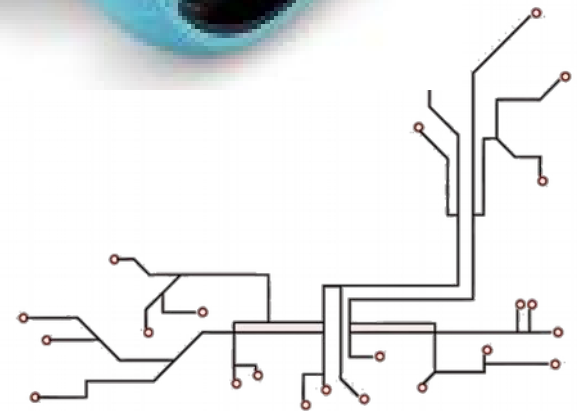
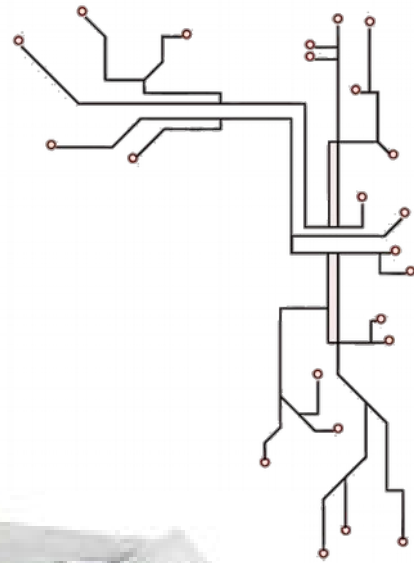
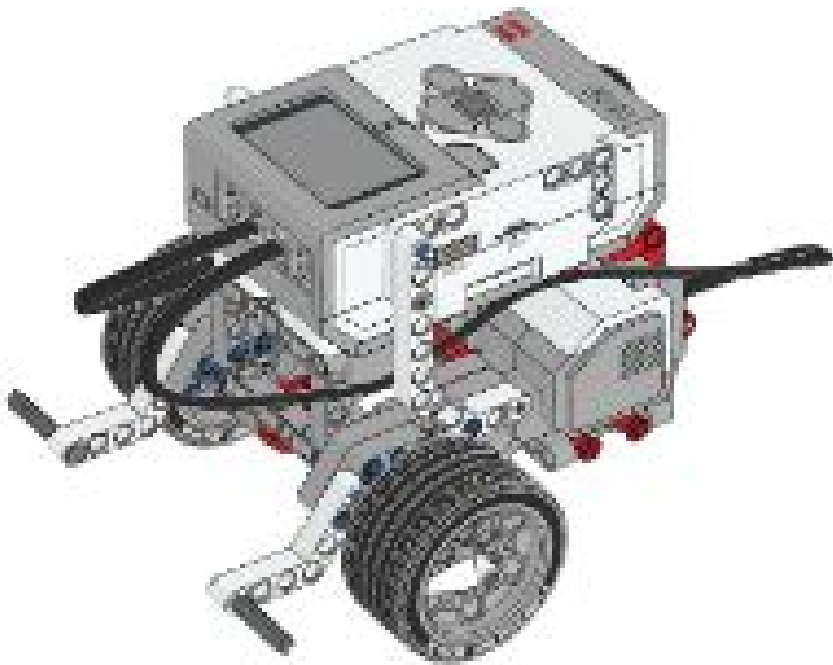
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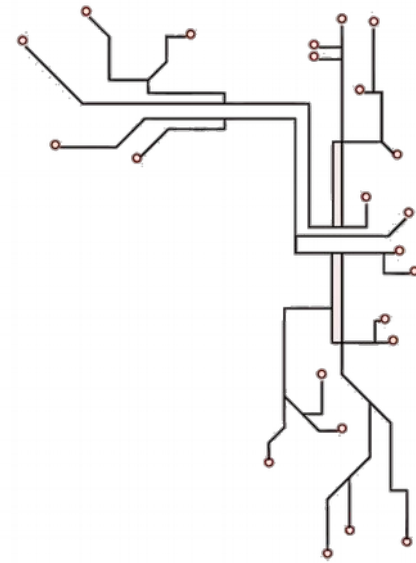
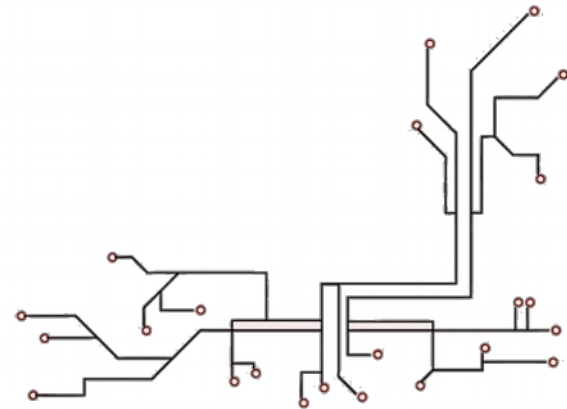
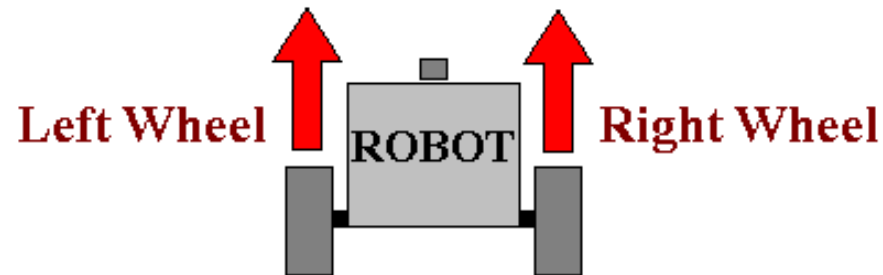
Basic Robot

2-Wheel Base

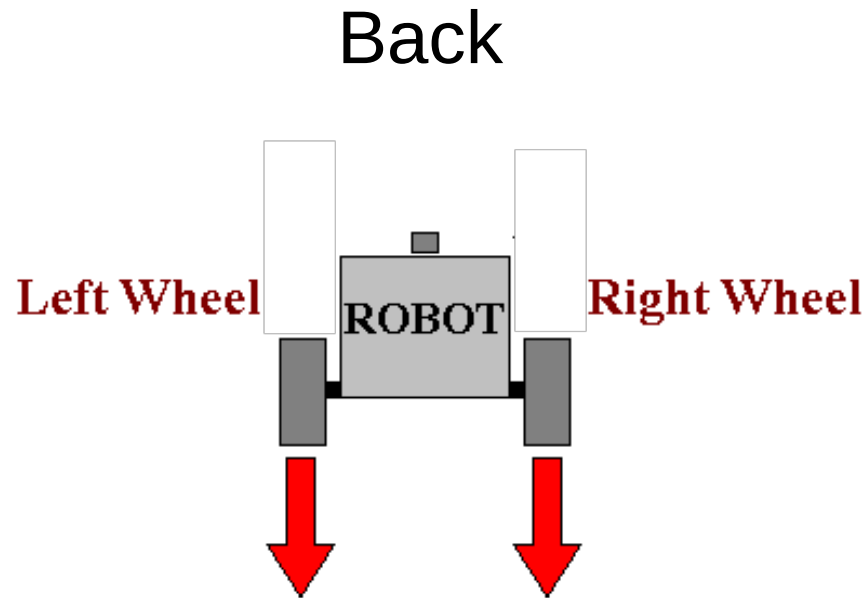


2-Wheel Differential Drive

Forward

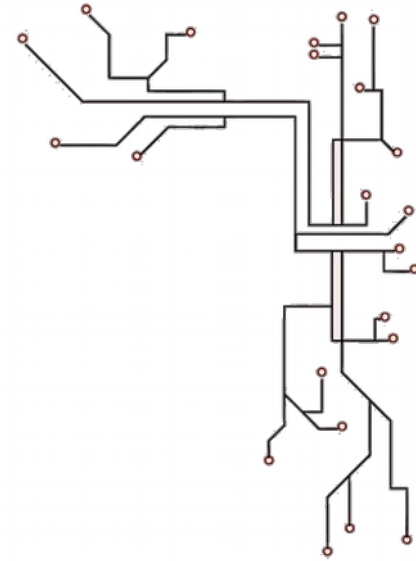
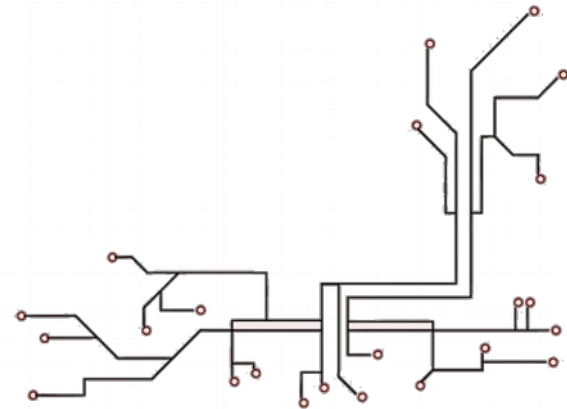


2-Wheel Differential Drive

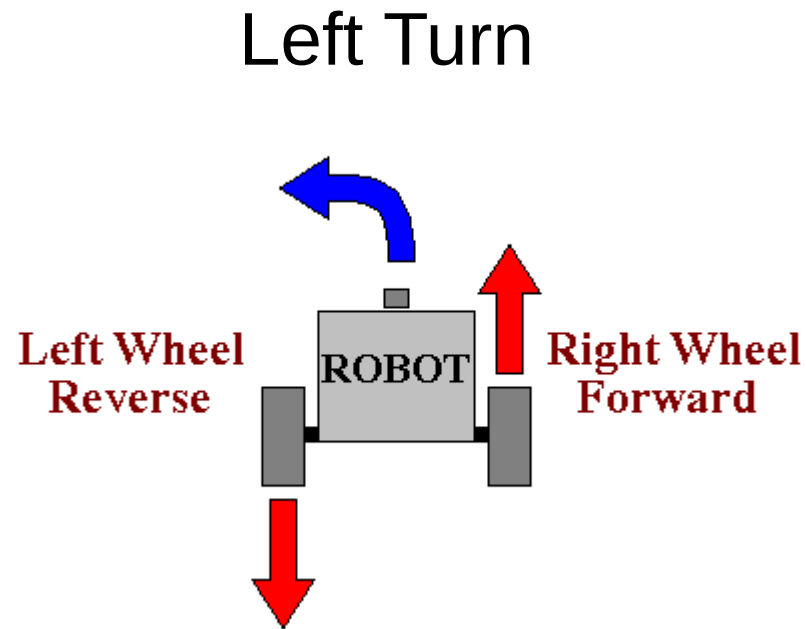


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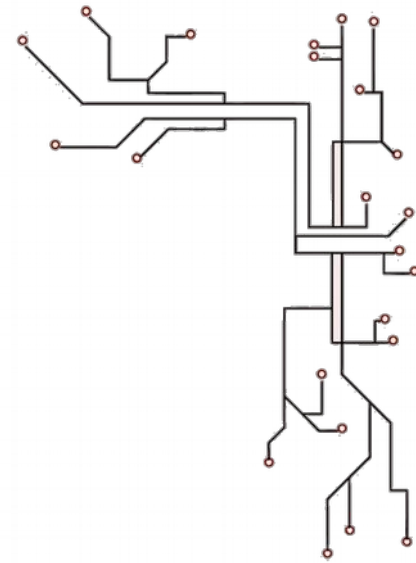
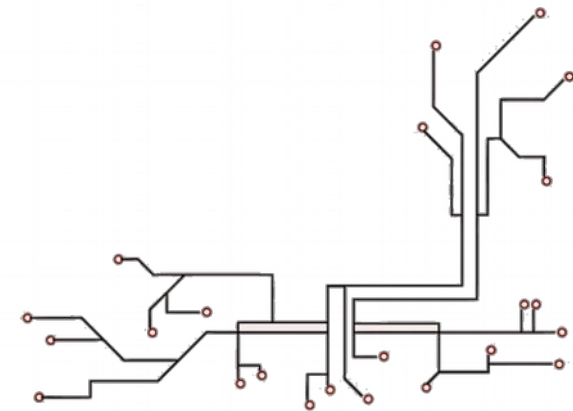


2-Wheel Differential Drive



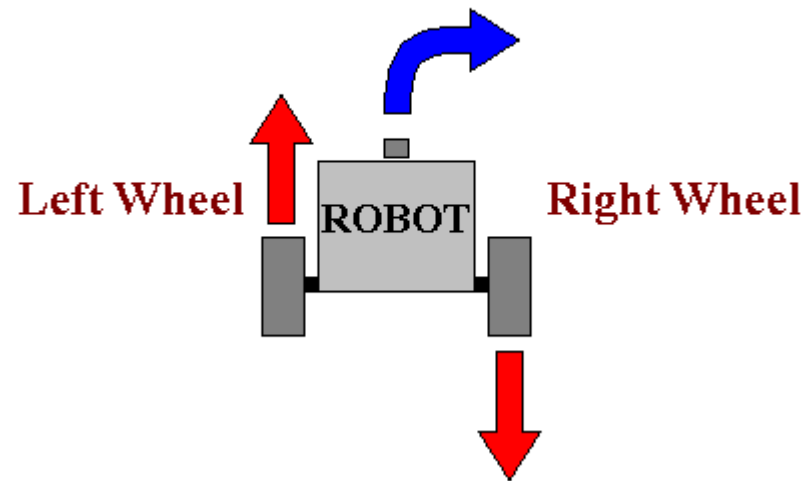
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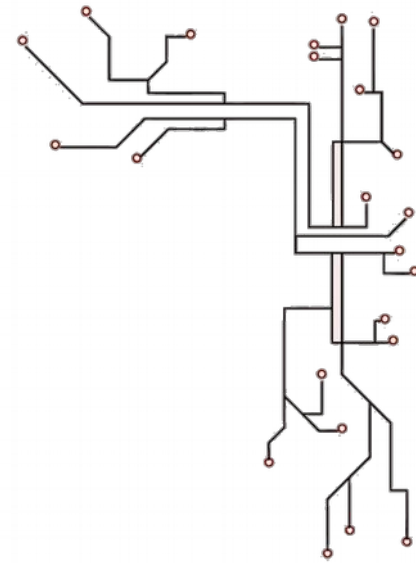
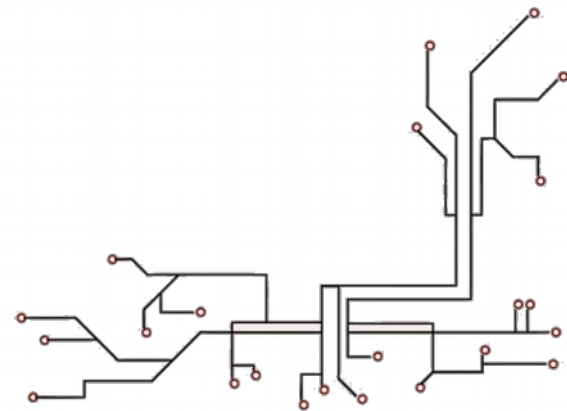
2-Wheel Differential Drive

Right Turn

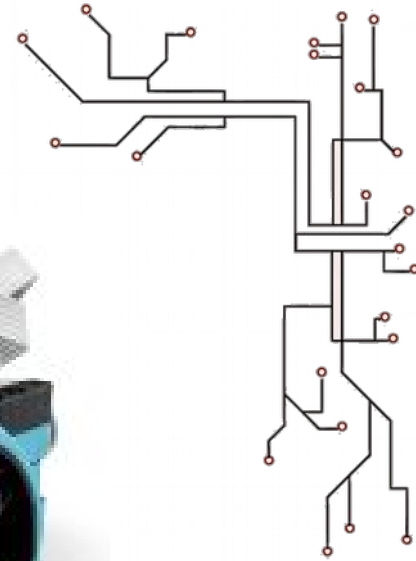
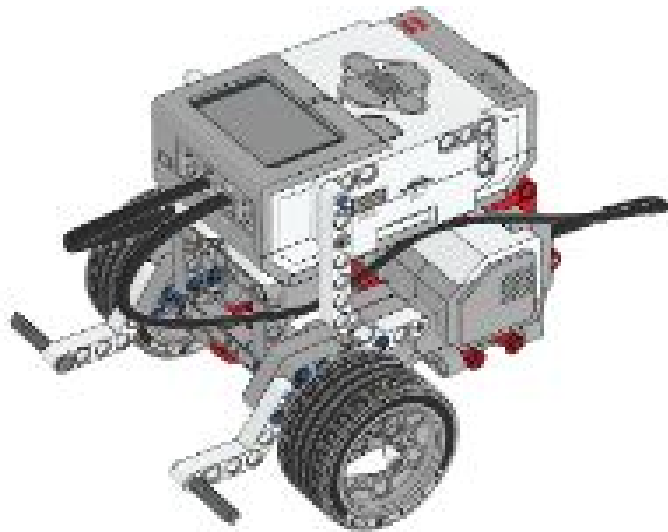


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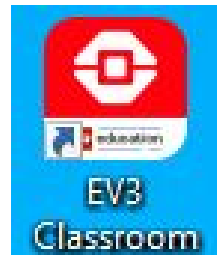
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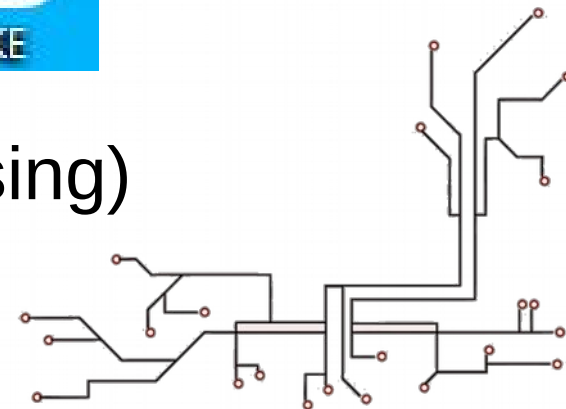
Time to Build!



Turn on your computer and start either...



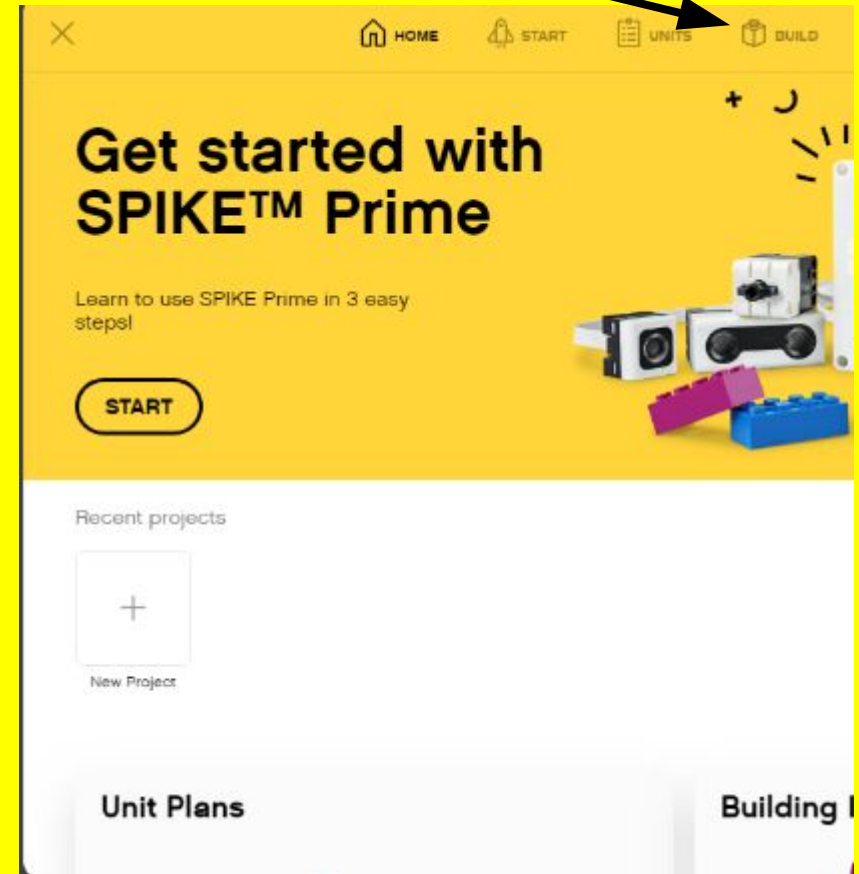
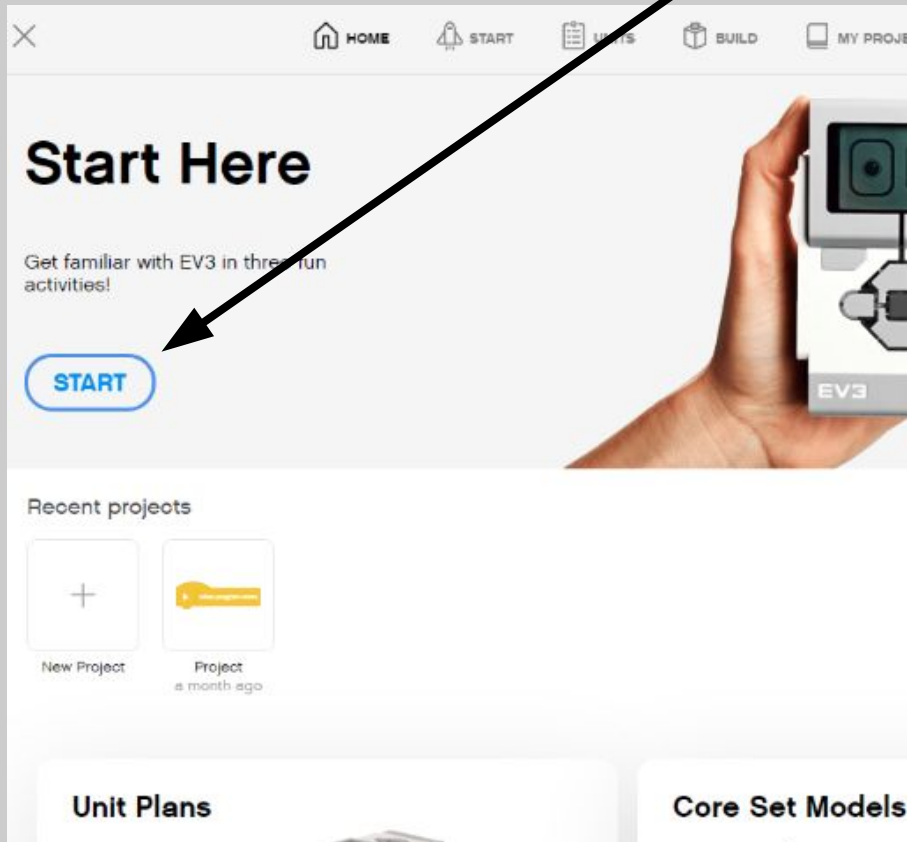
(...depends on what you're using)



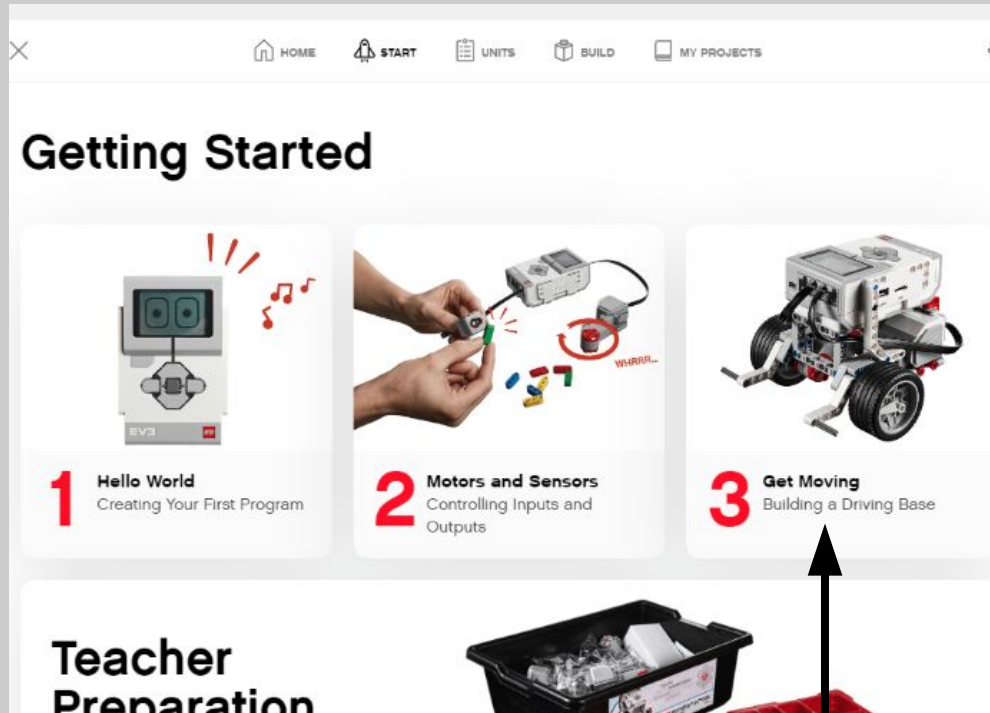
EV3

Spike Prime

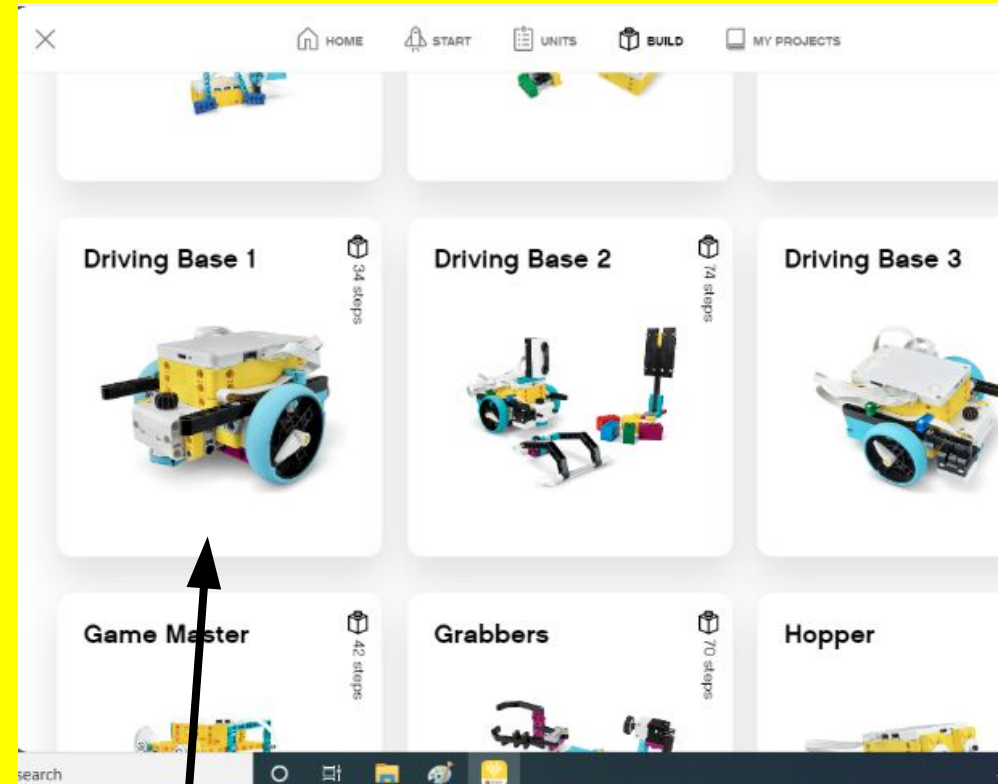
Click This



EV3



Spike Prime



Click This

EV3



Let's get moving!

You're going to build a Driving Base and make it move. Here we go!



Click This...



Build the Driving Base.

It uses two Large Motors to move around. Let's build it!



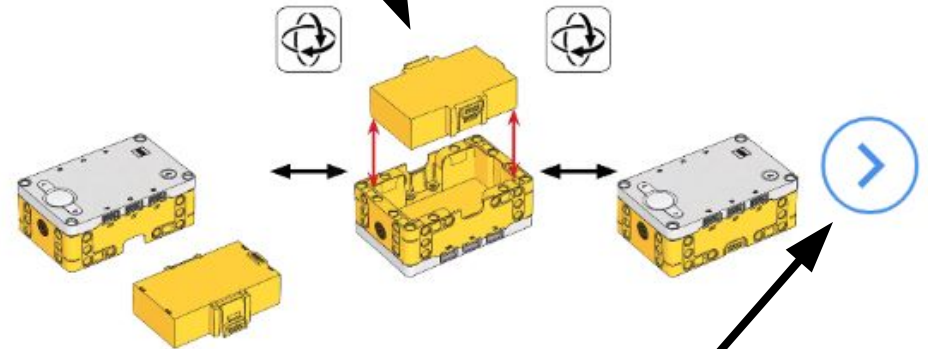
BUILD



...Then This

Spike Prime

Follow the instructions...



Click this when done

EV3



Click this to go to the next page

Spike Prime

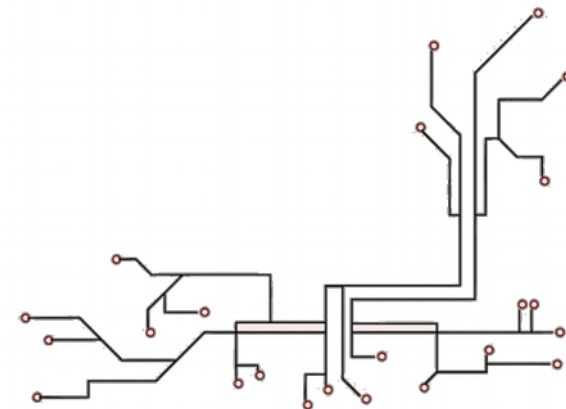
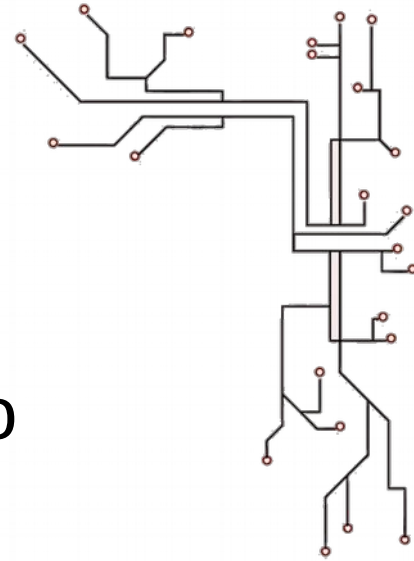
Continue to follow the instructions!

Build Your Robot!

Tips

- It's ok to be different. You don't have to follow the instructions exactly...
- ...but your robot **must** have two wheels

We'll help you if you are stuck, but this is **your** robot. You'll need to build it yourself.



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