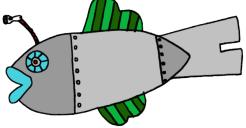
bots help us build cars, and others can help us work in space, or disarm bombs.

Do you know what a robot needs to do something useful? Follow these 5 steps and imagine what you'd put on your own!

1. Your robot needs to be able to move in its *environment*, the place its meant to work in. Does it need wheels to roll on hard ground? Propellers to fly through the air? Legs to climb up stairs? Flippers to swim through the ocean? Or maybe rockets to fly though air and space?

2. Your robot needs a way to *interact*. Does it need arms and hands for fixing things? Paint brushes for making art? A welder and screwdriver for building things? Or maybe a Laser for doing science on far away planets?

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3. Your robot needs to have a way of *sensing* its surroundings, like our seeing, hearing, balance, and other senses. Does it need **cameras to see** faces? Ultrasonic **rangefind**ers to measure distance? Temperature or pressure sensors to feel the weather? Or perhaps an accelerometer or gyroscope to tell which way is up or how well it's flying?

4. Your robot needs *power!* Just like we eat food, robots need energy too. Does it use a long **plug into the wall? Solar panels** to soak up the suns rays? Hydrogen **fuel cells**? A **plutonium space battery** that lasts 15 years? Or maybe a happy squirrel running on a wheel?

5. Lastly, your robot needs... a *brain!* This processes what the sensors tell it, and tells it what to do next; how to move through its environment, and how to interact. The brain is usually a microchip that holds instructions in code. Perhaps if your robot wants to play, one instruction could say:

"If I see a red ball, run over and kick it."

Try designing your own, and see what awesome machines you can think up. Anyone can design awesome bots, Robots Rule!

Check out these Super-Awesome robot resources: mymakedo.com * robotis.com/xe/kidslab * flip the page over for more!



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