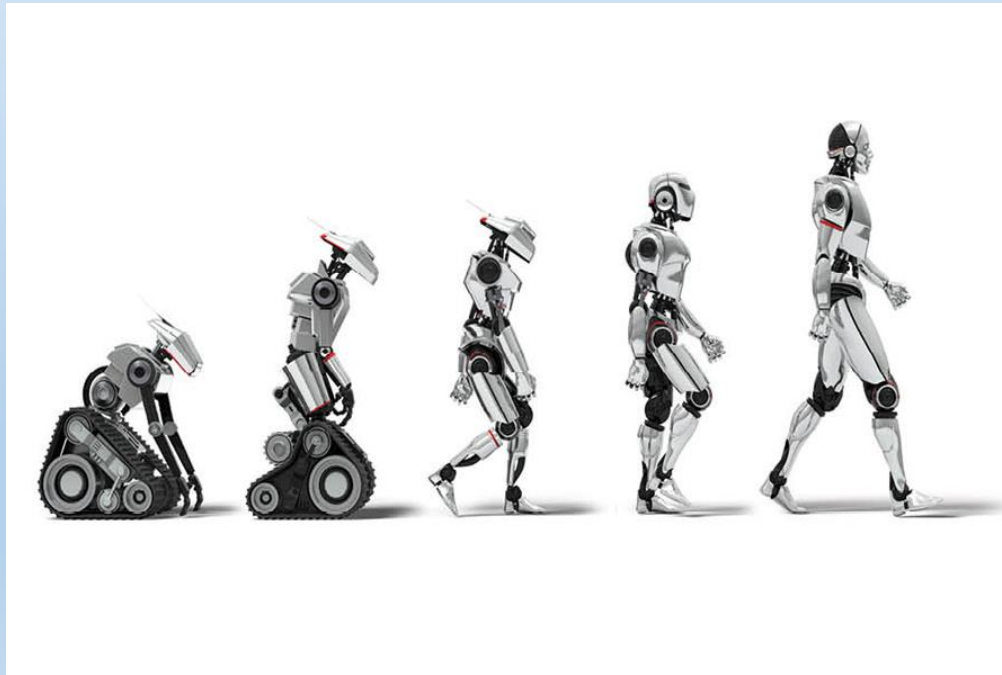


# Automation and Robotics

What's the Difference?



# What is the Difference?

- Automation involves a mechanical device that can imitate the actions of humans or animals
- Robotics involves the design, construction, and operation of a robot
- A robot is a machine that performs complicated tasks and is guided by automatic controls



# Robot Generations

- Machines, like the puppets in this theatre, were designed to imitate human actions over 3,000 years ago



# Robot Generations

- First generation robots were designed to perform factory work
- Such robots performed simple tasks that were dangerous or unpleasant for people
- Second generation robots perform more complex tasks and simulate human functions



# Today's Robots are Used For:

1. Precision Work
2. Repetitive Work
3. Dangerous Work
4. Exploration
5. Education
6. Competition

# Types of robots we see today...

1. Medical Robots
2. Assistive Robots
3. Exploration Robots
4. Household Robots



# Algorithm

- An *algorithm* is a procedure or formula for solving a problem. A computer program can be viewed as an elaborate algorithm. In mathematics and computer science, an algorithm usually involves a small procedure that solves a recurrent problem.





## Procedure

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- 1 Using only the required number of VEX® pieces, build a model.
- 2 Do not show the model to your partner.
- 3 Sit with your back to your partner. Your partner should have a bag of VEX® components that matches the components you used for your model.
- 4 Verbally instruction your partner to build a model that exactly matches your model.
- 5 Compare your model to the one that your partner built.