

# Robot Biography

## Murali Krishna

Murali Krishna loved to read as a boy. His favorite topic was science fiction, especially stories about space travel and robotic machines.

As he got older, Murali's interest in robots grew. At college, he built lots of different robots, including a walking robot that explored a volcano, and a robotic backhoe that could move huge amounts of dirt without a driver!



In Oregon, Murali worked for Intel. He helped to design and operate robots that are used to build computer chips. His robots make the factories safer by doing jobs that would be hazardous for humans. Murali's robots also work with the delicate materials used to make silicon chips.

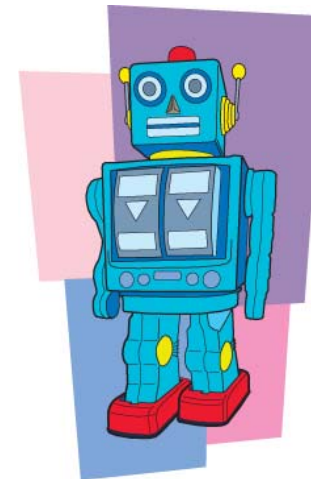
### To Learn More:

Visit the Tech Lab website at [www.oms.edu/tech](http://www.oms.edu/tech) for links to more information and Online Activities!

# OMSI

OREGON MUSEUM OF SCIENCE AND INDUSTRY  
**Vernier Technology Lab**

## Take-Home Activities



## Robots and Computers

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## Robot Hands


Can a robot tie your shoes?

### Materials Needed:

- Shoes that tie
- Popsicle sticks
- Masking tape
- Heavy gloves
- Cloth for a blindfold
- 2 pair of pliers



### To do and notice:

1. Try tying your shoes blindfolded. Was that hard? Even though you can't see, you can still feel.
2. Take the blindfold off. Put on heavy gloves. Does this make it harder to tie the laces? Why?
3. Tape popsicle sticks onto your thumbs and forefingers. Is it easy to tie your shoes without bending your fingers?  

4. Tie your shoes with pliers. The pliers remove your sense of touch and coordination.

### Going further:

A robot with only a few joints isn't very flexible. A robot without sensors can't feel or see anything. How a robot is designed and built puts limits on the kind of job it can do.

## Program a Friend

Can you build an obstacle course, then "program" a friend around the obstacles?

### Materials Needed:

- Large room
- Supplies to use as obstacles: pillows, chairs, etc.
- Blindfold
- Pencil/Pen
- Paper

### To do and notice:

1. Clear a space of all items in a room.
2. Build a maze in the space with the items you have gathered.
3. Blindfold your friend. Using step-by-step instructions, guide your friend through the maze. Try not to hit any obstacles. You can make corrections as your friend moves.
4. Write down each step it would take for your friend to move through the maze.
5. Give your instructions to your friend, and have her navigate the maze again. Did she hit an obstacle? If so, change the instructions and try again. Keep repeating this process until she makes it all the way through the maze without hitting anything.

### Going further:

It is easy to make mistakes when writing programs for robots. Programmers write a program, and then test it to find mistakes. If a bad instruction is found, they fix the problem and retest the program until it works correctly. This is called iterative testing.