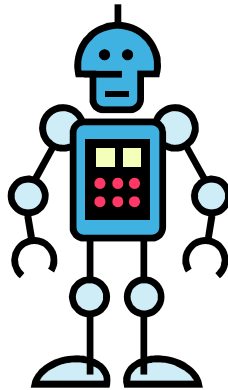


Robots

Pre-Visit Activities

Kindergarten – 2nd grade



Activities

These activities are intended for use before your visit to the Virginia Air and Space Center. It is beneficial for the students to have some prior knowledge about the content area covered in the program. All of the activities can be tailored to your specific classroom needs, and the procedures listed are suggestions for teaching.

Activity 1: Simple Machines

Machines are things we use to make work easier. The six simple machines are the wedge, the inclined plane, the screw, the pulley, the lever, and the wheel and axle. Compound machines are machines made up of two or more simple machines. Examples of compound machines are bicycles, scissors and wheelbarrows. Robots are compound machines. What makes robots different from a bicycle or a wheelbarrow is the parts they have. Robots have three parts: A body, a memory or control system, and a power source. Without a memory, a robot would just be a compound machine. Because it has a memory, a robot can do more one job or more than one job, whatever the programmer wants. This makes life a lot easier.

The attached worksheet shows the six simple machines. Have your students match the machine to its name.

Activity 2: Robot Telephone

Robots are programmed by humans to do work. A robot will not do its job correctly if it is programmed incorrectly.

Have your students sit in two lines. Choose one to be the robot standing in between the two lines. Think of a command for the robot to do. Quietly whisper the same command to the students at the end of each line. Have the command go down each line. Have the last student say the command, and see if it is altered in any way from the original command you gave, or from the other team's. Have the robot perform the original command.

Activity 3: Robot Memory

Robots are sometimes given more than one command at a time. Their memory allows them to keep the information and do all the tasks at the correct time they need to be done.

This activity can be done in small groups. Choose a robot for each group. Have each person in the group give the robot a command so it will be a sequence. The robot must not do the commands until everyone has given them to him/her. The robot must remember all of the commands and do them in the correct order, or else he/she will have done the job incorrectly.

For younger students: Play Simon Says with your students.

Name _____

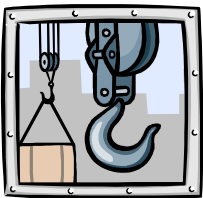
Look at the pictures of simple machines below. Draw a line to match them to their names.



Pulley



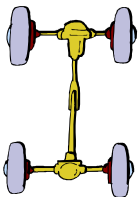
Screw



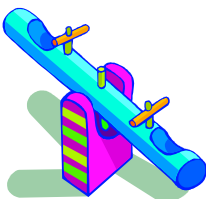
Wheel and Axle



Lever



Wedge



Inclined Plane

Resources

Books

Bridgman, Roger. Robot. DK Eyewitness Books Series, DK Publishing, 2004.

Bunting, Eve. My Robot. Houghton Mifflin Harcourt Trade & Reference Publishing, 2006.

Cali, Davide. Mama Robot. Tundra Books Inc., 2008.

Gifford, Clive. Robots. Roaring Book Press, 2007.

Jones, Christianne C. Clinks the Robot. Picture Window Books, 2006.

Ling, Stanley. Robots. Perfection Learning Corporation, 2006.

Internet

<http://spaceplace.jpl.nasa.gov/en/kids/muses2.shtml>

<http://www.robots.com/movies.php>

<http://www.pbs.org/wgbh/nova/robots/>

<http://www.robotcafe.com/>

<http://bettscomputers.com/moodle/course/view.php?id=5#WhatisaRobot>