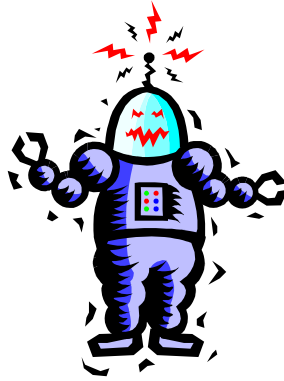


Robots

Post-visit activities



3rd – 5th grade



Activities

These activities are intended for use after your visit to the Virginia Air and Space Center. Your students should recall the information, demonstration and activities from the Jr. Mad Scientist program in order to do these activities. All of the activities can be tailored to your specific classroom needs, and the procedures listed are suggestions for teaching.

Activity 1: Identify the Parts of a Robot

During the demonstration, the students learned that robots are compound machines. They also learned that robots have parts with special names. Attached is a worksheet with the picture of a robot. The students will label the parts of the robot and some of the simple machines that make up robots. They may use the word bank provided.

Activity 2: Invent your own robot

During the demonstration, the students saw many types of robots. Each robot has a specific job: entertainment, putting things together, or making work easier. Have the students invent their own robots that would help make their lives easier. It could clean their room, take the trash out, make dinner, or do their homework.

Be sure they have included the three parts of a robot: Body, Power Source (battery or electricity), and Memory or Control panel. Have them also include at least 2 simple machines that are used to make the robot a compound machine.

Have the students draw or build models of their robots, depending on how involved you would like the activity to be and age appropriateness. They could also give a presentation about how their robot works and what they would use it for.

Activity 3: Human Robot

During the demonstration, the students saw how a robot was programmed to perform a task. Have your students play a game where one student is the robot, and the others program him or her. There are many variations of this game.

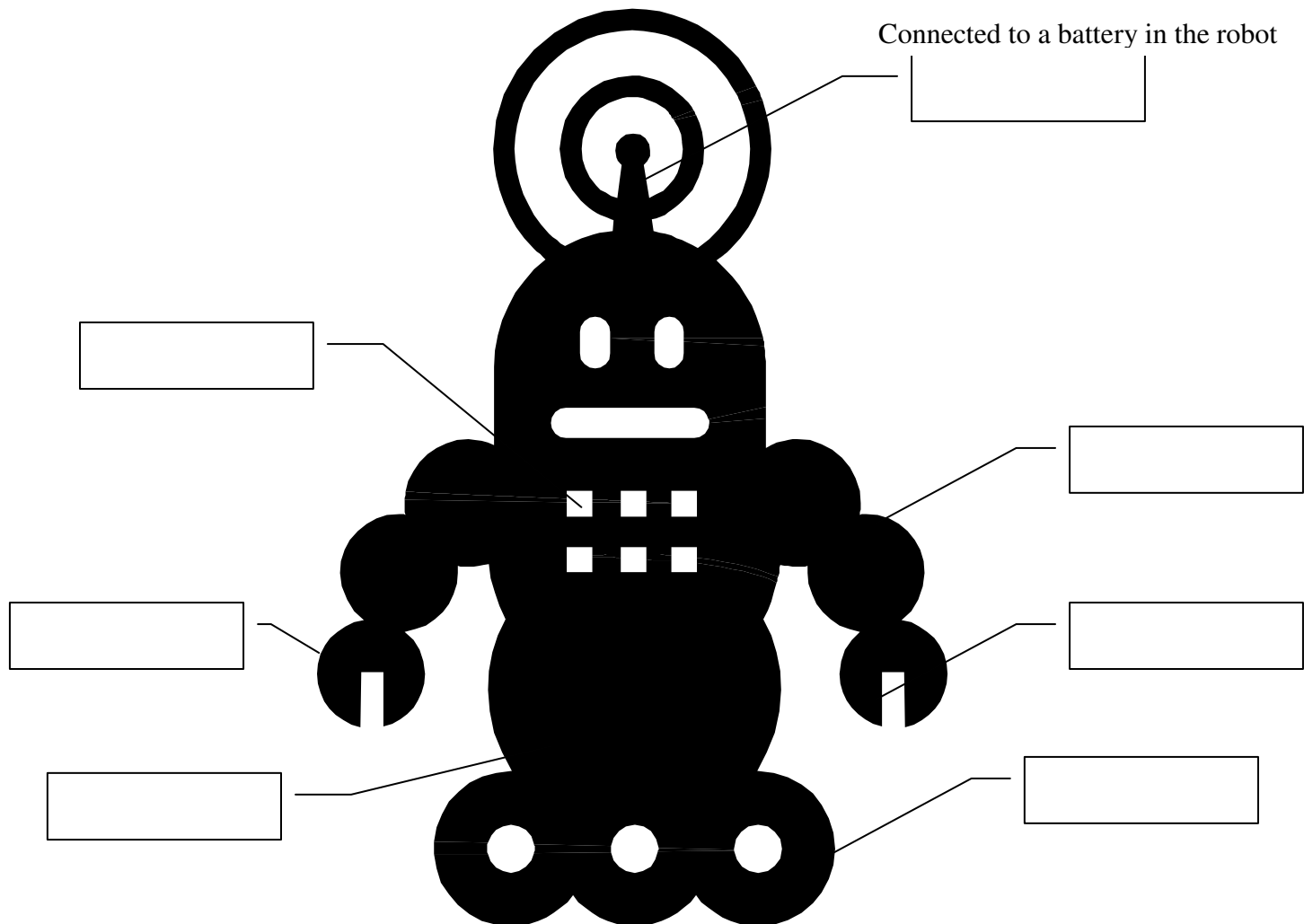
Variation 1: Choose a student to be the “robot”. Give the person a ball or bean bag to hold and blindfold him/her. Place a bucket or box somewhere in the room or area. Have each person in the class give the robot a command so that he/she may get to the bucket and drop the object in it. When the students give the command, they may only give a single command like one step forward, one turn right, lift hand in front of you, etc.

Variation 2: Have the students form a circle, with robot student in the middle. Blindfold the robot student. After the student is blindfolded, give a large paper to one student with an X on it. Each student in the circle must give a command to the robot student to get them to the X student and take his/her paper away. When the students give the command, they may only give a single command like one step forward, one turn right, lift hand in front of you, etc.

Variation 3: Build a small obstacle course, indoors or out, that two people could do at the same time. Have the students get with partners. One student of the pair will be the robot, the other will be the programmer. Each robot student will be blindfolded, and the programmer must walk beside the robot through the obstacle course. Have two pairs go through the course at the same time. The robots maneuver through the course by listening to the instructions of the programmer.

NAME _____

Use the word bank below to label the parts of the robot.



WORD BANK

- Body
- Control Panel
- Power Source
- End-effectors
- Wedge
- Wheel and Axle
- Lever

Resources

Books

Bridgman, Roger. Robot. DK Eyewitness Books Series, DK Publishing, 2004.
Hyland, Tony. How Robots Work. Black Rabbit Books, 2000.
Hyland, Tony. Robots at Work and Play. Black Rabbit Books, 2007.
Hyland, Tony. Space Robots. Black Rabbit Books, 2007.
Jefferis, David. Robot Workers. Crabtree Publishing Company, 2006.
Jefferis, David. Robot Voyagers. Crabtree Publishing Company, 2006.
Ling, Stanley. Robots. Perfection Learning Corporation, 2006.
Punter, Russell. Stories of Robots. EDC Publishing, 2004

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<http://www.pbs.org/wgbh/nova/robots/>
<http://www.robotcafe.com/>
<http://bettscomputers.com/moodle/course/view.php?id=5#WhatisaRobot>
<http://www-robotics.jpl.nasa.gov/>
<http://www.robots.com/movies.php>
<http://www.channel4.com/science/microsites/R/robots/constructor.html>
<http://spaceplace.jpl.nasa.gov/en/kids/muses2.shtml>