

2.B.1 Human Body Parts as Tools

Investigating how parts of the human body are used in similar ways as tools.

Grade Level	2
Sessions	1 at 50 minutes
Seasonality	None
Instructional Mode(s)	Whole class/small groups
Team Size	Individual
WPS Benchmarks	02.SC.IS.01; 02.SC.TE.05
MA Frameworks	K-2.TE.2.1; K-2.TE.2.2
Key Words	Tool, Grasp, Human Being

Summary

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This lesson introduces children to the idea of parts of the human body as tools that can be used to complete various tasks. The students also learn how animals use parts of their bodies in similar ways to humans. They then design a human being for a specific task.

Learning Objectives

2002 Worcester Public Schools (WPS) Benchmarks for Grade 2

1. **02.SC.IS.01** Ask questions about objects, organisms, and events in the environment
2. **02.SC.TE.05** Describe how human beings use parts of the body as tools (e.g., teeth for cutting, hands for grasping and catching), and compare their use with the ways in which animals use those parts of their bodies.

Additional Learning Objectives

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1. Students will understand that animals and humans have body parts that can be used for specific tasks.
 2. Students will learn similarities and differences between humans and other animals.

3. Students will work with other members of a group to problem-solve and engineer a human being to complete a specific task.

Required Background Knowledge

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None

Essential Questions

1. What part of the human body do you use in a similar way as a tool? What tool is it like?
2. How many more parts of the human body can you think of that you use like a tool? In addition, what tools are those parts like?
3. For what activity have you chosen to design a new human? How will your design help a human perform this activity?

Introduction / Motivation

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The instructor can introduce students to how certain parts of the body can act as tools for performing certain tasks. The instructor can ask students what parts of the body can be used for what tasks. Students can also be introduced to parts of other animals' bodies that also perform those tasks.

Procedure

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Part 1: (50 minutes)

1. Discuss with students how parts of the human body can be used as tools (teeth for cutting, hands for grasping, etc.). Also, discuss how animals also use their bodies in similar ways.
2. The students will work individually in this lesson.
3. Introduce the challenge of designing a human being that each student engineers to perform a specific task. Assign students a task, or allow them to choose a task for themselves. Some optional tasks are:
 - Climbing a mountain
 - Swimming to the bottom of the ocean/deep sea diving

- Playing baseball/soccer/football
 - Running a marathon
 - Building a house
 - Firefighting
4. Allow the students to work in teams, and talk amongst themselves about the tasks and what tools a human would need to perform it successfully.
 5. Hand out a blueprint to each student (attached) and have each student design a human being with those tools as body parts. It may also be motivational for the students to come up with a name for their new person and to color the design in.
 6. When the blueprints are completed, have each student share his or her design with the rest of the class.

Materials List

Materials per Student	Amount	Location
Human Blueprint	1	Attached

Vocabulary with Definitions

1. *Tool* – A thing that you use to make the work of a task easier
2. *Grasp* – To hold a thing with a hand or claw
3. *Human Being* – A person

Assessment / Evaluation of Students

The instructor may assess the students in any/all of the following manners:

1. Observe students at work.
2. Collect student worksheets.
3. Determine whether students understand the concepts involved by noting several things on each worksheet and during the short presentation:
 - a. Did the student draw a human body?

- b. Did the student label the new parts of the body?
- c. Did the student explain to the class his or her new design (i.e. the new parts and their purposes)?

Lesson Extensions

- 1. (Engineering) Show students pictures of mechanical tools that perform tasks similar to body parts (a steam shovel for biting like a mouth, a robotic arm for grasping, etc.) and discuss the similarities and differences.
- 2. (Engineering) Have students build a model of the human being out of simple materials. Have them list the materials used and for what reasons.

Attachments

- 1. Human Blueprint

Troubleshooting Tips

- 1. It may be helpful to draw an example of a modified human being in front of the class to point students in the correct direction. One example for this would be a mountain climber, replacing his hands with hooks, feet with claws, etc.
- 2. A “word bank” may be helpful. During the initial conversation with the class about parts of the human body that are used in the same way as tools, list on a white or blackboard the body parts and the tools they are similar to, when a student says them. For example:

<u>Body Part</u>	<u>Tool/Machine</u>
Hand/Arm	Wrench, Crane, Lever, Screwdriver, Forklift, Utensils,
Paddle	
Leg	Elevator, Spring
Foot	Wheel, Ski, Propeller
Torso/Back	Frame, Hinge
Brain	Computer

Teeth/Mouth

Scissors, Saw, Utensils

Safety Issues

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None

Additional Resources

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None


Human Blueprint

Name: _____

Date:

For what activity are you designing your human?

Draw your human in the space below. Please label the parts of your human.

A large, empty rectangular box with a thin black border, intended for drawing a human figure. The box is currently blank.