

**Title:** Get a Grip

**Grade Ranges:**

X\_K-4

5-8

9-12

**Subject Tag:**

Science: Stars and Planets

**Synopsis:**

This lesson gives students the opportunity to experience a hands-on activity demonstrating the significance of technology in the space industry. Students will discuss the spacesuits astronauts must wear in order to protect them from pressure differences, temperatures, and radiation in space. Students will learn that new technology sometimes creates obstacles that must be overcome. By trying simple activities while wearing one or two oversized gloves stuffed with tissue or cotton, students will experience an example of adapting to a new technology.

**Keywords:**

space program, astronauts, spacesuits, space technology

**Body:**

1. Before the lesson, set up four or five stations with the following materials:
  - a) adult-size work gloves or roomy leather gloves stuffed with cotton balls, facial tissues, or toilet tissue
  - b) needle and thread
  - c) toothpicks
  - d) small building blocks, dominoes, or dice
2. Discuss the importance of the spacesuit with the class. Show pictures of astronauts working in space with the suits on. Discuss why they do not have to wear the suits inside the spacecraft.
3. Divide the class into groups of four students. Tell them they will take turns wearing one glove, then two. Each student will try to thread a needle, pick up all the toothpicks, and stack the dominoes, blocks or dice.
4. When all the students in each group have had a turn using one glove and then both gloves, have them return to their seats. Pose the following questions: *What did the spaceglove feel like? What was hardest to do with one glove on? How did that change with two gloves on? How could you change any of the objects (needle, thread, blocks) so they would be easier to work with? Why is it important that new technology makes it easier for astronauts to move objects and operate equipment?*

**Related Links:**

Marshall Brain's How Stuff Works

<http://www.howstuffworks.com/space-suit.htm>

This site has everything you would ever want to know about spacesuits including how they work, how the astronauts learned to use them, and why they are necessary. There are also good photos from NASA.

**Features:**

Contains special education tips

Quick Activity (less than 30 minutes; story starter)

Requires Internet access for students to complete

**Objective:**

By completing this activity, students will experience a few challenges that simulate what astronauts might encounter when they must perform technical skills wearing space gloves.

**Standards:**

**NY: 5.5** History and Evolution of Technology: Technology has been the driving force in the evolution of society from an agricultural to an industrial to an information base. **5.6**

**Impacts of Technology:** Technology can have positive and negative impacts on individuals, society, and the environment and humans have the capability and responsibility to constrain or promote technological development.

**NYC: S4a.** Big ideas and unifying concepts, such as order and organization; models, form and function; change and constancy; and cause and effect. **S4b.** The designed world, such as development of agricultural techniques; and the viability of technological designs **S5f.** Works individually and in teams to collect and share information and ideas.

**CT: 14.** Science and Technology: Students will understand the relationships among mathematics, science and technology, and the way they affect and are affected by society.

**NJ: 5.4:** All students will develop an understanding of technology as an application of scientific principles.

**Technology and Materials Needed:**

1. four or five pairs of adult-size work gloves or roomy leather gloves
2. cotton balls, facial tissues, or toilet tissue
3. four or five needles and spools of thread
4. four or five packages of toothpicks
5. building blocks, dominoes or dice

**Recommended Lesson Plan Review Date:**

NA

**Review Comments:**

NA