

# The Need to Invent

**Overview:** Students experience what it is like to be physically challenged and create an invention that will help them.

**Materials:**

- copies of page 59 (one per student)
- copies of pages 60 and 61 (enough for all students when divided into pairs)
- one-inch (2.5 cm) wide, removable, adhesive bandage
- soft earplugs used for swimming
- eye patch (black fabric or paper will do)
- baseball bat
- sleep masks
- index cards
- dark cellophane
- cups of applesauce
- drawing paper
- wheelchairs
- cloth strips (2" x 3' / 5 cm x 90 cm)
- wide stretch bandage with fastener
- spoons
- crutches
- ticking clock
- tennis balls
- disposable combs

**Preparation:**

- Send home the parent letter before doing this activity.
- Contact parents and the school health clerk or nurse to find crutches and wheelchairs which may be used for this activity. Sleep masks and earplugs are usually available in drug stores.

**Procedure:**

- Ask the students if they have ever had to use crutches or a wheelchair. Have them share what this was/is like and the problems they may have had. Explain to the students that inventions are often created to help people who are physically challenged. Discuss how these have helped them.
- Tell the students that they are going to be teamed with a partner and that each pair of students will be given a temporary physical challenge. Let them know that each member of the team will spend time experiencing the challenge. Explain that the purpose of this activity is for them to design an invention that will make life easier if they have to live with this challenge forever. They will not actually make the invention but draw it instead.
- Divide the students into pairs and let each team choose its physical challenge card from a bag. Have them read the information on the card and discuss what the rules will be during this time.
- Complete the challenge.

**Closure:**

- Distribute drawing paper to the students and have them design their inventions. They should label them and explain how they will be used.
- Have each team post its design on the bulletin board and explain it to the class.
- Compare the inventions which were made for the same type of physical challenge.

# Parent Letter for Physical Challenge Activity

Date: \_\_\_\_\_

Dear Parents,

Our class is continuing our study of inventions. The students are about to be involved in an activity which will have them assume a physical challenge. These include forgoing the use of their legs so they must be in a wheelchair, wearing a sleep mask over their eyes to simulate blindness, and wearing earplugs to simulate loss of hearing. The students will work in pairs so only one partner will be physically challenged at a time. They will exchange roles so both partners have the opportunity to see how it feels to experience this challenge.

Safety will always be considered throughout this activity, and students will be closely monitored. During the time they experience this physical challenge, they will perform everyday tasks such as playing ball, writing, and moving around the classroom or outside.

At the end of this lesson, students will be responsible for designing devices that would help them live as normally as possible in spite of the physical challenge. They will make drawings of their inventions and explain them to the class.

We will need to borrow a wheelchair and adjustable crutches during this activity. If you have either one of these items that you could loan us for a few days, please contact me at school.

Be sure to ask your child about this activity and discuss how it made him or her feel to have a temporary physical challenge.

Thank you for your help in this project. You are welcome to visit our class during this activity or come to see the pictures of the students' inventions which will be displayed in our classroom in a few days.

Cordially,

\_\_\_\_\_

# Physical Challenge Cards

**Physical Challenge:** loss of vision in both eyes  
**Materials:** sleep mask, applesauce, spoon  
**Getting Started:** Put the sleep mask on so that you see no light.  
**Tasks:** Walk around the room and outside. Pick up objects and try to identify them. Eat the applesauce.

**Physical Challenge:** both arms broken  
**Materials:** two cloth strips, comb, applesauce, spoon  
**Getting Started:** Cross your arms in front of you and have your partner use the cloth strip to tie them together. The hands should be free to move at the wrists.  
**Tasks:** Write, sit and then stand up; comb your hair; take off your shoes and put them on again; and eat the applesauce.

**Physical Challenge:** loss of vision in one eye  
**Materials:** eye patch, removable tape, tennis ball  
**Getting Started:** Tape the patch over one eye so you cannot see.  
**Tasks:** Walk around the room and outside. Play catch with your partner.

**Physical Challenge:** both legs broken  
**Materials:** strip of cloth, wheelchair, tennis ball  
**Getting Started:** Sit in the wheelchair and have your partner tie your legs together with the cloth strip.  
**Tasks:** Use the wheelchair to move around the classroom. Move to your desk chair. Go outside and move around the area. Play catch with your partner.

**Physical Challenge:** one arm broken  
**Materials:** cloth strip, applesauce, spoon, comb  
**Getting Started:** Have your partner tie the strip around the wrist of your writing hand and then around your chest. This will hold your arm against your body.  
**Tasks:** Write, sit, and then stand up; comb your hair; take off your shoes and then put them on again; eat the applesauce.

**Physical Challenge:** cannot speak  
**Getting Started:** You cannot speak, not even whisper.  
**Task:** Try to tell your partner something without using your voice.

# Physical Challenge Cards *(cont.)*

**Physical Challenge:** can only see straight ahead

**Materials:** two index cards, removable tape, tennis ball

**Getting Started:** Fold the cards in half and tape them on either side of your head so you cannot see around them.

**Tasks:** Toss the ball with your partner. Walk around the room and outside.

**Physical Challenge:** one leg broken

**Materials:** crutches, stretch bandage, tennis ball

**Getting Started:** Have your partner put the stretch bandage around your knee so it cannot be bent. Do not make it so tight that it cuts off the flow of blood. Remember not to put any weight on that leg.

**Tasks:** Walk around with the crutches. Sit and stand. Play ball with your partner.

**Physical Challenge:** lost use of one thumb

**Materials:** removable tape, comb, applesauce, spoon

**Getting Started:** Tape the thumb of your writing hand to the side of your hand.

**Tasks:** Write, pick up a spoon and eat the applesauce, and comb your hair.

**Physical Challenge:** partial hearing loss in both ears

**Materials:** earplugs, clicker (noisemaker)

**Getting Started:** Place the earplugs into your ears to cut out as much sound as possible.

**Tasks:** Listen to the sounds around you with and without the earplugs. Notice what sounds you can hear. Repeat this as your partner walks around you and uses the clicker.

**Physical Challenge:** born without thumbs

**Materials:** removable tape, baseball bat, tennis ball, applesauce, spoon

**Getting Started:** Have your partner tape both thumbs to your hands.

**Tasks:** Play baseball with your partner, write, and eat the applesauce.

**Physical Challenge:** limited vision

**Materials:** 3" x 6" (7.5 cm x 15 cm) strips of dark cellophane, same size cardboard strip, two 8" (20 cm) strings, tennis ball

**Getting Started:** Draw a rectangle on the cardboard, leaving a half-inch (1.25 cm) border around it. Cut this section out and tape the cellophane over it. Attach strings to the long ends. Tie the strip in front of the eyes.

**Tasks:** Walk around, write, and play ball.