
PHYSICAL DISABILITIES

Curriculum

Understanding Our Differences gratefully acknowledges the talent and dedication of:

- Frank Siteman for the photography in the 'Where's the Barrier' activity.



Understanding Our Differences
The Leader in Disability Awareness Education

BACKGROUND INFORMATION FOR PRESENTERS

This background information provides presenters with additional information about physical disabilities that is not presented to the students. It is provided to help you avoid misconceptions, use appropriate disability-positive language and feel more comfortable answering questions that may arise during class discussion.

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This unit groups physical disabilities according to their onset:

Birth - Cerebral palsy, muscular dystrophy, spina bifida, dwarfism, cleft lip, cleft palate

Injury - Severe burns, spinal cord injury, head injury, amputation

Illness - Heart disease, cancer, kidney failure, multiple sclerosis, rheumatoid arthritis, Parkinson's disease, amyotrophic lateral sclerosis (Lou Gehrig's disease)

No matter when the onset, people with physical disabilities often experience both architectural and attitudinal barriers. As a means of addressing **architectural barriers**, two topics will be emphasized:

Universal design is an inclusive way of thinking about and constructing environments with the goal of creating a world that fits everyone, whether you are elderly, pushing a baby stroller, or using a wheelchair for mobility.

Assistive technology has broadened the realm of abilities for people with disabilities with the use of devices that make possible anything from performing a simple task to competing with one's peers in sports.

In order to tackle **attitudinal barriers**, this unit focuses on sharing commonalities and prioritizes building communication skills and taking personal responsibility for action. To help prevent the isolation of peers with disabilities, these points are emphasized:

- Learning to ask for help or wanting to offer assistance in a kind and respectful way can be difficult and can bring up uncomfortable feelings. This is true for both people with disabilities and people without disabilities.
- It is natural to feel uncertain about how to interact with someone who has a disability.
- Another important concept in this unit is hidden disability. Physical disabilities include numerous types of disabilities and chronic illnesses, including many you can't see. This means you can't always tell a person has a physical disability.
- Some people with disabilities will take extra time to complete a task or will perform it in a different way. Learn something new or practice patient waiting!

We invite you to read the introduction to the *Understanding Our Differences Program* that emphasizes several important concepts that are critical to this unit. For example, those of us who were not born with a disability are likely to experience one in our lifetime. Though we can't anticipate its onset, viewed through this lens, disability becomes a natural phenomenon, something we can all expect to learn to live with in our life.

GLOSSARY

Adaptive Equipment is equipment or tools that have been modified to assist a person in functioning more independently.

Adaptive Physical Education Teacher is a teacher trained in physical education who adapts a program and/or provides an individualized program that meets the needs of students with disabilities so they can participate in physical activities to the best of their ability.

Alternative Communication is a way to communicate without using speech.

Assistive Technology is any device or service that enhances a person's ability to live more independently and perform tasks he or she might not otherwise be able to do.

Augmentative means increased in strength.

Cerebral Palsy is a brain disorder beginning at or before birth causing uncoordinated or stiff muscles, while leaving the ability to think and process information intact. Speech is often affected.

Hemiparesis is weakness on one side of the body.

Hemiplegia is paralysis (inability to move muscles) on one side of the body.

Multiple Sclerosis is a chronic, progressive illness in adults affecting the nerves in the brain, spinal cord and other parts of the central nervous system causing intermittent to permanent loss of function.

Muscular Dystrophy is a genetic condition causing weakness or loss of muscle function in children and adults.

Occupational Therapist is a health care professional who assists people to increase gross and fine motor movement to fulfill their life roles including self care (bathing, dressing, eating), work and recreation. This may include use of adaptive equipment to enhance independence.

Paraplegia is paralysis or inability to move one's legs.

People First Language refers to describing a person before their disability by explaining-what a person *has*, rather than defining who a person *is* by the disability. For example: the person with a physical disability, rather than the physically disabled person.

Physiatrist is a medical doctor specializing in physical medicine and rehabilitation, primarily treating people with physical disabilities and chronic medical conditions.

Physical Therapist is a health care professional who assists people to increase gross motor movement and muscle strength, range of motion, decrease pain and maintain their mobility through walking, using a wheelchair or assistive device like a walker.

Quadriplegia is paralysis of arms and legs, except for some minimal hand movement that remains in some people.

Speech and Language Pathologist is a health care professional who assists in helping a person communicate, either through an assistive device, writing or speaking.

Spina Bifida is a condition occurring in utero causing incomplete closure of the spinal column that may result in loss of function, especially in the legs.

Stroke: Cerebral Vascular Accident (CVA) is a clogged or ruptured blood vessel in the brain that may cause paralysis or weakness, and decreased or lack of coordination of one side of the body. It may affect speech, sensation and ability to perform everyday tasks including self care and work.

Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

– Ron Mace Center for Universal Design, College of Design, North Carolina State University

PHYSICAL DISABILITIES BIBLIOGRAPHY

Nonfiction

Barr, Linda. **Young Champions: It's All About Attitude.** Mankato, MN: Red Brick Learning/Capstone Press, 2006.

Dwight, Laura. **Brothers and Sisters.** Long Island City, N.Y: Star Bright Books, 2005.

Edwards, Nicola. **My Friend Has Dyspraxia.** North Mankato, MN: Chrysalis Education, 2005.

Gray, Susan H. **Living With Cerebral Palsy.** Chanhassen, MN: Child's World, 2003.

Gray, Susan H. **Living With Juvenile Rheumatoid Arthritis.** Chanhassen, MN: Child's World, 2003.

Heelan, Jamee Riggio. **The Making of My Special Hand: Madison's Story.** Atlanta: Peachtree Publishers, 2000.

Heelan, Jamee Riggio. **Rolling Along: the Story of Taylor and His Wheelchair.** Atlanta: Peachtree Publishers, 2000.

McMahon, Patricia. **Dancing Wheels.** Boston: Houghton Mifflin, 2000.

Powell, Jillian. **Sam Uses a Wheelchair.** Philadelphia: Chelsea Clubhouse, 2005.

Royston, Angela. **Using a Wheel Chair.** Chicago: Heinemann Library, 2005.

Schaefer, Adam. **Tools That Help Me.** Vero Beach, FL: Rourke Publishing, 2007.

Schaefer, Lola M. **Some Kids Use Wheelchairs. Rev. ed.** Mankato, MN: Capstone Press, 2008.

Biography

Apte, Sunita. **Christopher Reeve: Don't Lose Hope!** New York: Bearport Publishing, 2006. Series: **Defining Moments: Overcoming Challenges.**

Barasch, Lynne. **Knockin' On Wood: Starring Peg Leg Bates.** Lee & Low Books, 2004.

Kehret, Peg. **Small Steps: The Year I Got Polio.** Anniversary Edition. Morton Grove, IL: Albert Whitman and Co., 2006.

Kent, Deborah. **Franklin Delano Roosevelt: Nothing to Fear!** New York: Bearport Publishing, 2007. Series: **Defining Moments: Overcoming Challenges.**

Rappoport, Ken. "Jim Abbott" in **Profiles in Sports Courage**. Atlanta: Peachtree, 2006.

Sandler, Michael. **Jean Driscoll: Dream Big, Work Hard!** New York: Bearport Publishing, 2007. Series: **Defining Moments: Overcoming Challenges**.

Fiction

Asare, Meshack. **Sosu's Call**. LaJolla, CA: Kane/Miller Book Publishers, 2002.

Auch, M.J. **One-Handed Catch**. H. Holt and Co., 2006.

Avi. **Prairie School**. New York: HarperCollins, 2001.

Bang, Molly. **Tiger's Fall**. New York: H. Holt, 2001.

Bertrand, Diane Gonzales. **My Pal Victor/Mi Amigo, Victor**. Green Bay, WI: Raven Tree Press, 2004.

Carter, Anne. **In the Clear**. Victoria, B.C.: Orca Book Publishers, 2001.

Chaconas, Dori. **Dancing With Katya**. Atlanta: Peachtree, 2006.

Giff, Patricia Reilly. **All the Way Home**. New York: Dell Yearling, 2001.

Herrera, Juan Felipe. **Featherless/Desplumondo: Story/Cuento**. San Francisco: Children's Book Press, 2004.

Kehret, Peg. **My Brother Made Me Do It**. New York: Aladdin Paperbacks, 2000.

Lears, Laurie. **Nathan's Wish: A Story About Cerebral Palsy**. Morton Grove, IL: Albert Whitman and Co., 2005.

Palacio, R.J.. **Wonder**. New York: Alfred A. Knopf, 2012.

Romansky, Sally Rosenberg. **Invincible**. Bethesda, MD: Imagination Stage Inc., 2006.

Ryan, Pam Munoz. **Becoming Naomi Leon**. New York: Scholastic Press, 2004.

Stauffacher, Sue. **Harry Sue**. New York: Knopf/ Random House, 2005.

Striegel, Jana. **Homeroom Exercise**. New York: Holiday House, 2002.

Wait, Lea. **Finest Kind**. New York: Margaret K. McElderry Books/ Simon & Schuster, 2006.

Web Sites for Students

KidsHealth for Kids: Cerebral Palsy

http://www.kidshealth.org/kid/health_problems/brain/cerebral_palsy.html

KidsHealth for Kids: Juvenile Rheumatoid Arthritis

http://www.kidshealth.org/kid/health_problems/bone/juv_rheum_arthritis.html

KidsHealth for Kids: Problems with Legs and Feet

http://www.kidshealth.org/kid/health_problems/bone/orthopedic_conditions.html

KidsHealth for Kids: Scoliosis

http://www.kidshealth.org/kid/health_problems/bone/scolio.html

KidsHealth for Kids: Things that Help Me: Wheelchairs

http://www.kidshealth.org/kid/feel_better/things/wheelchairs.html

Kids' Quest on Disability and Health: Centers for Disease Control and Prevention

<http://www.cdc.gov/ncbddd/kids/>

Winners on Wheels (WOW) USA

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

Zigawhat! Connect with Other Kids: National Information Center for Children and Youth with Disabilities.

<http://www.nichcy.org/kids/>

Reading for Adults

Dobbs, Jean, ed. **Kids on Wheels – A Young Person's Guide to Wheelchair Lifestyle.** Vol. 1. No Limits Communications, 2004.

Dobbs, Jean, ed. **Kids on Wheels - A Guide to Wheelchair Lifestyle for Parents, Teachers and Professionals.** Vol. 2. No Limits Communications, 2004.

Gilman, Laura Anne. **Coping with Cerebral Palsy.** New York: Rosen Publishing Group, 2001.

Kelker, Katharin, Roger Holt, and John Sullivan. **Family Guide to Assistive Technology.** Brookline: MA, Brookline Books, 2000.

Lavin, Judith Loseff. **Special Kids Need Special Parents: A Resource for Parents of Children with Special Needs.** New York: Berkley Books, 2001.

Miller, Freeman, and Steven J. Bachrach. **Cerebral Palsy: A Complete Guide for Caregiving.** 2nd ed. Baltimore: Johns Hopkins University Press, 2006.

Orenstein, David M. **Cystic Fibrosis: A Guide for Patient and Family**. 3rd ed. Philadelphia: Lippincott Williams and Wilkins, 2004.

Thomas, Bernadette, and Cindy Dowling, ed. **A Different Kind of Perfect: Writings by Parents on Raising a Child with Special Needs**. Trumpeter, 2006.

Web Sites for Adults

American Academy for Cerebral Palsy and Developmental Medicine (AACPDM)
<http://www.aacpdm.org/>

American Occupational Therapy Association
<http://www.aota.org/>

American Physical Therapy Association
<http://www.apta.org/>

Apraxia-Kids The Childhood Apraxia of Speech Association of North America (CASANA)
<http://www.apraxia-kids.org>

Arthritis Foundation
<http://www.arthritis.org/>

Closing the Gap: Assistive Technology Resources for Children and Adults with Special Needs
<http://www.closingthegap.com/>

Cystic Fibrosis Foundation
<http://www.cff.org/>

KidsNeeds.com
<http://www.kidneeds.com/>

March of Dimes
<http://www.marchofdimes.com>

National Center on Physical Activity and Disability (NCPAD)
<http://www.ncpad.org/>

National Dissemination Center for Children and Youth with Disabilities (NICHCY)
<http://www.nichcy.org/>

National Easter Seals
<http://www.easterseals.com>

National Institutes of Health: National Institute of Neurological Disorders and Stroke
(Follow links to Cerebral Palsy)

<http://www.ninds.nih.gov>

National Youth Sports Safety Foundation

<http://www.nyssf.org/>

Partners for Youth with Disabilities

<http://www.pyd.org>

Scoliosis Research Society

<http://www.srs.org/>

Spina Bifida Association

<http://www.sbaa.org/>

United Cerebral Palsy (UCP)

<http://www.ucp.org/>

United Cerebral Palsy (UCP) of MetroBoston

<http://www.ucpboston.org>

WheelchairNet

<http://www.wheelchairnet.org>

SCHEDULE

The Physical Disabilities unit will take 2 hours to implement and requires 4 volunteers for every 30 students.

ACTIVITY	TIME	ORGANIZATION
1. Introduction	10 min	Students are kept in one group for a PowerPoint presentation.
2. Architectural Barriers and Universal Design VIDEO: 'Kids Just Want to Have Fun'	15 min	Students remain as one group for the VIDEO.
3. Activities	45 min	Students are divided into groups of 6 – 8, each group led by a volunteer. A third of the groups do the Assistive Technology and Adaptive Equipment activity, a third do the Communication Board activity, and a third do the Where's the Barrier activity. After 15 minutes, the groups rotate to the next activity. Repeat this until all groups have done each activity.
4. Assistive Technology video	10 min	Students join together as one group again for the movie.
5. Guest Speaker with a physical disability	30 min	Students remain as one group to meet and interact with the guest speaker.
6. Wrap Up	5 min	Students remain as one group for the Wrap Up.

TWO-DAY IMPLEMENTATION SCHEDULE

Some schools choose to have the speaker and/or optional activities at another time. If this is the case, please end the first session with all students in a large group after the activities. Tell students that they will meet a guest speaker when they next meet. Thank the students for doing a great job!

1. INTRODUCTION TO PHYSICAL DISABILITIES

1 Leader
10 minutes

Note to presenters:

This unit has been developed with some helpful teaching aids that are expected to make implementation more successful. Some important information may be repeated throughout the curriculum on both the instruction page and the actual activity.

The PowerPoint presentation has been designed to:

- Increase student comprehension by providing material in a child friendly visual representation.
- Provide leaders with an outline of the material that will help eliminate the need for notes or reading from the curriculum guide.

Teach and use the American Sign Language sign for "I agree" (or YOU-ME-SAME) to:

- Keep students engaged
- Allow all students to have a voice
- Keep the fast pace of the discussion on track

The ASL sign for YOU-ME-SAME is a "Y" hand shape with a back and forth movement between the speakers.




- PURPOSE:**
- To define the terms physical disability, handicap and attitudinal barriers
 - To explain causes of physical disabilities
 - To discuss ways to prevent accidents that could cause a physical disability
 - To acknowledge the natural feelings and discomfort that someone might experience when first seeing a person with a physical disability
 - To increase comfort level around people with physical disabilities


- MATERIALS:**
- Introduction PowerPoint from UOD website or flash drive from kit


- SETUP:**
- Set up computer, projector ,external speakers and screen.

- PROCEDURE:**
- The students sit facing the leader and the projection screen.
 - The leader teaches the students the ASL sign for "I agree."
 - The leader leads the discussion using the PowerPoint slides.

POWERPOINT PRESENTATION

	SLIDE	DISCUSSION
1	PHYSICAL DISABILITIES	<p>It's nice to be back with you again for the Understanding Our Differences Program. We are going to be giving you a lot of information and asking you a lot of questions. This is the American Sign Language sign to show that you agree. When you agree, do this (show the sign). Everyone, give it a try.</p> <p>Today, we are going to be talking about physical disabilities. What is a physical disability?</p>
2	PHYSICAL DISABILITY Part of the body <ul style="list-style-type: none"> • Functions differently • Does not function at all • Is missing 	<p>A person has a physical disability when a part of the body functions differently, does not function at all or is missing. Do you know anyone with a physical disability?</p>
3	TEMPORARY PHYSICAL DISABILITIES <ul style="list-style-type: none"> • Broken bones • Torn ligaments • Sprains  <p>Temporary physical disabilities go away when the injury heals.</p>	<p>Temporary physical disabilities such as broken bones, torn ligaments and sprains are common. These types of disabilities usually go away when the injury heals. Some of you know what it's like to have a part of your body that doesn't work the way it did. It can make it harder to participate in some of the things you like to do.</p> <p>We are going to be focusing on permanent physical disabilities that do not go away, and learn how they affect peoples' lives. We will learn how accommodations and devices can help people with physical disabilities do things more easily.</p>

4	<p>PERMANENT PHYSICAL DISABILITIES</p> <p>Can happen in 3 ways: Birth, Illness or Injury <u>Birth</u> A person may be born without all or part of his/her limbs, or without a body part fully developed. They also may be born with body parts that do not function in a typical way. <u>Illness</u> Some people have a physical disability as the result of serious illness that affects their body organs or ability to move or speak clearly.</p>	<p>Examples of physical disabilities from birth include cerebral palsy and spina bifida.</p> <p>Examples of physical disabilities caused by illnesses include multiple sclerosis, stroke or arthritis. Most of these conditions are adult illnesses.</p> <p>Many people, as they get older, May some sort of physical disability. If you have any relatives who have a physical disability, use the I agree sign.</p>
5	<p>INJURY</p> <ul style="list-style-type: none"> • Automobile accidents • Bicycle accidents • Sports injuries • Diving accidents • Falls • Burns • War • Guns 	<p>Physical disabilities can occur as a result of injury from automobile or bike accidents, sports injuries or diving accidents, falls or burns. Sometimes people are also injured in war or by guns.</p>
6	<p>PREVENTION</p> <p><i>Protect your body and brain by wearing seat belts and helmets</i></p> <div data-bbox="376 1331 779 1495">  </div>	<p>YOU can prevent some physical disabilities from becoming permanent by wearing seat belts and by never getting in a car when a driver has been drinking alcohol.</p> <p>What about bicycle or scooter, roller-blade or skateboard, ski or snowboarding accidents? <i>(Wear helmets and pads, bike in safe places)</i></p> <p>What about water accidents? <i>(Don't dive in shallow water or in murky water where there may be rocks or other hard objects you cannot see on which you can hit your head. Swim with a buddy/lifeguard.)</i></p>




7	<p>SPINAL CORD OR BRAIN INJURY</p> 	<p>Sometimes injury to the body can involve the spinal cord or brain.</p> <p>Where is the spinal cord? (<i>Inside the spine or vertebral column</i>)</p> <p>Everybody touch the top of your spine. Your spine starts at the top of your neck and ends at your low back.</p>
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8	<p>SPINAL CORD OR BRAIN INJURY</p> <ul style="list-style-type: none"> • Brain messages could get jumbled • Muscles may not move in a coordinated way • Speech may be difficult to understand 	<p>Messages from your brain travel through nerves in the spinal cord to tell the body parts to move. If the brain or spinal cord is injured, these messages cannot get through or they get mixed up.</p> <p>The muscles may move in an uncoordinated way.</p> <p>Sometimes speech is affected. So if, for example, the brain tells the mouth to say, "hello," and the brain is injured, what could happen to that message? (<i>It could get jumbled. Speech may be difficult to understand.</i>)</p>
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9	<p>INJURY TO THE BODY:</p> <ul style="list-style-type: none"> • Permanent damage to arms or legs • Loss of part or all of arms or legs • Severe burns can cause loss of use of limbs 	<p>Other people have disabilities because of injuries that permanently damage parts or all of their arms or legs. Sometimes severe burns can damage the skin enough to limit movement.</p>
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10	<p>BARRIERS</p> <ul style="list-style-type: none"> • Architectural • Attitudinal 	<p>Architectural barriers are obstacles in the environment that prevent a person from doing what they want to do. Some examples are a step instead of a ramp or a staircase</p>
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		<p>instead of an elevator.</p> <p>People's attitudes can be an excluding barrier when they assume people with disabilities can't do things. We call these attitudinal barriers.</p> <p>What are some examples of attitudinal barriers that exclude someone with a disability? <i>(not being picked for a team or for a cooperative learning group or group activity in school, judging people or their ability to do something because of how they look, speak, or move)</i></p> <p>Sometimes adults with disabilities do not get hired for jobs because the employer thinks they can't do the work, even though they may be very capable and competent.</p>
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11	<h2>HANDICAPS</h2> <div data-bbox="496 1005 604 1100"></div> <p>Lack of accessible transportation</p> <div data-bbox="496 1199 604 1285"></div> <p>A step instead of a ramp</p> <div data-bbox="496 1346 604 1432"></div> <p>People's attitudes</p>	<p>We sometimes hear the word "handicap" and use it incorrectly. What is a handicap? A handicap is the limitation placed on a person by others.</p> <p>People are not handicapped.</p> <p>Some examples of handicaps are:</p> <ul style="list-style-type: none"> • Lack of accessible transportation • A step instead of a ramp • People's attitudes
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FEELINGS AND FRIENDSHIP

- Are you uncomfortable, shy or curious, but don't want to stare?
- Do you want to avoid people with physical disabilities?
- How can you be a friend and an ally?



You may have some different feelings when you see a person in a wheelchair or with a disability.

- Maybe you are uncomfortable, shy or curious, but don't want to stare. Has anyone felt this way or experienced this? (**Use the sign for I agree**)
- You may want to avoid people with physical disabilities. Has anyone felt this way or experienced this? (*I agree*)

All of these feelings are very natural.

- What are ways to be a friend? (*talk together, treat everyone the same way, include everyone, offer help, never tease, never be a bully*)

Be an **ally**! An ally is someone who stands up for another person.

2. ARCHITECTURAL BARRIERS AND UNIVERSAL DESIGN

1 leader
15 minutes

- | | |
|-----------------|--|
| PURPOSE: | <ul style="list-style-type: none">• To define the terms architectural barriers and attitudinal barriers• To show the advantages of universal design• To discuss ways to be a friend to peers with disabilities• To acknowledge that some activities may be challenging for everyone |
|-----------------|--|

- MATERIALS:**
- VIDEO "Kids Just Want to Have Fun"
-

- SETUP:**
- Set up computer, projector, external speakers and screen
-

- PROCEDURE:**
- All students sit facing the leader and screen.
 - The leader shows the VIDEO.
 - The leader leads the movie discussion.
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ARCHITECTURAL BARRIERS AND UNIVERSAL DESIGN

Universal Design

Have any of you wondered how people with different kinds of disabilities could participate in a sport or play on the playground equipment? There are several ways to promote inclusion or everyone playing together. One way is to use adaptive equipment such as the ultra-light wheelchairs used in the Boston Marathon, or devices to help everyone communicate. Another way is to design spaces or buildings and common tools that are useful for everyone. This is called universal design. Let's watch a VIDEO about a group of kids with disabilities in a playground using universal design. They just have fun.

(Show VIDEO "Kids Just Want to Have Fun")

Discussion Questions

- How were all children in the movie able to play together?
(the playground was universally designed, special equipment, the playgrounds were designed to be accessible without barriers.)
- Do you think the children without disabilities treated the children with disabilities in a friendly, accepting and helpful way? If you agree use the sign for I agree.

Now we are going to talk about barriers that can prevent people with disabilities from working and playing and doing things they like to do.

The playground in the movie had no barriers, but usually there are architectural barriers everywhere. Architectural barriers can be helpful, such as a fence so your pet or ball stays in your backyard.

Architectural barriers can also exclude people from doing what they want or need to do. Can you think of any architectural barriers that exclude people?
(curbs and stairs instead of ramp, vehicles without a lift, buildings without elevators)

We are now going to divide into three groups for activities.

3. ACTIVITIES:

ADAPTIVE EQUIPMENT

Station 1

1 leader for every 6 – 8 students

20 minutes

- PURPOSE:**
- To show how universal design is useful for EVERYONE
 - To show how aids and adaptive equipment can help a person with physical disabilities to do everyday tasks
 - To recognize that technology is playing an increasingly important role in allowing people with physical disabilities to function independently
 - To appreciate that it may take extra time for a person with a physical disability to complete a task
 - To recognize that some people with physical disabilities may need assistance from other people

- MATERIALS:**
- Eating and Assorted Devices**
- | | |
|----------------------|--------------|
| 2 forks and 2 spoons | T-handle cup |
| Rocker knife | Plate guard |
| Long straw | |
| 2 Adapted scissors | |
| Built-up pen | |
| Grips for pencils | |
- Personal Aids**
- | | |
|---------------------------|--------------------------------|
| Shoes with Velcro closure | 4 Buttonhooks |
| 4 Shirts with buttons | Shoes with spiral spring laces |
| Reacher | Shoehorn |
| Long handled sponge | |

- SETUP:**
- Set up the adaptive devices on 2 desks or tables nearby. Make sure there is sufficient room for the students to sit at the tables while the leaders demonstrate the devices.

- PROCEDURE:**
- Demonstrate and discuss how equipment enables a person with physical disabilities to be more independent.
 - Explain how each piece of equipment is used.
 - Let students use/hold each item.
 - Explain how they are helpful.

Hot Tip!

To avoid injuries, the leader should restrict students' use of the rocker knife and the reacher.

ADAPTIVE EQUIPMENT

Sample Discussion

Physical disabilities can occur in almost any part of the body.

- If you have a physical disability involving your legs or your feet, how would that affect your life?
(*You might have difficulty walking or getting around.*)
- If you have a physical disability involving your hands and arms, how would that affect your life?
(*You might have difficulty writing, eating, dressing, opening doors, typing on the computer.*)

Independence

People who have a physical disability that makes it hard for them to do certain things, like buttoning a shirt or cooking a meal, can sometimes choose to have people help them with difficult activities. Others prefer to rely on assistive technology because it makes them less dependent on others.

- What would be an advantage of trying to manage on one's own?
(*Independence*)
- What would be a disadvantage?
(*Takes a long time, frustrating*)
- Would you want another person to help you?
(*Students may have different answers*)
- How would you feel if you couldn't do as much as you can now and had to ask for help to do even simple tasks?

People with physical disabilities can sometimes choose to use service animals. These are specially trained animals that help people with disabilities with certain life tasks (similar to the dog guide you learned about in the blindness unit). Some examples are monkeys and dogs.

Babies born with physical disabilities grow up never knowing what it would be like to do things like their peers without disabilities. From the beginning, they figure out or are taught alternative ways to move and do things. People who have acquired physical disabilities through injuries or illness have to learn to do things in new ways. This can sometimes be frustrating when doing things they used to do easily.

Occupational, physical and speech therapists are specially trained professionals who teach people to do things more easily on their own, often using assistive technology. This minimizes the amount of assistance needed from others for everyday tasks.

We are now going to look at some examples of adaptive equipment devices that may be helpful for people with physical disabilities in their activities of daily life.

(Emphasize the importance of universal design - these aids can be used by everyone)

Eating Devices

These adaptive devices include a cup holder, plate guard, long straw and rocker knife, fork and spoon with expanded (built-up) handles.

These eating devices assist a person who has decreased hand strength or coordination, or can only use one hand. Would you like to see how these work? The plate guard helps keep food from being pushed off the plate, and the long straw can be used by someone who can't pick up a cup or glass to drink.

Assorted Devices

These adaptive devices are adapted scissors, grips for pencils and built-up pens.

These devices assist a person who has decreased hand strength or finger coordination. The gripping surface is larger so a person doesn't need as much strength or coordination to hold the item.

Personal Aids

These adaptive devices include shoes with spiral spring laces, and shoes with Velcro closures.

These are for people who lack the coordination to tie their shoes or to use their hands well. Try them and see how they work. How can these shoelaces and closures make it easier?

These are a shoe horn, a reacher and a long-handled sponge, which are devices to help people get dressed and bathed. They assist a person who has limited ability to bend and use their arms to put on shoes, pants, to reach, and wash legs and back.

This is a buttonhook to use with a shirt with buttons.

The buttonhook enables a person with use of one hand or decreased hand strength or coordination to do buttons, and even pull up a zipper.

Would you like to try buttoning this shirt with the buttonhook?

Optional Activity - Student Practice Procedure

(Have interested students practice using a buttonhook to put on a shirt)

Pretend one of your arms cannot move. Be sure to keep this arm motionless throughout the activity of putting on the shirt.

1. Put the shirt on, and after you get it around both shoulders, begin buttoning it by using the buttonhook.
2. Put the wire part of the buttonhook through the buttonhole to catch the button on the other side. Try to pull the button through the buttonhole, making sure not to use the other arm.
3. After you button one button, then switch with your partner so he/she can have a turn.

Hot Tip!

- Dress the motionless arm first. It makes it much easier.
- An occupational therapist may help a person with a disability learn to how to do things independently by teaching him or her tips like this one.

COMMUNICATION BOARD

Station 2

1 leader for every 6 – 8 students

20 minutes

- PURPOSE:**
- To recognize that technology plays an increasingly important role in allowing people with physical disabilities to communicate more easily
 - To understand that without communication a person can feel, and in fact can be, isolated

- MATERIALS:**
- Several communication boards
 - Card A and B with text for each student
 - Card C if there is extra time
 - Picture of girl using a communication board

- SETUP:**
- The students and the leaders sit at a table large enough for half of the students to use the communication boards.

- PROCEDURE:**
- An introduction is given.
 - The students are divided into pairs. One student is given the communication board and instructed not to talk. The other student is given card A with text.
 - The students using the boards participate by pointing to the appropriate squares on the board. The students with the text card can "read" the words as the students point to their answers on the board.
 - The boards are given to the other students and card B with text is given to the students without the boards.
 - If there is time, the boards are given to the other students and card C with text is given to the students without the boards.
 - Leave a few minutes for discussion questions.

Hot Tip!

If you prefer to use different text for the communication board activity, feel free to do so. Any topic that is current would be appropriate.

COMMUNICATION BOARD

Sample Discussion

How do we usually communicate?

(Speech, using our voice)

Some people with physical disabilities who cannot speak clearly use sign language, computers, gestures or facial expressions, communication boards, or writing. If someone does not communicate with speech, it doesn't mean they do not have anything to say. Without communication people can feel lonely.

Did you know that we use **hundreds** of muscles in our mouth, neck, face and chest to speak? Here are the steps our bodies take to create speech:

- We take a deep breath and let it out while we're talking.
- This forces the air through the voice box (larynx) in our neck and then through our mouth.
- Our lips, tongue and jaw work together to make different sounds.

Some people with physical disabilities may have weak muscles or very little muscle control. They may have slurred speech or no speech at all. For example, cerebral palsy often affects speech and a person's facial muscles. It does not necessarily affect a person's ability to think or how smart he or she may be.

This is an example of a communication board. (**Show the students the communication board.**) This can be very helpful to someone with limited or no speech at all. The board has pictures on one side and letters to spell out words on the other side.

Now you are going to try to communicate without speech. Everyone will have a partner. One partner will use the communication board without speaking to answer some questions. The other partner will ask the questions on the card using speech. (**Pass out the laminated communication board to half of the students and cards with text to the other half of the students.**)

Use the communication board to answer these questions. After you are finished with the questions on Card A, switch roles and ask the questions on Card B.

Card A

Speaker:

Tell your partner that you are going out to lunch together. Ask your partner the questions below. Tell your partner if he/she can't find a picture to spell it out.

- Where do you want to have lunch?
- Who else should come with us? What are their names?
- How will we get there?
- What do you want to eat and drink?

Card B

Speaker:

Tell your partner that he/she is going somewhere special today. Ask your partner the questions below. Tell your partner if he/she can't find a picture to spell it out.

- Where are you going?
- What should you do to get ready in the morning?
- What are some of the things you will do when you get there?
- What will you bring in your backpack?

Closing Discussion

- How did it feel not to be able to use your voice to communicate?
- How did it feel to talk to your partner who could communicate only with the board?
- What happened to the pace of the conversation when using a communication board?

(Show picture of the girl using a communication board.)

People have many different kinds of conversations and have many things to share in school, work, and while out having fun or just hanging out at home. Can you see why it would be important to have different kinds of communication boards to communicate all that you want to say? Many people now use iPads or other tablets to communicate their needs if they have difficulty verbalizing. They may also speak and use voice activated software if they are unable to physically type in their words to communicate. In the VIDEO we will watch, we'll learn the ways that two students communicate with assistive devices.

If you have extra time, the students can use the communication boards again with Card C.

Speaker:

Tell your partner you are taking a trip to Disneyworld in Florida.

- What would you need to bring for your trip?
- How are you getting there? (If there is no picture, use the letters and spell the word.)
- How many days will you spend there?
- What do you think the weather will be like?

“WHERE’S THE BARRIER?”

Station 3

1 leader for every 6 - 8 students

20 minutes

PURPOSE: • To teach students about architectural and natural barriers that prevent people with disabilities from participating fully in activities they need or want to do

MATERIALS: • Spiral bound flip chart with pictures of architectural barriers and barrier-free environments and activities
• Blue accessibility sign

SET UP: • Students should sit in a circle or at a table to be able to see pictures held up by the leader.

PROCEDURE: • Hold up one of the boards showing a barrier.
• Ask how the situation pictured would prevent someone with a physical disability from participating.
• Then present the opposite side of the picture showing universal design or environmental adaptations. Explain how this made the environment accessible.

Hot Tip!

Please review the picture categories ahead of time. If you have time constraints implementing this activity, you can shorten it by selecting those categories that are most relevant to your community. Prioritize and plan ahead.

“WHERE’S THE BARRIER?”

Sample Discussion

Architectural barriers can prevent a person from going where they want to go and doing what they want to do. In all the activities you do today you are learning about ways that devices or places are designed to accommodate people with physical disabilities. These adaptations can also benefit people without disabilities. This is called **universal design**, which means they are designed for everyone’s use. Examples are automatic door openers, kitchen utensils with large, easy-to-hold handles, touch screens and speech recognition software.

People with disabilities can do many of the same activities as people without disabilities. In the following pictures, I will show you a typical place or activity, and you try to guess if people with disabilities could access this place or do this activity. Then I will show you how universal design or adaptations helps people with disabilities do the things they need and want to do.

Picture 1: Bathroom

Inaccessible

If you used a wheelchair or walker or had limited hand strength or coordination, what two things would be difficult for you to do in this bathroom?

Accessible

- Roll-in shower with shower chair
- Sink with space below to fit wheelchair or scooter
- Lever on faucet for people with limited hand strength
- Grab bars to make transferring easier
- Soap dispenser that can be used with one hand
- Hand held shower for easier bathing

Picture 2: Transportation – public and private

Inaccessible

If you used a wheelchair, could you use this station?

Would a person in a wheelchair or scooter be able to drive a car?

Accessible

- Adapted van with an electric ramp and swivel driver’s seat with hand controls could be used by someone with limited leg strength
- Train stations with specialized ramps and lifts can be used by all
- In Massachusetts, the “Ride” is an adapted vehicle service that can be used by people with physical disabilities if they are unable to use other modes of transportation

Picture 3: Recreation – lake, playgrounds and sports

Inaccessible

If you used a wheelchair or walker, would you be able to go to the beach? On the sand? Into the water? Would you be able to use this playground?

Accessible

- Ramp leading down to the lake
- Special sand wheelchair with large rubber wheels

If you used a wheelchair or a walker, would you be able to use this playground?

- Playground is custom built to have level ground that is made of rubber, so students in wheelchairs can access the equipment to play
- Playground has ramps so students in wheelchairs and others can use the bridge, platform and slides

If you used a wheelchair or walker, would you be able to ride a bike, windsurf, or ski? Would you be able to kayak, canoe, sail, rock climb, raft, hike, skateboard or do some of the same things you like to do for fun? You would because so many sports can be adapted such as:

- Adaptive skiing
- Hand cycling or adapted seats for bikes,
- Adapted seats and paddles for kayaking, canoeing, rafting, windsurfing, sailing
- Prosthesis (artificial leg or arm) for climbing, skateboarding, hiking, waterskiing, rock-climbing

Picture 4: Public Buildings – Library, City Hall

Inaccessible

If you used a wheelchair or a walker, would you be able to use this building? (**Hold up the blue accessibility sign.**) This sign means that a person using a wheelchair or walker is able to use the facility.

Accessible

- Older buildings were designed without considering accessibility. Today the law requires that these public buildings add ramps and elevators.
- Newer buildings can be designed using universal design. People with strollers and people who have difficulty climbing and descending stairs can get into universally designed buildings easily.
- The book drop at the library is low enough for a person in a wheelchair to use.

Picture 5: Home

Inaccessible

Outside: stairs, curbs, doorknobs, and entryway

If you used a wheelchair or a scooter would you be able to get into this house?

Accessible

- Curb cuts, ramps, wide entry, and lever doorknob or automated opener

Inaccessible

Inside: Kitchen, stairways, light switches, control of environment

If you used a wheelchair or had limited coordination or strength, would you be able to use these stairs, turn on a light switch, or cook a meal?

Accessible

- Adapted kitchen with wall ovens (wheelchair height) and stoves with controls on the front, lower counters and sinks with space beneath them, door knobs and faucets with levers, shelves at the appropriate height, cooking utensils for one-handed or weaker grasp
- Light touch, motion, or heat activated light switches, remote controls for heating or operating blinds or shades
- A home on one level to access all rooms, chairlifts for stairs
- Beveled or no thresholds between rooms for wheelchairs or scooters

Other points to discuss:

- Which pictures demonstrate universal design?
- Everyone can benefit from well-designed spaces and devices, not just people with disabilities.
- Examples: curb cuts, ramps, door knobs and faucet with levers, easily reachable shelves and comfortable keyboards for computers

Wrap Up Discussion

Every person has a right to participate in activities he or she needs or wants to do.

Thoughtful construction of environments like playgrounds and buildings and adaptations to computers and sports equipment allow people with disabilities to do all the things our world has to offer.

4. ASSISTIVE TECHNOLOGY VIDEO

1 leader
10 minutes

- | | |
|-----------------|--|
| PURPOSE: | <ul style="list-style-type: none">• To define the term assistive technology• To show how assistive technology provides independence• To discuss ways to be a friend to peers with disabilities• To acknowledge that some activities may be challenging for everyone |
|-----------------|--|

- MATERIALS:**
- VIDEO "Assistive Technology"

-
- SETUP:**
- Set up the computer, projector, external speakers and screen

-
- PROCEDURE:**
- All students sit facing the leader
 - The leader shows the VIDEO.
 - The leader leads the movie discussion.
-

Read to Students

In the video documentary that we are seeing today, we are going to meet Emeline and Marianne, students at Newton South High School. Emeline was born with Cerebral Palsy; she uses a wheelchair and cannot speak to communicate. Marianne was born with Spinal Bifida, and uses a wheelchair. During the interviews, Emeline and Marianne will answer questions and show us how they use computers, iPads, and other assistive technologies.

We are also going to meet Kelli Mulcahy, who is a speech and language pathologist in Newton, Massachusetts. Ms. Mulcahy will tell us how she teaches people with disabilities to use assistive technologies to help them communicate and be successful in school, especially with the use of "apps." She looks for tools that match each student's particular needs.

Discussion Questions

- Do you use any assistive technology in your every day life? (*point out that people with eyeglasses do*)
- Do any of the assistive technologies shown in the video look familiar? Do you have them in your home? (*iPads, computers, etc.*) Let's talk about the meaning of "universal design" and how these tools are great for everyone, for a huge variety of needs. (*Such as homework, communicating with friends, etc.*)
- How do you think the use of technology affects the lives of Emeline and Marianne? How does the use of technology affect your life?

5. GUEST SPEAKER

1 leader

30 minutes

- PURPOSE:**
- To put a personal face on the unit information
 - The speaker tells the students about his or her experience and feelings living with a physical disability.
 - The students have an opportunity to express their curiosity, interest and understanding.
 - This experience reinforces the concept that a disability is only one of the many traits that contribute to a person's identity.

- MATERIALS:**
- Card with optional speaker questions and wrap-up discussion from kit
-

- SETUP:**
- No special setup is required.
-

- PROCEDURE:**
- Students and leaders sit facing the guest speaker.
 - The speaker is introduced.
 - The speaker speaks and answers questions.
-

Sample Discussion

I'd like to introduce our guest speaker, _____.

Here's a chance for you to listen and learn more about what it's like to live with a physical disability. Feel free to ask any questions you may have.

6. WRAP UP

1 leader

5 minutes

- | | |
|-----------------|---|
| PURPOSE: | <ul style="list-style-type: none">• To recognize the commonalities among us all• To share the human needs for respect, self-esteem, family, friendship, accomplishment and independence• To recognize that a physical disability is only one of the many traits that contribute to making a person the individual that he or she is• To put the experiences of the unit into perspective• To answer any remaining questions |
|-----------------|---|

- MATERIALS:**
- Wrap up discussion card
-

- SETUP:**
- No special setup required.
-

- PROCEDURE**
- Students and leaders remain in their seats as the guest speaker leaves.
 - A wrap-up discussion follows.
-

Sample Discussion

We learned today about physical disabilities. I want to review with you some of the main points that we learned.

1. Architectural barriers can be challenges for people with physical disabilities, but we can use universal design to make places and things accessible for everyone.
2. People who have a physical disability can participate in most activities of daily life just like you. They may use assistive technologies, adaptive equipment, or personal assistants to make activities of daily living possible.
3. You can be a good friend by treating people with physical disabilities the same way you treat your other friends, offering help, if needed and by encouraging them to play with you. You can also be an ally by standing up for them if they are being teased or bullied.
4. Being part of our community and a good friend means valuing and accepting people of all abilities. Every person has a combination of strengths and challenges, and who a person is on the inside is what matters

You did a great job today. Thank you!

OPTIONAL ACTIVITIES

WHEELCHAIRS

- PURPOSE:**
- To raise the students' consciousness of the existence and significance of architectural barriers
 - To sensitize the students to some of the difficulties and limitations of wheelchair locomotion
 - To give the students an appreciation of the importance of wheelchairs; they are not toys and should never be treated like toys

- MATERIALS:**
- Wheelchairs
-

- SETUP:**
- Plot a route that includes some or all of the following: textured surfaces, a threshold, a drinking fountain, double doors. Avoid going near stairs.
-

- PROCEDURE:**
- Students and leaders gather at the beginning of the wheelchair route.
 - The safe use of a wheelchair is demonstrated and the route is described. Have a leader stationed at the beginning to assist students in and out of chairs and one leader stationed along the route.
 - While students take turns using wheelchairs, a discussion is held that involves all the students in the wheelchair group.
-

WHEELCHAIRS

Sample Discussion

Before using the wheelchairs:

- Have you ever had to use a wheelchair?
- Do you know how to use it?
(*When getting in or out always lock the wheels. Always use the outer ring on the wheel for pushing, not the rubber wheel-rim.*)
- Describe the route to the students.

While using the wheelchairs:

- Does the world look different to you while using a wheelchair?
- What is it like to be looking at people's waists rather than their faces? Imagine what it might be like in a crowd.
- Have you ever pushed a stroller in a crowded place?
- What problems would you have going to a movie? A sporting event? A restaurant?
- Sometimes to gain access to some places, a person who uses a wheelchair has to call in advance to make arrangements to go in through the back door or ride up in the freight elevator. How would you feel if every time you wanted to go to a public place of this type you had to call ahead to make arrangements?
- Can all people propel their own wheelchairs? Why not?
(*Their upper bodies are too weak.*)
What can they do to get around?
(*Choose a motorized wheelchair or scooter*)
- People who use a manual or motorized wheelchair can be independent. People use different types of wheelchairs for different purposes. Many people use manual wheelchairs if they have the strength and endurance. Others may choose to use a motorized wheelchair or scooter to preserve strength for other activities. Racing wheelchairs are used for competition.
- What is it like to open a door while in a wheelchair or scooter? What would be helpful?
(*Automated door opener*)

After using the wheelchairs:

Today we had a sample of what it is like to use a wheelchair. Remember that wheelchairs are not toys. They are invaluable to those who rely on them for mobility and are very expensive to replace.