National Aeronautics and Space Administration

Train Like an Astronaut: Adapted Physical Activity Strategies

Crew Assembly Training

YOUR MISSION

As a team, you will assemble a puzzle quickly and correctly to understand the importance of dexterity and hand-eye coordination; you will also practice communication and problem-solving skills. Observations of your dexterity and hand-eye coordination will be recorded in your Mission Journal.

LINK TO SKILLS AND STANDARDS

APENS: 10.01.03.03 Understand how to effectively analyze progress and provide feedback to individuals with disabilities using a task style teaching method.

Activity Specific Terms/Skills

Team work, communication, problem-solving skills, dexterity, hand-eye coordination, endurance

SPACE RELEVANCE

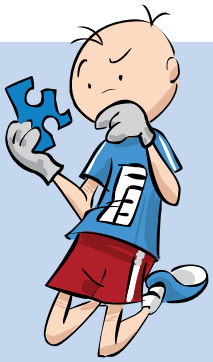
Humans get tired while working in space and they fatigue over the course of Extra Vehicular Activities (EVAs.) To protect against the hostile environment of space, EVA gloves are pressurized and have multiple layers. The gloves have a tactile feel that resembles ice hockey gloves. Astronauts must have strong muscles and endurance to overcome the bulk and pressure inside the suit.

WARM-UP & PRACTICE

Warm-up

- Play patty cake wearing gloves
- Lift familiar objects
- Compete in a relay wearing gloves (pick-up ball and Frisbee)

Practice: Practice skills separately

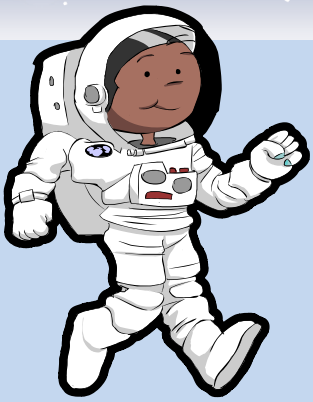


SUGGESTED ADAPTED EQUIPMENT:

- VARIOUS LARGE PUZZLES
- FUNCTIONAL TASK BOARD
- ASSORTED BUILDING BLOCKS OR CLIPS

Crew Assembly Training

LET'S "TRAIN LIKE AN ASTRONAUT!"



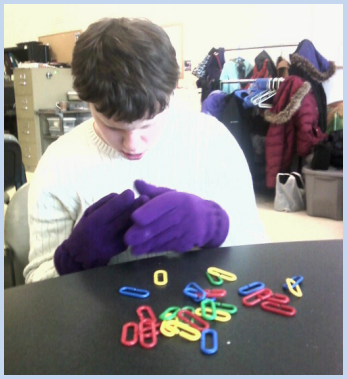
Individual Play

- Wearing various gloves, put together a puzzle or task items (such as using a screwdriver to turn a screw)

Team relay procedure:

- Two crew members will start at home base.
- Have one crew member be the time keeper.
- One crew member will open the container of puzzle pieces and distribute them equally to all crew members.
- After distribution of puzzle pieces, crew members should put on two pairs of gloves. The first pair of gloves should tightly cover the hands. The second pair of gloves will be worn on top of the first pair and should be thicker, for instance ski gloves.
- Crew members holding pieces labeled "A" will go to their assembly area and assemble the outer edge of the puzzle. They are assembling the puzzle face up, not letters up.
- Once all the "A" pieces are assembled, all crew member will return to their home base and tag team members.
- Crew members holding pieces labeled "B" will go to the assembly area and assemble the next layer moving inward of the puzzle.
- Once all the "B" pieces are assembled, crew members will return to home base.
- If your team has a "C" puzzle piece and letters beyond, continue piecing together the puzzle in alphabetical order until the puzzle is complete, and all crew members have returned to home base.
- The time keeper will record how long it took your team to complete the puzzle.

Record observations before and after this physical experience in your Mission Journal



TRY THIS! *Some ideas for Adapted Activity*

- Puzzle with knobs and shape puzzle, zipper board, latch board
- Velcro pieces (three-dimensional objects)
- Attach objects to a larger surface like a table or wall
- Perform a simple assembly task like a "Jewelry Box"
- Pick up sticks/jacks, large bricks or blocks
- Place braille on puzzle pieces
- Verbal cues or hand-over-hand
- Shorten or eliminate distances to carry pieces