

A GUIDE TO...

ADAPTATIONS

Cultivate and encourage ALL young children (0-5; with and without disabilities) to explore STEM concepts through activities as independently as possible with adaptations in their natural environments.

Every child is different, and these are only suggested adaptations. Do what works best for the child. The child's therapist can give you more ideas.

Are you interested in helping your child learn about STEM? Are you looking for ways to help your child participate in STEM?

Use this guide to adapt activities for your child. Every child is different, and these are only suggestions. Do what works best for your young child or children you are working with. You might also work with the child's speech or occupational therapist to adapt activities.



INCLUSION FRAMEWORK

The inclusion framework is informed by evidence-based inclusive practices (e.g., Milbourne & Campbell, 2007; DEC, 2014) and helps adults support all children in STEM.

ADAPTATIONS FRAMEWORK

Adaptations to the environment and materials align with the Division for Early Childhood (DEC) Recommended Practices on environment while instructional adaptations align with the Recommended Practices on instruction.

1. ENVIRONMENT - Environmental, activity, and/or routine adaptations are broad changes and/or accommodations in the setting and/or activity that support learning for all children (e.g., room set-up, equipment, how an activity is done, length of time).



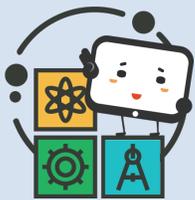
Follow your child's lead and interests. Enthusiastically ask your child questions about what they are doing and what they like.



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ADAPTATIONS FRAMEWORK (CONTINUED)

- 2. MATERIALS** – Materials adaptations are changes and/or accommodations to materials that support full participation in learning for all children (e.g., adaptations to toys, materials, assistive technology devices).
- 3. INSTRUCTION** – Instructional adaptations are changes and/or accommodations to the instruction or teaching that support full participation in learning for all children (e.g., add information, reduce steps).

The parameters of the framework are that :

- 1) adaptations are not disability-specific,
- 2) adaptations can be used across all settings and be embedded in children's everyday routines and activities, and
- 3) adults should start with children's interests and preferences, and work to maximize children's strengths to promote positive and active learning experiences.

ADAPTATIONS

Adaptations are practices adults can use (e.g., family members, practitioners) to support STEM learning and experiences in routines and environments. Specifically, they are changes to the environment, materials, and/or instruction that support child engagement and learning (Campbell, Milbourne, & Kennedy, 2012).

ENVIRONMENT

- ▶ Area & Space
- ▶ Within Reach

MATERIALS

- ▶ Assistive Technology
- ▶ Grasping Supports
- ▶ Variety of Materials
- ▶ Visual Supports

INSTRUCTION

- ▶ Communication Supports
- ▶ Visual Cues
- ▶ Visual Schedules
- ▶ Teaching Practices



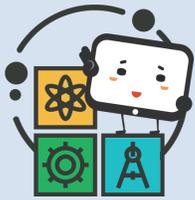
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ENVIRONMENT:

Area & Space: Arrange the environment and/or materials to meet the activity needs



Add rails to stools

Image credit: CONNECT Module 1, 2009



Tape placemats for mealtime routines

Image credit: CONNECT Module 1, 2009



Arrange the room to allow for in/out and turning for wheelchairs and walkers (at least 3 ft width)

Image credit: Creative Commons



Use sturdy modified seating and standing options so that all children are on the same level (e.g., stander at water table, floor-level support seat for group time, cube chair, chair with bumpers)

Image credits: CONNECT Module 1, 2009, Feeding Littles



Cover materials not needed for an activity

Image credit: Creative Commons



Limit background noise & distractions (have a quiet area)

Image credit: Creative Commons



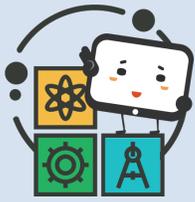
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ENVIRONMENT:

Within Reach: Arrange materials in the space for easier access



Make items longer so that children can reach (i.e., extend faucet handle with pliers or tubing)

Image credit: CONNECT Module 1, 2009



Place toys and materials at eye level in open containers with labels

Image credit: Parma Preschool



Use low, open shelves and tables that are at comfortable heights

Image credit: Creative Commons



Use trays, cookie sheets, or short bins for manipulatives, games, and/or puzzles

Image credit: Creative Commons, BRIDGES Activities, 2021



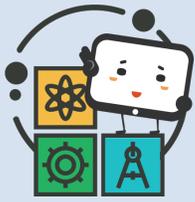
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MATERIALS:

Assistive Technology: Use of "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities" (Sandall et al., 2005)



Use big button switch to make an object do something specific (e.g., make gears spin on a toy, turn on a radio)

Image credit: CONNECT Module 1, 2009



Use technology (e.g., toys/computers with switches, powered wheelchairs)

Image credit: Creative Commons



Use voice output to 'say' a simple phrase like 'more, please'

Image credit: CONNECT Module 1, 2009



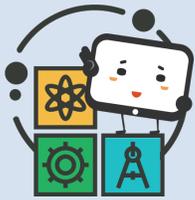
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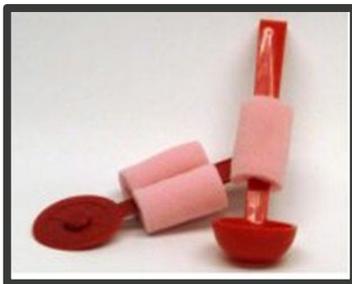
MATERIALS:

Grasping Supports: Add additional material(s) to an object to make it easier to grasp, lift, or turn



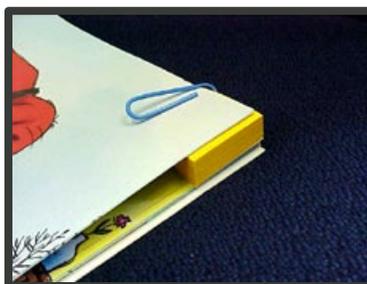
Add a Styrofoam ball to pencils, crayons, and or paintbrushes for easier grasping or use wide handles

Image credit: Pinterest, BLICK Art Supplies



Add grip tape or silicone bands to handles or use wide utensils for easier grasping

Image credit: Creative Commons, EazyHold Store



Add page fluffers to book pages for easier turning (Refer to **A How-To Guide for Book Adaptations** and/or **A Guide to Book Adaptations** for more information & ideas)

Image Credit: Paths to Literacy, 2018



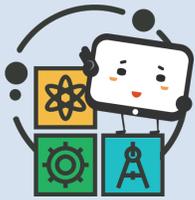
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MATERIALS:

Grasping Supports: Add additional material(s) to an object to make it easier to grasp, lift, or turn (continued)



Use cups with handles
Image credit: Creative Commons



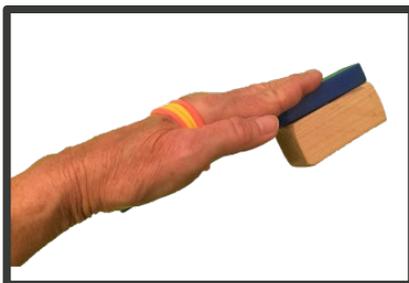
Use deep bowls/plates for easier scooping
Image credit: Creative Commons



Glue empty thread spools, knobs, or t-plumbing pipes to blocks and/or puzzles pieces for easier grasping
Image credit: Simmons-Martinez, 2007



Use non-skid mats (i.e., Velcro, rubber shelf liners) to keep toys and materials in place and within reach
Image credit: Creative Commons



Add Velcro or magnets to toys and materials and use a Velcro wrist band or a magnet grasper to make it easier to pick up materials and toys
Image credit: Creative Commons, BRIDGES Activities, 2021



Use alternative materials (e.g., soft, squeezable) to support grasping
Image credit: Creative Commons



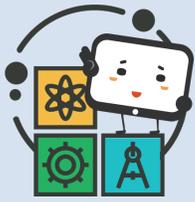
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MATERIALS:

Variety of Materials: Provide a variety of materials of different sizes, shapes, colors, and/or textures to increase interest and access



Use materials or toys that stack or interlock easily (magnetic tiles, bristle blocks)

Image credit: Creative Commons



Use alternative materials to support grasping (e.g., soft, squeezable; visit **Grasping Supports** for more examples)

Image credit: Creative Commons



Use high contrast materials (e.g., puzzles, shapes) for visual discrimination

Image credit: Creative Commons



Create prop/story boxes (e.g., items/objects related to the books or theme) for books to increase engagement and understanding

Image Credit: Paths to Literacy, 2018



Use materials or toys that are a mix of different sizes, colors and/or textures

Image credit: Creative Commons



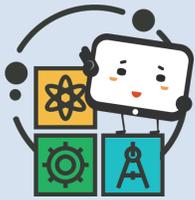
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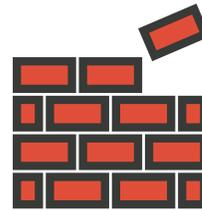
INSTRUCTION:

Communication Supports: Use a variety of communication types (e.g., sign language, gestures) so all children can engage



Support use of a communication book

Image credit: Creative Commons



Build vocabulary by using and defining words (e.g., you chose a red block; you put that on top)



Support use of communication devices (visit **Assistive Technology** for more examples)

Image credit: Creative Commons



Describe children's actions (e.g., counting, building, waterplay)



Use First/Then board or a choice board

Image credit: CONNECT Module 1, 2009



Repeat and build upon interactions, activities, and children's words



Use sign language and/or gestures with spoken words

Image credit: Creative Commons



Speak slowly and clearly and make sure the child can see you during activities and songs



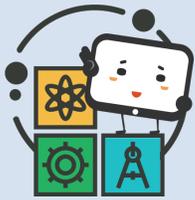
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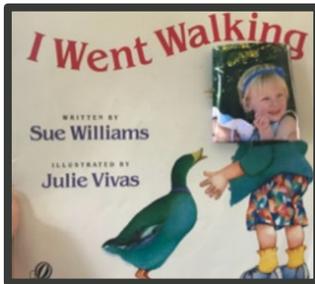
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MATERIALS:

Visual Supports: Add to and/or visually modify an object or material to increase interest



Add child's name and/or picture of the child

Image credit: [A How-To Guide for Book Adaptations](#)



Simplify book text
Image credit: [A How-To Guide for Book Adaptations](#)



Add colored borders to point something out

Image credit: [Infopeople](#)



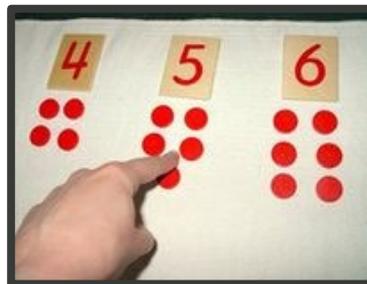
Create prop/story boxes (e.g., items/objects related to the books or theme) for books to increase engagement and understanding

Image Credit: [Paths to Literacy, 2018](#)



Add tactile outlines to book pictures

Image credit: [PACER Simons Center on Technology](#)



Use concrete objects or visuals in activities (e.g., a number chart or small objects a child and/or teacher can point to while counting)

Image credit: [Creative Commons](#)



Create picture cards of key words/ideas for books

Image credit: [CONNECT Module 1, 2009](#)



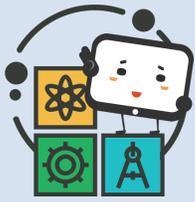
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INSTRUCTION:

Visual Cues: Use pictures and/or icons to signal next steps



Use prompt cards (e.g., pictures of activities and centers)

Image credit: Creative Commons



Use First/Then board

Image credit: Creative Commons



Create a visual schedule with predictable daily routines & activities

Image credit: Creative Commons



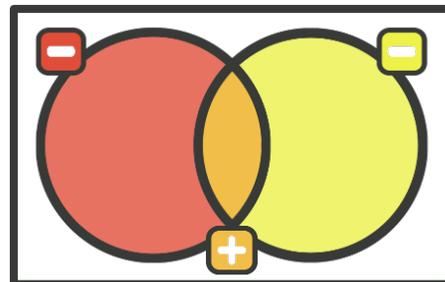
Use a choice board

Image credit: Creative Commons



Use concrete objects to represent schedule (Refer to **Visual Schedules**)

Image credit: SimplifyTheChaos.com



Add a graphic organizer to aid comprehension

Image credit: STEMIE



Use visuals that clearly illustrate the activity

Image credit: Creative Commons



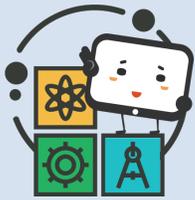
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INSTRUCTION:

Visual Schedules: Use a picture and/or icon list with words for transitions and routines to provide structure and routine



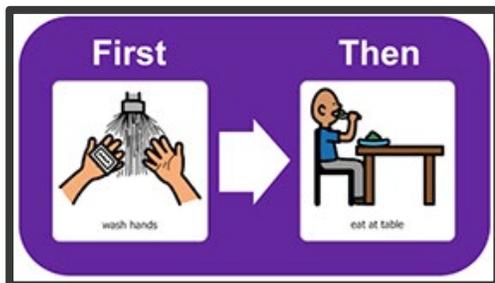
Create a visual schedule with predictable daily routines & activities

Image credit: Creative Commons



Create a class schedule

Image credit: Creative Commons



Use a First/Then board (refer to **Visual Cues**)

Image credit: Creative Commons

Washing hands	
	Water on
	Hands wet
	Rub hands with soap
	Rinse
	Water off
	Dry

Break down tasks into smaller steps

Image credit: Creative Commons



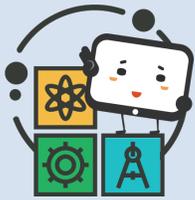
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INSTRUCTION:

Teaching Strategy: Used by adults or other children to help a child participate in everyday experiences, and activities.



Some young children may require additional instructional support, such as teaching strategies/practices, from adults and/or peers to successfully engage in STEM learning. For more information about teaching practices listed below, refer to [A Guide to Teaching Practices](#).

- Allow time for child response
- Support and encourage children
- Give reinforcement
- Limit the number of children in an activity
- Model exploration and play
- Modify an activity (shorten, extend, break into steps, add movement)
- Pair children together
- Provide prompts (visual cues, hand-over-hand/physical, gestural, model, verbal, scaffold)
- Take turns with children
- Use descriptive talking/verbal guidance
- Wait for children to initiate interactions and activities and follow their lead and interests



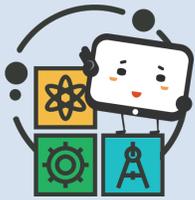
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