

# Vertical Surfaces



Benefits of working on vertical surfaces:

- Crossing Midline
- Provides Shoulder and Elbow Stability
  - ◆ Encourages larger arm movements providing strength and flexibility through muscles and joints, followed by smaller arm movements
    - (Gross --> Fine)
- Wrist Extension and Pencil Grasp
  - ◆ Writing on a vertical surfaces puts the wrist in extension aiding in grasp and writing development
- Core Strength and Posture
  - ◆ Sitting, kneeling, half-kneeling, and standing encourage the use of back and core muscles
- Hand-eye Coordination
  - ◆ Brings the work closer to the child's eyes encouraging the use of visual attention
- Visual Skill Development
  - ◆ The upright surface encourages good head and neck position during play promoting scanning and tracking.
- Bilateral Coordination
  - ◆ Encourages the use of both hands to work together
- Spatial Awareness
  - ◆ Easier to understand directional terms (Up, Down, Left, Right)
- Sensory
  - ◆ Change of positions often guides children who are fidgety

Examples of vertical surfaces:

- Walls, Doors, Windows, Chalkboards/Whiteboards, Smartboards, Paper taped to a wall, Mirrors, and Playgrounds/Parks



→ Modified Versions:

- ◆ Using a slant board for writing, reading, ipad work, etc.
- ◆ Using an easel to prop up toys to encourage play in a vertical plane



How to Encourage Play/Work on Vertical Surfaces:

- Tape a piece of paper to the wall and trace objects or stencils
- Write with dry erase markers on a hanging mirror or dry erase board
- Play with stickers! Have children place stickers at different levels on the wall. Instruct which stickers need to be placed where using directional terms and encouraging change in body position (stand, kneel, jump, squat, etc.)
- Finger paint on windows or mirrors
- Encourage play on outside playgrounds

Evidence to Support the Use of Vertical Surfaces:

- ★ Occupational therapist within the school setting have identified using vertical surfaces to increase/improve arm strength and stability. Therapist reported using vertical surfaces during handwriting activities and treatments (Case-Smith 2002).
- ★ School based occupational therapists' identified 5 objectives to help increase fine motor control in preschoolers. The objectives were wrist stability and extension, flexibility and stability of the palmar arches, isolated finger use, thumb stability and mobility, and control of radial fingers with ulnar fingers stabilized. Examples of activities used to meet these objectives were finger painting on easels and vertical surfaces, magnets and/or

stickers placed on a vertical surface, and push pins on a cork board. Vertical surfaces have been shown to work on eye-hand coordination and eye-hand skills with object manipulation or object placement (Case-Smith, 1996).

- ★ Difficulty with handwriting is one of the most frequent reasons that children in the public schools are referred to occupational therapy. Current research on the influence of ergonomic factors, such as pencil grip and pressure, and perceptual–motor factors traditionally affect handwriting. Factors such as visual perception demonstrate a smaller relationship with handwriting, whereas tactile–kinesthetic, visual–motor, and motor planning appear to be more closely related to handwriting. By better understanding the ergonomic; use of vertical surfaces and perceptual–motor factors that contribute to and influence handwriting, occupational therapist will be better able to design rationally based intervention programs (Tseng & Cermak, 1993).

## References

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