



FINE MOTOR



SLANT BOARDS / ANGLED SURFACES

What are slanted surfaces and where should they be used?

A slant board or angled surface is a sloped work surface. Research suggests it may be useful for children with motor impairments to improve fine motor skills and classroom performance. The angled surface can be helpful in improving posture by providing upper arm and wrist support in writing and also by preventing hooking of the wrist or other ineffective writing postures. These angled surfaces, often in the form of slant boards, are commonly used in the classroom.



Image Credit: School Specialty <https://tinyurl.com/ycldw2j>

What does the research tell us about slanted surfaces?

Some moderate quality, lower level evidence (from studies without a control group) suggests the use of slanted surfaces along with ergonomic seating may improve fine motor skills and classroom performance in children. However, the research is limited by the study design (which does not allow us to confirm that the intervention directly caused the outcomes), and conflicting results; therefore, the following recommendations should be evaluated for a given child to determine their effectiveness.

What are the best suggestions for using slant boards/angled surfaces and/or well-fitting school furniture?

The following suggestions for the use of slant boards or other angled surfaces for school-aged children with motor impairments are based on a systematic review that explored studies on the use of ergonomic school furniture, including slanted surfaces, with a variety of children, as well as on clinical expertise:

- Ensure that the child is seated properly at the writing surface.
 - Fit the chair first. Ensure that the child's feet are flat on the floor. Hips and knees should be at 90 degrees. Lower back should be supported by the back of the chair. Providing a smaller chair, footrest and/or back rest may be necessary if these criteria cannot be met.
 - Once the chair has been fitted, ensure that the tabletop is adjusted so that the forearms are well supported, with the elbows at 90

degrees - Ideally at approximately 2 inches above bent elbow height so that the child is able to bear weight through the forearms.

- Encourage the child to sit “all the way back” in the chair and lean forward slightly to sit close to the desk (“tummy touches table”).
- Position the paper to the left side of the slant board if the child is right-handed (on the right for left-handed) to prevent the wrist from slipping off the side of the slant board.
- Attach a clip to the slant board (if one is not present) to help to stabilize the paper.
- Ensure that the child rests their wrist on the slant board when writing. Provide verbal or touch cueing to the wrist as needed.
- Encourage the child to rest their non-dominant hand on the slanted surface for best upright body posture.
- Measure outcomes (e.g. writing legibility) and monitor over time to determine effectiveness.

Where can I find a slant board?

- School Specialty (schoolspecialty.ca)
- Therapy Shoppe (therapyshoppe.com)
- Toys Tools and Treasures (toystoolsandtreasures.com)
- Tools for Kids (toolsforkids.ca)
- Ikea ([BRÅDA Laptop support - black - IKEA](#))
 - You can modify by removing bottom lip and adding a clip

Prices for slant boards vary depending on size, features and provider. Some are fixed and some fold flat for easier storage. Sunny Hill does not endorse any specific providers.

This resource has been developed by a team of occupational therapists at Sunny Hill Health Centre. The information included in this handout is based on current research and expert clinical opinion. Please contact your occupational therapist if you have any questions or concerns.

Reference

Castellucci, H. I., Arezes, P. M., Molenbroek, J. F. M., de Bruin, R., & Viviani, C. (2017). The influence of school furniture on students' performance and physical responses: Results of a systematic review. *Ergonomics*, 60(1), 93-110.