

Functional Pencil Grasps:

A traditional tripod grasp is not necessarily required for legible and productive printing and handwriting. Instead alternative grasps, such as those shown below, can also be functional.



Tripod Grasp



4 Finger Grasp (Quad)



Thumb Wrap (Tripod)



Thumb Wrap (Quad)



Thumb Tuck Grasp

Non-functional Pencil Grasps:

However, for students with handwriting difficulties, who have poor speed and legibility, a fisted or a 5-fingertip grasp is not ideal.



Fisted Grasp



In these instances, try the ideas on the next page.



Getting Ready to Print:

Pencil Size: Use a shorter pencil for easier grasp and better control.

Pencil Grasp: Encourage use of a *functional pencil grasp* such as:

- **Tripod grasp**: Grasp pencil with thumb, index and middle fingers, "pinching" it securely. Tuck 4th and 5th fingers into palm. Ensure pencil shaft is resting against web space. The web space is the soft area between the base of the thumb and index finger. Please see previous page.
- Alternative grasps: Please see previous page.

Consistent, daily use of the same functional grasp is recommended.

A *pencil grip* can be used as needed to encourage consistency of grasp and decrease hand fatigue.

Positioning: The height of the chair and writing surface can affect a student's efficiency and attention. Feet need to be supported with hips and knees at 90°. This may require use of a lower chair or foot stool.

The height of the desk top should be 1-2 inches above the height of the elbow when sitting.

The "heel" of the student's hand should be resting on the desk top or *slant board*. This is the "steady" part of the hand. The "dynamic" or moving side of the hand is now ready to print!



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 student's occupational therapist if you have any questions or concerns.



References:

- Dennis, J. L., & Swinth, Y. (2001). Pencil grasp and children's handwriting legibility during different-length writing tasks. *American Journal of Occupational Therapy*, *55*, 175–183.
- Koziatek, S. M., & Powell, N. J. (2003). Pencil grips, legibility, and speed of fourth-graders' writing in cursive. *American Journal of Occupational Therapy*, 57, 284–288.
- Parush, S., Levanon-Erez, N., & Weintraub, N. (1998). Ergonomic factors influencing handwriting performance. WORK: *A Journal of Prevention, Assessment and Rehabilitation, 11*, 295-305.
- Rosenblum, S., Goldstand, S., & Parush, S. (2006). Relationships among biomechanical ergonomic factors, handwriting product quality, handwriting efficiency, and computerized handwriting process measures in children with and without handwriting difficulties. *American Journal of Occupational Therapy, 60,* 28–39.
- Schwellnus, H., Carnahan, H., Kushki, A., Polatajko, H., Missiuna, C., & Chau, T. (2012)(a). Effect of pencil grasp on the speed and legibility of handwriting after a 10-minute copy task in Grade 4 children. Australian Occupational Therapy Journal, 59(3), 180-187.
- Schwellnus, H., Carnahan, H., Kushki, A., Polatajko, H., Missiuna, C., & Chau, T. (2012) (b). Effect of pencil grasp on the speed and legibility of handwriting in children. American Journal of Occupational Therapy, 66, 718–726.
- Shah, L. J., & Gladson, B. L. (2015). The Relationship of Pencil Grasp on College Students' Handwriting Speed and Legibility. *Journal of Occupational Therapy, Schools, & Early Intervention, 8*(2), 180-191.
- Yakimishyn, J. E., & Magill-Evans, J. (2002). Comparisons among tools, surface orientation, and pencil grasp for children 23 months of age. *American Journal of Occupational Therapy*, *56*(5), 564-572.

