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## Glossary of Vision Terms

**Acuity (Clearness of Sight):** The ability to see clearly at near and far distances.

**Accommodation:** The ability of the eyes to constantly focus for clarity and interpretation, with both eyes maintaining clarity regardless of changes in position, distance, or posture.

**Amblyopia (Lazy Eye):** The condition in which one eye is not correctable to normal visual acuity with lenses; a lowered measured visual acuity in one eye compared to the other eye. This condition can result from strabismus, injury, or the student using one eye more than the other.

**Astigmatism (Eye Warp):** The condition in which light rays reaching the retina are distorted and one experiences difficulty seeing clearly at any distance without excessive focusing effort on their part.

**Convergence:** The ability to turn the eyes inward to track an object moving toward the body. The eyes must be converged any time a person reads or looks at something close. If the eyes do not converge correctly, double vision or the suppression of one eye or the other will occur. Convergence problems are fatiguing and the amount and efficiency of visual information processed is reduced.

**Developmental/Behavioral Optometrists:** Have post-doctoral training and certification in near vision diagnosis and treatment and usually practice optometric vision therapy in addition to general optometry.

**Eye Disease:** The American Optometric Association has stated that school-age children rarely have serious eye disease. However, it is still recommended that all children receive a thorough examination by an eyecare professional to rule out ocular pathology. Two common types of eye infections in children are sties and blepharitis. Blepharitis is the condition where lids become inflamed and crusty. This problem warrants a complete visual examination. "Pink Eye," or conjunctivitis, is contagious and the child needs to be sent home from school so he can be taken immediately to an eyecare professional for treatment.



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**Eye-Hand Coordination:** This is the ability of the vision system to coordinate the information received through the eyes to control, guide and direct the hands. A child with poor eye-hand coordination will exhibit messy handwriting, get frustrated when trying to form letters and copy patterns, and sometimes performs poorly in sports.

**Eye Movement Control:** The visual skills needed to smoothly and accurately move the eyes while following or locating an object. These skills include eye-tracking, eye-jumps and near-to-far movements. When a child has difficulty with eye-movements, he will lose his place while reading, have difficulty copying from the chalkboard or books and will be a slow reader.

**Eye Teaming (Binocular Vision):** The ability of the two eyes to align and team together to enable a student to judge his/her orientation in space and have depth perception. The ability of the eyes to work together as a matched pair and act as one single unit. A student experiencing eye-teaming difficulties can be observed to cover one of his/her eyes, blink frequently, exhibit poor desk posture, tire easily when reading or not be able to complete his assignments.

**Far Point:** In a person with 20/20 eyesight this is a distance beyond 10 feet. Far point may be different for individuals with eyesight problems.

**Far-sightedness (Hyperopia):** The condition in which one sees more clearly and maintains this focus more easily at distance than at near points. A common condition in children that can be easily missed by routine screenings but which can be found during a professional visual examination and for which prescription lenses can be prescribed.

**Fixation:** The extremely critical ability to point the eyes at an object and to voluntarily keep them on the target. Without good fixation ability, a child can become easily distracted and has difficulty concentrating. Words can also appear to move on the page causing near visual distortion.

**Focusing Near-to-Far:** The ability to make the eyes look quickly from near to far and back again without momentary blur, conscious effort or discomfort. The student experiencing a near-to-far focusing difficulty will get frustrated and have trouble copying from a book, and even greater difficulty copying from the chalkboard or an overhead projector.



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**Fusion:** The ability of the brain to combine the stimuli from the two eyes into a single visual experience. When fusion cannot be maintained, one eye or the other must be suppressed in order to avoid double vision. Problems in maintaining binocularity can cause a person to squint, close or cover one eye, and experience discomfort with close work. Whenever fusion is difficult, the efficiency of visual information processing is greatly reduced.

**Kinesthesia:** The muscle sense that provides information to the person regarding the degree of relaxation or tension in the muscles. Through this kinesthesia, the person is able to estimate the amount of force of muscle movement that is required to make contact with an object. This estimate is used to determine the distance to the object.

**Learning Lenses:** The proper prescription lenses needed to help maintain clarity at nearpoint. Near-point lenses are also used to help train the eyes to focus properly and improve visual attention and the overall attention span. These are bifocals for classroom use by students.

**Nearpoint:** A distance approximately 14 to 16 inches away from a person. Nearpoint also refers to an accommodating (focusing) demand of approximately 2.5 diopters (a measurement of optical units) that a person must contend with when doing desk work.

**Near-sightedness (Myopia):** The condition in which one sees more clearly and easily at near points than at distances. In most cases this condition is easily screened for and prescription lenses can be prescribed. Good visual acuity is then attained at distance. Research studies have shown that often the "near-sighted students are the best readers.

**Opticians:** Technicians who are trained to grind lenses to prescription and fit glasses. The opticians attend technical school and are not licensed to prescriptions for glasses or to perform eye examinations.

**Optometrists (O.D.):** Doctors of Optometry who have attended a minimum of seven years of college and professional graduate education on the study of the eye. They can perform eye examinations, are licensed to write glasses



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prescriptions, and in all states since 1998, prescribe some ocular therapeutic medications. They do not perform ocular surgery.

**Ophthalmologist (M.D.):** Physicians who have completed a residency and specialized training in the diagnosis and treatment of disorders and diseases of the eye. They can perform eye examinations, are licensed to prescribe medication and write glasses prescriptions, as well as perform ocular surgery.

**Proprioception:** The proprioception system is made up of receptors which is located in our muscles, tendons, ligaments, and joints. These receptors give us information about the position of our body parts.

**Pursuit Movements:** The ability to maintain fixation or visual attention on a moving object by moving the eyes at the same speed as the object, regardless of any changes in head or body posture.

**Saccadic Movements:** The precise locating movements used, for example, when jumping from one word to another along a line of print. Saccadic movements are done with the eyes only, the head must remain stationary. They are critical for maintaining one's place on a printed page.

**Scanning:** Smooth eye movements enabling a person to maintain inspection of the words on a page or the lines in a design.

**Slant Board:** A sloped work surface utilized in the treatment of vision processing problems. Critical to eliminate several deficiencies associated with reading at incorrect angle.

**Stereopsis:** Depth perception. Use of both eyes as a team to form a single image with depth. Necessary for perception of the spatial orientation of the object viewed.

**Strabismus (Crossed or Wall-Eyes):** The condition that occurs when the two eyes do not align together resulting in double vision or the blocking of one eye's visual image to the brain.

**Suppression:** Cortical inhibition or the cancellation by the brain of the signals from an eye to avoid confusions and discomforts arising from problems of



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binocularity. It is a condition frequently found in those individuals having excessive visual stress, but can usually be reduced or eliminated through proper vision care and lens therapy. It is a common deterrent to academic progress. This symptom requires a clinical evaluation.

**Sustaining Clear Focus:** The ability to see words on a page clearly over time. A child having difficulty maintaining sustained clear focus at near point can only read or concentrate on a near task for a short period of time.

**Tactile:** information and interpretations derived from the sense of touch. This involves the skin's contact with an object as well as sensations that approach the skin, such as pressure, wind, and temperature. The skin is the primary tactile organ and it has many different kinds of receptors for receiving sensations or touch, pressure, texture, temperature, pain, and movement of the skin hairs. The tactile system is the largest sensory system and it plays a vital role in human behavior.

**Vision:** The primary tool used for the process of visual information in the learning process. Vision is the result of a child's ability to interpret and understand the information that comes to him from sight. He must perceive the meaning of the visual information. Vision is the scope of a child's understanding of his world and is based on what a child brings into the academic environment as well as what he derives from it.

**Vision Therapy:** The carefully programmed series of visual activities, which may include the use of selected lenses and prisms that are applied in an effort to explore, extend, and enhance all the visual abilities and skills the human is capable of developing. These procedures are practiced most prevalently by developmental optometrists, and have been generated and validated by these professionals through clinical practice and carefully designed research. Such regimens have been very beneficial to students whose academic problems have some basis in visual inadequacies. Likewise, such vision care has been extremely beneficial in the attack upon the visual difficulties that originates through excessive stress in the classroom. Although there is continuing discussion of the validity and benefits of this special clinical care, such controversy is rapidly fading among those clinicians who take the time and make the effort to intelligently investigate these concepts and their applications. Many routines borrowed from



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the developmental optometrist by the special education teacher are now part and parcel of special education programs in hundreds of schools and colleges.

**Visual Attention:** The ability to maintain visual fixation and concentration on a particular target or object. This skill is of critical necessity for school children and helps them maintain on-task behaviors.

**Visual Bi-Laterality:** The ability to project internal awareness of one's own laterality out into space for use in discrimination of objects and symbols. Children with visual bilaterality difficulties can experience letter reversals, get confused with rights and lefts and exhibit poor coordination.

**Visual Form Perception:** A developed skill that enables a child to accurately discriminate visible likenesses and differences so that comprehension can be immediately followed by appropriate actions. A child experiencing difficulty with visual form perception will frequently reverse words or letters or have poor discrimination when confronted with similar words or shapes.

**Visual Memory:** The ability to visually recall learned facts. A child with a poor visual memory will have difficulty remembering reading material that was visually presented to him. The same child, however, might be able to recall the same information that was verbally read to him.

**Visual-Motor Dysfunction:** The inability of the eyes and hands to work together as a team. The child's hands cannot do (or match) the action perceived through the visual system. This may involve visual-tactile integration, where a child's eyes and hands appear to be disconnected. In a broader sense, it is the inability of the visual system to monitor movements such as steering oneself through a room.

**Visualization:** The ability to use the "mind's eye" to visually conceptualize and manipulate thoughts and ideas. Frequently referred to as mental imagery it is recognized as a major component in memory and creativity. It is probably the most important of all the visual skills for achievement, performance, and survival in our culture because it is so closely related to reading, reading comprehension, spelling, writing and the skills of symbolic performance. Children with poor visualization skills are often poor goal setters and have a poor self image.



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**Visual Stress:** This situation is caused by excessive nearpoint work or inefficient movement or teaming patterns and results in visual fatigue. This tends to cause a decrease in performance or task avoidance. It is often confused with distractibility in children.