

Visual Perceptual Hierarchy

Visual perceptual skills are the expertise we need to make sense of what we observe. These skills, which are fundamental for our day-to-day lives, include reading, writing, driving, and manipulating items. Visual perception consists of a complex combination of these various skills, which must exist together and in coordination with one another. We need that cooperation to see information and use that visual information to create responses or react with functional abilities like movement or processing. In performing handwriting, visual perceptual skills are a priority. These skills are necessary for letter formation, identifying and copying letters and words, spatial awareness, left-to-right orientation, organization on a page, line use, and size awareness. The brain relies on visual information to anticipate and adapt to the environment and complete daily occupations. Brain injury or disease disrupts visual information processing, creating gaps in the visual input sent to the brain. The quality of a person's occupational performance decreases because the brain does not have sufficient or accurate visual information to make decisions.



PLAY PICMONIC

Foundation of Visual Perceptual Hierarchy

Oculomotor Control

Octopus-motor Controller

Oculomotor control in the context of the visual perception hierarchy refers to the foundational level of visual processing that enables quick and accurate eye movements and keeps the image focused on the fovea, the area of the retina with the highest visual acuity. Oculomotor control involves eye-muscle coordination to execute precise eye movements, allowing individuals to direct their gaze toward objects of interest in their visual field. Oculomotor control is essential for gathering visual information, tracking moving objects, and maintaining visual fixation. Disruptions in oculomotor control can affect an individual's ability to accurately scan the environment, leading to difficulties in visual attention, tracking, and overall visual perception.

Visual Fields

Visual Fields

Visual fields in the context of the visual perception hierarchy refer to the foundational level of visual perception, where the brain registers the scene and receives complete visual information from the environment. Visual fields encompass the entire area a person can see without moving their eyes, including central and peripheral vision. They provide the raw visual input that serves as the basis for higher-level visual perceptual skills such as discrimination, form constancy, visual memory, and visual-motor integration. Disruptions in visual fields can impact an individual's ability to process visual information effectively, affecting their overall visual perception and functional performance in daily activities.

Visual Acuity

Eye Accuracy

Visual acuity ensures that details of the environment and tasks are seen, including colors.

Visual Perceptual Hierarchy

Visual Attention

Eye Attention Exclamation-mark

Visual attention falls under the big visual processing hierarchy. Attention to visual information is a key factor in obtaining visual input and signaling the brain with the information. This information collection requires several eye mobility skills, including voluntary eye movements, visual fixation, smooth pursuits, and visual scanning.

Visual Scanning

Eyes Scanning

Visual scanning functions through saccadic eye movements. A saccade is an eye movement toward an object of interest in the environment. The main purpose of saccades is to focus on the specific object of interest with the fovea, which is the area of the retina with the greatest ability to process details. During the scanning process, the eye selectively focuses on the elements to accurately interpret the array and ignores the unnecessary elements.

Pattern Recognition

Pattern Recognition

Pattern recognition refers to the ability to identify object features and use these features to differentiate the specific object from its surroundings. Being able to identify such features actually aids in differentiating one object from another.

Visual Memory

Eye Memory

Visual memory is one level of the hierarchy of visual perceptual skills. It focuses on one's ability to recall visual information. Visual memory is a fundamental factor that facilitates reading, writing, and the ability to identify objects and process information during daily functional tasks. Visual memory also refers to the ability to recall what one has seen and use that information in the present or future. This process involves working memory, an executive functioning skill, and involves more advanced cognitive information processing so the brain can utilize visual information in a different setting or at another time.

Visual Cognition

Eye Cogs

Visual cognition is the ability to manipulate visual input and integrate vision with other sensory information to obtain knowledge, solve problems, formulate plans, and make decisions. Visual cognition starts developing in childhood and combines vision with sensory input from the body to develop cognitive concepts.

Adaptation Through Vision

Adaptation Through Eye

Adaptation through vision refers to an individual's ability to use visual perceptual skills to adapt and respond effectively to changes in their environment and tasks. Visual perceptual skills allow us to interpret visual information, recognize patterns, understand spatial relationships, and make sense of the world around us. When faced with new or challenging situations, our visual perceptual abilities enable us to adapt and adjust our responses accordingly.

Mnemonic

A Child Makes Parents See Appropriately

A Child Making their Parent See Appropriately

We created a mnemonic to help you memorize the Visual Perceptual Hierarchy from the top down. Just remember, "A Child Makes Parents See Appropriately." A for adaptation, C for cognition, M for memory, P for pattern recognition, and A for attention.