

Children, Young People and Families Occupational
Therapy Team

PERCEPTUAL SKILLS

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Body Awareness

Body awareness is the conscious awareness and identification of the parts of our body, their position on our body and in space and the relationship between our body parts and objects or space around us. This is important in helping us to develop good co-ordination skills.

The activities below can help a child develop their body awareness and co-ordination.

- Break activities into steps and give 1 or 2 directions at a time
- Simon Says – copy body positions
- Head, Shoulders, Knees & Toes song –pointing to body parts
- Draw around body parts – hands/feet, etc
- Copy pictures of characters
- Finish an incomplete picture of a person
- Hand positions – copy
- Handwriting warm-ups
- Imitate movements of animals e.g. jump like a frog, wriggle like a worm
- Obstacle courses
- Hide and seek – encourage your child to find the smallest space to hide inside/under/behind
- Ask questions on how your child is going to complete activity, e.g. how are you going to get from bedroom to kitchen/classroom to library
- Mirroring, e.g. lie on floor with eyes closed, someone else puts your child into a position (e.g. hands on hips legs crossed). Ask questions about your child's posture (e.g. is your knee bent?) and try to mirror it.
- Clapping games.



Spatial Awareness

Spatial Awareness is the ability to interpret and use the space around us in an organised way. This relates to our understanding of our own body parts in relation to each other, and in relation to outside objects, e.g. when walking through a door way, and the relationship of objects to each other, e.g. a chair to a table.

The body is the reference point for identifying the position of objects in space. We develop a sense of up/down, side to side, and forward and backward in relation to our own body , and this allows us to apply these concepts to the external world, e.g. start at the top of the page, draw a square on the right, etc.

Spatial awareness problems may be due to difficulties interpreting visual information about spatial relationships (copying designs, letters) or due to problems recognising body parts, touch, feel and force or a combination of both.

Functional Problems

- Have poor presentation skills (can be unsure of how to arrange information on a page)
- Have difficulty with structuring and organising written work
- Have some visual perception difficulties
- Appear clumsy and bump into objects when moving around the classroom
- Have problems with positional language and be unable to tell left from right
- Have difficulty playing games or doing PE, using apparatus
- Have difficulty understanding abstract maths concepts, particularly in the areas of shape and space
- Have problems with reproducing patterns and shapes.



Activities to address difficulties with spatial awareness

Body Awareness: to develop the internal awareness of body position and movements.

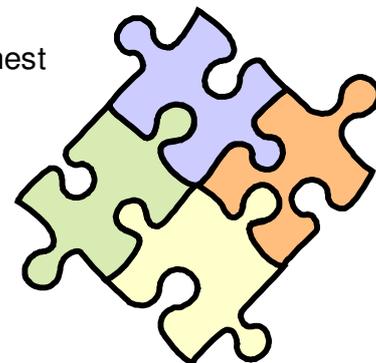
- Tactile activities – massage/stroking/brushing body, different textures, finger/hand paints, clay, water and sand activities
- Movement activities – rolling, jumping, spinning, climbing, marching, jumping on a trampette, pulling self along a bench
- People puzzles, body and face jig-saws
- Body collages and people pictures
- Play games such as “Simon Says”, mime/copy gestures
- Sing movement songs such as “Hokey – Cokey” and “Head, Shoulders, Knees and Toes”
- Touch, feel and find games- use sticky labels to place and name on the body

Activities to encourage Awareness of Self in Relation to External Objects

- Obstacle courses that involve moving in/on/over/under/through/around objects
- Target games (start big and easy moving to smaller and more precise)
- Climbing apparatus, play ground equipment
- Walking through horizontal ladders, ropes or hop scotch games
- Spatial commands, e.g. stand behind the chair, on the bench, under the light
- Spatial concepts in relation to self, e.g. is the thumb bigger than the foot? Is the head higher than the knees? Put your hand behind your back
- Spatial concepts in relation to objects - put the spoon in the cup, the book on the chair, the pencil under the book



- Ask the child to move an object into particular positions, e.g. above, below, next to etc.
- Judging/placing the distance between objects - nearest, furthest
- Inset puzzles, nesting barrels/ Russian dolls, jigsaws
- Building and construction toys
- Peg boards and copying patterns



Right/Left Awareness

- Reinforce the dominant hand with tactile input, e.g. rub, bang fist, slap table
- Right and left games, e.g. Hokey Cokey
- Follow right and left directions

Practical Solutions

These tips may aid the child produce neater, more organised school work.

- Copying patterns made from cut out, simple, geometric shapes. This can be done by copying from a picture or being given verbal instructions such as, "Draw a small circle on top of a large circle, draw two triangles on top of the small circle, one to the left and one to the right. Look it's a picture of a cat."
- Using squared paper to help with spacing, e.g. 1 letter per square and 1 square as a space between words.
- Use a lolly stick, tongue depressor or strip of paper to mark a space between words.
- Mark the top / bottom and starting side (left) of the page, e.g. with coloured dots.
- Taping paper to desk at no more than 30° angle.
- Encourage the child to complete art projects that require precision.
- Use a blank sheet of paper or make a frame to cover all of the work that the child is not presently working on.
- Pre-marked paper could be used - Try pre-marking paper, indicating space appropriate for name, date and subject, or paper which indicates ascender/descender lines.

Visual Attention

Visual attention is a child's ability to focus on a specific task or item. Children often appear easily distracted from an activity or appear to have difficulty focusing on a specific task, this could be due to a lack of visual attention.

If a child has limited visual attention they may have difficulties at home and school with tasks such as completing games, listening to instructions and finishing a piece of work. Below are some ideas to help encourage visual attention.

Getting/Maintaining Attention

- Gain the child's focus prior to any activity using a recognised indicator, e.g. clapping, buzzer, bell.
- Before giving any other instructions, say, "Look at me."
- Use visual words to transfer child's attention to something specific "Look at the blackboard" or "Have you seen what I have?"
- If the child's attention lapses whilst listening, try to stop mid sentence and remain silent to see if they will look at you again.
- Check child understands/comprehends the instructions or task.
- Reduce visual/auditory distractions where possible, e.g. pictures from around the blackboard, switch off the TV, do not sit child by a window where people/objects will be moving past.
- Use varied activities to maintain interest.
- Enable the child to work for short time periods that are achievable for the child.
- Take regular breaks in between activities. Something active may help raise the child's energy level which could help with visual attention.



Strategies to help with Visual Attention

Copying from the Whiteboard

- Use of coloured pens
- Sit child near the centre and front of the class room, with a clear unrestricted view of the whiteboard
- Use a clear writing style
- Use a 2nd smaller whiteboard written in a simpler format next to the child
- Allow extra time to copy off the board.



Worksheets

- Be careful of quality and quantity of information
- Ensure presentation is not visually confusing.
- Make sure size is adequate and reduce the amount of information on the sheet
- Use a photocopier to enlarge
- Section work into boxes
- Use a spare sheet of blank paper to cover all parts of the work sheet except those which the child is working on.

Workbooks

- Use lines and boxes to highlight which parts are to be completed
- Check the spacing of printed lines is correct for child's writing size
- Pre-printed margins.

Dictionary / Word book

- Use a simple format
- Use a highlighter pen / tape
- Have dictionary sheets available
- Encourage use of spellchecker
- Mnemonics to help with spelling, e.g. songs or rhythms.



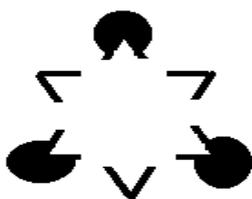
Visual Closure

Visual closure is the ability to visually complete a picture, shape, word or number. It is the ability to identify a shape or form when only part of it is visible.

Elements forming a shape will be perceived as part of the same form even with gaps in between them. This is because our visual system often supplies missing information and closes the outline of an incomplete figure.

Functional Implications of difficulties with Visual Closure

- Difficulty recognising objects when only partially visible such as slippers under the bed.
- Difficulty recognising words or letters when only partially written or written with gaps or spaces.
- Difficulty blending letters in words visually.
- Poor cursive writing skills.
- Difficulty knowing if an assignment is incomplete or finished.
- Confusion interpreting charts, maps, graphs, etc.
- Difficulty completing puzzles, tending to use a trial and error approach.
- For example, difficulties identifying the triangles in the picture below.



Activities to address difficulties with Visual Closure

- Dot to dot books
- Jigsaw puzzles
- Cover part of a picture and ask the child to tell the whole story
- Tracing pictures and letters
- Mazes
- Finding the hidden objects within pictures
- What's wrong with the picture games

Visual Discrimination

Visual Discrimination is the ability to detect similarities and differences in pictures, objects, patterns, sequences and/or organisation of single or groups of visual stimuli.

Functional Implications of difficulties with Visual Discrimination

- A child may have difficulty making quick, accurate or refined interpretations of visual information.
- A child may be slow to scan information.
- A child may have difficulty recognising letters, numbers or symbols. This may have implications for reading and writing and maths i.e. letter confusion/reversals, etc.
- A child may experience difficulty copying work.
- A child may have difficulty gaining relevant information from pictures, graphs and charts.
- A child may have difficulty recognising distinct shapes from background.

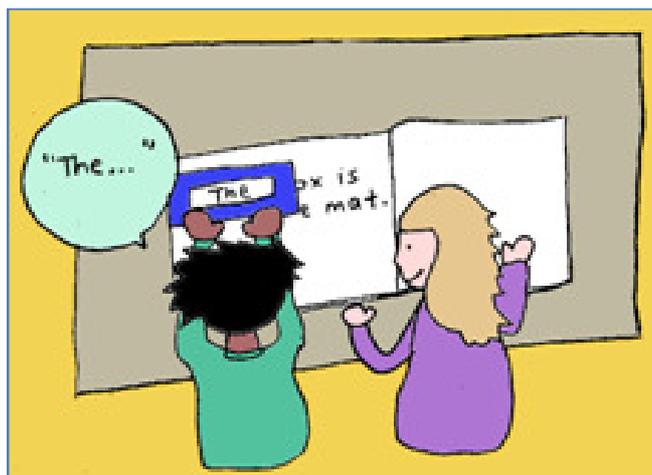
Activities to address difficulties with Visual Discrimination

- Puzzles, lotto games, spot the difference games, etc.
- Matching activities using objects or cards
- Sorting by category – grade as appropriate
- Ask the child to feel objects with their eyes closed, then ask them to describe what they feel. This aims to increase language skills
- Dominoes using pictures or tactile objects
- Mosaics
- Colour collages
- Matching drawn silhouettes to objects
- Looking for objects around the child, identifying them by shapes and colours, etc. This can be done during everyday activities



Practical solutions

- Reduce distractions
- Reduce information presented
- Use worksheets rather than copying
- Increase size or print on worksheets/books
- Use multi-sensory approach- tactile, kinaesthetic and visual (younger children)
- Gradually build up auditory skills. Reinforce auditory skills through verbalisation
- Use a cut out window to highlight the relevant area of work.



Visual Figure Ground

Figure Ground is the ability to find a specific form hidden on a crowded background.

In a stimulus that contains two or more distinct regions, we usually see the part, which contains the object of interest, as a figure and the rest as background. The figure usually appears more solid than the ground and also to be in front of it.

Functional Implications of difficulties with Visual Figure Ground

- The child may have poor attention to detail
- The child may have difficulty finding their place on a page or background. It may affect their ability to copy and read
- The child may have difficulty finding an object on a cluttered table or room and may present with organisational difficulties
- The child may have difficulty finding the correct key on a keyboard
- The child may have difficulty picking out a face in a crowd
- The child may have difficulty seeing an approaching car
- The child may experience difficulty when finding objects in a busy supermarket
- The child may see all the words on a page but be unable to focus on a single word or letter
- The child may present as inattentive and very disorganised especially when they are switching their attention from one task to another
- The child may become confused if presented with too much information in a small space
- The child may have limited imagination or artistic ability
- The child may accidentally omit or skip sections of a task or an assignment
- The child may experience difficulty with attention and concentration for example instead of focussing on one problem in maths they may concentrate on all the problems listed on the page.

Activities to address difficulties with Visual Figure Ground

- Where's Wally games
- Jigsaw puzzles
- Worksheets
- Geometric colouring sheets
- Painting by numbers
- Kim's game (use 4-6 everyday objects laid out in front of the child. Ask the child to remember the objects before looking away. Remove an object and ask the child to look and identify what is missing.)
- Highlight specific words that are repeated in the text
- Highlight places on a map.



Practical Solutions

- Developing a routine where everything has its set place
- Using specific colours for specific objects that will help to highlight the objects
- Reading/copying – cut out a template or use a ruler to underline certain sentences
- Developing auditory skills and tactile skills to assist visual skills
- Planning and preparation, for example when going to the supermarket, or arranging a room in specific way
- Make things visually clean and not cluttered
- Cue the child when thing change
- Use cue cards for multi-step tasks or step by step instructions.

Visual Form Constancy

Form Constancy is described as ‘the ability to mentally manipulate forms or shapes and visualise the resulting outcomes’ (www.childrensvision.com). It is the ability to understand that an object or a shape is the same and has unchanging qualities even if it is seen in a different context or it is seen in a different orientation (i.e. rotated or turned over).

Form Constancy helps children distinguish differences in shape, size and orientation. For example in reading Form Constancy helps the child to recognise words that they have learnt even if the word is seen in a different context or printed differently.

Functional Implications of difficulties with Form Constancy

- They may have problems with differentiating a shape regardless of its size, colour or texture. E.g. a ball is a circle – a clock face is a circle – children with Form Constancy difficulties may not associate that a clock is the same shape as a ball.
- They may not understand that an object is the same size whether it is a field’s length away or whether it is in their hand.
- They may not recognise geometrical shapes.
- They may have a tendency to reverse letters and numbers when writing them down.
- They may not recognise words they have learned when it is presented in an unfamiliar context or in a different style of writing or printing. For example the child may be able to read the word Rabbit in this style of text but may not recognise it as the same word when it is presented slightly differently such as: -

Rabbit

Rabbit

RABBIT

rabbit

rabbit

- They may have confusion between some letters

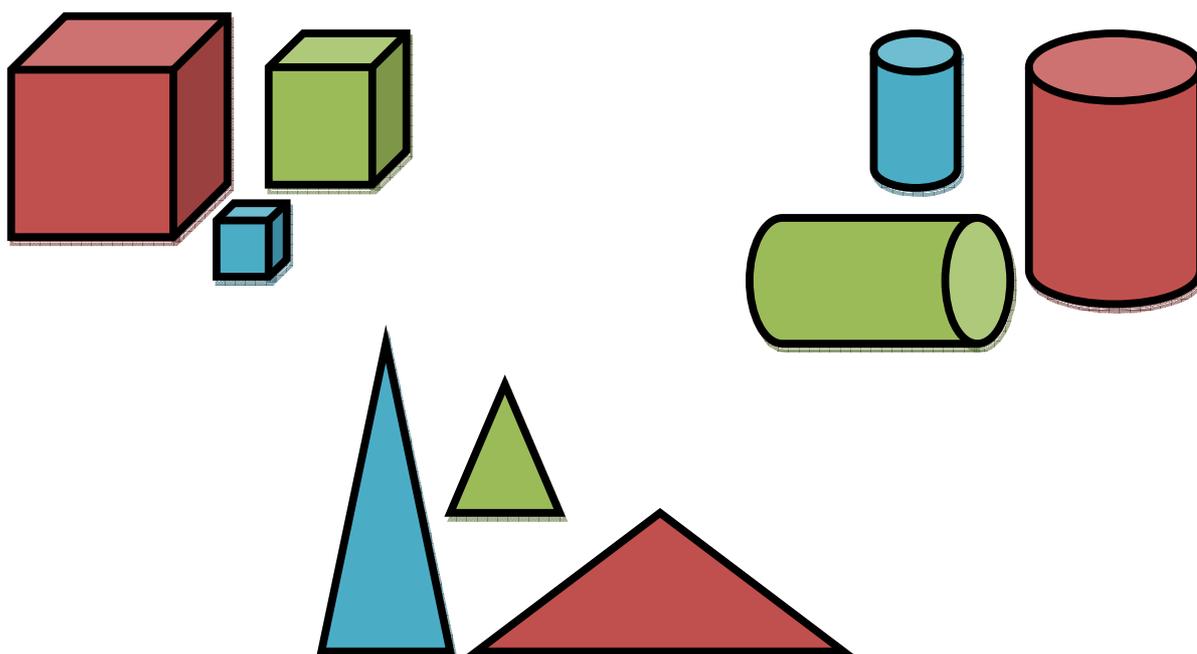
v and u
c and e
i and n

- They may be able to read a sentence in their own handwriting but not be able to recognise the same sentence if they read it in a book or vice versa.
- They may have general difficulties with learning, especially reading and writing.
- They may confuse similar words such as: -

how and now
canary and carry

Activities to address difficulties with Form Constancy

- Look at the same object but in different sizes, heights, widths and depths.
- Sort the same objects but different types/designs according to shape, colour and size so as to help the child understand that objects are the same even though they appear slightly different.
- Compare sizes of objects using words like thick, thin, tall, short, big, little, etc.
- Work on recognising and naming shapes, e.g. circle, square, triangle, diamond, star, semi-circle, etc.



Visual Memory

Visual Memory is the ability to retain and recall information from pictures, list of words, or other information presented visually.

Functional Implications of difficulties with Visual Memory

- May affect the child's ability to recognise different letters or numbers when reading, particularly if they are a similar shape.
- When reading they may need to frequently look back from one page to the next to review the text.
- Children may struggle with comprehension when reading and often use sub vocalisation to give auditory rather than visual feedback to assist memory.
- May affect the child's ability to remember and copy letters when writing, which will affect their spelling.
- Children may have difficulty recognising objects, or remembering designs or musical notes.
- Copying from the whiteboard and having to look up and back to the page again may also be difficult.
- Other tasks may also be affected such as drawing from memory and pictures often lack detail.



Activities to address difficulties with Visual Memory

- All types of memory and recall games, e.g. Kims game, pairs etc.
- Perceptual worksheets, e.g. recognising a letter from among others.
- Practice recognising and remembering similar words from one page to the next.
- Practice recognising and remembering numbers of different sizes.



- Strategies to help memory, e.g. verbally rehearsing sequences of letters, numbers, etc.
- Strategies such as elimination: comparing the first two and last letters or shapes in a sequence so the whole pattern does not have to be memorised.
- Encourage the child to look at things in detail. Discuss specific details and work on good observation habits, e.g. the colour of someone's eyes, what they are wearing, objects in the room, etc.
- Find simple pictures in books or magazines or specific details on the page then take the book away and ask the child to recall some of the detail.
- Show a simple picture for a short period of time. Cover the picture and have the child recall the main objects in the picture.
- Draw two simple identical pictures. Add extra detail on one and ask the child what has been added.
- Take a walk with the child and afterwards ask the child to describe some of the things they have seen.
- Use jigsaw puzzles. Start with a whole puzzle before taking it apart and putting it back together. Use puzzles that are developmentally appropriate and discuss the shapes and pieces and how they fit together.
- Cut pictures from magazines and ask the child to arrange them according to function, e.g. fruit, clothes, tools, toys, etc.
- Use Visual Sequencing cards.

Practical Solutions

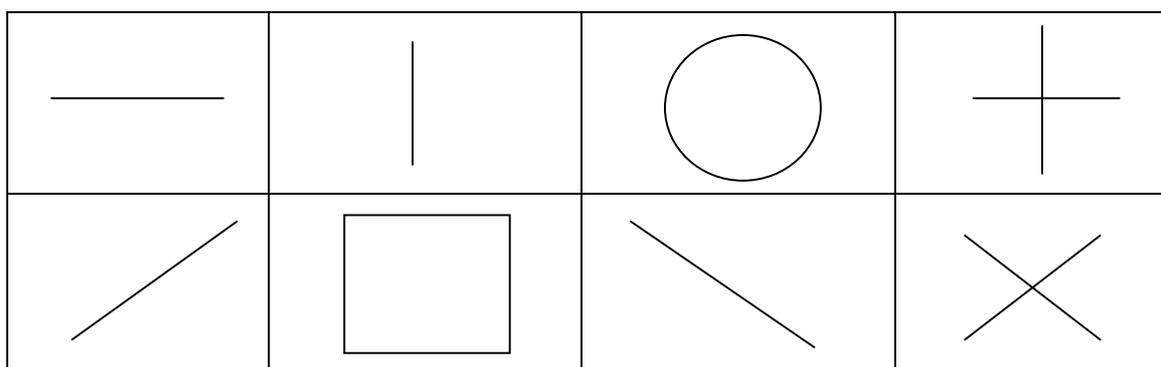
- Minimising the need to copy from the whiteboard by having the information on the desk.
- Give crib sheets for the alphabet, numbers and often used words on the desk to copy.
- Giving instructions already written down, such as home work.

Visual Motor Integration

Visual Motor Integration refers to the ability to co-ordinate what we see with the appropriate motor response. It involves visual perception and eye-hand co-ordination. Children with difficulties in this area often find the completion of fine and gross motor activities difficult, for example copying a sentence from a textbook, kicking a football.

Visual Motor Integration difficulties can affect every child differently. Some children find the visual aspect difficult, i.e. remembering what different letters look like, being able to identify the differences in different shapes. Some children have difficulties with the motor aspect for example controlling the pencil efficiently enough to copy a shape. Some children have difficulties with both aspects; co-ordinating the two together in an effective way in order to achieve the desired response.

Difficulties with Visual Motor Integration can impact hugely on a child's ability to complete pencil and paper tasks as writing involves hand/eye coordination. Beery (1997) proposed that a child will be ready for formal instruction in handwriting if they manage to master the first eight figures of the Developmental Test of Visual-Motor Integration (VMI). These are shown below.

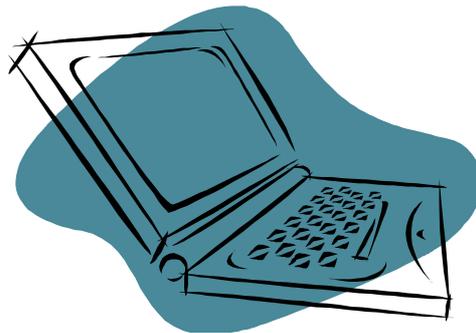


Some Strategies for Teachers

- Some children's visual motor problems result in them making errors that they do not detect on visual scanning tests. These children may benefit from interventions around study skills, such as evaluating the difficulty of the task before beginning, and strategies for checking work. For example, if a child tends to do a whole worksheet on mixed maths facts (addition, subtraction, division, multiplication) with errors in noticing the sign has changed, ask him or her to highlight the maths sign in a different colour before starting (pink for addition, yellow for subtraction, etc.).
- Try to avoid visually complex worksheets. When worksheets cannot be modified, ask the child to cover up all the problems except the one they are currently

working on with a white piece of paper to reduce overwhelming visual information.

- Allowing the use of cursive or print on written assignments.
- Adapt assignments and materials when necessary by shortening assignments (with the focus on aiming for quality, not quantity).
- Teach word processing skills so the child can learn compensatory strategies for handwriting assignments.
- For older children who have become resistant to writing and copying, thinking about modifications such as having a peer note taker or scribe, providing copies of the notes, giving extra time to complete longer writing assignments, and allowing the child to type, record, or give answers verbally instead of in writing may be helpful.



Visual Sequential Memory

Visual Sequential Memory is the child's ability to retain remember and recall a sequence or pattern in a specific order. This skill is needed for the production of words and sentences.

Functional Implications of difficulties with Visual Memory



- Difficulties with spelling, omissions, additions and transpositions when writing.
- Difficulty identifying words with similar sequences causes confusion when reading and if a child cannot visualise events in sequence it may hinder their comprehension.
- Problems with visual sequential memory can affect learning to read and write and other visual tasks.
- It may also cause problems with maths if a child has difficulties recognising and remembering patterns and sequences of numbers.

Activities to address difficulties with Visual Sequential Memory

- All types of memory and recall games, e.g. Kim's game, pairs, etc.
- Perceptual worksheets, e.g. recognising a letter from among others.
- Practice recognising and remembering similar words from one page to the next.
- Practice recognising and remembering numbers of different sizes.
- Strategies to help memory, e.g. verbally rehearsing sequences of letters numbers, etc.
- Elimination Strategies: comparing the first two and last letters or shapes in a sequence so the whole pattern does not have to be memorised.
- Encourage the child to look at things in detail. Discuss specific details and work on good observation habits, e.g. the colour of someone's eyes, what they are wearing, objects in the room, etc.
- Find simple pictures in books or magazines or specific details on the page then take the book away and ask the child to recall some of the detail.

- Show a simple picture for a short period of time. Cover the picture and have the child tell the main objects in the picture.
- Draw two simple identical pictures. Add extra detail on one and ask the child what has been added.
- Take a walk with the child and afterwards ask the child to describe some of the things they have seen.
- Use jigsaw puzzles. Start with a whole puzzle before taking it apart and putting it back together. Use puzzles that are developmentally appropriate and discuss the shapes and pieces and how they fit together.
- Cut pictures from magazines and ask the child to arrange them according to function e.g. fruit, clothes, tools, toys etc.
- Use Visual Sequencing cards.

Practical Solutions

- Minimising the need to copy from the whiteboard by having the information on the desk.
- Give crib sheets for the alphabet, numbers and often used words on the desk to copy.
- Giving instructions already written down, such as home work.

Visual Spatial Relationships

“The determination of the spatial relationship of figures and objects to oneself or other forms and objects (Case Smith, 2001, p386)”.

This is the child’s ability to see two or more objects in relation to themselves and in relation to each other. For example when threading beads the position of the bead and string in relation to the child is as important as the relation to each other.

Visual Spatial skills are important for the child to understand directional language concepts such as ‘in’, ‘out’, ‘up’, ‘down’, ‘in front of’, ‘behind’, ‘between’, ‘left’ and ‘right’.

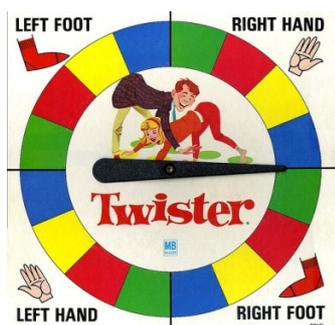
The skill of Visual Spatial Relationship is needed to help a child differentiate between letters in a word or in a sentence.

Functional Implications of difficulties with Visual Spatial Relationships

- May show letter reversals past eight years of age.
- Confusion regarding the sequence of letters or numbers in a word or maths problem (e.g. was/saw).
- May have difficulty spacing letters and words on paper.
- May choose random starting points on the paper for writing i.e. Middle of the page or to the right rather than the left-hand side.
- The child may have difficulty in understanding directional language (in, out, on, under, next to, up, down, and in front of).
- Reading may be affected. Difficulties in this area may affect the way the child sees the order of letters in a word, digits in a number and arrangement of materials on a page.
- Child may not see objects in correct relation to themselves.
- Depth perception - A child with depth perception problems may have difficulties walking through space and catching objects such as balls. May also have difficulties visually discriminating when the surface plane has changed and therefore have difficulties with steps and curbs. Transference of visual spatial notations across two visual planes may make copying from the blackboard difficult. Faulty interpretation of spatial relationships may result in difficulties with sorting and organising belongings.
- Topographical orientation - A child with difficulties in this area may become easily lost and have difficulty finding their way around.

Activities to address difficulties with Visual Spatial Relationships

- A multi-sensory approach can be used.
- Games to encourage body in space concepts i.e. Simon Says, Statues, Shadow Dancing.
- Simple obstacle courses

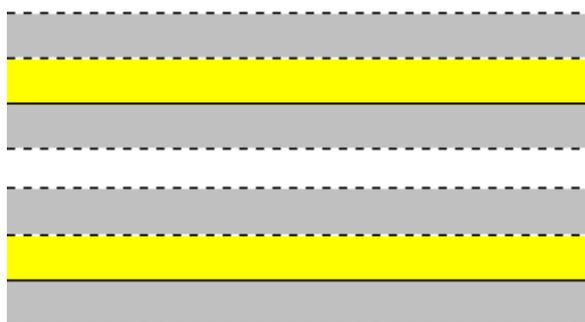


- Have the child use his body in relation to objects - Draw two parallel lines on the floor to represent a road. Ask the child to walk along the road, walk down the middle of the road, walk on the edge of the road, on the left side of the road, on the right side, etc.
- Play Twister or a similar game to work on left and right. It may be necessary at first to mark the child's feet and hands with an "L" for left and an "R" for right until he can remember his left from right on his own.

Practical Solutions (Infant/Junior School)

Children with visual spatial problems often choose random starting points that can confuse the writing task from the onset. Therefore, the child needs concrete cues to teach correct positioning. For example:-

- Coloured lines on the paper or paper with raised lines to help a child who has difficulty knowing where to place the letters on the page.



- A green symbol on the left-hand side of the line to indicate 'go' and a red symbol on the far right to indicate 'stop'.

- Upright orientation of the writing surface (paper on an easel or wall) may lessen confusion about directionality (up means up and down means down) as opposed to writing on a horizontal surface, where up means away from oneself and down means towards oneself.
- To help the child stop at the end of lines the use of templates with windows can be used to help teach handwriting. These can be made out of cardboard with three windows; one for one-line letters (a, c, e, i, m and n), one for two line letters (b,d,k,l and t) and one for three line letters (f,g,j,p,q,z)
- The child can be encouraged to follow along the printed lines with a finger. This helps the child to encourage the child to read the letters in the correct sequence.
- Letter Reversals - Use of verbal cues with directional cues to help a child who reverses letters and numbers (for example palms facing the chest and thumbs up, the child makes two fists. The left hand will form a 'b' and the right hand will form a 'd'). The use of cue cards for the child to keep for common reversals.

Basic Guide of activities for Perceptual Difficulties

	Visual Attention	Visual Memory	Visual Sequential Memory	Visual Closure	Visual Figure Ground	Visual Motor Integration	Visual Discrimination	Visual Form Constancy	Visual Spatial Relationships
Kim's Game		✓	✓		✓				
Pairs		✓	✓				✓		
Simon Says (iPad)		✓	✓						✓
Where's Wally					✓				
Maze				✓					
Dot to Dot				✓					
Jigsaw Puzzle		✓		✓	✓				
Spot the Difference							✓		
Tracing Pictures & Letters	✓			✓					
Hidden Pictures				✓	✓				
What's Wrong with Picture				✓					
Snap							✓		
Sorting		✓					✓		
Dominoes							✓		
Matching silhouettes to objects							✓		

	Visual Attention	Visual Memory	Visual Sequential Memory	Visual Closure	Visual Figure Ground	Visual Motor Integration	Visual Discrimination	Visual Form Constancy	Visual Spatial Relationships
Geometric Coloring Sheet					✓				
Painting by Numbers					✓				
Statues									✓
Shadow Dancing									✓
Construction games i.e. Lego, Duplo								✓	
Obstacle course									✓
Identifying objects by feel									✓
Matching 2D pictures with 3D object							✓		