



**OCCUPTIONAL THERAPY
CHILDREN & YOUNG PEOPLE**

VISUAL PERCEPTION

INFORMATION

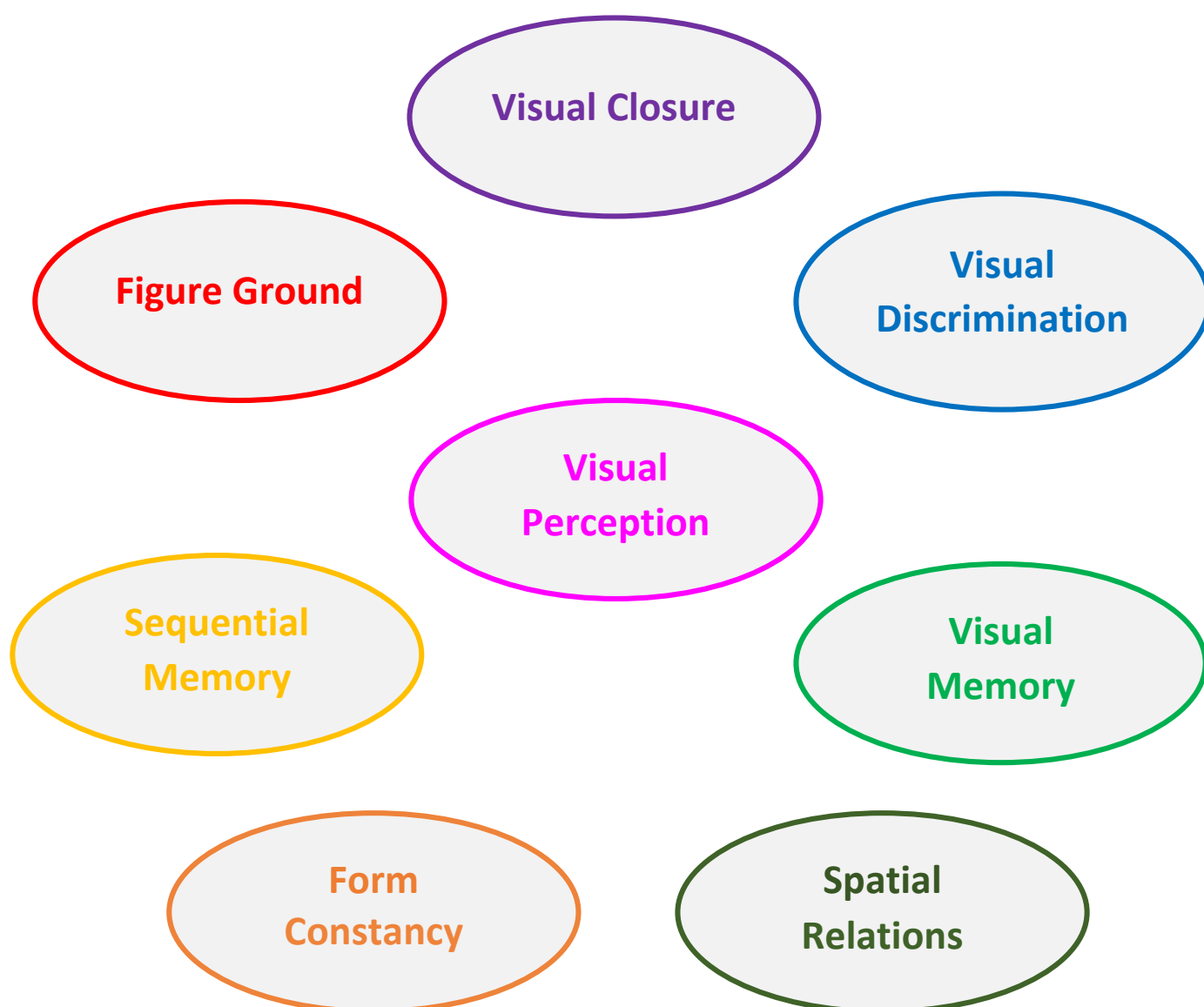
STRATEGIES

ACTIVITIES

What information does this booklet contain?

Visual perception is the ability to recognise, recall, discriminate and make sense of what we see. It is a very important skill and is essential for carrying out many activities of daily living, learning and school based tasks. Within this booklet you will find a general definition of visual perception and each visual perceptual sub system, implications of difficulties in each area, together with activity ideas and strategies to help minimise these difficulties.

If you require further information, please contact the Occupational Therapy Department. Contact details can be found at the end of this booklet together with social media contacts and a useful website resource.



What is Visual Perception?

Visual perception is a complex skill which is closely connected with other abilities such as cognition, and motor skills. Visual perception is the ability of the brain to process visual information i.e. giving meaning to what one sees. This is a different skill from visual acuity (how clearly one sees). Visual perception develops from very basic skills at birth, progressing to more complex processes, and reaches full maturity by around age 12. When a child has visual perceptual difficulties, it tends to be an on-going difficulty which is best addressed by strategies to compensate for the area of deficit.

Why is visual perception important?

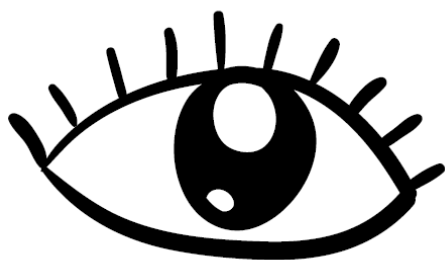
We use our visual perception skills in everyday life. Visual perception is an important skill, particularly for success in school. Everyday tasks which use visual perceptual skills may include: finding socks in a drawer, finding our way around a building, judging depths of steps/stairs, and working out what an object is without seeing the whole object. Some examples of everyday school tasks which require visual perception may include: copying from the board and organising handwriting on the page, finding your place on the page for reading, and organising your school belongings.

Components of visual perception

Visual perception is a complex process comprised of a number of sub components or skills which all interlink and work together as a whole system. The sub components of the visual perceptual system include:

- Visual discrimination
- Visual Memory
- Spatial Relations
- Form Constancy
- Sequential memory
- Figure Ground
- Visual Closure

This booklet will provide a definition of each area of visual perception and the difficulties that may be encountered. Each section will also provide activity ideas and strategies to help develop skills and minimise the possible difficulties encountered.



Visual Discrimination

Visual discrimination is the ability to find similarities and differences between objects, looking at size, shape or colour. A real life example would be recognising the differences between letters such as 'b' and 'd'.

Implications of poor visual discrimination

- Difficulties learning the alphabet and recognising words/letters.
- Confusion of similar shapes, letters and numbers (e.g. regular reversal past age 7/8)
- Mistaking words with similar beginnings or endings.
- Trouble writing and remembering letters.
- Understanding differences between size and colour.

Strategies for visual discrimination

- Encourage your child to look more carefully at objects and consider the colour size and shape
- To start with real objects first and then progress to pictures
- Looking at different shapes and letters and make comparisons between them
- Use of diagrammatic prompts e.g. letterland, alphabet, arrows
- Tracing over letters using directional cues when describing letters
- Use of visual cues e.g. making hands in shape of letters b and d or L

Activities to do

Activity	Description
Pipe cleaners	Make into a variety of shapes
Scavenger hunt.	Following a map if possible. Looking for objects that are half hidden.
Building blocks	Copy patterns already made
Activity worksheets	<ul style="list-style-type: none">• Find pairs• Find differences• Find odd one out
Different Word Circle	Prepare a sheet consisting of sets of words. One word in each group will be different. The child is to circle the word that is different i.e. can con can can can big big pig big big
Letter Search	Materials: Old magazines, which may be cut, scissors, paper and paste. Designate a specific letter or number, which the child is to find in their magazine. They are to find this letter or number printed in as many different sizes and styles as possible. Each time they finds the character in a new size or style, they have to cut it out and paste it on their paper.

Activity	Description
What is Different?	<p>Materials: Several old workbooks from which pictures may be cut, cardboard and paste.</p> <p>Preparation: Select two identical pictures and paste them onto the cardboard, but omit one part from one of the pictures. For example, find two identical cats, but cut an ear from one of the pictures; or two horses with tail cut from one of the pictures.</p> <p>The child must compare the two pictures in each set and describe what is different. Variation: Show only the incomplete pictures and ask the child to identify the part that is missing.</p>
Find the Letter	<p>Write a word on paper and have the child find all the words in their story book that begin with the same letter as the designated word.</p> <p>As a variation, the child might look for all the words that end with the same letter as the designated word.</p>
Scoring the News	<p>Give the child a page or part of a newspaper. With magic marker or crayon have them do one of the following:</p> <ul style="list-style-type: none"> • Circle all of the “e” or other designated letter. • Circle all designated word such as “the”. • Circle the first word in every sentence. • Circle the last word in every sentence. • Circle all the double letters in various words.
Colour Squares	<p>Measure and cut the paper into squares of various sizes, ranging from 1” x 1” up to 6” x 6”.</p> <p>Give the child a handful of the squares. Have them sort the squares according to size and paste them by groups on their paper.</p> <p>The squares may be sorted by colour, or by both colour and size.</p>
Egg Carton Sort	<p>Give the child an assortment of objects e.g. buttons, beads, screws and have him sort them into different egg-carton sections, according to size, colour and shape. The difficulty of the activity can be varied by changing the number of objects to be sorted and the degree of similarity between them.</p>
Categorising by shape	<p>Find all the squares, triangles, circles, oblongs etc. Either in the room/garden/picture</p>



Visual Memory

Visual memory is the ability to store and recall what you have seen e.g. recall of visual images or objects, shapes, symbols and movements. A real life example would be remembering a word from the board in order to copy into a jotter.

Implications of poor visual memory

- Problems remembering words or objects when removed from view.
- Inaccurate copying
- Drawings lacking details
- Difficulty recalling things you have seen everyday
- Poor at matching games.
- Difficulty remembering what was read

Strategies for visual memory

- Give adequate time for child to record work
- Make verbal descriptions of the letters (m and n have humps)
- Provide desk top copy of information and place in optimum position for scanning
- Placing a memory strip on his notebook or desk, or other area where he has difficulty recalling something
- If they can use a computer or tablet, have them use spell check to help find misspelled word
- When a child is working independently encourage a multi-sensory memory approach, e.g. touching, naming, describing details etc.
- Short frequent practice. Use everyday activities e.g. touching, naming, describing details etc.
- Use simple drawings or symbols as memory joggers

Activities to do

- Word searches
- Show child abstract shapes briefly (draw on paper) and ask them to repeat on paper. N.B shapes which cannot be verbalised easily are better
- Flash card bingo
- Kim's game- place several items in a row, cover, then change the order items. Ask the child to replace in the original sequence. Try removing an object without the child looking then ask the child to identify the missing item. Try to increase the number of objects removed.
- Memory pairs- initially start in a linear fashion and move to a scattered effect
- Show a busy picture. Cover. Ask child to list details
- If working on recalling formations for letters, have them try to draw it with their eyes closed to remember the shape of the letter
- Use bendable things such as pipe cleaners to form letters and shapes (because feeling a shape can help them visualize [see] the shape). The letters can then be glued onto index cards, and later the child can touch them to "feel" the shape of the letter

Spatial Relations

Spatial Relations is the ability to sense and interpret the relationship of objects from each other and their self. It involves judging position distance and size. A real life example would be moving and organising yourself.

Implications of poor spatial relations

- Difficulties with dressing i.e. putting clothes on the right way round, doing buttons up straight and clothes inside out.
- Difficulties with handwriting including sizing spacing and orientation
- Copying shapes and pictures i.e. drawing graphs, plans, and labelling.
- Moving in space for example moving in gym hall, bumping into others, knocking things over, using stairs and judging spaces i.e. doorways.
- Organisational of self and belongings.

Strategies for spatial relations

Handwriting/Copying from board

- Using squared/lined paper so that the child is aware of size and spacing
- Using really dark or raised lines to prompt the child with letter position.
- Have a green margin to show the child where to start writing and red where to stop.
- Copying from one paper to another in the same plane (e.g. on the table) rather than copying from the board
- Give concrete examples of expected format or use part prepared layout
- A shield or folded paper to eliminate visual distractions. Cut a hole in a piece of card or paper the average size of a word or sentence. This can be placed over the paper that the child is working on and moved when appropriate
- Using a finger spacer to help with placement of work
- Teach rules how to draw common shapes
- Use a “dot to dot” approach
- Allow child to trace shapes from workbooks or worksheets

Organising Personal Belongings

- Keeping only necessary items on desk top
- Allowing limited number of personal belonging at school
- Designing a place or container for each belonging
- Scheduling a set time each day to organise belongings
- Creating a colour coded filing system. Files of different colours can signify different subjects or complete and incomplete work.
- Discussing strategies for organising personal belongings. Ideas include talking about same and different characteristics of objects. This can be applied to cleaning a bedroom, doing the dishes, sorting collections of clothing etc.
- Visual check list of items required

Organised Approach to Movement

- Body awareness techniques prior to carry out movement
- Encourage child to experience different surfaces such as sand, gravel, and grass

Organised Approach to Dressing

- Reinforcing correct orientation of clothes such as labels to the back, badges/motifs to the front.
- Laying out clothes in the same order
- Socks with coloured heels and toes
- Stickers in shoes to help with left and right discrimination
- Talking through sequence of dressing with child
- Try to be consistent with the dressing task. For example, encourage your child to start with the same side of the body each time
- Leave extra time so your child does not feel rushed. Try to minimize distractions and interruptions.

Activities to do

Activity	Instructions
“whole body” games which include movement and balance	e.g. rolling, jumping and hopping. Perform obstacle courses in correct sequence after demonstration. Move over, under, in between items. Playing Simon says or follow the leader games.
Threading	Sequence bead threading with repetitive patterns or copy patterns
Peg board patterns	Beginning with simple shapes and progress to complex patterns involving many colours and diagonal lines. Talk about each peg in relation to the next i.e. the red is above the blue and to the right of the yellow.
Tennis	Begin with large soft ball to decrease fear and increase chance of success
General ball games	Catching straight ahead then to sides, high and low. Throw over wire into a goal, net or basket.
“Simon Says” and “Follow the leader”	Copy body patterns and movements
Games on the wall	e.g. darts, put the tail on the donkey, put the nose on the man.
3D construction toys	e.g. Lego, mecano, stickle bricks, nuts and bolts
Jigsaw/puzzles	Begin with simple puzzles and just remove one or two pieces and ask the child to replace. Move on to removing more pieces and finally the child doing the jigsaw/puzzle completely.

Form Constancy

Form constancy is the ability to understand 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. Real life examples would be identifying a diamond is still the same shape despite it being turned on its side, or recognising the same letter when presented in different fonts.

Implications for poor form constancy

- Difficulty recognising when font colour or shape changes.
- Confusion when shapes or objects are presented in a different environment (for example when they see them in the playground instead of in the classroom).
- Trouble understanding that an object is the same size whether it is at the other side of playground or whether it is in their hand.
- Difficulty recognising geometric shapes.

Strategies for form constancy

- Give the child what is to be copied on a paper lying flat on their desk, rather than the board, or copy from another child's paper
- Try to use the same font or style of letter on hand-outs as the child issued to in school. (like the "a" here is not like a D'Nealian "a".)
- When learning a letter form, have the child work in the same plane as it is being taught (they need a vertical board if that's what you're using)
- Teach them to tilt their head, eyes or object if they have trouble visualising something at a certain angle.
- Use physical objects to explain shapes, sizes and colours, rather than expecting child to visualise these.
- Use 'Roll n write' alphabet resource. By rolling a ball bearing along a moulded plastic letter shape, kinaesthetic awareness of the letter form is reinforced.
- Using resources such as the Write From the Start or Speed Up handwriting programmes (can be purchased from Amazon)
- Reinforce similarities between objects and shapes
- Provide concrete examples of objects

Activities to do

- Make a feely bag. Ask the child to identify toys/objects/shapes by describing them using touch not vision e.g. long, sharp, hard
- To reinforce shape constancy- try a tactile perception activity and ask the child to identify the shape that he/she can feel inside a feely bag.
- Practice building block designs according to a diagram or model
- Complete construction type activities such as Duplo, Lego or other building blocks like K-Nex
- Colour code sequences
- Sorting games- sort objects by colour, size, shapes

- Give child pairs of objects radically different sizes and ask them to point out the larger one. Gradually decrease the difference between the pairs and ask them to point out the larger.
- Show the child a shape e.g. circle, square or rectangle- ask them to look for an item or object in the room of a similar shape i.e. circle- clock or bowl. Reinforce language needed for naming, sorting and classifying
- Present shapes in as many different textures, sizes, colours and spatial orientations (vertical, horizontal, tilted at various angles) and use language to reinforce learning
- Show child an object behind a black card. See if they can guess what it is. Show the top, side, end or underside of the object e.g. peg, nail, brush, bottle etc.
- Give the child an object or shape. Place identical objects or shapes at various distances from the child. Ask the child to identify the objects that are the same as the ones he/she holds
- Picture/shape dominoes
- Dot to dot activities
- Ask children to cut out, letters, numbers, cars etc. from magazines and leaflets and collect them in a box. When enough material has been collected ask children to make collage of one category e.g. of different numbers or of cars.
- I spy, using the shapes of objects instead of the letter e.g. I spy something circular shaped, triangular, square?
- Write shapes/letters/words in different styles, colours prints or cut out of magazines. Ask the child to identify a chosen shape/letter/word on the page.
- Mark shapes out on the floor using masking tape/.chalk. Move round shapes by walking or hopping for example.



Sequential Memory

Sequential memory is the ability to retain, remember and recall a sequence or pattern in the order it was given. This skill is needed for the production of words and sentences. A real life example would be being able to remember and write an unknown sentence.

Implications for poor sequential memory

- Difficulty when remembering the sequence of letters in order to spell the word correctly.
- Problems with visual sequential memory can affect learning to read and write and other visual tasks.
- Confusion when doing multiple digit addition and subtraction.

Strategies for sequential memory

- Tracing over words or pattern before drawing.
- Sentence completion with cues e.g. beginning, middle, end.
- Repetition exercises.
- Using mental imagery / visualisation.
- Colour sequences.
- Movement sequences: the child looks, remembers and copies pattern e.g. clap, jump, hop, clap.
- Ask child to repeat back a series of instructions
- Encourage awareness of need to regularly check information
- Encourage note taking to prompt memory

Activities to do

Activity	Description
Kim's Game	Recall of objects seen for a short period of time and then hidden from view. The more objects added, the harder the task becomes.
Object Sequences	Arrange a sequence of objects (e.g. cup, apple, spoon, shoe) or a row of objects that are large/small and after the child studies the sequence for a short time, using cues to help him remember, (e.g. touching the objects, naming them) mix the sequence up and ask the child to reproduce it.
Copying	Copying pattern sequences using coloured beads, pegs or blocks. This can be made harder by giving the child a set time to memorise them and then repeat the sequence without looking.
Patterns	Place beanbags of different colours in a line, e.g. red, blue, yellow, green, red, blue, yellow, green, and then place hoops full of beanbags of different colours by the side. Child picks up the beanbags from the hoop one at a time and matches the line pattern starting from left to right.

Activity	Description
Shape	With a rope ask the child to make the same shape / letter made by the teacher or partner.
Movement sequence	Ask the child to watch an adult and copy the movement(s) they make. Gradually build up a larger sequence, e.g. touch head, turn whole turn, sit down, hop, and jump. Ask the child to repeat these two or three times.
Lego	Build a tower out of large Lego (Duplo), using different colours. See if your child can copy your tower exactly
Threading	Thread coloured beads into a string and encourage your child to copy the same pattern on her string.
Card sequencing	Make sequencing cards by writing down familiar sequences e.g. day of week, months of year, recipe, getting up, cutting these into individual units, (e.g. days) and asking child to place in correct sequence.
Routines	Ask child to write down familiar routine (e.g. getting up) and discuss with them each stage, giving them prompts if they are not specific enough, e.g. I get out of bed and go to school.

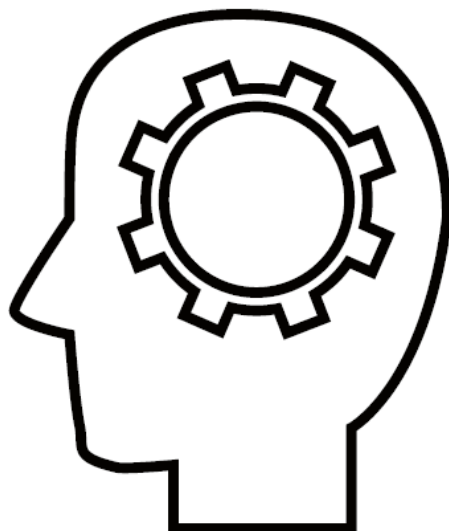


Figure Ground

Figure ground is the ability to distinguish an object from its background. When looking for an object it usually appears in front of the background which makes it easier to identify. If a person has difficulties with visual figure ground it can be difficult to tell the difference between the object and the background. A real life example would be finding a green button on the grass.

Implications of difficulties with visual figure ground

- Poor attention to detail.
- Difficulty finding their place on a page whilst reading.
- It may affect their ability to copy and read.
- Struggle to find personal items in a cluttered place.
- Trouble to find a dropped item if it fell onto a similar coloured background,
- Difficulty with using stairs.

Strategies for figure ground

- Reduce environmental distractions as possible such as turning off TV
- Keep the child's visual field as uncluttered and simple as possible. Organisation of personal space, particularly at school is important. Use tidy boxes to store unwanted items out of sight and limit the amount of items on the desktop. Encourage the student to be responsible for their own workspace as well.
- Consider position of the child's desk in classroom. Up the front near the blackboard will reduce distractions particularly from other children on their desks.
- Prepare worksheets and sections of the blackboard as simply and free of visual clutter as possible even to the extent of presenting only one work item per page.
- Use visual and tactile cues e.g. colour coding workbooks, darkening boundaries / lines for colouring in or cutting activities.
- Using boxes or windows to highlight units of work.
- Using a highlighter to emphasise important components on a work sheet e.g. instructions, steps involved.
- Identify what font style/size is more easily recognised and ensure these are consistently used.
- Use larger or bold print when typing.
- Use larger spacing word to word, line to line.
- Colour contrasting on blackboard or workbook.

Activities to do

Everyday Activities to do:

- Finding individual items of clothing
- Sorting cutlery
- Setting table
- Selecting crayon from box
- Stacking dishes

- Putting toothpaste on brush
- Writing activities
- Working television/radio
- Looking at things whilst out walking – do you see? A white horse, A red flower, A coloured stone?
- Identifying separate objects in pictures of storybooks

Sorting Activities to do:

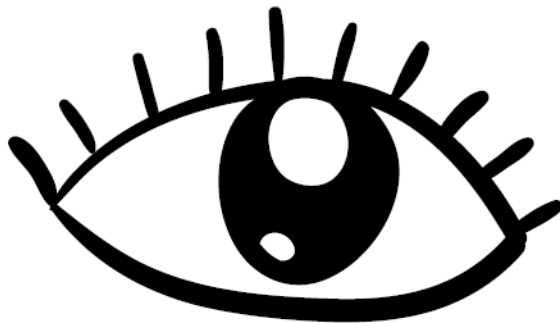
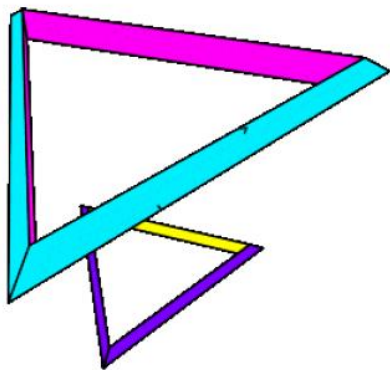
Sorting involves correct identification of qualities such as size, shape, colour, texture. At first the objects should differ greatly, but later they should differ less.

- Objective- mix objects of two or more types and ask children to sort.
- Pick out objects from box containing many different types
- Sorting farm animals and placing on farm
- Sorting cars and placing in garage
- Sorting dolls
- Shapes: sort bread/blocks/reels of different sizes, colours etc.
- Find Square button/bead in box of round ones
Large button/bead in box of small ones
Green marble on box of blue ones
Rough paper among smooth

Games to do:

Activity	Description
Games or books which ask the child to identify a particular object within the picture	Race to the Roof, Find It, Where's Wally
Magazine hunt	Show the child a busy page or picture from a magazine and find small details.
Activity books	For example: <ul style="list-style-type: none"> • Spot the Difference. • Word Search.
Overlapping Objects	Prepare a worksheet containing overlapping objects. Ask the child to outline a specific object
Find a colour	Ask child to differentiate objects of a particular shape from a distracting background, e.g. Colour all the squares green. Colour all the triangles red
Circle the word	Make a worksheet of several rows of designs. Each row will contain a word, which the child will circle.
Find the letter	Give the child a sheet full of randomly typed letters / numbers. Have the child find, for example, all the e's etc.
Colour the design	Make a design on paper repeating it many times. Specify a part of the design to be coloured e.g. colour all blocks under the lines or all blocks over the line

Activity	Description
"I Spy"	Ask the child to scan a busy room and find small obscure objects.
Jigsaw puzzles	Ones that have figure ground contrasts
Peg patterns	Copying established design
Board games	Snakes and Ladders, Monopoly
Lego	Lego or similar construction games
Painting	Find correct colour pot for brush
Dressing up	Practice fastenings and taking clothes on/off, over head etc.



Visual Closure

Visual closure is the ability to visually complete a picture, shape, word or number. The ability to successfully identify a shape or form when only part of it is visible helps you to quickly make sense of what you see, even if it is not all visible to you. This means you do not have to see every little detail in order to recognize something. A real life example would be the ability to find something you were looking for in junk drawer when part of the desired object is hidden by other items.

Implications of difficulties with visual closure

- Difficulty recognising objects when only partially visible such as slippers under the bed.
- Trouble making sense of words on a smudged page.
- Difficulty knowing if an assignment is incomplete or finished.
- Difficulty completing puzzles, tending to use a trial and error approach.

Strategies for visual closure

- Have a completed project placed near the student together with a step-by step instructions to complete task
- Arrange seat placement right in front of the board
- Present cleanly photocopied worksheets and test forms
- Give child a “helpful hint” about mistakes in order to give him/her a second chance to correct some of the errors, due to his/her difficulty recognizing errors in written material
- Make sure the child has the concept of finding and describing the sameness and differences between puzzle pieces (flat, cornered or curved edge, type of colour, words or objects on the piece)
- Use a line tracer or clear ruler
- Limit the amount of information given
- Allow additional time to process information

Activities to do

- Jigsaws
- Dot to dots
- Colouring in
- Words searches
- Incomplete sentences. Fill in the missing letters or words
- Matching complete and incomplete shapes
- Construction games
- Scrabble
- Stencils
- Model making
- Building 3D models e.g. K’Nex
- Partially covering a picture and asking the child to identify the whole shape

Further information on the topics covered in this pack and a range of other useful resources can be found on the KIDS Scotland web page. The website is a specifically designed NHS website for Children and Young People hosted by NHS Greater Glasgow and Clyde.

<http://www.nhsggc.org.uk/kids/>

In addition we regularly post activity ideas and general information on our Facebook page and Twitter account.

Please follow our Social media Pages:



NHS Lanarkshire Children and Young People, Occupational Therapy



@OccupationalTh4

If you have any queries or concerns please contact NHS Lanarkshire Occupational Therapy, Children and Young People:

South Team – Douglas Street Community Health Clinic (01698 368714/705)

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