

## **GROSS MOTOR information and STRATEGIES:**

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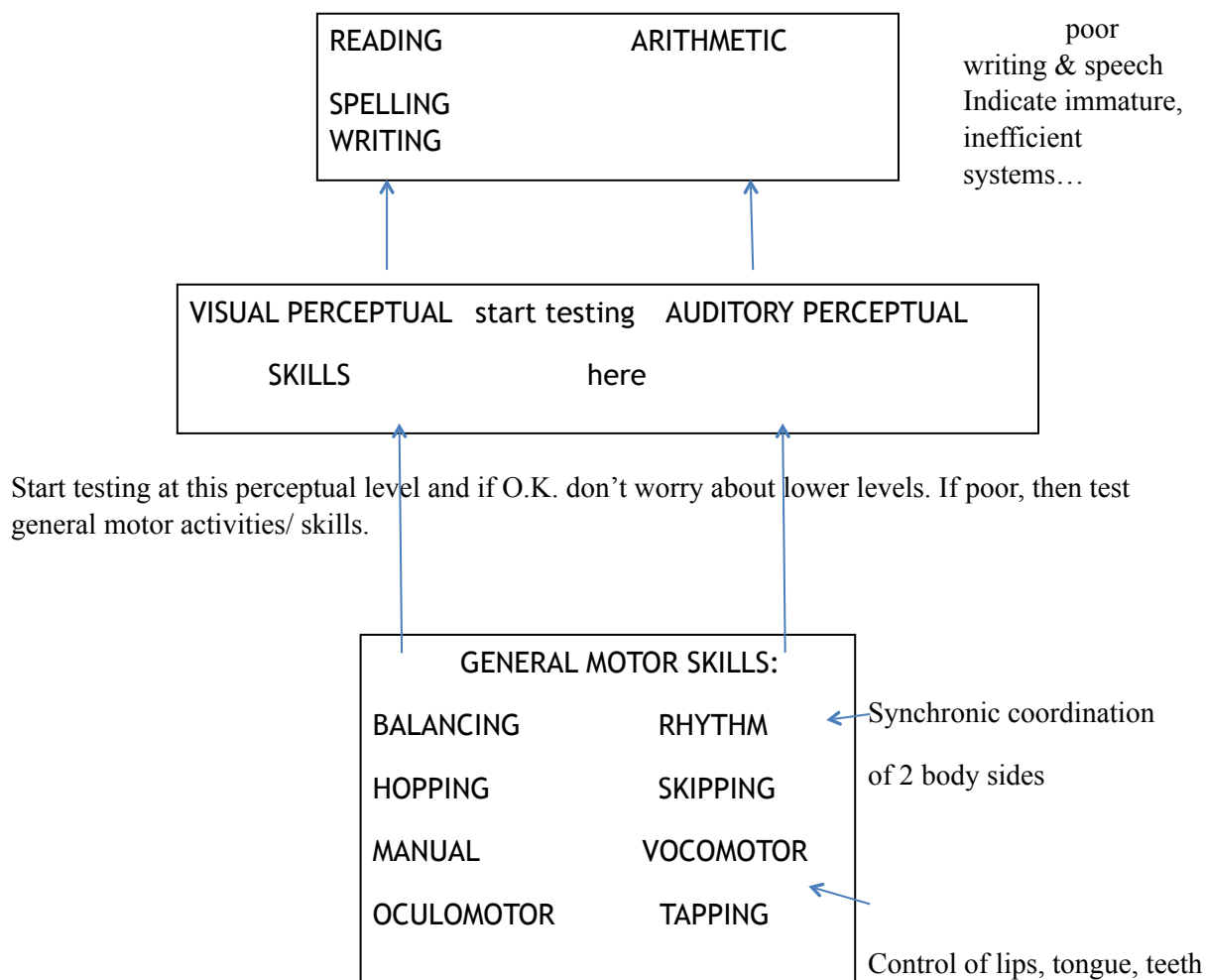
17-21. Gross motor strategies. **The Importance of gross motor: Try to spell a difficult word with dominant hand and non-dominant hand.**

## The crucial role of foundational central nervous functions to higher level cognitive tasks:

Rosner (1975) describes the crucial part that the basic foundation **tactile, vestibular and proprioceptive** central nervous systems play in the higher level **cognitive, abstract** tasks involved in learning. For successful academic learning to occur, the following basic skills are involved: the visual and auditory sensory systems; postural security; body awareness (including ability to cross the midline); spatial awareness, (especially left-to-right orientation); motor planning (involving both fine and gross motor); ocular motor control (vision does not stabilise until the age of 9); **auditory language skills; visual spatial perception and attention centre functioning.**

A student with good visual and auditory perceptual skills is better able to see how the **individual parts fit together to make a whole**. For example, how the lines, circles, dots join together to make letters/ words/ sentences. Students with poor perceptual skills do not see these relationships as easily and are less able to **organise and assimilate** information, at the basic sensory and sensory-motor levels. (See diagram on pages 4 & 6). Problems at these lower skill levels impact on higher cognitive functioning.

## The relationship between motor, visual perceptual and auditory perceptual skills and academic functioning.



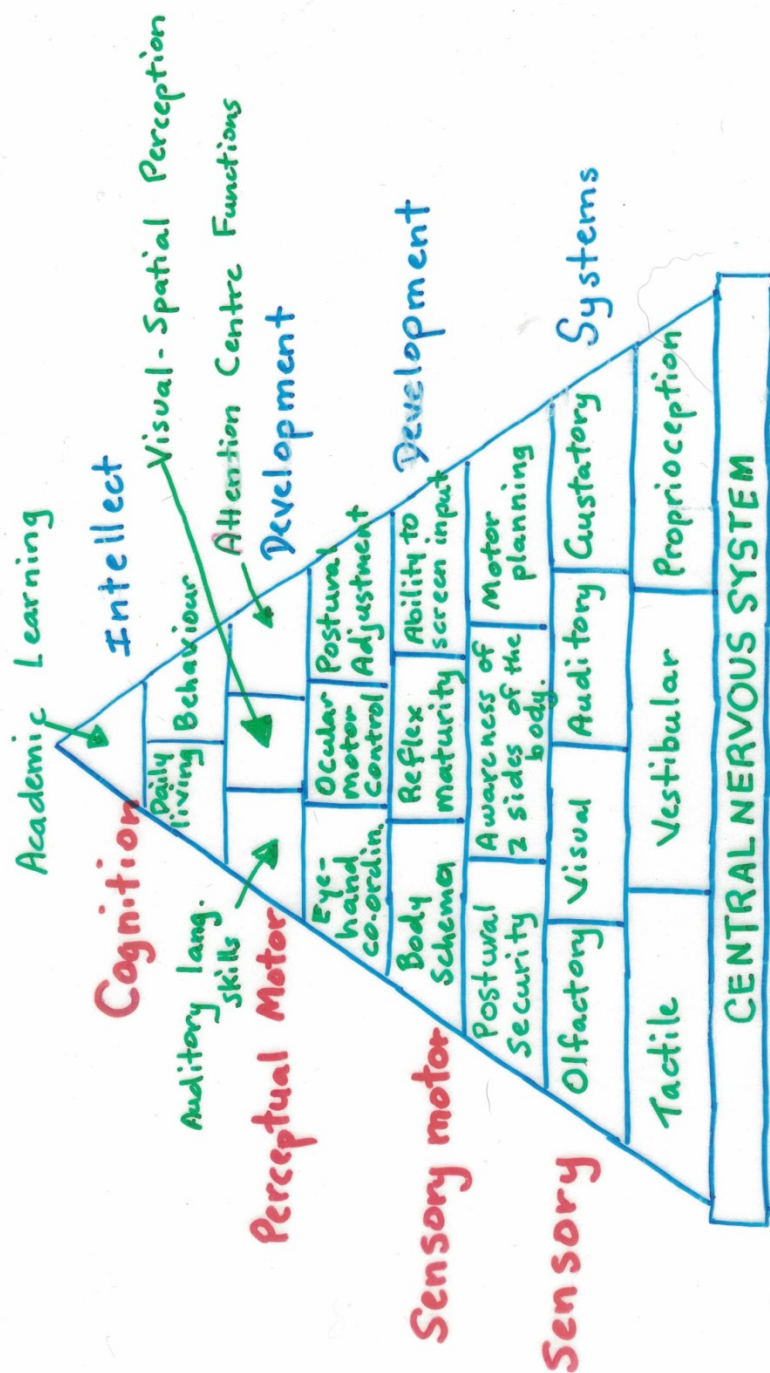
Rosner states that there may be delays in **speech skills** and likens this to the clumsy student with delayed kinaesthetic, fine and gross motor skills. A speech delayed child will require **more oral activities** (speaking and hearing, then speaking again), to compensate for the fact that the link between the speech mechanism and the ears is underdeveloped. Speech pathologist programmes are

very helpful. The student needs to develop strong speech-sound associations: **tangible** information about speech sounds. **Speech teaches the ears about the sounds of a language.**

**Oculomotor skills** (eye movements/ scanning/ not losing place in print/ tracking/ left to right reading) are also crucial. As children mature, the visual and auditory analysis skills go from being “unsorted” to being “more differentiated over time”. Young children **confirm what they see by touching**. As they get older, vision confirms what they feel with their body, as they **physically explore** the world, learning how the visual world is **constructed** and **how the different elements relate** to each other. Learning disabled students need to continue this physical exploration longer. **Body actions and contacts teach the eyes about relationships between the parts and the whole.... Leading to a fully integrated, correct perception.**

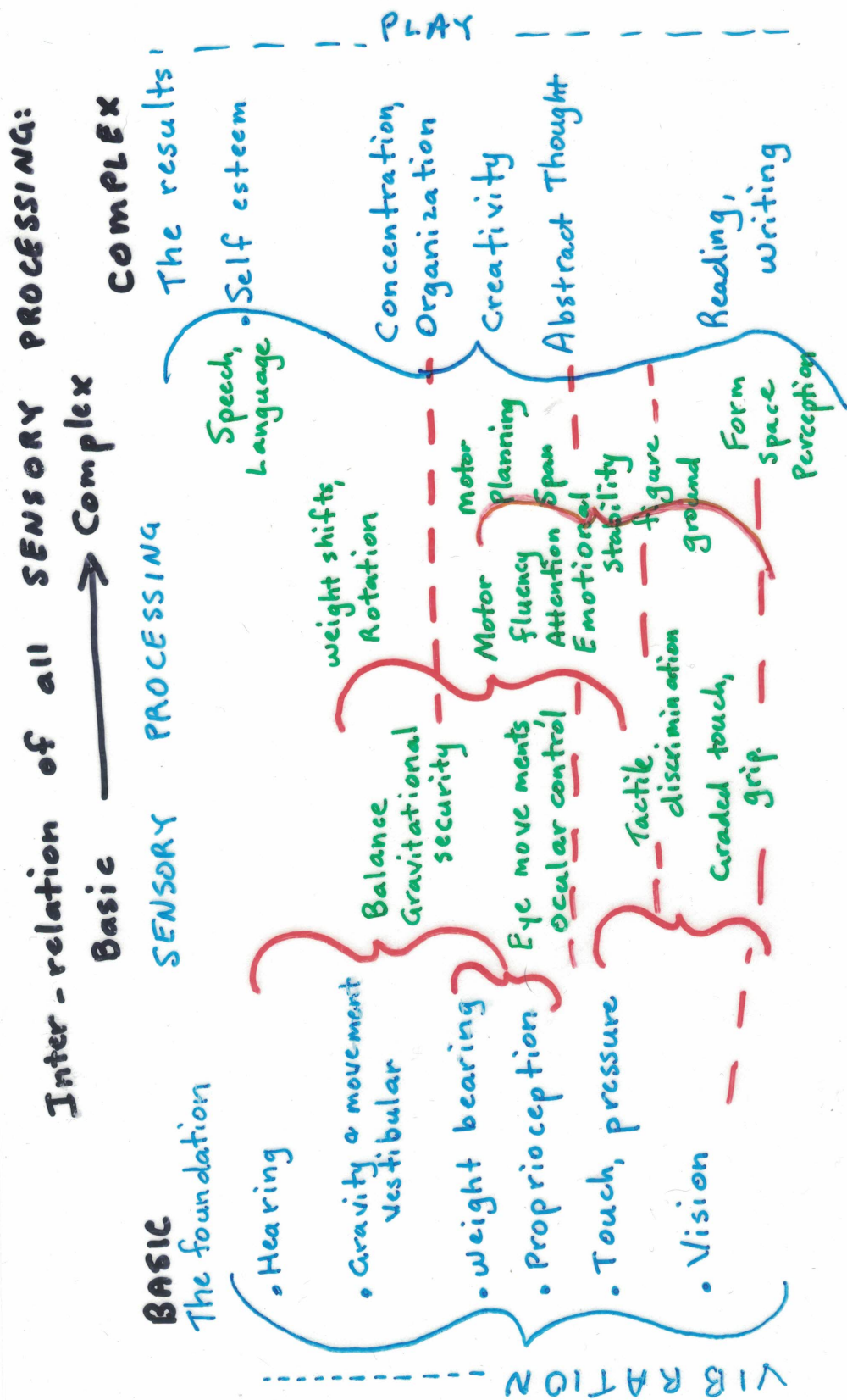
**NB: Visual-Motor/ Spatial:** are not remediated past pre-school at the present time. There are many children present in Kindergarten and also some in First and even into Second grade whose **spatial knowledge** is still developing. These children need to be assessed to separate them from those with visual problems and allow for specific remediation of their specific needs. (Rowena Harding-Smith).

Rosner: Hierarchy of central nervous systems: from basic to higher order functions.



**Rosner: inter relation of all sensory motor processes: basic to complex.**

<b>BASIC</b>	.....>	.....>	.....>	.....>	<b>COMPLEX</b>
<b>V</b>	<b>Foundation</b>	Sensory	.....	Processing	
<b>I</b>	Hearing	Listening		Speech/ language	Self-esteem
<b>B</b>	Mobility & movement	Balance/touch	Weight shifts, rotation		Social Ease
<b>R</b>	Vestibular	Coordination security	Motor planning		Concentration, organisation
<b>A</b>	Weight bearing		Motor Fluency		Creativity
<b>T</b>	Proprioception	Eye movements...> Ocular control	Attention span. Emotional stability.	Form & space perception	Abstract thought
<b>I</b>					
<b>O</b>	Touch Pressure	Tactile.....>	Discrimination	Figure ground	Reading Writing.
<b>N</b>	Vision	Graded touch	.....>grasp		



## **Rosner: inter relation of all sensory motor processes: basic to complex.**

Efficient and effective perceptual functioning is a complex melding of many aspects. Efficient and correctly functioning gross motor systems involves fine motor, kinaesthetic, tactile skills, spatial judgements, awareness of body in space, body planes and correct left-to-right orientation.

Dyslexic and learning disabled students have SPLINTER deficits, and it can be difficult to determine exactly what is causing their problems. The following informal assessments are to be used as a GUIDE to sorting out what the problems may stem from. Formal educational tests can be extremely expensive and these informal assessments may help show areas that need remediation.

The following pages describe informal assessments and programs that have proven useful in remediating these perceptual deficits. Also see the following documents: *Assessment Dyslexia* and *Assessment Dyslexia Fine Motor*.

**INFORMAL ASSESSMENTS:** that can be completed by class teachers/ parents/ tutors to give an indication of possible causes for learning difficulties.

### **Auditory Perception Assessments.**

For example: Rosner's **Test of Auditory Analysis Skills (TAAS) test** (in *Auditory Perception* Assessment).

**Visual Perception Assessments.** See *Visual Perception Assessment* document for:

- \*age-appropriate block design, puzzle and matching tasks (2 ½ to 5 years).
- \*Rosner's Test of Visual Analysis Skills assessment.
- \*Gesell's Form Copy test.

**Gross Motor Assessments:** the role of motor (**gross, fine and oculomotor**) skills/ body in space activities in learning difficulties.

Children with dyslexia also sometimes are clumsy/ accident prone. It seems to come with the territory. Clumsiness can (**sometimes**, not always) indicate delayed maturity, and possibly delayed intellectual development. (When a survey was done in England to judge the feelings of pupils regarding the dyslexic students who were being integrated into their school, one child said: *they get out of the bus and fall over.....*)

Rosner (1975) wrote that visual and auditory processing analysis and organisational skills relate to the higher level perceptual skills of reading, spelling, writing and computation. Gross motor skills, awareness of their body in space, body concepts, how body parts work, eye and ear functioning all impact on academic skills.

Harding-Smith (2013): **gross motor is the basis of all learning**. Tracking and other visual perception problems come from deficits in this area.

### **Motor Development Milestones:**

If a child is immature in one aspect of his behaviour, it is fairly sure that he will be immature in others as well. Behaviours like early reflexive postures, sitting up, standing, walking, balancing on one foot, hopping on one foot, skipping and others...show that the child is learning to understand his own body construction as a collection of separate parts that work together in a variety of ways. They are milestones in his development.

### Motor Development Milestones:

Approximate age	Motor Action
60 months	Skips
50 months	Hops on one foot
32 months	Balances on one foot.
15 months	Walks unaided
14 months	Stands unaided
7 months	Sits up unaided
4 months	Rolls over unaided
0-4 months	Tonic neck reflex

### Who should test the child's general-motor skills?

Manual skills are easy to assess and parents can use published developmental guidelines. It is a bit harder for a non-professional to test speech production and eye movement skills, but they can use the available free checklists to see if maybe intervention by speech pathologists and/ or behavioural optometrists is warranted. Likewise, parents can encourage use of the strategies/ games etc.

### First Grade (aged 6-7) children should be able to do the following tasks:

If their **Test of Visual Analysis (TVAS)** (see *Visual Perception Assessment* document) was **poor**, then test the following:

\*balance on one foot for about 10 secs, then on the other for 10 secs.

\*hop for 15 feet on one foot, then the other.

\*draw a pencil line connecting 2 dots situated 4 inches apart horizontally, then vertically, then diagonally. (A similar task to this is in *Frostig's Visual Perception Test*.)

\*cut a line with scissors.

\*tie a shoelace with a bow.

\*stretch his hands out in front of himself thumbs held upright & about 16 inches apart. As teacher says *left & right*, he is to look at the relevant thumb. Do this 5 or 6 times. ( May need to teach L or R first). Call out "left", "right" at a regular and constant tempo (about every 2 seconds). **WATCH THE CHILD'S EYES.** Do they move together? Can the child find the target quickly and stay on it until told to shift?

\*follow a visual target with both eyes as it is brought to his nose. Both eyes should be able to stay focussed on the object, until it is a couple of inches from his nose (at this point, the eyes are then crossed). As you do this test, **watch the eyes.**



If their **Test of Auditory Analysis Skills (TAAS) test** (in *Auditory Perception* Assessment) was poor, then do the following also.

\*skip, maintain that pattern for 15 feet.

\*tap rhythmically in different patterns and have child imitate. Do 2 times with R hand, then 2 times with L hand and repeat again (for five complete cycles).

Instructions: “Watch me, then tap this way.... Two times with the right hand, then two times with the left, then two times again with the right hand and so on. Don’t stop between any of the taps. Keep it up until I tell you to stop.”

The child is to tap at a steady, rhythmic pace, with 1 tap every 2 seconds. Swapping should not alter tempo or the right-left tapping sequence. Stop child at the end of five complete cycles, if he gets that far.

Students in First grade should be able to do these tasks. The following 1-2-1-2 pattern is a little harder.

#### **For students 8 or older: 1-2-1-2- pattern:**

Model the pattern: Tap 1 time with R hand, then 2 times with L hand, 1 time with the right, then 2 times with the left...and repeat again (for five complete cycles).

Instructions: “Watch me, then tap this way.... one time with the right hand, then two times with the left, then one time again with the right hand and two with the left and so on. Don’t stop between any of the taps. Keep it up until I tell you to stop.”

The child is to tap at a steady, rhythmic pace, with 1 tap every 2 seconds. Swapping should not alter tempo or the right-left tapping sequence. Stop child at the end of five complete cycles, if he gets that far.

**Repeat this test** with right hand tapping once and the left hand twice for 5 complete cycles.

#### **Tongue movements:**

Check muscle control of the mouth by seeing if the child can do the following: Puff out his right cheek with his tongue, then his left cheek, then his right cheek, then his left and so on, at a steady tempo. Model what he is to do and set the pace by calling “right”, “left”, “right”, “left”, “right”, “left”, at about a one second interval. Stop at the end of 6 complete cycles if he has not lost the rhythm before this.

If a child is old enough to be in the First grade, he is old enough to be expected to be able to perform all of the motor tasks described above, with the exception of the 1-2-1-2 rhythmic tapping task. (This is quite difficult for children younger than 8 years of age.) Take note of the tasks failed. What to do about them will be described in the next section.

This testing sequence could be extended and made more elaborate, but what has been described is sufficient to get the basic information needed. Namely, to find out if the child needs more time spent on **motor skills**, the justification being that the effort will **pay off** in the **classroom**. Additional tests are not necessary, just more practice in the gross motor skills.

**Spatial:** (important for letter orientation, sequencing order).

People with dyslexia often have **poor knowledge of left and right**, and this can persist all through their life. (For example, when Susan Hampshire was filming *Born Free* and was told to run to her right, away from Elsa the lioness, she didn't know which way was right). I have known of adults who had to right a capital R on their hand so they could remember which was which, when under stress.

For students trying to learn to read, spell and write English, this can manifest itself in problems remembering: d, b, p, q      m,n,u      u,y      v, w, x, y      etc.

Spatial knowledge includes **left/right orientation** and **sequencing** (ordering of letters). Poor physical coordination is sometimes present.

**Indicators: poor perception of position in space.**

Clumsy and hesitant.

Difficulty understanding words indicating spatial position: top, bottom, right, left, in, out, under, above, below, between, up, down, inside, outside, in front, behind, beside, first, last, forwards, backwards, beginning, end.

Reversals of letters and numbers.

Activities:

Body awareness activities.      Body mazes and obstacle courses.

Exercises with objects—OVER the chair, UNDER the table etc.

Drawing outline of body parts in pictures (indicate L hand, R shoe, etc).

**Indicators: poor perception of spatial relationships.**

Difficulty building blocks.

Tries to squeeze things into spaces that are too small for them to fit. (For adults: driving, parking, changing lanes difficulties).

Poor spelling.      Difficulty reading maps.

Difficulty learning graphs.      Problems with measurements.

Activities:

Use “spatial words” with 3D objects eg “Put the red square UNDER the blue circle.”

Copy parquet designs.      Draw patterns 3D to 2D.

2D copy patterns.      Nail boards with elastic bands.

Follow instructions on paper eg put a circle in the top right hand corner etc.

There is also a pencil and paper test that has directional assessments included in the **Visual Perception Assessment** document (pp 245, 38, 39 and 40). The **Frostig Visual Perception**

**Developmental Test** will show spatial/ directional problems (See Assessments). The **Frostig teaching program** has detailed remediation activities with Pupil and Teacher booklets at Beginner, Intermediate and Advanced stages. I purchased my copies from ebay.

The following 4 pages have **informal indicators**: Brigance list of skills; body plane and left to right orientation activities.

**Brigance**: end of Kindergarten/ aged 6- 6½: **GROSS MOTOR**.

<b>A-7. 16</b>	<b>Standing gross motor skills:</b> <ol style="list-style-type: none"> <li>1. One foot for 1 second.</li> <li>2. One foot for 5 seconds.</li> <li>3. One foot for 10 seconds.</li> <li>4. Other foot for 1 second.</li> <li>5. Other foot for 5 seconds.</li> <li>6. Other foot for 10 seconds.</li> <li>7. One foot for 1 second with eyes closed.</li> <li>8. Other foot for 1 second with eyes closed.</li> <li>9. Heel-to-toe for 5 seconds.</li> </ol>
<b>A-8. 17-18</b>	<b>Walking gross motor skills:</b> <ol style="list-style-type: none"> <li>1. Tiptoes 3 steps.</li> <li>2. Forward heel &amp; toe 3 steps.</li> <li>3. Tiptoe a distance of 2 metres.</li> <li>4. On a straight line.</li> <li>5. On a 25 mm circular line.</li> <li>6. Forward heel-to-toe a distance of 2 metres.</li> <li>7. In scissor steps along a 25mm line a distance of 2 m.</li> <li>8. Backward toe and heel 3 steps.</li> <li>9. Backward toe-to-heel a distance of 2 m.</li> </ol>
<b>A-9. 19</b>	<b>Skipping &amp; Running gross motor skills:</b> <ol style="list-style-type: none"> <li>1. Skips on 1 foot.</li> <li>2. Skips by alternating feet.</li> <li>3. Runs 45 m in 15 seconds.</li> <li>4. Runs 45 m in 12 seconds.</li> <li>5. Runs around obstacles a distance of 45m in 12 seconds.</li> </ol>
<b>A-10. 20-21</b>	<b>Miscellaneous gross motor skills:</b> <ol style="list-style-type: none"> <li>1. Walks up &amp; down stairs with a holding rail.</li> <li>2. Catches bounced ball with both hands.</li> <li>3. Catches thrown ball with both hands.</li> <li>4. Hops on one (dominant) foot a distance of 2 m.</li> <li>5. Hops on other foot a distance of 2m.</li> <li>6. Takes 2 or more co-ordinated steps and kicks a ball</li> <li>7. Skips 5 consecutive jumps with skipping rope.</li> </ol>

**Brigance:** end of Kindergarten/ aged 6- 6½. **SPATIAL.**

<b>A-1</b>	<b>3</b>	<b>Identifies body parts:</b> 1. Mouth.      2. Eyes.      3. Nose      4. Feet 5. Hair.      6. Tongue.      7. Teeth.      8. Hands 9. Ears.      10. Head.      11. Legs.      12. Arms 13. Fingers.      14. Thumbs.      15. Toes.      16. Neck 17. Stomach.      18. Chest.      19. Back.      20. Knees 21. Chin.      22. Fingernails.      23. Heels.      24. Elbows 25. Shoulders.      26. Ankles      27. Jaw.      28. Hips 29. Wrists      30. Waist.
<b>A-5.</b>	<b>11</b>	<b>Understands directional &amp; Positional Concepts:</b> 1. Up/ down.      2. Out/ in.      3. Top/ middle/ bottom.      4. Over/ under 5. Closed/ open.      6. Go/ stop.      7. Low/ high.      8. Inside/ outside. 9. Beginning/ end.      10. Off/ on.      11. Far/ near.      12. Below/ above. 13. Forward/ backward.      14. Toward/ away. 15. Centre/ corner      16. straight/ crooked 17. Through/ around.      18. Front/ back 19. Right/ left      20. Coming/ going 21. middle/ right/ left      22. To/ from 23. Here/ there      24. Behind/ in front of.
<b>A-25.</b>	<b>37</b>	<b>Numbers in sequence:</b> writes numbers in sequence from memory. 3.   5.   10.   20.   30.   40.   50. Older students: 60.   70.   80.   90.   100.

**Body planes.** (end of Kindergarten/ aged 6- 6½).

Date:

1. Identification of Body planes. (Child standing).

- a. Touch the top of your head.
- b. Touch the bottom of your feet.
- c. Touch the side of your body.
- d. Touch the front of your body (“tummy/ stomach”).
- e. Touch your back.

2. Body Planes in Relation to External, horizontal & vertical surfaces. (Child is lying/ standing on a mat).

- a. Lie down on the mat so that the side of your body is touching the mat.
- b. Now move so that your stomach or the front of your body is touching the mat.
- c. Now move so that your back is touching the mat.
- d. Touch the wall with your hand, now move so that your side is touching the wall.
- e. Now touch the wall with your hand, & now move so that your back is touching the wall.

3. Objects in relation to Body Planes (Child is seated in a chair with a box).

- a. Place the box so it touches your side.
- b. Place the box so that it touches your front (“tummy”/ “stomach”).
- c. Place the box so it touches your back.
- d. Place the box so it touches the bottom of your feet.

**Piaget right-left awareness test.** (end of Kinder/ aged 6- 6½).

Name:

Date:

Age:

Many children cannot tell the difference between left and right, on themselves or in the mirror position. It is more common in girls and among left handers. It is also more common in children showing difficulty with arithmetic.

Instructions: use + for correct responses. Use - for incorrect ones.

Pre-test.

Post test.

- |       |       |           |                             |
|-------|-------|-----------|-----------------------------|
| ----- | ----- | <b>A.</b> | Show me your right hand.    |
| ----- | ----- |           | Now show me your left hand. |
| ----- | ----- |           | Show me your right leg.     |
| ----- | ----- |           | Now show me your left hand. |

(Sit opposite the child).

- |       |       |           |                           |
|-------|-------|-----------|---------------------------|
| ----- | ----- | <b>B.</b> | Show me my right hand.    |
| ----- | ----- |           | Now show me my left hand. |
| ----- | ----- |           | Show me my right leg.     |
| ----- | ----- |           | Now my left leg.          |

(Place a coin on the table to the left of a pencil, in relation to the child).

- |       |       |           |  |
|-------|-------|-----------|--|
| ----- | ----- | <b>C.</b> | Is the pencil to the right or to the left? |
| ----- | ----- |           | And the penny. Is it to the right or left? |

(Have the child go around the table to the opposite side of the table).

- |       |       |  |   |
|-------|-------|--|---|
| ----- | ----- |  | Is the pencil to the right or to the left?        |
| ----- | ----- |  | And the penny, is it to the right or to the left? |

(Sit opposite the child with a coin in your right hand and a bracelet or watch on your left arm).

- |       |       |           |   |
|-------|-------|-----------|---|
| ----- | ----- | <b>D.</b> | You see this penny. Have I got it in my<br>right hand or my left? |
| ----- | ----- |           | And the watch, is it on my right arm or left?                     |

(Place 3 objects in front of the child: a pencil to the left, a key in the middle, and a coin to the left).

- |       |       |           |  |
|-------|-------|-----------|--|
| ----- | ----- | <b>E.</b> | Is the pencil to left or right of the key?       |
| ----- | ----- |           | Is the pencil to left or to the right of penny?  |
| ----- | ----- |           | Is the key to the left or to the right of penny? |

-----Is the key to the left or to the right of pencil?

-----Is the penny to left or to the right of pencil?

-----Is the penny to the left or to the right of key?

NORMS:

Age.	Items passed by 75% of age.	Age.	Items passed by 75% of age.
5	A	8	A, B, C, D
6	A	9	A, B, C, D
7	A, C	10	A, B, C, D
		11	A, B, C, D

### **Directional games:**

1. For left/right confusions, ask child to:
  - a. Show me your **left eye**.
  - b. Show me your **right leg**.
  - c. Show me your **left hand**.

Initially, the tutor may need to sit beside the student. Once the student can identify on their own body, sit in front of the student and have them identify the same things on the tutor's body.

1. Extend the above game by folding arms, crossing legs and then either wag one finger and ask to which hand does it belong, or tap one foot and ask which foot is tapping.
2. Teach the compass points. Explain how to use an atlas with north at the top and south at the bottom.
3. Draw an imaginary treasure island: mark places with directional arrows eg *South Farm*, *North Inlet*. Clues involve turning in correct direction.

**Kinaesthetic memory:** involves recognising & recalling the feel of writing the word.

“Look, write, cover, write, check”: is one routine that is associated with the kinaesthetic recall of words. Activities that help to promote kinaesthetic memory include:

- \*using handwriting to reinforce spelling patterns.
- \*writing words in sand, paint, shaving cream...
- \*writing letters and words in the air with fingers, hands, feet.
- \*using the whole body to make letter & word shapes.
- \*walking, crawling, hopping, jumping to follow words shapes on the ground.
- \*tracing over letters.
- \*tracing over templates of words.

**Tactile memory:** involves recognising & recalling the feel of words. Activities that may assist include:

- \*constructing words from sandpaper, felt, velvet.
- \*feeling the shapes of letters & words.
- \*using concrete objects to feel the shape of letters & words. eg plasticine, Playdoh, Lego, “sticky” sand, mud.
- \*Using the “feely bag” containing letters & words constructed from different media.

### **Gross Motor activities:**

1. Twister: Put yr left foot on the phoneme *ay*. (*Long a at the end of a word*).
2. Alphabet sponge letters: make hop scotch, hop-step- jump course; obstacle course loaded with phonemes that have been causing problems.



## Teaching general motor skills:

The purpose of a general motor skills instructional program is that students will recognise that their bodies are constructed of a number of movable parts that can be organised in a variety of ways. As the goal is achieved, the child will have better control over his movements... better not only in the preciseness of those movements but also with the ease in which he executes them. The goal is not to teach a specific skill, like skipping or hopping, but to teach better **coordination** that he will display by hopping and skipping.

There is no need for expensive equipment. A variety of experiences can be had in a variety of setting: YMCA, Little Athletics, swimming, Cubs and Scouts, and all add to the development of coordination, confidence and improve cognitive functioning. The aim is not to produce Olympic standard athletes.

If it is found that the child has below standard visual and auditory perceptual functioning, and poor gross motor skills (as discussed already), provide activities from the following suggestions.

**Automatic** functioning is required and so much practice/ activity may be needed.

In teaching these general motor skills, **three principles** apply:

**1. Organise for success:** for example, if the goal is to develop cutting skills, don't start with intricate shapes.... Start with straight lines/ snipping.

**2. Provide additional support** that is needed to complete the task. For example, if the child cannot hop on one foot without support, provide a chair etc, allow practice, and then teach the student how to do the task independently.

**3. Encourage child to use all his senses** to get additional information about what he is doing: by looking and listening as he acts. For example, watching his hands as he completes fine motor activities. Listening as alliterative are spoken etc.

**Suggested activities:** there are literally thousands of general motor activities. Try to make the activities fun. Give them a game format. If there is a chance for a child to win, they often maintain interest longer. The following activities are organised into general categories of balance and movement skills, hand skills, oculomotor skills, (**visual perceptual skills**) and voco motor skills and rhythmic skills (**auditory perceptual skills**).

**Balance and movement skills (visual perceptual skills):** goal: that students will recognise that their bodies are constructed of a number of movable parts and that he knows how these parts move together.

### 1. Walk like a:

\*duck: squat on both feet and walk forward, backward and sideways.

\*rabbit: hands and feet on the floor, move both hands forward together, then both feet and so on.

\*kangaroo: take large hops, both feet together.

\*crab: chest up away from the floor, hands and feet on the floor, walk forward and backwards without collapsing.

\*elephant: walk on all fours, slowly and ponderously.

**2. Roll across the room:** lie down on the floor, then roll over sideways, attempting to maintain the desired position.

**3. Hop scotch:** this well-known game involves hopping, jumping and balancing.

**4. Jump rope:** start simply. It will be easier for the child to learn to jump rope if two others hold the rope. Start by marking an **x** on the ground for the child to stand on. Then the two people holding the rope should swing it back and forwards slowly and rhythmically while the child jumps over it. Don't swing it over him at first. Just keep it close to the ground and swing at a pace that is manageable for the child. When he is able to do this, extend the swing of the rope.

**5. Ball games:** there are many ball games that can be used. Start off by using a balloon, as it is more slow moving than a ball. A good place to start is for the child to keep the balloon afloat by tapping with hand, head, or foot, while the teacher keeps track of the time. The child may be interested in beating his own record.

Don't have the child involved in formal football teams etc until they can participate without embarrassment.

**6. Obstacle course:** any homemade activity, outdoors or in, involving whatever articles are available. Draw up a set of instructions of how to proceed through the obstacles (over, under, through around). Keeping track of the time taken may be motivating if graphed.

**7. Balance rail:** get a 10 or 12 foot length of 2 x 4. Place it on the floor and have the student walk the length if it: forwards, backwards, sideways. The goal is to walk the length without stepping off. Once this is possible, complicate the task by having him walk the rail while:

- \*placing his hands on his hips, his head, his chest.

- \*walks heel to toe.

- \*holds a weight in one hand.

- \*balances a book on his head.

- \*looks somewhere other than at the walking rail, straight ahead or at you, for example.

Remember the basic principle of working at the child's ability level. If a 12 foot rail is too long, then use a shorter one and gradually increase the length. If he cannot get across the rail without support... a hand to hold... give him that support, then slowly withdraw it.

The goal is to improve the child's results on the tests described previously.

### **Finger/ hand skills:** (visual perceptual skills):

The following suggested activities are again but a sample of activities. They are designed to teach the child how to use his fingers in precise, controllable movements.

**1. Move this finger:** designate one finger (touch it or name it) and have the child extend it, keeping all the others out of the way. He may want to use his thumb to restrain the other fingers. This is acceptable. Then have him extend the same finger on the other hand. Start slowly. Work on speed, when the basic movements have been learned.

**2. Fold paper:** Origami activities are excellent.

**3. Crochet, knit or weave:** incorporates fine motor activity and visual perceptual skills if a pattern is being followed.

**4. Identify objects with the hands:** have child close their eyes, or use a pillow case. Use everyday objects, and coins of various denominations, cardboard or plastic geometric shapes and letters and buttons of varying sizes.

**5. Cutting, pasting, painting or colouring:** children enjoy these activities. Don't give anything that is too finicky. Find large uncluttered colouring books etc. There is time enough for intricate tasks after the basic skills have been mastered.

**6. Buttoning buttons, zipping zippers, tying bows and lacing laces:** it is important for students to develop self care skills like dressing, buttering toast etc and these involve fine motor skills.

**7. Construction toys** and activities like folding napkins, sorting buttons, lacing etc that involve precise individual finger movements, rather than his whole fist.

### **Oculomotor skills:** (visual perceptual skills)

These activities are not to take the place of a vision assessment or the input of a vision specialist. They are designed to foster better control of eye movements.

**1. Follow a smoothly moving target:** suspend a rubber ball (about basketball size) from the ceiling on a string, at about the level of the child's chest. This can be used for a variety of activities.

a). Take the strings out of an old badminton bat, or make a similar loop from a coat hanger, and have the child keep the loop of the racket around, but not touching, the ball.... as the ball swings in a variety of motions. Also have him take the racket away, then return it to its position around the ball, without touching the ball.

b). have the child use his hands instead of the racket. He is to cup them near, but not touching the ball, as it swings.

c). Bunt the ball with a broomstick handle. The ball should be at the child's chest height. The child holds the broomstick at his chest with both hands and makes contact with (bunts) the ball. He maintains this bunting pattern as long as he can. The activity can be made more complicated and involve more complex eye movements by having the child lie down on the floor, face up, and do his bunting from there. (Obviously, the ball will have to be lowered). As the child improves, encourage him to move his eyes, not his head, as he follows the ball.

**2. Making the eyes hop:** when reading, our eyes do not smoothly across the page, but move rapidly in a “hopping” pattern (saccadic eye movements), stopping periodically to look at words. When the eyes actually stop, is when we read. One way to improve reading ability, is to train the eyes so they move (“hop”) more accurately. Inaccurate, random eye movements can lead to losing your place on the page, and skipping words or lines.

This activity can be done in any room that has furniture etc in it. Tell the child that, as you name an object in the room, they are to look directly at it and to continue looking until another object is named. When the 2<sup>nd</sup> object is named, the child is to move his eyes directly to this object, then a third as it is named, etc. If he moves his eyes from the object before being told to, he loses a point. Keep the pace somewhat irregular, but reasonable... maybe a new object every 2 seconds. If he needs extra support, have him point at the object with his finger as he looks at it. This will help him control the eye movements.

**Vocomotor skills:** (auditory perceptual skills).

These activities are not meant to replace a speech therapist’s activities, but are activities that might foster more precise speech production skills. The activities are designed to teach the child better control of his lips, tongue and jaws.

1. Whistle through puckered lips.
2. Inflate balloons.
3. Play tabletop soccer with a Ping-Pong ball and straws, propelling the ball with air blown through the straws.
4. Click tongue against the roof of mouth; click teeth; produce odd noises with vocal chords.
5. Say alliterative rapidly. For example: “She sells sea shell by the sea shore.”

**Rhythmic skills:** (auditory perceptual skills).

These activities require the child to coordinate both sides of his body in a synchronised way. This is not the same as tapping out rhythms with one hand, although there is nothing wrong with doing that as well.

Bongo drums can be used, but aren’t essential. The child is to:

- a). Tap one time with his right hand, then one time with his left, then his right, and so on (one tap per second).
- b). Tap two times with his right hand, two times with his left, two times with his right, and so on (same tempo).
- c). tap once with his right hand, twice with his left, once with his right, and so on (same tempo).
- d). Then do the reverse: twice with his right hand, once with his left, and so on (same tempo).

The child may have to count to himself initially, as he engages in the different rhythms, saying “one-two, one-two”, then “one, one-two, one, one-two”. This is fine. But the goal is to be able to tap these rhythms without losing the beat as he switches hands—while at the same time carrying on a conversation. This will take practice.

Once the rhythmic pattern is established, start asking him simple questions like his age or his birthday. The questions can get more complex in time. The goal here is for him to be able to tap any of the rhythms upon requests, while **simultaneously** carrying on a conversation.