

Motor Development and the Primary Student (Grades 1-3) - Lunch & Learn

Goals: *What to do we want to achieve?*

1) To transfer knowledge to teachers about:

- the typical progression of gross and fine motor skill development
- red flags which suggest the student may be having challenges with motor coordination

2) To help teachers:

- identify students who are not performing motor skills at the developmentally appropriate level
- determine if a student's challenges are due to lack of experience/practice or if there may be possible coordination or other difficulties

Activities: *How can we achieve the goals?*

1) **Lunch and Learn:** 20-30 minutes seems to be a reasonable amount of time to expect the teachers to take out of their day for a lunch and learn. This can be offered during a nutrition or lunch break, at a team meeting, before or after school.

Handouts DEVELOPMENTAL MOTOR MILESTONES- AGES 4-8
CLASSROOM OBSERVATION GUIDELINE: GRADES 1-3

Content Use the Developmental Motor Milestone- Ages 4-8 handout as the basis for your lunch and learn and provide to teachers as a resource (**after** the initial activity)

1) Make a large chart similar to the one below:

By 4 years of age	By 5 years of age	By 6 years of age	By 7 years of age	By 8 years of age
gross motor milestone				
fine motor milestone				

- Prepare a variety of milestones from the Developmental Motor Milestones Handout- Ages 4-8, written on separate pieces of paper (e.g.: draws a person with 4-6 body parts, cuts out a complex shape, can tie shoelaces, walks a two inch wide balance beam, jumps a self-turned rope). Have the teachers place

these milestones on the chart in the place they feel would represent typical development (have some tape available for this activity). You could also do this verbally, giving the teachers a milestone to consider, then writing it under the age they feel represents typical development.

- After completing the above activity, provide the teachers with a copy of the handout. Review the placement of the milestones, correcting any which were placed incorrectly.
- - *encourage/facilitate discussion*- e.g.: Anything surprise you about this typical developmental progression? Does this knowledge impact your expectations for your students? Do you think the curriculum expectations match up with typical developmental motor milestones? Think about the daily fitness programme in your classroom. Are the motor skills involved appropriate for the ages of the students? What changes, if any, would you make to the daily fitness programme? What do you think some of the consequences may be for a child who struggles to tie his shoelaces, catch a ball or ride a bike?

2) The Experiential Calligraphy Exercise could be done to help illustrate the challenges facing children with coordination challenges.

Follow Up Suggestions:

- Offer to visit the classroom during gym or daily fitness activity time- use this as an opportunity to observe the children in context as they participate in gross motor activity- together with the teacher, identify “red flag” students who may require further observation and input- work with the teacher to change the activities as required through the application of UDL principles for the group, and differentiated instructional strategies for individuals.
- Offer to assist in developing a resource list of age appropriate daily fitness activities to support gross motor development.
- Run a gross motor group or a group targeting a specific skill (e.g.: ball skills, bike riding- consider before/after school with parents present) with “red flag” students and monitor their response to intervention to assist in determining those who require experience and practice from those who may have coordination challenges.
- Teach a full class lesson on posture and positioning when writing or when keyboarding, this could be combined with an audit of desk/chair heights or computer ergonomics.
- Offer to attend a keyboarding class and assist the teacher in identifying students who are struggling with 10-finger typing and who may require an alternative access method or strategy.

Developmental Motor Milestones- Ages 4-8

Note: *These milestones represent averages and there is a typical range of development across different children, for example, some children walk at 9 months, some at 15 months. Both are still within the typical range.*

By 4 years of age:

Fine Motor/Self-Care Skills

- feeds herself (with little spilling)
- uses a fork
- unbuttons buttons
- tries to buckle, button, and lace, even though she probably needs help
- completely undresses herself if wearing clothes with simple fasteners
- brushes teeth with help
- uses the toilet alone
- holds a pencil in fingers
- draws with the arm and not small hand movements
- draws a vertical, horizontal, cross and circle
- cuts across paper with blunt scissors
- builds a tower of 7-9 blocks
- puts together a simple puzzle of 4-12 pieces

Gross Motor Skills

- tries to skip
- catches a bouncing ball
- walks downstairs using a handrail and alternating feet
- swings, starting by himself and keeping himself going
- jumps with two feet in place
- runs around obstacles
- kicks a ball with direction

By 5 years of age:

Fine Motor/Self-Care Skills

- brushes teeth and hair
- fastens Velcro shoes, buttons and zippers
- copies a square and some capital letters
- draws a person with two to four body parts
- colours with more accuracy
- cuts along a line

Gross Motor Skills

- hops and stands on one foot for 5 seconds
- goes upstairs and downstairs without support
- throws ball overhand with direction
- catches smaller balls
- moves forward and backward with agility
- walks on tip toes
- may be able to skip
- may be able to ride a bike with training wheels

By 6 years of age:

Fine Motor/Self-Care Skills

- dresses unsupervised
- able to tie knot
- beginning to tie laces (if opportunity to learn)
- uses a knife to spread, beginning to cut
- colours with accuracy
- prints name and other letters
- prints numbers
- draws triangles, diagonal lines
- hand preference established
- draws recognizable pictures
- draws a person with six body parts
- cuts out simple shapes
- uses mature pencil grasp
- builds three-dimensional block structures
- more proficient with handling a computer keyboard and mouse

Gross Motor Skills

- skips and hops several times in succession
- stands on one foot for 10 seconds
- throws and catches tennis ball
- running kick
- runs in adult manner with quick direction changes
- clear contrasts between slow and fast movement while traveling
- climbs well
- maintains balance while moving quickly
- walks a two-inch-wide balance beam
- rides a bike with training wheels, possibly without
- jumps over objects and lands without falling

By 7 years of age:

Fine Motor/Self-Care Skills

- able to tie shoelaces
- uses scissors to cut out complex shapes accurately
- beginning to write with a keyboard using a hunt and peck method

NOTE: By 7 to 8 years of age, children generally are proficient with most fine motor skills. As with many skills, practice improves performance; therefore, refinement of already acquired fine motor skills can continue into adulthood.

Gross Motor Skills

- rides a two-wheel bicycle without training wheels
- able to perform sports with good physical control, proficiency developing
- can travel backwards at a slow speed
- developing an awareness of space (e.g. travels in close proximity to others without bumping into them)
- rolls forward and sideways (e.g. forward roll, log roll) using a jerky rather than smooth flow
- jumps and lands using combinations of one- and two-foot take offs and landings, without falling most of the time
- jumps a slowly turned long rope turned by skilled turners
- uses overhand and underhand patterns to throw a ball for distance and accuracy
- dribbles a ball with hands or feet continually while in a stationary position
- strikes stationary oversize objects with bats, hockey sticks and golf clubs

By 8 years of age:

Fine Motor/Self-Care Skills

- has the dexterity to begin to learn 10 finger keyboarding skills

Gross Motor Skills

- excels at running, skipping, hopping, galloping, sliding, etc. and can travel in a variety of rhythmical patterns (e.g. even, uneven, fast, slow)
- moves in all directions (e.g. forwards, backwards, sideways) without bumping into others
- uses complex combinations of movement skills (e.g. jumping to catch a ball, dribbling and running, rapid transfers of weight from feet to hands to feet)
- uses combinations of jumps and landings smoothly and without losing balance (e.g. leaps into a two-foot landing, three hops into a two-foot landing)
- begins to jump a self-turned rope
- stays in control when traveling and dribbling a ball using hands or feet
- strikes slowly-moving object with bat or hockey stick
- beginning to perform weight-bearing activities that require the transfer of weight from feet to hands to feet (e.g. cartwheels, hand stands, walk-overs)

CLASSROOM OBSERVATION GUIDELINE

Grades 1-3

Purpose: to assist classroom teachers, resource teachers and OT's in identifying primary grade students who are at risk for having a coordination disorder

Observations of Posture and Movement:

- trips and stumbles easily, difficulty with uneven surfaces
- bumps into furniture, walls, people
- clumsy and hesitant in gym, awkward looking when running
- difficulty with ball skills and skipping (across floor and with rope)
- fatigues easily, poor endurance
- slouched posture, leans on walls, furniture or people, lies down on floor
- sits in “W” position on floor; falls off chair in classroom
- frequently shifts position, appearing inattentive but still attends to task
- floppy, loose jointed: “scarecrow”
- moves whole body rather than individual body parts, looks stiff: “tin man”
- trouble organizing self to get seated properly at a table, needs assistance to pull chair in
- head too close to the table top, leans on arms

Use of Hands/Written Work:

- awkward pencil and/or scissor grasp
- excessive tightness of grasp: hyperextension of finger joints
- excessive pressure on pencil; breaks pencil leads frequently OR loose grasp of pencil with light pressure, poor control
- difficulty with two handed tasks e.g.: cutting accurately with scissors, opening lunch containers
- poor use of non-dominant “helper hand” to hold paper or ruler steady
- slow to complete written work OR may rush through; often incomplete, illegible, messy, careless, disorganized; OR may be neat but writing takes tremendous effort and time
- avoids writing: stalls, argues, acts out, needs bathroom or drink break
- generates a written product that is inferior to their verbal language abilities

- difficulty learning keyboarding and/or cursive writing

Approach to, or Avoidance of Tasks:

- rushes through tasks, work appears to be careless OR works very slowly, deliberately and meticulously
- avoids certain tasks, particularly those demanding motor skills, often through talking rather than doing
- may present as "class clown" to avoid a motor task
- difficulty following steps to complete a task; disorganized approach to tasks
- disorganized and messy materials and desk
- easily frustrated, impulsive, lacks persistence
- last to get ready for recess and home, has messy/untidy appearance

Recess:

- avoids playground equipment and games
- difficulty joining in a play group, tends to watch others play
- wanders the perimeter of the playground
- exhibits preference for reading or talking rather than physical activities

Adapted from:

Missiuna, C., Gaines, R., & Pollock, N. (2002). Recognizing and referring children at risk for developmental coordination disorder: Role of the speech-language pathologist. *Journal of Speech-Language Pathology and Audiology*, 24, 172-179.

Missiuna, C., & Pollock, N. Children with Motor Difficulties in Grade 1/2: A Resource for Educators. www.canchild.ca

Missiuna, C., & Pollock, N. Children with Motor Difficulties in Grade 3/4: A Resource for Educators. www.canchild.ca

Pollock, N., & Missiuna, C. (2005). To Write or to Type- That is the Question! www.canchild.ca

Calligraphy Exercise

Materials Required:

- Lined paper
- Pen or pencil
- Calligraphy letters within easy view (handout attached)

Instructions for Participants:

- “Take the pen in your hand”
- “Now switch the pen to your other, non dominant hand.”
- “Picture your first name and print your name using these letters.” (using calligraphy letters attached)

Instructions for OT

- Impose time pressure- “try to go faster, we are almost out of time”, “hurry up”, “I assume you are almost done”, “Anyone need more time?”
- After a reasonable amount of time, stop the exercise and ask...”How did you feel?”

Typical Comments/Observations from participants after completing this exercise & suggested responses to illustrate challenges of children with DCD when printing or performing other motor based activities

- Not confident
 - Kids with DCD have a sense of what they want to achieve but are not confident in their ability. Repeated failure experiences over time.
- Slow
 - Speed accuracy trade off. Kids with DCD may appear sometimes to be able to be accurate with things like printing or writing but, in order to do this, they have to slow down. They are so much slower than other children that it is not functional – can talk about how they do not finish tasks on time, etc. but emphasize that there is a trade off – if they try to keep up, their handwriting will be messy and may be illegible.
- There are so many details in the letters to memorize
 - Kids with DCD have trouble keeping a motor pattern or sequence in their memory; they stay at the new learning stage and do not seem to get to the “automatic” level with many tasks. Every time they do a task, it is like they are doing it for the first time.
- Took a lot of effort
 - Everything kids with DCD do with their bodies takes extra effort. There is evidence that kids with DCD have to recruit more parts of their brain to do a task that is simple.
- Kept looking up and back to page

- Unable to keep a picture in mind. In the literature, kids with DCD rely heavily on vision. Keyboarding is easier for kids because once they have learned where fingers have to go, they don't have to look at the keys.
- Kept changing my plan – sometimes started letters in middle, sometimes at the top
 - Every task is like they are doing something for the first time. Kids with DCD are highly variable in performance. They do not seem to learn from experience and become more efficient performers.
- Wanted to shorten my name
 - Kids with DCD commonly shorten tasks to get them done. These are bright kids who know what they want to say but may go to very elaborate effort to shorten what they have to do – particularly with regard to written output.
- Was frustrated with what I saw and what I produced
 - Kids with DCD are often frustrated. They know what they want to do, they know what they want to produce but their work never looks like they think it should (e.g., of kids work up on the walls, everyone knows whose it is). It is difficult and can be frustrating. We know that outbursts may occur - particularly with boys – and that there may be task avoidance. Girls may be more likely to be withdrawn and depressed.
- Disappointed when told to stop
 - Kids with DCD don't get their work done – they may be punished by being held in at recess or, at the end of the school day, to have to bring work home. They are already more fatigued at the end of the day than other kids.
- Messy (can also use this comment for speed/accuracy trade off)
 - See kids with DCD trying to erase work because it does not look the way they want it to look.
- I was focused on what I was doing, I lost track of what to do next
 - Difficulty with motor programming, automaticity etc.
 - DCD has secondary effects on written language, spelling and math. Losing track of where you are can lead to omissions in spelling, organizational and spacing errors on the page.

A B C D E F G
H I J K L M N O P
Q R S T U V W X Y Z