

Motor Development and the JK/SK Student- 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

CLASSROOM OBSERVATION GUIDELINE: JR AND SR KINDERGARTEN

HAND DOMINANCE This handout can be found in the "Additional Resources" file. Many kindergarten teachers are concerned about students who have not yet established hand dominance. Depending on the time available, this topic can be addressed at the Lunch & Learn, or used with teachers in the classroom as the issue arises with specific students.

Content use the Developmental Motor Milestone 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 3 years of age	By 4 years of age	By 5 years of age	By 6 years of age
gross motor milestone				
fine motor milestone				

- 2) Prepare a variety of milestones from the Developmental Motor Milestones Handout written on separate pieces of paper (eg: hops and stands on one foot for 5 seconds; hand preference established; draws vertical, horizontal, cross and circle). 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.
- 3) 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.
- 4) *encourage/facilitate discussion*- eg: 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?
- 5) *encourage/facilitate discussion*- try to pull from the teachers their observations about the differences between the motor performance of the children with /without coordination challenges- refer to the Classroom Observation Guideline Handout for red flags you will want to focus on
- 6) provide the teachers with the handout following the discussion as a resource- ask them to quickly review it and clarify points as required

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 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.
- Participate in the kindergarten prep. events, usually held in the spring, for incoming families- provide information on the importance of motor skills to full participation and success in kindergarten (use the *Let's Start School Together* resource for content and as a handout to parents- found in the Additional Resources file).

NOTE: follow up suggestions regarding fine motor coordination in kindergarten are more specifically discussed in the resources labelled “Scissor Skills Package”, “Dressing Skills Package”, “Preprinting/ Fine Motor Package”

DEVELOPMENTAL MOTOR MILESTONES

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 12 months of age:

Fine Motor/Self-Care Skills

- drink from a cup with help
- feed herself finger food like raisins or bread crumbs
- grasp small objects by using her thumb and index or forefinger
- cooperate with dressing by offering a foot or an arm
- use his first finger to poke or point
- put small blocks in and take them out of a container
- knock two blocks together

Gross Motor Skills

- sit well without support
- crawl on hands and knees
- pull himself to stand or take steps holding onto furniture
- stand alone momentarily
- walk with one hand held or independently

By 2 years of age:

Fine Motor/Self-Care Skills

- drink from a straw
- feed himself with a spoon
- help in washing hands
- put arms in sleeves with help
- build a tower of 2-3 blocks
- open cabinets, drawers, boxes
- operate a mechanical toy
- scribble with crayon

Gross Motor Skills

- toss or roll a large ball
- bend over to pick up a toy and not fall
- walk up steps with help
- take steps backward
- run with a wide base

By 3 years of age:

Fine Motor/Self-Care Skills

- feed himself (with some spilling)
- wash and dry hands by himself
- hold a glass in one hand
- put on shoes
- dress herself with help
- use the toilet with some help
- hold a crayon
- fold paper, if shown how
- build a tower of 4-5 blocks

Gross Motor Skills

- throw a ball overhead
- try to catch a large ball
- walk up steps, alternating feet
- walk on tiptoes if shown how
- walk in a straight line
- kick a ball forward
- jump with both feet
- pedal a tricycle
- open doors

By 4 years of age:

Fine Motor/Self-Care Skills

- feed herself (with little spilling)
- use a fork
- unbutton buttons
- try to buckle, button, and lace, even though she probably needs help
- completely undress herself if wearing clothes with simple fasteners
- brush teeth with help
- use the toilet alone
- hold a pencil in fingers
- draw with the arm and not small hand movements
- draws vertical, horizontal, cross and circle
- cuts across paper with blunt scissors
- build a tower of 7-9 blocks
- put together a simple puzzle of 4-12 pieces

Gross Motor Skills

- try to skip
- catch a bouncing ball
- walk downstairs using a handrail and alternating feet
- swing, starting by himself and keeping himself going
- jumps on 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 squares, 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
- walk on tip toes
- may be able to skip

By 6 years of age:

Fine Motor/Self-Care Skills

- dresses unsupervised
- able to tie knot
- begins to tie laces (if opportunity to learn)
- uses knife to spread, begin 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

Gross Motor Skills

- skips, hops,
- stands on one foot for 10 seconds
- throw and catch tennis ball
- running kick
- runs in adult manner with quick direction changes

CLASSROOM OBSERVATION GUIDELINE

Junior and Senior Kindergarten

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

Observations of Posture and Movement:

- trips easily, bumps into furniture
- awkward when running
- fatigues easily, poor endurance
- slouched posture, leans on walls or furniture, lies down on floor
- sits in "W" position on floor
- 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:

- awkward pencil, marker or scissor grasp
- excessive tightness of grasp: hyperextension of finger joints
- excessive pressure on pencil or marker
- loose grasp of pencil or marker with light pressure, poor control
- frequently changes hands when colouring, cutting or printing/drawing
- difficulty with two handed tasks e.g.: cutting accurately with scissors, catching ball
- doesn't use "helper hand" to hold paper steady, hold bottom of zipper, pour water
- needs more physical assistance than other children with clothing, backpack and food packaging

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
- difficulty following steps to complete a task, disorganized
- easily frustrated, impulsive, lacks persistence

Free Play/Recess:

- avoids "messy" and/or tactile activities, crafts, fine motor centers/activities
- difficulty joining in a play group, tends to watch others play
- moves from activity to activity in unstructured play time
- 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.

DEVELOPMENT OF HAND DOMINANCE

At 1-3 months of age: awareness of two hands

At 3-6 months of age: reaches hands out together to get an object

At 5-10 months of age: transfers objects between hands

At 10-18 months of age: stabilizes with one hand, manipulates object with the other; for example, hold drum with one hand while the other hits it with a stick

From 2-4 years of age: preference for right or left hand emerges

By 5-7 years of age: hand dominance clearly established

Dominance

The dominant hand is more skilled with dexterous movements, especially when holding and using objects. The majority of people are right dominant, with about 10% having left hand dominance.

Ambidextrous

About 1% of the population is ambidextrous, meaning they can use either hand interchangeably to complete a fine motor task.

Mixed Hand Preference

Some people interchange their dominance depending on the task. For example, swing right with a baseball bat, but cut with the left hand; print with the right hand, but swing left with a golf club.

What if the Kindergarten Student is still switching hands?

As many tasks in kindergarten require the use of a skilled hand, a child who is constantly switching hands is splitting the “practice” between two hands. It is unlikely that the child is truly ambidextrous based on its rarity in the population. You may want to determine which hand the child prefers, and encourage use of the preferred hand so that it has more practice to develop skilled dexterity (see below for tips to discover hand preference). In the meantime, try using the following strategies:

- Make sure students sit with good posture at the table and use the cue, “feet flat, hips back, head up”. Encouraging the students to “park the car in the garage” cues them to pull their chairs up close to the table top.
- Consider using alternative work positions such as lying on the tummy. In this position the student will naturally support himself on the non-dominant arm/hand for longer periods than on the dominant side. Try activities such as reading, doing puzzles, or completing worksheets.
- Present work on a vertical surface to complete while standing.

- Present tools at the middle of the body, to discourage the child automatically reaching with the right hand for a tool on the right side, or left hand for a tool on the left side of the body.
- Encourage the student to finish a step of the task with the chosen hand before switching.
- Provide practice with a variety of 2-handed tasks, such as stringing beads, opening jars and containers, connecting snap beads, fastening nuts and bolts, lacing cards etc.

Tips to determine hand preference:

Try several of the activities below and watch for a pattern. Does the child consistently use one hand more than the other? If so, encourage use of that hand as the dominant hand for skilled activities. Remember, mixed hand preference is possible for specific tasks. For example, a child may more consistently use the right hand to throw a ball, but the left hand for a pencil and scissors.

- **Hand puppet** – Place a hand puppet on the table at the midline of the child's body. In a play situation, observe the child to see which hand she or he puts the puppet on.
- **Key and lock** – Padlock a cupboard in the classroom. Place the key on a desk. Ask the child to take the key and unlock the padlock and bring you an object from the cupboard. Observe the child as she or he unlocks the padlock and picks up the object.
- **Hammering nails** – Place a toy hammer and nails, or pegs and pegboard on the table at the midline of the child's body. Observe the child as she or he hammers several nails into place, or puts pegs into pegboard.
- **Screwing lids on jars** – Place several jars of various sizes with removable lids on the table. Place the lids in a separate pile. Ask the child to match the lids with the jars, put the lids on the jars, and close them.
- **Throwing a ball** – Place a rubber ball on the floor. Ask the child to pick up the ball and throw it to you. Repeat several times and observe which hand is used the majority of the time to throw.
- **Holding a spoon** – At lunchtime, or in a play situation where the child must use eating utensils, observe which hand is used.
- **Cutting with scissors** – Place a pair of scissors and a piece of paper on the table at the midline of the child's body. Instruct the child to cut the paper into strips. Observe which hand is used to pick up the scissors and to cut the paper. Repeat with various cutting activities and observe which hand is used the majority of the time to cut.

ADDITIONAL RESOURCES



Let's start school together



Getting Ready for Kindergarten Think about...

Getting to school

- Walking
- Riding a bus

In the classroom

- Sitting in a chair
- Sitting on the floor
- Changing activities

In the cloakroom

- Getting undressed
- Dressing for recess

At circle time

- Sharing news
- Sitting quietly
- Listening to the teacher
- Following directions
- Taking turns
- Singing songs

Going to the washroom

- Walking through the hallways
- Using the washroom
- Hand washing

At snack time and lunch

- Eating food
- Drinking
- Cleaning up
- Opening containers

In the gym

- Moving around
- Using the equipment
- Playing sports
- Following rules



	Fine Motor Skills	Gross Motor Skills
3 Years Old	<p>Using the hands and fingers in a co-ordinated way to draw, write, cut, eat, or play.</p> <ul style="list-style-type: none"> • Assembles simple puzzles. • Manipulates clay, finger paints. • Copies simple shapes: horizontal and vertical lines and a circle. • Stacks blocks up to eight high. • Uses a spoon with little spilling. • Provide lots of sensory experiences for learning and developing coordination — sand, mud, finger paints, puzzles. 	<p>Using large body muscles for movement in a balanced way such as running, walking, and playing ball.</p> <ul style="list-style-type: none"> • Jumps in place on two feet. • Walks/steps with alternating feet. • Runs around obstacles. • Catches large balls and throws overhead. • Kicks a ball. • Climbs ladders and uses a slide independently. • Rides a tricycle. • Can walk backwards.
4 Years Old	<ul style="list-style-type: none"> • Copies some letters and shapes (crosses, squares). • Uses table utensils skillfully. • Cuts on a line. • Draws a person with three parts. • Can brush teeth, comb hair, wash, and dress with little assistance. • Can stack ten blocks. 	<ul style="list-style-type: none"> • Running is more controlled; can start, stop, and turn. • Can hop and jump on one foot. • Able to gallop. • Can easily catch, throw, and bounce a ball. • Rides a tricycle or bicycle with training wheels. • Climbs stairs with alternating feet.
5 Years Old	<ul style="list-style-type: none"> • Hand preference is usually established. • Grasps pencil like an adult. • Colors within lines. • Cuts and pastes simple shapes. • Draws a person with six parts. • Prints some letters. 	<ul style="list-style-type: none"> • Runs in an adult manner and is able to run around corners and able to stop voluntarily. • Walks on tiptoe and on a balance beam. • May be able to skip.
Helpful Tips	Provide the child with pencils, crayons, scissors, blocks, and utensils. Encourage the child to feed self and dress self (zippers, buttons).	Take your child outside and let them run around, throw balls, and play on the swing set.

Fine Motor Skills

Fine motor skills involve using the small muscles of the hand to manipulate small toys and objects. They are critical when learning how to draw and cut. Below are fun activities to strengthen fine motor skills:

- Cutting pictures out of newspapers or magazines.
- Gluing pasta or beans to make a picture.
- Stringing small beads, fruit loops, cheerios, popcorn, etc.
- Playing with interlocking blocks and puzzles.
- Kneading and building with plasticene or clay.
- Playing pegboard games.
- Finger painting with jello or pudding.
- Finding hidden objects in the dough (try using tweezers to get the object out).
- Using tweezers to pick up small household objects (marshmallows/ small beans/candies) and place them in a container.
- Playing with toys that involve manipulation of small pieces.
- Squirting water bottles outdoors on the sidewalk, or on the snow (use food colouring in the water).
- Threading small marshmallows onto toothpicks – good for counting or creating a colour pattern.
- Creating a design on paper with a hole punch.
- Playing tug-of-war with a coffee stirstick, holding it only with the thumb and index finger.
- Drawing on mirror/ bath tub tiles with foam soap or shaving cream.
- Drawing in the sand or using sidewalk chalk.
- Cooking activities – i.e. stirring and decorating cookies.
- Using a meat baster or eye dropper in the bath tub to fill up a container.
- Practising with buttons and zippers (dressing).
- Using an egg timer, when asking your child to dress or undress.



Getting Ready For School

Gross Motor Skills

Gross motor skills encompass the abilities required to control the large muscles of the body for walking, running, sitting, crawling and other activities.

- Opportunities for skipping, hopping, galloping, crabwalk (forward and backward).
- Drawing or painting on an upright surface – easel or vertical surface.
- Riding a tricycle or bicycle with training wheels.
- Climbing a ladder, swinging, monkey bars, with assistance (park activities).
- Throwing, catching and kicking (ball activities).
- Climbing stairs with alternating feet.
- Creating an obstacle course with a few directions – i.e. jump on two feet, walk around four pylons, walk backwards ten steps.
- Walking on a narrow chalk line.