OE: 15
As children progress through the Kindergarten program, they: demonstrate an understanding of numbers, using concrete materials to explore and investigate **counting**, **quantity**, and **number relationships**

counting

Number represents an organized structure and can be counted

- 15.1 Investigate number in a sequence
- 15.3 - 1 to 1 correspondence
- 15.4 - stable order & order irrelevance

counting

Number is used to represent something

- 15.7 - explore and communicate the function/ purpose of numbers in a variety of contexts
- 15.8 - explore different Canadian coins

quantity

Quantities can be represented in many ways

- 15.8 - explore different Canadian coins
- 15.7 - explore and communicate the function/ purpose of numbers
- 15.2 -investigate quantity and equality through identifying and comparing sets
- 15.5 - subitize quantities to 5

number relationships

Number/Quantities can be composed and decomposed

- 15.9 - compose and decompose quantities to 10
- 15.10 - investigate addition and subtraction in everyday experiences and routines through the use of modelling strategies and manipulatives

counting	Number represents an organized structure and can be counted	15.1	15.3	15.4

Initial (from observation & other resources)	**Intentional Interactions**	**Eventual** (from the document)
Saying • "Onetwothreefour" (sing-songing) • "1, 2, 5, 3,...." • "1, 2, 3, 4….." (counting without purpose) • "1, 2, 3, 4…." (eyeing objects) Doing • Children recite numbers in order in a song or a poem but do not necessarily isolate the words individually "Onetwothreefour" • Children repeat numbers in order when prompted • Children will count small sets of objects incorrectly • Pointing at different materials and counting 1,2,3… • Reads the number line or number path from left to right Represent • Counts the squares in a ten frame in an activity or game without an understanding of stable order or magnitude "one, two, five, four...I have four" • Makes a staircase with relational rods without an understanding of magnitude	Counting individual stairs as you walk up the stairs at school "I counted five children. I need five plates for each children." "There are five chairs, so five friends can sit at this table." Notice and name when children use stable order "I like how you counted in order 1, 2, 3, 4, 5…That's how Mathematicians count" Notice and name when children demonstrate the use of one-to-one correspondence "I like how you touched each object and gave it a number. That's what Mathematicians do." Counting towards special events as a class (e.g., field trip, concert) Prompting How is your staircase growing/changing?	**Saying** • "When I walk forward on the number line, the numbers get bigger. When I walk backward they get smaller." • "I counted five children. I need five pieces of apple – one for each child." **Doing** • Children use manipulatives to move forward and backward along a number line and use their bodies to move around on a hundreds carpet. • In the dramatic play area, a child counts out placemats, one for each child seated at the table. An educator observes a child counting the number of people (made from building materials) for the imaginary house she has built. Each time she counts, the child gives one count to each object. Even though she counts accurately, she recounts starting with a different object. The educator notices and names what the child is doing. • Adding 3 toppings to an ice cream sundae because there is a limit of only 3 toppings per customer at a shop the student creates • Counts the number of people in a centre/area of the class "There are five people in the dramatic play area **Represent**

counting	Number is used to represent something	15.7	15.8

Initial (from observation & other resources)	**Intentional Interactions**	**Eventual** (from the document)
Saying ● "My favourite number is four" ● "I am three years old." ● "I have five people in my family" ● "I am 4 and a half." (Years old) ● "My favourite hockey player is number …" ● My soccer number is 8 ● "My sister is this number" ● "What is billion, zillion, infinity number?" ● "I'm first in line" "I'm last." ● "Our room is 127." **Doing** ● Students write their birthday on the birthday wall. ● Students start singing after teacher counts to 3. **Represent** ● Example ● Notices numbers in the environment (speed signs, price tags, house numbers, license plates, room numbers, birthdays, age) ● "I am at the beginning/end of the line" ●	● As students come inside from recess they count each child that gets to the carpet (e.g., first, second, third) ● Weaving numbers into dramatic play (real life concepts)- numbering seats in a movie theatre, when creating a store in the drama centre, children label the food using numerals pricing the different items. Describing this interactions….connect to potential tasks, annotated with student examples (from triangulations & pedagogical documentation) **Task: loose parts and numerals (extend with number words, tally marks, dots) and ask "How many?"**	**Saying** ● "Who was the first person to have a birthday this year" ● ' How much money do we need to buy ice cream or cookies?" ● "I am fifth on the carpet" ● (In the movie theatre) "I am making a poster, two popcorn boxes for $3.00" ● "I have 6 cookies so I will write the number 6." **Doing** ● Counts their place in line using ordinal numbers "I am third in line" ● Describes the winner of a race "he came first" **Represent** " We can see numbers all around us not only in the classroom." "Where else can we use numbers?" (e.g., the price of food at the store, phone number, - Understanding the verbal concept of a number (e.g., using manipulatives to show the number four), symbolic representation of the number (e.g., 5,4) and the number contexts they represent (e.g., using fingers, counters, cubes). - Representing numbers using concrete materials (e.g., 5 fingers and 6 counters) to

quantity	Quantities can be represented in many ways	15.2	15.5	15.7	15.8

Initial (from observation & other resources)	**Intentional Interactions**	**Eventual** (from the document)
Saying • "I have more than you" • "I have less than you" • "I have some money to spend at the store" • "I am rich." Means lots of money **Doing** • Putting out more material than needed for the activity • When handing out materials to the class so that everyone has the same amount, giving some students more without considering the amount each student has. • Sorting objects based on more/less • Using "fair" to describe/compare quantity **Represent** • Using materials to represent numbers, eg, a cube is 1, 2 cubes means 2…. • Having to count the dots on a dice when playing a game • Having to tag the beads on a 5 or 10 rack to count without recognizing 5 and counting on	• Students use coin manipulatives from their created wallet to pay for the items in dramatic play centre • Representing numbers in different ways for students- tally marks, 5 and ten frames, coins, numerals, dice, dot formations, objects • Singing songs and chants that involve representing number amounts with your hands (e.g., 5 little monkeys, 5 green and speckled frogs) • Class survey and graphs • Describing/naming/comparing coins and quantity during school book fair, cookie and ice cream sales (e.g., "You need one more gold coin to buy that") "How do you know which one is more?" "Is this one more or less?" Educator noticing and naming counting strategies in our daily routines (subitizing,counting three times, counting on from the larger number, counting on/counting back) **Tasks:** **Don't Get the Red Dot game** **5 or 10 Frame Pick Up** **Tenzies** **Kindergarten Yahtzee**	**Saying** • I saw five on the Reknrek because there were 5 white on the top • "I know it's 4 because there's one empty box on the five frame." **Doing** • Placing the same number of items into sides of a scale to make balance • Giving every student an equal number of materials when requested • Subitizing **Represent** • Using a 5 or 10 frame to help count • Demonstrates equality when sorting materials based on quantity/size/shape. "I sorted the shapes based on the number of sides. All of the triangle have three sides and the squares and the rectangle have four sides • Knows to move five spaces on the game board when a five is rolled on a dice without having to count dots on the dice • Noticing how many dots are on the dot plate without having to count

number relationships	Number/Quantities can be composed and decomposed	15.9	15.10

Initial (from observation & other resources)	**Intentional Interactions**	**Eventual** (from the document)
Saying ● " There are five students at the sand/water table and only three scoops, we need two more scoops" ● " We have three people in our group now we need two more people to make five. ● "There are too many people at the easel, there is only enough space for two people, three people have to leave" **Doing** ● Separating the boys and girls in a group in the dramatic play area. "The you are the parents and we are the babies" ● Splitting pile of toys in half without counting items in each pile to share ● Sharing playdough amongst group of peers by unfairly dividing the dough **Represent** ● Counting three times ● Representing quantities of 5 and 10 with models and tools ● Sharing materials with friends ● I am inviting 5 people to my birthday party, knowing that one is a boy and four are girls	"If we have 26 people in our classroom and 4 are away, how many people are here today?" When looking at the data collect on the question of the day, students Noticing and naming strategies that students use during daily routines (ie. using 10 frames for attendance) <u>Models/Tools:</u> Rekenrek 5 Frame 10 Frame Dice Dot plates **Tasks** **Bear Tracks Game (Fosnot)** **Don't Get the Red Dot** **Race to Fill the Cup**	**Saying** ● "I know this is five so I am going to count on 6, 7, 8." ● "I know 22 students are here today 26-4= 22" ● "There are 4 days until our field trip. I know because i see 4 red dots filled in and 6 blue dots empty on the ten frame" ● "Ms. Moffitt is 3 ten frames and 7 more!" **Doing** ● Counting on/counting back ● Subitizing ● Five and ten frames, retelling story problems ● Intentionally divide playdough independently/collaboratively into (estimated) equal sizes before distributing **Represent** ● "How many people are here today?" ● " How many people have an apple today for snack" ● Budgeting their snacks/lunch for the day/ "I have three snacks, two of them are healthy" ● Dividing the class into teams for gym ● Dividing the class into year 1/year 2 ● Count the blocks they are playing with so that they can have a fair share "He has two more blocks than us that's why their tower is taller" ● Children partition the number of children they