School District of Marshfield Mathematics and Scientific Thinking Standards – 4-Year-Old Kindergarten

Wisconsin Model Early Learning Standards *Specific knowledge and skills that students will know and be able to do by the end of 4 Year Old Kindergarten*	***Marshfield Student Learning Target ("I can ….")*** *These learning targets could be taught in the context of whole group, mini lessons, small groups and conferences. This is not an inclusive list of learning targets.*
Cognition and General Knowledge	
Exploration, Discovery, and Problem Solving • Uses multi-sensory abilities to process information. **A.EL.1** a. Uses senses to explore the environment. b. Uses senses to explore and experiment with new materials. c. Uses senses and a variety of strategies to investigate information. d. Uses senses to generalize and apply prior learning. • Understands new meanings as memory increases. **A.EL.2** a. Observes and imitates sounds and movements. b. Understands that objects and people continue to exist when they are removed from the child's immediate environment. (Object Permanence.) c. Remembers and recalls events. d. Recognizes functional uses of items in the environment. e. Practices and applies new information or vocabulary to an activity or interaction (representation and symbolic thinking). f. Generates a rule, strategy, or idea from a previous learning experience and applies to a new context. • Applies problem solving skills. **A.EL.3** a. Demonstrates awareness of a problem. b. Uses an object or part of an object to obtain another object and moves around large objects. c. Asks questions, seeks information, and tests out possibilities. d. Determines and evaluates solutions. e. Makes statements and appropriately answers questions that require reasoning about objects, situations, or people. f. Uses multiple strategies to solve problems.	***Exploration, Discovery, and Problem Solving*** • I can respond to too much stimulation (touch, sounds, light, and voices) by looking away, crying, yawning, or sleeping. • I can follow objects and people with eyes. May prefer shiny objects and faces, especially eyes and mouth. • I can experiment with tastes of new foods and decides likes and dislikes. • I can engage in poking, dropping, pushing, pulling, and squeezing objects to see what will happen. • I can explore and experiment with modeling clay, shaving cream, and other materials such as sand, dirt, and water. • I can inspect all moving parts of toys such as the wheels, doors, and other small moving parts. • I can use a variety of ways to use crayons, markers, scissors, and paper to create "works of art." • I can use tools to take things apart and attempts to put them back together the same way or invent new structures using the parts. • I can push a chair up to computer and pushes at the keys to "work" with adult. • When asked, "Where's your coat?" I can look for the coat. • After reading a book with an adult, I can tell what happened in the story. • After seeing an adult stack boxes, I can play independently nesting and/or stacking toys as previously seen done. • I can sing part of a song, rhyme, or finger play heard earlier said or sung by an adult. • I can take on pretend roles such as being the "dad, mom, or teacher" as he/she plays with two other children. • I can use objects and other materials to "make believe." • I can enjoy playing games that have simple rules such as Candy Land and Go Fish. • I can indicate hunger or pain. • I will go around a person, chair, or table to get to a desired toy or object. • I can show an adult a game and how to play. • I can identify when someone is sad by how they are acting (crying). • I can find more than one solution to a problem.

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Cognition and General Knowledge	
Mathematical Thinking • Demonstrates an understanding of numbers and counting. **B.EL.1** a. Explores numbers and imitates counting. b. Arranges sets of objects in one-to-one correspondence. c. Can rote count and counts concrete objects to 5 and beyond. d. Recognizes some numerals and associates number concepts with print materials in a meaningful way. e. Names and writes some numerals. f. Counts with 1 to 1 correspondence up to 20 objects and can tell the number that comes next. g. Names and can write number symbols 1 through 20 and beyond. h. May rote count to 100 and may count to 100 by 5's and 10's. • Understands number operations and relationships **B.EL.2a** a. Compares concrete quantities to determine which has more, less, or the same. b. Recognizes that a set of objects remains the same amount if physically rearranged. c. Identifies "1 more" and "1 less." d. Joins (combines) and separates groups of objects. e. Recognizes that there are parts that make up a whole and recognizes "less than" a whole. f. Estimates and uses words such as more than, less/fewer than, about, near, approximately, and in between. • Explores, recognizes, and describes, shapes and spatial relationships. **B.EL.3** a. Explores shapes and spatial relationships. b. Recognizes basic shapes. c. Assembles puzzles of at least 15 intersecting pieces (5-10 at age 3; 15 at age 4; 25 at age 5).	***Mathematical Thinking*** • I can point to a number when reading a picture book to an adult. (ex. 3) • I can hold up 4 fingers when asked how old I am. • I can sign counting songs and participate in counting finger play. • I can set the table so that everyone gets 3 plate and 3 napkin when directed. • I can count 5 blocks in the block center. • I can fill in with the next number (4) when counting beads, "1, 2, 3..." • I can count correctly while pointing to each object saying, "1, 2, 3, 4, and 5..." • When I see 5 brown coins, I say, "There are 5 pennies." • I can count the number of animals on the page of a picture book. • When playing with rubber number puzzles, I can put the correct piece with the number on it with the number of dots on the other puzzle piece. • I can write "4" and says "I am 4"(years old). • I can write numbers. • I can count using objects such as cards, number cubes, or dominoes that have familiar dot patterns. • I can say, "I am 5, next year I will be 6." "My sister is 9, next year she will be 10." • I can name the numbers on a calendar. • I can count to 100. • I can equally distribute a set of objects into 2 or more smaller sets, e.g., shares 6 crackers with 3 friends equally. • I can tell "how many" 3 is when looking at 3 objects in a row, or 3 objects diagonally placed, or 3 object in a vertical row. • I can say, "I need 1 more mitten." • I can solve single digit addition and subtraction problems verbally, e.g., 5+1=6 or 5-4=1. • When picking up a puzzle piece I can say, "This piece belongs to the cat puzzle." • I can recognize when there is not enough or too much of something. • I can complete simple puzzles (pieces fit separate spaces). • I can point to a circle, square, and triangle and put correct shape in matching space. • I can draw or paint shapes on paper and names the shape. Child says, "This is a heart shape." • I can put simple puzzles together where each shape goes into one slot, e.g., house shape, ball shape, progressing to more difficult puzzles with interlocking pieces.

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Language Development and Communication	
Mathematical Thinking • Uses the attributes of objects for comparison and patterning **B.EL.4** a. Categorizes objects based on physical or functional similarity. b. Matches objects. c. Sorts and/or describes objects by one or more attributes or characteristics. d. Uses positional and comparative words to demonstrate understanding direction and location, e.g., on-top, below, bottom, over, under, above, on, and next to. e. Recognizes, duplicates, extends simple patterns and creates original patterns. f. Locates which out of 5 objects does not belong in same class or category. g. Matches at least 6 items according to class or category. h. Matches groups having equal numbers of objects up to 10. • Understands the concept of measurement **B.EL.5** a. Recognizes objects can be measured by height, length, and weight. b. Recognizes objects can be measured by height, length, and weight. c. Determines more, less, many, and few. d. Compares and orders by size. e. Categorizes and sequences time intervals and uses language associated with time in everyday situations. f. Identifies coins and understands their value. g. Uses tools to explore measuring (non-standard units). h. Categorizes, sequences time intervals in everyday situations, and demonstrates an awareness of time related to a clock. i. Explores, compares, and describes length, weight, or volume using standard measures. • Collects, describes, and records information using all senses **B.EL.6** a. Draws and describes pictures of objects and actions from memory. b. Describes and records information through a variety of means, including discussion, drawings, maps, graphs, and charts. c. Begins to apply information collected to similar situations by designing own charts or graphs.	***Mathematical Thinking*** • I can place all "blue blocks" together in one place. • I can put all the "big buttons" together saying, "they're all round." • I can match colors. • I can name the difference in color and shapes by making a necklace with all yellow beads or sorting the squares from the circles. • I can sort buttons, beads, or pegs into egg cartons, with each compartment holding a different color or size. • When playing games and asked to line up first, middle, or last, I can go to the specified place in line. • I can echo clap a pattern modeled from an adult. • I can identify when one object does not fit in a group. • I can take the giraffe out of the bin filled with four farm animals. • I can match my clothes by color. • When provided number puzzles, I can match the number to the set of dots. • I know I can buy 10 pieces of gum for 10 cents if the gum is 1 cent. • I can measure the table, a window, and the height of another child, using small connecting cubes. • I can ask a friend, "Are there more people that live at your house than at my house?" • I can identify if my father is taller than me. • I can identify when a ball is smaller than another. • I can identify the morning is when I go to school and it is dark when I go to sleep. • I can identify a penny and nickel. • I know that a nickel is worth more than a penny. • I can measure using a string or paper strip to compare the length of two objects. • I can relate time to my daily activities. • I can state the month of my birthday and how old I am. • I can guess (estimate) how many cups of water can fit in his/her tall plastic drink container. • I can draw/ paint a picture of a family vacation or field trip and describe the picture I drew.

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Early Literacy	
Scientific Thinking • Uses observation to gather Information. **C.EL.1** a. Shows awareness of differences in their environment (smell, touch, sight, sound, and taste). b. Recognizes and responds to differences in the environment. c. Purposefully seeks information through observation to satisfy curiosity or need for answers. d. Discriminates properties of nature, using a variety of senses (part to whole, living/nonliving, weather, etc.). • Uses tools to gather information, compare observed objects, and seek answers to question through investigation. **C.EL.2** a. Engages in behavior to investigate consequences; notices cause and effect relationships in daily environment. b. Works toward an objective, may use tools or others in the environment to obtain the object. c. Uses buttons/levers to produce desired responses. d. Uses books to look for information. e. Uses magnifying glass (hand lens), binoculars, and maps for investigation of the environment. f. Makes comparisons between objects that have been collected or observed. • Hypothesizes and makes predictions. **C.EL.3** a. Locates object hidden from view. b. Creates mental images of objects and people not in immediate environments. c. Asks questions, seeks information, and tests out possibilities. d. Asks simple scientific questions and draws conclusions based on previous experience. e. Makes plans for testing hypotheses to prove or disprove predictions. • Forms explanations based on trial and error, observations, and explorations. **C.EL.4** a. Identifies and investigates the physical qualities of living and nonliving things. b. Explores and formulates conclusions based on observation and past experiences. c. Makes reasonable explanations, using data gathered from observation and experiments. d. Offers and seeks explanations of questions and experiments, using references such as books and computers.	***Scientific Thinking*** • I can show awareness of loud and soft noises. • I show preference for familiar person as opposed to a stranger. • I ask many questions as I find something interesting. • I can draw pictures of animals I saw at the zoo. • I use a bottle to collect water from a shallow pond and wonder why the water is dirty. • I continue to poke or hit an object to keep it in motion or make it repeat actions. • I can look carefully inspect, try, and move parts of toys, such as wheels, doors, and other moving parts. • I can press on multiple buttons and lifts and pushes on multiple levers on an object to make a variety of sounds and recall which lever or button was push. • I can seek information from a book. • I can use binoculars or a magnifying glass to see small things and things far away. • I can examine a shell collection and respond to requests, such as "Find some more pink ones." or "Show me a shell that isn't smooth." • I can observe the differences among the birds in the yard or at the feeder.