

**A Continuum of Learning
Math, Science, Literacy and Social Emotional Development
Ingham Great Start Collaborative
March 9, 2010**

The purpose of this packet is to provide an overview of a proposed common set of competencies to be shared and supported by teachers, programs and families in Ingham County. The competencies outline what teachers, caregivers and parents will do and what children should have in early learning experiences to support their development in math, science, literacy and social emotional development.

This packet contains four documents that span the developmental stages from infancy to first grade. These documents should be viewed as a work in progress. They are not meant to be exhaustive resources, but rather as a starting point to provide guidance for those working with and caring for children birth through grade one to support their learning and development. They represent the work of the Ingham Birth to Five Great Start Collaborative and several of its workgroups, including Quality Initiatives and the Kindergarten Transition Committee.

The following documents were used in developing these continuums: The Early Childhood Standards of Quality for Infant and Toddler Programs (ECSQ-I/T), the Early Childhood Standards of Quality for Pre-kindergarten (ECSQ-PK), and the Grade Level Content Expectations (GLCE) in kindergarten and first grade. These documents define expectations for children in the birth to seven-year-old age range. This work shows the alignment across these developmental stages and was also done with alignment to the Head Start Child Outcomes. The ECSQ-I/T, ECSQ-PK and Grade Level Content Expectations are available at the website for the Michigan Department of Education. <http://www.michigan.gov/mde>

The knowledge and skills, as described in these documents, are not intended as a checklist of developmental milestones; those are readily available in textbooks on child development and in materials designed to alert parents and caregivers to potential concerns with a child's developmental trajectory. Instead, the developing knowledge and skills are intended to define what young children from birth to age seven might reasonably be learning and doing, how this learning is connected over time and what adults should be helping them to learn and do, in high-quality programs and settings.

May the work you do in helping children grow be full of ordinary, but important, moments and milestones that are long remembered.

For more information about these documents contact Michelle Nicholson, Supervisor of Early Childhood Education, Ingham Intermediate School District at 517.244.1384 or mnichols@inghamisd.org.

Infancy through First Grade: A Continuum of Skills in Math

	Early Childhood Standards of Quality for Infants and Toddlers: Math	Early Childhood Standards of Quality for Prekindergarten: Math	Michigan's Grade Level Content Expectations for Kindergarten: Math	Michigan's Grade Level Content Expectations for First Grade: Math
Exploration	<p>The confidence to explore and make sense of their world through simple problem solving, recognizing patterns, learning from trial and error, asking questions, listening to others, simple planning, observing, and listening to stories.</p> <p>Strand C, Goal 3a</p>	<p>Children begin to develop processes and strategies for solving mathematical problems.</p> <p>ECSQ: ELE-M 1, HSCOF-M 3.1.1, 3.1.2</p>		
Counting and Operations	<p>Familiarity with a variety of materials (e.g. sand, water, ice, bubbles, blocks, paper)</p> <p>Strand C, Goal 4b</p>	<p>Children begin to develop the ability to seek out and to recognize patterns in everyday life.</p> <p>ECSQ: ELE-M 3</p>	<p>Count objects in sets up to 30.</p> <p>GLCE-N.ME.00.01</p>	<p>Count to 110 by 1's, 2's, 5's and 10's, starting from any number in sequence; count to 500 by 100's and 10's; use ordinals to identify position in a sequence.</p> <p>GLCE-N.ME.01.01</p>
		<p>Children begin to develop an understanding of numbers and explore simple mathematical processes (operations) using concrete materials.</p> <p>HSCOF-M 3.1.3, 3.1.4, 3.1.5, 3.1.6</p> <p>ECSQ: ELE-M 7</p>	<p>Use one to one correspondence to compare and order sets of objects to 30 using phrases such as "same number", "more than", or "less than"; use counting and matching.</p> <p>GLCE-N.ME.00.02</p>	<p>Read and write numbers to 110 and relate them to the quantities they represent.</p> <p>GLCE-N.ME.01.02</p>
			<p>Compare and order numbers to 30 using phrases such as "more than" or "less than".</p> <p>GLCE-N.ME.00.03</p>	<p>Order numbers to 110; compare using phrases such as "same as", "more than", "greater than", "fewer than"; use = symbol. Arrange small sets of numbers in increasing or decreasing order.</p> <p>GLCE-N.ME.01.03</p>

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Counting and Operations			Read and write numbers to 30 and connect them to the quantities they represent. GLCE-N.ME.00.04	Identify one more than, one less than, 10 more than, and 10 less than for any number up to 100. GLCE-N.ME.01.04
			Count orally to 100 by ones. Count to 30 by 2's, 5's, and 10's using grouped objects as needed. GLCE-N.ME.00.05	Understand that a number to the right of another number on the number line is bigger and that a number to the left is smaller. GLCE-N.ME.01.05
			Understand the numbers 1 to 30 as having one, or two, or three groups of ten and some ones. Also count by tens with objects in ten-groups to 100. GLCE-N.ME.00.06	Count backward by 1's starting from any number between 1 and 100. GLCE-N.ME.01.06
			Compose and decompose numbers from 2 to 10. GLCE-N.ME.00.07	Compose and decompose numbers through 30, including using bundles of tens and units. GLCE-N.ME.01.07
			Describe and make drawings to represent situations/stories involving putting together and taking apart for totals up to 10; use finger and object counting. GLCE-N.ME.00.08	List number facts (partners inside of numbers) for 2 through 10. GLCE-N.ME.01.08
			Record mathematical thinking by writing simple addition and subtraction sentences. GLCE-N.ME.00.09	Compare two or more sets in terms of the difference in number of elements. GLCE-N.MR.01.09

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Counting and Operations			Create, describe and extend simple number patterns. GLCE-N.ME.00.10	Model addition and subtraction for numbers through 30 for a given contextual situation using objects or pictures; explain in words; record using numbers and symbols; solve. GLCE-N.MR.01.10
				Understand the inverse relationship between addition and subtraction. GLCE-N.MR.01.11
				Know all addition facts up to $10 + 10$, and solve the related subtraction problems fluently. GLCE-N.FL.01.12
				Apply knowledge of fact families to solve simple open sentences for addition and subtraction. GLCE-N.MR.01.13
				Add three one-digit numbers. GLCE-N.FL.01.14
				Calculate mentally sums and differences involving: a two-digit number and a one-digit number without regrouping; a two-digit number and a multiple of 10. GLCE-N.FL.01.15
				Compute sums and differences through 30 using number facts and strategies. GLCE-N.FL.01.16

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Geometry	Spatial understandings, including an awareness of how two and three dimensional objects can be fitted together and moved in space. Strand C, Goal 4c	Children begin to develop skills of comparing and classifying objects, relationships and events in their environment. HSCOF- M 3.2.4, 3.2.1, 3.3.2, 3.3.3 ECSQ: ELE-M 2	Relate familiar three-dimensional objects inside and outside the classroom to their geometric name, e.g. ball/sphere. GLCE-G.GS.00.01	Create common two-dimensional and three-dimensional shapes and describe their physical and geometric attributes, such as color and shape. GLCE-G.GS.01.01
	The confidence to choose and experiment with materials, to explore actively with all their sense, and to use what they learn to generalize their learning to other experiences. Strand C, Goal 3c	Children build their visual thinking skills through explorations with shape and the spaces in their classrooms and neighborhoods. ECSQ: ELE-M 8	Identify, sort, and classify objects by attribute and identify objects that do not belong in a particular group. GLCE-G.GS.00.02	Describe relative position of objects on a plane and in space, using words such as above, below, behind, in front of. GLCE-G.LO.01.02
			Create, describe and extend simple geometric patterns. GLCE-G.GS.00.03	Create and describe patterns. GLCE-G.SR.01.03
				Distinguish between repeating and growing patterns. GLCE-G.SR.01.04
				Predict the next element in a simple repeating pattern. GLCE-G.SR.01.05
				Describe ways to get to the next element in simple repeating patterns. GLCE-G.SR.01.01

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Measurement		Children explore and discover simple ways to measure. HSCOF-3.3.4, 4.2.3 ECSQ: ELE-M 5	Know and use the common words for the parts of the day (morning, afternoon...) and relative time (yesterday, today.) GLCE-M.UN.00.01	Measure the lengths of objects in non-standard units. GLCE-M.UN.01.01
		Children begin to develop skills of sorting and organizing information and using information to make predictions and solve new problems. ECSQ: ELE-M 4	Identify tools that measure time (clocks and calendars) GLCE-M.UN.00.02	Compare measured lengths using the words shorter, shortest, longer, longest, taller, tallest, etc. GLCE-M.UN.01.02
			Identify daily landmark times to the nearest hour (lunchtime is 12 o'clock). GLCE-M.UN.00.03	Tell time on a twelve-hour clock face to the hour and half-hour. GLCE-M.UN.01.03
			Compare two or more objects by length, weight and capacity. GLCE-M.UN.00.04	Identify the different denominations of coins and bills. GLCE-M.UN.01.04
			Compare length and weight of objects by comparing to reference objects and use terms such as shorter, longer, taller, lighter, and heavier. GLCE-M.UN.00.05	Match one coin or bill of one denomination to an equivalent set of coins/bills. GLCE-M.UN.01.05
				Tell the amount of money in cents up to \$1, in dollars up to \$100. GLCE-M.UN.01.06
				Add and subtract money in dollars only or in cents only. GLCE-M.UN.01.07

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Measurement				Solve one-step word problems using addition and subtraction of length, money and time, including "how much more/less, without mixing units." GLCE-M.PS.01.08
Data and Probability	The ability to question, explore, generate, and modify their own ideas about the world around them. Strand C, Goal 4a	Children can translate a problem or activity into a new form (e.g., a picture, diagram, model, symbol, or words) by applying emerging skills in representing, discussing, reading, writing, and listening. HSCOF-M 4.1.2 ECSQ: ELE-M 6		Collect and organize data to use in pictographs. GLCE-D.RE.01.01
				Read and interpret pictographs. GLCE-D.RE.01.02
				Make pictographs of given data using both horizontal and vertical forms of graphs. GLCE-D.RE.01.03

