ECEM 130 Curriculum Outline

class	STANDARD	MATH CONTENT	ACTIVITIES	RESOURCES	CLASS	DISCOVERY JOURNAL
NUMBER AND OPERATION						
1a	Use numbers and numerals	number recognition, counting, one-to-one correspondence	Match quantity to number of kids. Count objects and identify corresponding numeral. Stamp and count bingo stamp dots Use egg cartons to sort objects	Felt board Attendance Number Bingo Bingo Dot Counting Egg Carton Sort	Organize Math Portfolio, *Going Camping* video, Interactive play with kids	Create a flannel board number recognition activity to share with the class
1b		count with understanding, recognize how many	Guess numbers using lower/higher questions Sort then count quantity of each color Teach kids to count in sequence Count manipulatives	Number Guessing M & M Counting Chart Counting to 10 Counting to 10 & beyond	Begin discovery journal *Anno's Counting Book*, Mitsumasa	Observe the ways kids use mathematical thinking and record observations
2a	Solve problems using number facts and operations (+, –, x, ÷)	solve simple numerical problems	Solve problems using 1, 2, and 3 objects Physical and virtual manipulatives to 5 Count knots on a cord with eyes closed Show and hide objects, guess how many are hidden	How Many Bears on the Bed? Blocks & Pattern Block Frames How Many knots now? Under the Bed	Begin felt board project *Anno's Flea Market*, Mitsumasa	Prepare felt board activity to share
MEASUREMENT						
2b	Compute and estimate using a variety of tools	explore quantity and number	Count letters in names Experience numbers to 9 or 10 Add 1 more to number Count 1 more with manipulatives, collage pieces	How Many Letters in Your Name? Adding One More Number Collage	Share felt board activities, handouts for Math Portfolio *Ten Black Dots*, Crews	Observe strategies kids use to communicate quantities
3a		connect numbers to quantities they represent	Tactile activities to teach written numerals Choose number to represent collection up to 5, 10 Tally up to 10, connect with number	Sandpaper Number Tracing Writing Numerals Get the Number Tally it!	Sandpaper number trace boards *Benny's Pennies*, Brisson	What numbers do kids use naturally?
3b	Compare quantities	same, less than, greater than	Compare handprint size Make handprint sets on different sized trays Measure height and compare Compare numbers of objects in a bag Roll dice for pennies	Handprints How Tall are You? Fruit Graph Money Match	Finger play songs *Anno's Math Games*, Mitsumasa	Observe the ways kids use comparison

4a	Measure quantities	measurement tools and words	Describe ways to measure a puddle Describe things that are measured by workers Use 6” rulers to find string lengths Name measuring tools pictured on cards	Measure a puddle Measuring the Neighborhood Measure It Scavenger Hunt Name That Tool!	*Sara Measures* IEL video, Demonstrate measurement using non-standard units and measurement words. *One Grain of Rice,* Demi	Observation how kids measure
4b		time and sequence	Arrange activity pieces in temporal order Jump, tap, wave for timed periods Set timer to guess length of a process Guess if song is longer/shorter than egg timer	Felt board Schedule 10 Second Timing Set the Timer Egg Timer Songs	*Numberworlds* video Dot counting *Time to Sleep*, Holt	Observe kids use of sequence
5a	Estimate	use comparative words	Compare animal sizes using height, weight, pounds Guess water level changes when adding objects Choose the right box to send a present Guess how many steps between two points	How Big is Big? Sink the Fruit Find the right box Step Guessing	*Experimenting with Balls* video, Kids test bounciness of different balls *Millions of Snowflakes*, Siddals	Extend activities from *Experimenting with Balls* video, describe your strategy
5b	Use technology and tools to solve simple problems	read instruments describe observations	Use a food scale to measure food servings Describe volume levels Observe rain gauge readings Read outdoor/indoor thermometers	Weigh your food Turn down the Music! Rain Gauge Rain What is the Temperature?	*Numberworlds* video Count and Compare *Pigs Will be Pigs*, Axelrod	Find out who can use a calculator
PATTERN / ALGEBRA						
6a	Find patterns and relationships	sort and classify	Sort folded socks by color/size/owners Choose criteria to sort blocks Sort recyling trash Sort puzzle pieces by shape Separate pieces of mixed puzzles	Sort the Socks Sort Pattern Blocks Recycle Puzzle sorting	*Pattern Fish*, Harris	Find natural examples of sorting in the classroom
6b	Describe relationships	recognize and describe simple patterns in shapes, sounds and time	Describe, compare, and count crackers Put away toys according to shapes on shelves Categorize and describe house lighting Describe appearance of pattern block designs, Play sound tracks of seasonal occurrences	Counting Crackers Shape template marked shelves Lights On When? Pattern Block Design Guess the season	*Counting Crackers* video, *Counting Caterpillars and Other Math Poems*, Franco	Describe ways you can share with parent how their kids participate in math activities
7a		put objects in order	Construct and use graphs to sort blocks Sort buttons using sorting cards Observe properties of objects Play Bingo with shapes	Sort Pattern Blocks Grandma’s button box Alike and Different Shape Bingo	*Tiger Math: Learning to Graph from a Baby Tiger*, Nagda	List household items that you can sort with kids, and how you would guide the activities
7b	Solve problems using patterns	compare patterns, describe changes	Learn how to use simple graphs Make graph of food by time eaten Make graph to sorted buttons by type Describe, share graph observations to group	Naming Rows and Columns Food Graph Button Graph Show and Tell Graphs	*Magnets and Cars* video, Kids predict the parts of a car that are magnetic, *G Is for Googol: A Math Alphabet Book*, Schwartz	Explain ways you can interact with parents about math activities at home

GEOMETRY AND SPATIAL						
8a	Recognize geometric objects	recognize geometric shapes such as points, lines, planes and space	Identify and sort shapes on felt board Trace outlines of objects and describe Identify common traffic signs and shapes Use geoboards to make shapes	Felt board shapes The Outline of Things Traffic signs Geoboard shapes	Bethany Draws a Wheel, recognize, duplicate, and extend simple patterns *Sir Cumference and the First Round Table*, Neuschwander	What shapes do kids already know?
8b	Use geometric concepts	find and compare locations and sizes	Use treasure map to find objects in a room Google map familiar places Describe rooms and places in house Make a map of your neighborhood	Treasure Map Google It! Rooms! Make a map	*Numberworlds* video, Number Bear Path *Shapes,Shapes,Shapes*, Hoban	Discuss your interaction with kids when solving estimation problems.
9a	Solve problems using geometric concepts	describe geometric relationships, qualitative change in patterns	Use tunnels, stools, hoops, to describe actions Read stories about distant places Make simple globe of Earth from balloon Sing songs about places, show on map, describe how to get there	Over, under around, and through Faraway Places Make a globe Songs about Places	*The Secret Birthday Message*, Corle	Reflect on how you can interact with kids to build their confidence and abilities in math
DISPLAYING AND ANALYZING DATA						
9b	Structure and use data	represent data using concrete objects	Paste seeds next to drawings of plants Identify sorted items by color, size, and shape Use name cards to identify objects on shelves	Seeds Chart Properties Everywhere Namecards	*Lemonade for Sale*, Murphy	Do kids know their age, their height?
10a		make predictions	Observe sky to guess weather Use sense of smell to guess food cooking Guess characteristics of objects	Guess tomorrow's weather What's cooking? How can you tell?	*Weighing the Elephant*, Ye & Langlois	What do kids think will happen tomorrow?
10b	Gather and analyze data and communicate findings	pose questions	Pose mathematical questions about self and surroundings Use felt board to describe weather each day Analyze footprint cutouts to guess animal Think of questions to ask an astronaut, race car driver, movie star	Eye to Eye Weather Felt Board Footprint mystery 3 Questions!	Summarize portfolio *Betcha: Estimating*, Murphy	Sort and organization your journal entries