

PreK for ME

A Preschool Curriculum

Unit 3: Wind and Water

Unit 3 Overview: *Wind and Water*

In Unit 3, children continue to develop their understanding of the concepts related to interpersonal interactions and extend the skills from units 1 and 2, particularly non-fiction writing. A multi-dimensional study of weather and its impact on humans and animals provides a lens for conducting research, exploring scientific concepts, and representing ideas and understandings in multiple ways. The Showcase of Learning at the end of the unit provides the opportunity for children to reflect thoughtfully on the processes that they engage in as they move through each week’s learning experiences.

Children continue to develop skills related to rhyming, letter-sound correspondence, vocabulary development and story comprehension.

<p>Basic Unit Concepts/Goals:</p>	<ul style="list-style-type: none"> ● Weather affects living things. ● Living things respond in different ways to different kinds of weather. ● Weather can inspire artistic expression and provide opportunities for recreation. ● Living things often depend on each other for shelter and protection. ● Water soaks into or is absorbed by some things but is repelled by others. ● Gathering information helps us make decisions.
<p>Core Read Aloud Texts</p>	<ul style="list-style-type: none"> ● <i>Gilberto and the Wind</i>, Marie Hall Ets ● <i>Thunder Cake</i>, Patricia Polacco ● <i>Rabbits and Raindrops</i>, Jim Arnosky ● <i>A Hat for Minerva Louise</i>, Janet Morgan Stoeke ● <i>The Snowy Day</i>, Ezra Jack Keats
<p>Supplemental Texts SWPL</p>	<ul style="list-style-type: none"> ● <i>Time for Bed</i>, Mem Fox ● <i>Bringing the Rain to Kapati Plain</i>, Verna Aardema ● <i>Swimmy</i>, Leo Lionni ● <i>Down East in the Ocean</i> by Peter Roop ● <i>Going Lobstering</i> by Jerry Pallotta
<p>Supplemental</p>	<ul style="list-style-type: none"> ● <i>Living Things Need Water</i>, Bobbie Kalman

<p>Texts LFOAI</p>	
<p>Supplemental Texts Math</p>	<ul style="list-style-type: none"> ● <i>Like a Windy Day by Frank Asch & Devin Asch</i> ● <i>The Big Storm: A Very Soggy Counting Book by Tafuri</i> ● <i>Rosie’s Walk by Pat Hutchins</i> ● <i>Down East in the Ocean by Peter Roop</i> ● <i>Going Lobstering by Jerry Pallotta</i> ● <i>Goldilocks and the 3 Bears as retold by Delmege</i>
<p>Supplemental Texts outdoor learning</p>	<ul style="list-style-type: none"> ● <i>Snowflake Bentley by Jacqueline Briggs Martin and Mary Azarian</i> ● <i>Whose Tracks Are These? By Jim Nail</i>
<p>Maine Early Learning Standards (MELDS)</p>	<p><i>A Note Regarding the Maine Early Learning Standards:</i> In the course of a quality early learning classroom, every minute of the day is focused on providing support to young children. In <i>PreK for ME</i>, intentional activities are designed to address each child’s unique development, as well as the development of the classroom community. The MELDS Standards for Social & Emotional Development and Standards for Approaching Learning are embedded in the curriculum design, approach, and pedagogy. While some of these standards may be highlighted in particular lessons, facets of these standards are embedded in all minutes of the day to support each developing whole child.</p> <p>Standards for Social & Emotional Development <i>Emotional Development</i></p> <ul style="list-style-type: none"> ● Emotional Development- Self Concept <u>MELDS.SED.ED.SC.PS.1</u> Has an awareness of self as having certain abilities, characteristics, preferences and rights <u>MELDS.SED.ED.SC.PS.2</u> Demonstrates self-direction by making choices among peers, activities and materials <u>MELDS.SED.ED.SC.PS.3</u> Takes on new tasks and improves skills with practice <u>MELDS.SED.ED.SC.PS.4</u> Initiates actions or activities with peers

MELDS.SED.ED.SC.PS.5

Expresses delight over a successful project and want others to like it too

MELDS.SED.ED.SC.PS.6

Demonstrates confidence in own abilities and delights in the mastery of a skill

MELDS.SED.ED.SC.PS.7

Demonstrates an understanding of and follows through with basic responsibilities

- Emotional Development- Self-Regulation

MELDS.SED.ED.SR.PS.1

Expresses self in safe and appropriate ways through words and actions

MELDS.SED.ED.SR.PS.2

Seeks peaceful resolutions to conflict

MELDS.SED.ED.SR.PS.3

Stops and listens to instructions before jumping into activity, with guidance

MELDS.SED.ED.SR.PS.4

Follows rules and routines

MELDS.SED.ED.SR.PS.5

Respects the rights and property of others

MELDS.SED.ED.SR.PS.6

Uses materials appropriately

MELDS.SED.ED.SR.PS.7

Is able to share materials or caregiver's/teacher's attention

MELDS.SED.ED.SR.PS.8

Can wait for turn in simple game or use of equipment

MELDS.SED.ED.SR.PS.9

Accepts consequences of own actions

MELDS.SED.ED.SR.PS.10

Regulates own emotions and behaviors

MELDS.SED.ED.SR.PS.11

Refrains from disruptive, aggressive, angry or defiant behaviors

MELDS.SED.ED.SR.PS.12

Asks what and why questions to understand effects of behavior

- Emotional Development- Sympathy and Empathy

MELDS.SED.ED.SE.PS.1

Expresses empathy for others

MELDS.SED.ED.SE.PS.2

Comforts physically hurt or emotionally upset child through

appropriate words or actions

MELDS.SED.ED.SE.PS.3

Labels own emotions and, increasingly, the emotions of others

MELDS.SED.ED.SE.PS.4

Demonstrates understanding of the consequences of own actions on others

MELDS.SED.ED.SE.PS.5

Understands the reasons for rules and routines within the group and accepts them

MELDS.SED.ED.SE.PS.6

Asks “what” and “why” questions to understand effects of behavior

MELDS.SED.ED.SE.PS.7

Shows progress in expressing feelings, needs, and opinions, in difficult situations and conflicts, without harming self, others, or property

- Emotional Development- Adapting to Diverse Settings

MELDS.SED.ED.ADS.PS.1

Demonstrates ability to be flexible or adjust to routine or unexpected changes including physical setting, daily schedule, staffing and group size/ attendance

MELDS.SED.ED.ADS.PS.2

Adjusts to transitions from one activity setting to the next during the day with appropriate emotions and behaviors

MELDS.SED.ED.ADS.PS.3

Anticipates with assistance what will be needed in diverse settings

MELDS.SED.ED.ADS.PS.4

Follows rules in diverse settings

Social Development

- Social Development- Building Relationships with Children

MELDS.SED.SD.BRC.PS.1

Participates cooperatively in large and small group activities

MELDS.SED.SD.BRC.PS.2

Participates in classroom and group routines

MELDS.SED.SD.BRC.PS.3

Uses different turn-taking strategies

MELDS.SED.SD.BRC.PS.4

Shows increasing abilities to use compromise and discussion in play, and resolution of conflicts with peers

MELDS.SED.SD.BRC.PS.5

Develops consideration for the needs or interests of peers

MELDS.SED.SD.BRC.PS.6

Develops friendships with peers

MELDS.SED.SD.BRC.PS.7

Notices and comments on who is absent from routine group settings

MELDS.SED.SD.BRC.PS.8

Shows concern for personal fairness within a peer group

MELDS.SED.SD.BRC.PS.9

Defends own rights and the rights of others

MELDS.SED.SD.BRC.PS.10

Gives social support to others

MELDS.SED.SD.BRC.PS.11

Demonstrates knowledge that fairness involves a recognition that respects the needs of individuals as well as sharing and turn-taking

MELDS.SED.SD.BRC.PS.12

Identifies and expresses self a part of several groups (e.g. family, preschool class, faith community, etc.)

MELDS.SED.SD.BRC.PS.13

Uses play to explore, practice and understand social roles

MELDS.SED.SD.BRC.PS.14

Joins in the middle of an on-going group activity with friends independently

MELDS.SED.SD.BRC.PS.15

Invents and sets up activities that include more than one child

MELDS.SED.SD.BRC.PS.16

Gives social support to others

- Social Development- Respecting Similarities and Differences

MELDS.SED.SD.RSD.PS.1

Names and accepts differences and similarities in preferences

MELDS.SED.SD.RSD.PS.2

Notices that other children might communicate differently or use different words for the same object

MELDS.SED.SD.RSD.PS.3

Begins to examine a situation from others' perspective

MELDS.SED.SD.RSD.PS.4

Shows concern about personal fairness within a peer group

Standards for Approaching Learning

Initiative and Curiosity

MELDS.ATL.IC.PS.1

Initiates participation in a widening ranges of topics, ideas, and tasks

MELDS.ATL.IC.PS.2

Invents projects and works on them with little assistance

MELDS.ATL.IC.PS.3

Wonders and asks questions about change in his/her world

MELDS.ATL.IC.PS.4

Uses “wh” questions to get information a variety of topics (why, who, what, where and when)

MELDS.ATL.IC.PS.5

Approaches tasks and activities with increasing flexibility, imagination, and inventiveness

MELDS.ATL.IC.PS.6

Invents games and new activities

Engagement & Persistence

MELDS.ATL.EP.PS.1

Persists in and completes an increasing variety of tasks, activities, projects, and experiences despite frustrations

MELDS.ATL.EP.PS.2

Demonstrates resiliency and coping skills when faced with challenges (i.e. concentrates despite distractions and/ or increasingly manages own level of frustration)

MELDS.ATL.EP.PS.3

Chooses to leave a project and returns to it later for completion or elaboration

MELDS.ATL.EP.PS.4

Sets goals, develops plans, and completes tasks with increasing independence

MELDS.ATL.EP.PS.5

Maintains concentration despite distractions

Reflection & Problem Solving

MELDS.ATL.RPS.PS.1

Predicts when something might be a problem or challenge

MELDS.ATL.RPS.PS.2

Makes predictions about what will happen next

MELDS.ATL.RPS.PS.3

Looks for more than one solution to a question, task, or problem

MELDS.ATL.RPS.PS.4

Applies prior experiences, senses, and knowledge to new learning situations

MELDS.ATL.RPS.PS.5

Considers and implements different approaches to carrying out a task

MELDS.ATL.RPS.PS.6

Independently alters approach to tasks when initial approach does not work

MELDS.ATL.RPS.PS.7

Discusses or documents important aspects of an experience and identifies what was learned

MELDS.ATL.RPS.PS.8

Solves increasingly complex problems and an increased number of problems

UNIT 3: *Wind and Water* Math Overview

Enduring Understandings used in Math Components

- Weather affects living things.
- Living things respond in different ways to different kinds of weather.
- Living things often depend on each other for shelter and protection.
- Gathering information helps us make decisions.

Essential Questions used in Math Components

- How do living things work together to solve problems and accomplish goals?
- How do living things gather information that will be useful to them and others?

Guiding Math Ideas

- Making Sense of Physical World Using Math- Language, Weather Observations, Measurement Tools
- Quantity (Subitizing)
- Language of Math- Comparison Words and Words to Describe Relative Position in Space
- Exploring and identifying numerals
- Finding Math in Stories: Directionality and Orientation; Seriation
- Representing number relationships with toys, manipulatives and puzzles: Assigning Number Names to Groups
- Growing in Classification Skills: Attribute identification and comparison.
- Problem Solving- Data collection and beginning analysis

Where's the Math?

Teacher Supports for Unit Concepts

- The Processes of Learning Math
- Seeing Groups: Subitizing

UNIT 3 MATH IDEAS BY THE WEEK- LINKS TO THEME

WEEK 1	WEEK 2	WEEK 3	WEEK 4	BONUS AND EXTENSIONS
Guiding Math Idea: Making sense of the physical world Link to theme: Using information (such as weather) to help us plan.	Guiding Math Idea: Using comparison words through Measuring tools and Toys Link to theme: Weather affects living things.	Guiding Math Idea: Finding Math in Stories; Seeing groups instantly Link to Theme: Making decisions based on information	Guiding Math idea: Representation and Relationships: Number names to groups Link to Theme: Living things respond in different	Guiding Math Idea: Gathering and classifying information about a problem. Link to theme: Finding math problems in stories

			ways to different kinds of weather.	
--	--	--	-------------------------------------	--

.MATH FOR ME- SCOPE AND SEQUENCE OF MATH CONTENT AND CONCEPT LEARNING PROGRESSIONS

CORE CONSTRUCT = THE OVERALL GOAL FOR THE YEAR THAT APPLIES TO ALL UNITS

UNIT 3-HIGHLIGHTED

MELDS COMPONENT CORE CONSTRUCT Concept	UNIT 1 FAMILY	UNIT 2 FRIENDS	UNIT 3 WIND & WATER	UNIT 4 WORLD OF COLOR	UNIT 5 SHADOWS AND REFLECTIONS	UNIT 6 THINGS THAT GROW
MATHEMATICAL PRACTICES CHILDREN ARE COMPETENT MATHEMATICIANS Attitudes/Approach	Learning math starts with discovery and exploration.	Participating in Math Activities with friends.	Using math to observe the weather.	Playing games = engaging with math concepts & skills.	Science and math concepts help us understand shadows.	Math is energizing and useful in many contexts: school, home, and the surrounding environment.
Usefulness (Mathematizing)	We use math every day: Connecting number to real world situations.	Math in our Classroom- Routines and activities	Math helps us describe and make sense of the physical world.	Math ideas relate to games and outdoor play (comparisons, quantity, subitizing)	Math is embedded in learning projects (Uses math in STEM activities)	
Problem Solving MATH HELPS SOLVE PROBLEMS	What is a problem? Introducing math into problem solving.	People work together to solve math problems	Gathering Information (data) to help solve problems	Finding patterns in data to help solve problems.	Generating and testing solutions to problems [STEM]	Solving practical problems using geometry and measurement data: Planning a garden.
Communication (Mathematizing) MATH = COMMUNICATION	Naming our math center and math activities	Math has special vocabulary. (e.g. 3D and 2D shapes/comparison words)	Math words and math ideas appear in storybooks, outdoors and home.	Identifying math words and math ideas in storybooks, outdoors and home: subitizing, patterns, etc.	Growing accuracy and expanding use of language of math (verbal and non-verbal).	Applying the many “languages” of math in multiple contexts.
MELDS COMPONENT CORE CONSTRUCT Concept	UNIT 1 FAMILY	UNIT 2 FRIENDS	UNIT 3 WIND & WATER	UNIT 4 WORLD OF COLOR	UNIT 5 SHADOWS AND REFLECTIONS	UNIT 6 THINGS THAT GROW
COUNTING & CARDINALITY CLUSTER COUNTING DETERMINES QUANTITY Counting	Practicing the number word list through words & action.	Practicing the number word list through words & action.	Rote Counting Strategies: Numbers have an order. Correcting errors.	Rote: Expanding the number word list to 20 and beyond.	Rote Counting Strategies: Finding patterns in counting above 10.	Counting the same group of objects results in the same result. [Stability of

Rote & Rational		Transition from rote to rational counting strategies: One object has only one name	Transition from rote to rational counting strategies: Counting dissimilar objects	Transition from rote to rational counting Strategies; Connecting groups to number names	Transition from rote to rational counting strategies– Order irrelevance; Keeping track of numbers counted	sets and/or order irrelevance] Using and applying rational counting to questions of quantity
Numerals NUMERALS AND MATH SYMBOLS REPRESENT MATH IDEAS	Some writing marks are called numbers (numerals) and others are letters.	Identifying/naming number symbols in the environment.	Matching numerals with their names (0-5). Exploring writing numerals	Matches numerals with their names (0-10). Exploring Writing numerals with intent.	Writing number symbols up to 10.	We communicate math ideas using number symbols.
Cardinality SEEING, SAYING AND REPRESENTING CARDINALITY INVOLVES MULTIPLE CONCEPTS. Subitizing	Grouping objects of 1 or 2 (arbitrary or attribute-based)	Grouping of objects and describing likes and differences	“Seeing” groups of numbers automatically up to 5. (perceptual subitizing)	“Seeing” groups (up to 5) and sometimes using them as a counting strategy	Exploring the “5” group in activities.	Relating counting and cardinality with increasing accuracy: labeling groups with various arrangements/arrays.
Cardinality		Using a number word or some form of Counting to answer <i>How Many?</i>	Counting groups of objects or persons and assigns a number name (1-2)	Counting groups of objects or persons and assigns a number name (Increasing accuracy)	Showing understanding that <i>How many</i> means the last number counted & represents amount in entire group.	
MELDS COMPONENT CORE CONSTRUCT Concept	UNIT 1 FAMILY	UNIT 2 FRIENDS	UNIT 3 WIND & WATER	UNIT 4 WORLD OF COLOR	UNIT 5 SHADOWS AND REFLECTIONS	UNIT 6 THINGS THAT GROW
OPERATIONS AND ALGEBRAIC THINKING Quantity DETERMINING HOW MANY? IS THE GOAL OF EARLY MATH	Introducing Number Questions	Responding to Number Questions with Demonstration or Words.(1, 2)	Beginning to count from 1 onward when asked how many. Gives an answer. Number words refer to quantity	Showing understanding that <i>How many</i> means the last number counted represents the entire group.	Showing understanding that <i>How many</i> means the last number counted represents amount in entire group.	Combining ideas of 1:1 correspondence, cardinality and number stability to understand quantity.
Relationships MATH = FINDING RELATIONSHIPS AND PATTERNS. 1:1 Correspondence & Other math relationships ($< > + - =$)	Demonstrating perceptive (intuitive) number in play or other daily activities	1:1 Correspondence is a special type of relationship—one name, one object. (See rational counting)	Beginning comparison of groups for more or less (visual estimating/ counting).	Beginning to compare groups using counting strategies (up to 10). Beginning to recognize parts/wholes of number groups.	Counts groups and begins to compare numbers($< > + =$) (up to 10) Finding number partners: number within numbers (up to 5).	Comparing groups of numbers ($< > + - =$) using word, actions or objects. Beginning to compose/decompose numbers (up to 5)

<p>Representation MATH IDEAS APPEAR IN MANY MODES AND CONTEXTS. Physical/verbal Modeling</p>	Objects can represent other objects.	Representing number with words signs or gestures.	Number can be represented by manipulatives (unit blocks, counters) and symbols and people.	Drawing, describing or showing with manipulatives how number names relate to groups.	Beginning concepts of Adding and Taking (up to 5) Away (varying ways of representing)	Communicating addition and subtraction with fingers and manipulatives. (up to 5)
<p>Visual Tools for Representing Number & Relationships</p>		Exploring number matching puzzles and manipulatives to represent relationships	Using number matching puzzles and manipulatives to represent relationships	Introducing number paths. Identifying a story problem.	Using number paths and grid games as a counting tool. Using story problems to visualize operations	Beginning to use number paths and grid games to communicate math ideas. Acting out story problems to visualize operations up to 10.
<p>MELDS COMPONENT CORE CONSTRUCT Concept</p>	UNIT 1 FAMILY	UNIT 2 FRIENDS	UNIT 3 WIND & WATER	UNIT 4 WORLD OF COLOR	UNIT 5 SHADOWS AND REFLECTIONS	UNIT 6 THINGS THAT GROW
<p>GEOMETRY (INCLUDES CLASSIFICATION) FORMING AND APPLYING IDEAS OF SHAPES AND SPATIAL RELATIONSHIPS Shape 3D-2D Attributes</p>	Manipulating and building with 3-D Shapes	Finding 3-D and 2-D shapes in the environment and using words to describe geometrical figures.	3D and 2D shapes have different attributes and uses. Discovering and describing some attributes of shapes.	Classifying shapes by describing and comparing some attributes.	Copies or represents shapes using manipulatives or drawing.	Growing accuracy in discovering, describing and comparing attributes of shape: Exploring grouping shapes by characteristics.
<p>Parts/Wholes COMPOSING & DECOMPOSING FIGURES</p>	Taking apart and putting together toys, puzzles & manipulatives	Taking apart and putting together toys, puzzles and manipulatives and sometimes describing parts and wholes	Identifying the parts of objects in the classroom and outside world and relating those parts to whole.	Using shape puzzles and shape manipulatives for parts/whole understandings	Putting a variety of shapes together to make objects or pictures. Identifying words for part/whole concepts.	Taking apart shapes and reassembling. May identify parts.
<p>Space (Spatial relations) Orientation Directionality</p>	Informal spatial movement: Moving our bodies in many different directions	Recognizing and responding to Directionality and Orientation words or commands	Moving objects and our bodies and describing relative positions in space.	Playing games and initiating activities that involve directionality and orientation.	Orientation: Shapes are still the same shape, despite their orientation (Intro to slides, flips and turns).	Orientation: Manipulating and describing 2-D Shapes y Slides flips and turns Integrating shape and space concepts in

			(Movement patterns or models such as maps)		Identifying shape and space concepts in STEM activities	class projects and problem solving.
MELDS COMPONENT CORE CONSTRUCT Concept	UNIT 1 FAMILY	UNIT 2 FRIENDS	UNIT 3 WIND & WATER	UNIT 4 WORLD OF COLOR	UNIT 5 SHADOWS AND REFLECTIONS	UNIT 6 THINGS THAT GROW
MEASUREMENT & DATA (INCLUDES CLASSIFICATION AND PATTERNS) FINDING MEASURABLE PROPERTIES AND EXPLORING MEASUREMENT METHODS Measurement Tools		Exploring measurement tools indoors and outdoors.	Matching measurement tools to their purposes: measuring water; temperature	Mixing and creating colors using measurement tools.	Using tools to measure and compare shadows.	Solving problems using some form of measurement method and tools.
Measurement Methods & Attributes		Exploring and describing Measurable Attributes in everyday activities.	Experimenting with measurement: Directly comparing 2 or more items on an attribute.	Experimenting with measurement methods Using measurable attributes to organize materials.	Experimenting with measurement methods Non-standard measurement	
Specific Language & Concepts PRACTICAL APPLICATION OF MEASUREMENT	Everyday use of measurement words in play, at school and at home.	Growing use of accurate measurement terms: Exploring the Language of Time in classroom routines	Growing use of accurate measurement terms: Exploring temperature and capacity/volume	Growing use of accurate measurement terms: Exploring weight and mass. Describing past, present & future events.	Growing use of accurate measurement terms: Exploring length and distance: Continuous and discrete measurement	Demonstrating the practical use of measurement (including data skills) to solve problems in everyday life
Data GATHERING, ORGANIZING AND USING INFORMATION TO MAKE MEANING AND SOLVE PROBLEMS	Matching and grouping (Attribute recognition)	Describing, sorting and classifying collections (Self-described or in response to questions	Growing use of discrete attributes for classification sorting strategies to organize collections Discovering patterns in movement song or materials.	Organizing data: Recording data graphically in charts & graphs. Describing patterns.	Growing abilities to recognize, copy describe and create patterns.	

The Processes of Learning Math*

In math, our instructional focus often emphasizes important **content** areas- Counting, Operations, Geometry, Measurement, Data Collection and Analysis. Just as important are the **Ways** that we approach math, and the thinking skills that help us make sense of math concepts **across** content areas. These thinking skills, identified as **Process** Skills by the National Council of Teachers of Mathematics [NCTM]* are present in all quality math instruction. We have been using them from the first day that we implemented our *Math for ME* curriculum.

- Problem-Solving- Each Unit presents ways that we can apply math to solve problems in books, in our classroom, and in the course of everyday living.
- Reasoning and Proof- When we ask children to “Show me how you did that” we are helping them uncover their reasoning and logic as they describe their thinking.
- Connections – Math ideas, such as the idea of number, connect from concept to concept as we build skills and understanding. Rote counting transitions to rational counting; Identification of simple shapes morphs into understandings of part-part whole; Forming small groups of under 5 objects becomes the basis for operations.
- Communication- Raising awareness about the Language of Math in daily conversations, attending to precision in math terms, and expanding children’s math vocabulary are natural ways to increase comfort with math concepts
- Representation- Math ideas can be abstract, and are made real by models. In early childhood, we use lots of models- manipulatives, counters, maps, tools, to make math accessible. A key representation we focus on in early math is **Relationships**- Counting, for example is a One-Plus Relationship. The ideas of More, Less, Bigger, Smaller—only make sense when we compare the *relationship* of one thing to another.

Representation and Relationships in Unit 3

Unit 3 builds on children’s understandings of representing math relationships through intentional design and active engagement. Here are just a few of the Activities that help children make math relationships visible through representation:

- Measuring Activities and Exploring Measuring Tools- Associating numbers/ materials.
- Making groups with counters, manipulatives and people- The Umbrella/Raindrop Game
- Making maps- Rosie’s Walk activities
- Composing and De-composing Numbers (relationships) the Inside/Outside Game
- Acting out Story Ideas that Focus on Numbers- The Big Storm; Goldilocks
- Seriation- the relationship of Big, Medium and Small.- Goldilocks, SWPL

*For more information, refer to National Council for Teachers of Mathematics [NCTM] (2000). Principles and Standards for School Mathematics pp. 52-71. Reston, VA: NCTM. OR Visit their website as www.nctm.org

SEEING GROUPS: SUBITIZING

What is subitizing?

The ability to “see” or recognize numbers instantly in a variety of number arrangements (called arrays). The dot patterns on a die, for example, can be instantly recognized as a group of numbers without individually counting the dots.

Why is it important?

Subitizing is the basis for rational counting, and is a specific skill that is embedded in the key preschool idea of cardinality [understanding that the last counting word named is the amount for the entire group]. *Subitizing* is also a “shortcut” for manipulating groups of numbers, as in adding $2 + 2$ and later on, in understanding multiplication. Games are particularly good tools for teaching subitizing, and also for observing and assessing children’s growing abilities to master the idea of quantity. The skills of *counting on* and *counting back* that many older preschoolers and kindergarteners begin to master include the idea of subitizing.

Preschool children typically can subitize quantities up to 5, but even infants can recognize the differences in small quantities, such as 1 or 2 of something.

Subitizing is already embedded in many everyday preschool activities. By raising awareness of the importance of subitizing, recognizing it when it occurs, and purposefully designing activities that reinforce this concept, preschool teachers help children build important foundations for later skills in operations and algebra.

Tools for Teaching Subitizing:

Math for ME includes many tools for teaching subitizing. These include: 10 Frames, 2 sided counters, various sizes of dice, number cards, small manipulatives, games and organizers. Grid games, short path games and long path games (introduced in Unit 4) are excellent resources for introducing, expanding, and assessing the skill of subitizing.

Home/School Connections:

Even though the word *subitizing* may not be a familiar one to many families, the idea of “seeing numbers instantly” can be reinforced at home in many ways.

Connecting with families: Playing a game that reinforces subitizing.

The following link can be shared with families. Alternatively, you can send home simple 5 frames and small inexpensive items with children in a folder or bag for families to play along with game instructions.

<https://www.naeyc.org/resources/pubs/tyc/dec2017/backpack/family-math-game-subitizing>

Resources and references:

Charlesworth, R. (2012). *Experiences in Math for Young Children (6th Edition)*. Boston, MA: Wadsworth Press

Kamii, K. (1982) *Number in Preschool and Kindergarten*.

Teaching Young Children (December, 2017). Backpack series: Family math games. Washington, DC: NAEYC.

The Learning Trajectories Organization (Douglas Clements) – Search for Subitizing Activities

<http://www.learningtrajectories.org/>

UNIT 3 WIND AND WATER- MATH BOOKS AND MATERIALS

Books

Books Used in Large or Small Group Activities or SWPL (in addition to the Unit Books for Read Alouds):

Like a Windy Day by Asch and Asch

Rosie's Walk by Pat Hutchins

Going Lobstering by Jerry Pallotta

The Big Storm: A Very Soggy Counting Book by Nancy Tafuri

Down East in the Ocean by Peter Roop

Goldilocks and the 3 Bears as retold by Delmege

Books for the Book Shelf/Reading Area:

1 is a Snail, 10 is a Crab by April Sayre

Bob and Joss take a Hike by Peter McCleery

Balancing Act by Ellen Walsh

One Cow Coughs by Christine Loomis

Any counting books or books about the ocean or wind from your school library

Math Materials

Offer in a Center (e.g., Puzzles/Manipulatives, Discovery, etc.) to ensure that children can play and explore these tools/materials prior to large and small group activities.

During the Entire Unit:

- Manipulative Sets
- 1 " Cubes
- Wooden, Plastic or Magnetic Letters and Numerals
- Activity Hoops and Bean Bags (as appropriate during Large Motor time)

Week 1:

- Bucket Balance
- 1 " Cubes
- Scarves or Squares of Fabric for Dancing

Week 2:

- Counters
- Water Table Supplies: Measuring cups, turkey basters, eye droppers, Small Scoops

UNIT 3 WIND AND WATER- MATH BOOKS AND MATERIALS

Week 3:

- Activity Hoops
- Bean Bags

Week 4:

- Ocean animals
- Wooden, Plastic or Magnetic Letters and Numerals

Week 5:

- Number Floor Puzzle
- 1" Cubes
- Manipulatives sets

Teacher Materials and Supplies for Activities

Every Week:

- Flip Chart
- Markers

Week 1:

- Cardboard tubes (toilet paper or paper towels)
- Journal for recording observation
- Yarn or string
- Tissue or crepe paper
- Stickers or Markers

Week 2:

- Picture of Anemometer and Wind Sock- In Unit 3 Google Drive
- Picture of rain gauges or a real rain gauge
- Clear Tubs for holding water
- Small clear containers for holding measured water
- Card Stock

Week 3:

- Bucket of Foam Shapes
- Glue Sticks
- Index Cards
- Coffee filters or paper cups
- 11 X 14 Paper

Week 4:

- 3 Colors of Construction Paper for Ocean, Sky and Land

UNIT 3 WIND AND WATER- MATH BOOKS AND MATERIALS

- Pictures copies from Down East in the Ocean

Week 5:

- 11 X 14 Paper
- Sets of 3 Circles- Small, Medium Large
- Glue Sticks

Emotional Development

Emotional Development- Self Concept

Emotional Development

Social Development

Social Development- Building Relationships with Children

Standards for Approaching Learning

Initiative & Curiosity

Engagement & Persistence

MELDS.ATL.IC.PS.1

MELDS.ATL.EP.PS.1

Engagement & P

arning

Reflection & Problem Solving

MELDS.ATL.RPS.PS.1

Visual Arts

Movement & Dance

MELDS.CA.VA.PS.1

MELDS.CA.MD.PS.1

Arts

Music

Dramatic Play & Performance

MELDS.CA.M.PS.1

MELDS.CA.DE.PS.1

Speaking & Listening

Comprehension & Collaboration

Standards for Early Language

Language

Reading Standards for Literature

Conventions of Standard English

Key Ideas & Details

& Literacy

Reading Standards for Informational Text

Reading Skills: Foundational Skills

Details-Informational Text

Print Concepts

Writing Standards	Nutrition
Text Types and Purposes of Writing	MELDS.PHD.N.PS.1

Standards for Physical Development & Health

Safety

Fine Motor

MELDS.PHD.S.PS.1

MELDS.PHD.FM.PS.1

Gross Motor

MELDS.PHD.GM.PS.6

Health Knowledge & Practice

MELDS.PHD.HKP.PS.7

Math

Math

Geometry

Mathematical Practices

Geometry

Science	
Physical Science	Earth Science
MELDS.S.PS.PS.1	MELDS.S.ES.PS.1

Life Science

MELDS.S.LS.PS.1

Civics & Government

MELDS.SS.CG.PS.1

Social Studies

Economics

Geography

MELDS.SS.E.PS.1

MELDS.SS.G.PS.1

History

MELDS.SS.G.PS.1

Nature Extensions and Outdoor Connections for Individual Lessons in Unit 3

Week 1

Art Studio: Making Sailboats

- The children can use sticks, leaves, fruit peels, bottle caps and other found items for constructing their boat.

Writing & Drawing: Blank Books

- Bring the blank books outside for journaling.

Discovery: Using Sailboats

- Bring the homemade boats outside.
- If possible, test the boats in a natural stream caused from the rain.

Dramatization: Baking Cakes

- Bring pots and pans outside for the children to use to make nature cakes in a mud kitchen.
- The children will be able to continue their learning beyond the classroom walls as they use grass, dirt and other items to create their cake.

Art Studio: Storm Painting

- Have the children color on absorbent paper using markers.
- If it is raining bring the children outside with their paper that has been colored on.
- As the rain falls onto the paper it will cause the colors to run and mix together.
- If it is not raining on the day of this activity use spray bottles to simulate a rain storm.

Blocks: Stability Challenge

- Rather than using the standard wooden blocks for this activity switch them out using at least one of the natural or recycled items.
 - Rocks
 - Paper towel rolls
 - Plastic containers
 - Wood slices

Small Group: What Can Air Move? Seeds

- Read *Flip, Float, Fly: Seeds on the Move* by JoAnn Early Macken.
- Talk to the children about seed dispersal (the scattering of seeds)
- Watch *Seed Dispersal - The Great Escape* on You tube by Naturalist Outreach.

Small Group: Blowing Objects Through Straws

- Have the children collect milkweeds, dandelions, maple seeds, petals and other natural items.
- The children will use their straw to try to blow various shapes and size items across the table or ground.

Week 2

Writing & Drawing: Storm Stories

- Place paper and writing tools near the window for the children to use while they observe the weather outside.
- This activity could also be done outside using sit spots. Sit spots is a spot away from others that the child chooses.

Art Studio: Box Lid Paintings

- The children could do this project outside on a rainy day to explore how the colors on the paper mix when it comes in contact with water.

Art Studio: Wind Illustrations

- Use a watered down paint or water colors for the children to use at the art area.
- Before the paint dries have the children hold their picture in front of a small fan for a few seconds.
- The wind from the fan will cause the paint to run across their painting.
- If this activity is done on a windy day leave the paintings outside to dry to create “wind marks” in the paper.

Blocks: Rabbit Habitat

- Take children outside to look for rabbit habitats referring to the book and block activity.
- Have them think about the rabbit habitats they made in the block area and look for natural materials they can use to build a rabbit habitat outside.

Small Groups: Sound Cans

- Lead a rainstorm with the children using their own bodies;
 - Begin by snapping fingers or lightly rubbing hands together
 - Start clapping lightly then more loudly and rapidly
 - As the storm gets louder, hit hands on thighs, then stomp feet
 - Slowly reverse the actions until it is no longer raining

Week 3

Art Studio: Animal Covering

- In small groups bring the children outside to explore the playground or nearby woods area for animal coverings.

Library: Animal Research

- After researching an animal, have the children create riddles for their animals that include characteristics of the animal (e.g. has fur, has four paws, lives in the forest, is a mammal, etc.). They then share the characteristics with the other children and the children guess what animal it is.

Blocks: Animal Habitats

- Take children outside to look for animal habitats. Make a list of the different habitats they find and which animals might live there. Have them try and find the animal habitat that they researched.

Writing: Animal Stories

- Bring the writing center outside; allow the children to journal about the animals they observe in nature.
- Use an iPad or computer to play a live stream video of forest animals or zoo animals as animal story inspirations.

Let's Find Out About It: Animals Prepare for Winter

- After learning about what animals do to prepare for winter, take children outside and revisit the Migrate/Hibernate/Stay Active game detailed in the Outdoor Learning lesson plan for Unit 2, Week 4.

Let's Find Out About It: Camouflaged Animals

- After learning about camouflage, take the children outside and play the camouflage game detailed in the Outdoor Learning lesson plan for Unit 3, week 3.

Week 4

Art Studio: Clouds

- The children could paint outside or near a window that allows them to observe the clouds in the sky

Discovery: Ice Melting

- An expansion for this activity could be painting with food colored ice cubes.

Writing: Winter Stories

- To help inspire the winter stories, have children go outside and play in the snow. As they play, they may come up with ideas for their stories.

Let's Find Out About It: Winter Activities

- Provide the children with information about what animals do when it is winter.

Unit 3 – Nature Connections to one of the books

Rabbits and Raindrops

- Continue activities that focus on mammals (from Unit 2 – Squirrels and Chipmunks), as rabbits are mammals.
- Since rabbits stay active in the winter time, look for rabbit tracks in the snow and see if they lead to a rabbit den.