

Resources for enjoyment!

- Albee, S. (2000). *The Oreo cookie counting book*. Simon & Schuster: Board Book.
- Charner, K., & Murphy, M. (2002). *It's great to be three*. Beltsville: Gryphon House.
- Giganti, P. (1994). *Each orange had eight slices: A counting book*. Mulberry Books.
- Green, M. D. (1995). *Teaching from cupboards & closets*. Glenview: Good Year Books.
- Mcgrath, B. B. (1994). *The M&M counting book*. Watertown: Charlesbrige.
- Mcgrath, W. & Mcgrath, B. (1998). *Cheerios counting book*. New York, NY: Cartwheel.
- Stone, J. (1990). *Hands on math*. Glenview: Good Year Books.

Web Resources

<http://www.funbrain.com/parents/index.html>

Play to learn! An interactive site with educational games for students.

<http://www.mathplayground.com>

Math playground is an action packed site for students in grades k-6. Practice math skills, play logic games, and have fun!

<http://nlvm.usu.edu/en/nav/vlibrary.html>

The national library of virtual manipulatives from Utah State University for grades K-12. A great site for students to practice math concepts using virtual manipulatives.

Edible Math

Hands on Math Strategies

★ Primary ★

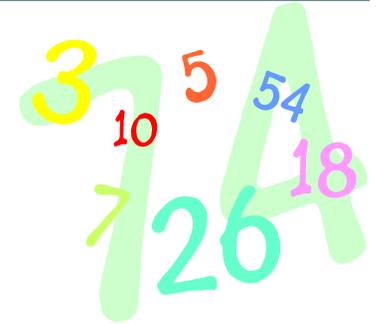


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Learning Check List

Child's Name _____



I can...

- Subtract numbers from 1-10.
- Write numbers from 1-10.
- Match shapes.
- Measure an object.
- Add and subtract numbers from 1- 10 using an abacus.
- Sort and graph objects.
- Count numbers to 10.
- Identify shapes.



				
1				
2				
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8				
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10				



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**To be used with Trail Mix Sort page 8.*

Trail Mix Sorting Mat



**To be used with Tangerine Count page 12.*

Tangerine Count 

peels	seeds

Edible Math

Primary

**Hands-on
Math Strategies**



PS/RtI

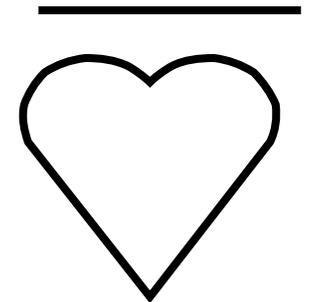
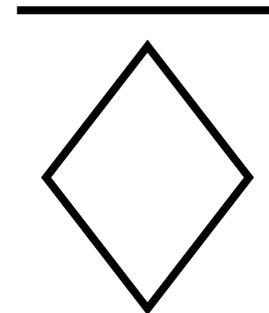
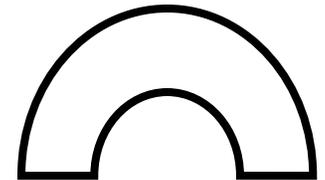
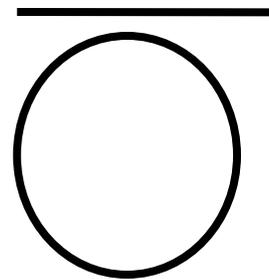
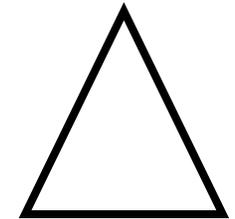
**To be used with Shape House page 10.*

The lesson plans presented in this booklet represent lessons that occur at the concrete, representational and show the abstract level in mathematics.



Shapes I used in my

Directions: Color and count each shape you used in your house



Special thanks to:
Marcey Kinney, University of Central Florida
for creation of the lesson plan activities.

ATTACHMENTS

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Dear Parent/Guardian/Educator,

RtI Teaching Learning Connections, a project funded by the Bureau of Exceptional Education and Student Services, Florida Department of Education—would like to welcome you to *Edible Math*. This presentation was designed as a tool to assist you in reinforcing mathematics concepts at home and in school using food. Research has shown that in order to reach the necessary level of abstract thinking in mathematics, students must start at the concrete level and gradually move through the representational level (Miller & Mercer, 1997, 1993). The activities presented in this workshop represent lessons that occur at the concrete and representational level in mathematics to foster important math skills for all children.

We recognize that parents are the first teacher(s) in the life of a child, and we hope that you will take these activities and expand on them to create rich, meaningful mathematic learning experiences for your children.

Sincerely,

RtITLC



Lesson Plan Title: Tangerine Seed and Peel Counting

Sunshine State Standards Addressed/NCTM:

(MA.K.A.1.1): Represent quantity with numbers up to 20, verbally, in writing, and with manipulatives.

NCTM: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Concept to Teach: Rational Counting

Required Materials:

Small Zip-lock bags

Pens

Seed/peel chart (individual and/or wall)

Marker

Post-it notes

Step-By-Step Procedures:

1. Have students peel their tangerines. Ask students if they want to count their seeds and peels.
2. They can write the numbers on their post-it notes and their log (provide assistance if needed).
3. Allow students to place their number on the wall chart.
4. Students can place peels and seeds in bags to take home and share with their family.



*Lesson Plan Title: Noodle Necklaces***Sunshine State Standards Addressed/NCTM:**

(MA.K.A.1.1): Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives.

NCTM: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Concept to Teach: Children count to a number he/she has mastered.

Required Materials:

Uncooked rigatoni

Paper cups

Water

Food coloring

Plastic spoons

Paper towels

Yarn

Small tags saying, "I counted to ___"

Step-By-Step Procedures:

1. Fill paper cups about half way with water ; add food coloring.
2. Let children place 3-4 pieces in water and stir.
3. Remove and dry on paper towel over night.
4. Assign a number to each child and allow them to string that many rigatoni on their necklace.
5. Add the tag stating the number they counted to.
6. Children can wear their necklaces.

Stone, J. (1990). *Hands on math*. Glennview: Good Year Books.

LESSON PLANS

*Lesson Plan Title: Animal Subtraction***Sunshine State Standards Addressed/NCTM:**

(MA.1.A.1.4): Use counting strategies, number patterns, and models as a means for solving basic addition and subtraction fact problems.

NCTM: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Concept to Teach: Children understand that separating sets results in smaller sets. They also see the meaning of an empty set.

Required Materials:

- 10 Stuffed Animals
- Animal crackers

Step-By-Step Procedures:

1. Arrange stuffed animals on a table and explain to the children that this is your pet shop.
2. Allow students to pretend to buy a pet and take it to their seat.
3. Each time they buy a pet, announce that 10 animals minus 1 equals nine animals. Proceed until all animals have been purchased.
4. Give each child 5-10 animal crackers to have their own pet shop. Have them buy/eat the crackers until their pet shop is empty.

Stone, J. (1990). *Hands on math*. Glennview: Good Year Books.

*Lesson Plan Title: Shape House***Sunshine State Standards Addressed/NCTM:**

(MA.K.G.2.2): Identify, name, describe and sort basic two-dimensional shapes such as squares, triangles, circles, rectangles, hexagons, and trapezoids.

(MA.K.G.2.3): Identify, name, describe, and sort three-dimensional shapes such as spheres, cubes, and cylinders.

NCTM: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

Concept to Teach: Students will create a house using different shaped food.

Required Materials:

- Graham crackers
- Vanilla wafers
- Triangular shaped crackers
- Any other food, candy, or cereal that represents a specific shape.
- Vanilla icing
- Popsicle sticks
- Shape identifying paper (see attachment Graham Cracker House)

Step-By-Step Procedures:

1. Allow children to create a house using the different foods.
2. Children will circle or color the shapes they used in their house.



*Lesson Plan Title: Stringing Number Sets***Sunshine State Standards Addressed/NCTM:**

(MA.K.A.1.1): Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives.

NCTM: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Concept to Teach: Students will count and sort cereal to show understanding of number values.

Required Materials:

- Construction paper
- Cheerios or Fruit Loops
- Yarn
- Tape

Step-By-Step Procedures:

1. On a piece of construction paper, write three-four numbers that the children recognize.
2. Tape a piece of string next to each number.
3. Have the children string the same number of cereal pieces.
4. Tape the other end of the string to the paper to hold the cereal in place.

*Lesson Plan Title: Sweet Numerals***Sunshine State Standards Addressed/NCTM:**

(MA.K.A.1.1): Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives.

NCTM: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Concept to Teach: Children practice forming numbers.

Required Materials:

- Chocolate Syrup
- Finger paint paper

Step-By-Step Procedures:

1. Pour syrup onto paper.
2. Allow children to draw numbers in the syrup.

*The syrup will not dry out or soak into the paper, therefore, the child can erase and write again.



*Lesson Plan Title: Noodle Shape***Sunshine State Standards Addressed/NCTM:**

(MA.K.G.2.2): Identify, name, describe and sort basic two-dimensional shapes such as squares, triangles, circles, rectangles, hexagons, and trapezoids.

(MA.K.G.2.3): Identify, name, describe, and sort three-dimensional shapes such as spheres, cubes, and cylinders.

NCTM: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

Concept to Teach: Students will match noodles to their appropriate shape on a pre-made mat.

Required Materials:

Assorted uncooked pasta
Plain paper

Step-By-Step Procedures:

1. Trace noodle shapes onto piece of paper.
2. Allow children to sort shapes and place them on their paper in the proper shape.
3. The sorting sheet can be laminated for reuse.

*Lesson Plan Title: Trail Mix Sort***Sunshine State Standards Addressed/NCTM:**

(MA.1.A.1.4): Use counting strategies, number patterns, and models as a means for solving basic addition.

NCTM: Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

Concept to Teach: Students will sort trail mix and then count and apply it to a graph.

Required Materials:

Marshmallows
Peanuts
Cheerios
Chex
Zip-lock baggies

Step-By-Step Procedures:

1. Create a mixture for each student that contains no more than 10 of each ingredient.
2. Have children sort their mixture using the sorting mats (see trail mix attachments pg. 16-17).
3. After sorting, place the items in the appropriate squares on the trail mix graph).



*Lesson Plan Title: Cheerios Abacus***Sunshine State Standards Addressed/NCTM:**

(MA.K.A.1.1): Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives.

Concept to Teach: Children learn that tools can be used for math. They also learn how to separate and join sets.

Required Materials:

- 1 long pipe cleaner for each child
- 1 Styrofoam bowl for each child
- 10 cheerios or fruit loops for each child
- Index cards with addition or subtraction equations for the children to solve

Step-By-Step Procedures:

1. Give each child a pipe cleaner and a bowl.
2. Turn the bowl upside down and have children stand the pipe cleaner to one side of the bowl.
3. Have children thread 10 cereal rings onto pipe cleaner.
4. Bend pipe cleaner to form an arc and stick other end into the bowl.
5. Show children how to work a problem.

Example: $5-3=2$. Place 5 rings at the front of the cube. Push 3 rings to the back of the cube. 2 rings are left.

Stone, J. (1990). *Hands on math*. Glennview: Good Year Books.

*Lesson Plan Title: Noodle Measure***Sunshine State Standards Addresses/NCTM:**

(MA.K.G.3.1): Compare and order objects indirectly or directly using measurable attributes such as length, height, and weight.

NCTM: Understand measurable attributes of objects and the units, systems, and processes of measurement.

Concept to Teach: An understanding of what measurement is and that all objects can be measured.

Required Materials:

- Two or three boxes of lasagna noodles
- Markers
- A very large piece of paper.

Step-By-Step Procedures:

1. Have child lie on the paper and make an outline of their body.
2. Show them how to use a lasagna noodle to measure how long they are.
3. Create a wall chart showing how many noodles tall everyone is.

Extension: If you dip about 1 inch of the noodle in hot water, they make great paint brushes to paint their body maps!

Green, M. D. (1995). *Teaching from cupboards & closets*.

