Early Math Project

Early Math Symposium
June 24th, 2022

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- Meet the Team
- Book Guides
    - *Double The Ducks* by Stuart J. Murphy
    - *Cook It!* by Georgie Birkett
    - *The Shape Song Swingalong* by Stevesongs
- More Resources

Math and Literature Connection

- Helps children learn math concepts by providing context
- Reduces Math Anxiety
- Helps children learn math-related vocabulary
- Provides access to grade-level mathematics
- Leads to rich math discussions among students
- Provides an engaging introduction to new math content
- Provides greater access to mathematics for students who enjoy literature and reading
- Shows children how math is used in a variety of situations

https://www.earlymathca.org/the-math-and-literature-connection

Book Guides

FINDING THE MATH: BOOK GUIDE

Stack the Cats

How would you stack the cats?

Topics: comparison, counting, balancing, sorting, mathematical reasoning, stacking, subtraction, addition, measurement

AUTHOR:
Susie Ghahremani

Three cats stack. Four cats teeter and five cats totter. Count and compare cats of different shapes and sizes in this book full of feline fun.

Ages: 2 to 5 years

ATOS Reading Level: N/A

Lexile: N/A

ISBN: 9781419727061

Copyright: 2017

Activities To Do Together:

As you read the book *Stack the Cats* with your child:

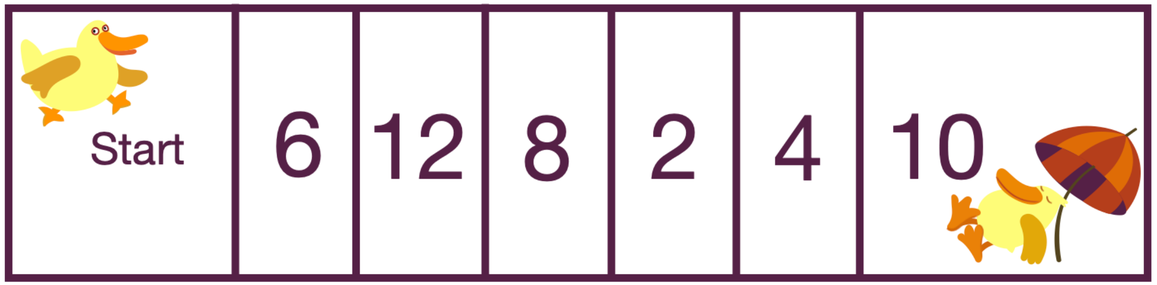
- Notice the different types of cats in the story. Talk about their differences and similarities. Ask your child to describe the cats or point out the colors, sizes, and positions of the cats to your child.
- Count the cats. Notice that two stacks of three cats makes a total of six cats.
- The eight cats tried to stack, but they tumbled. Ask your child how they would arrange the eight cats so they wouldn't fall down.
- Ten cats are just too many! Count how many cats remain once one cat falls asleep. Count how many cats remain after two cats climb up and away.

When you are done reading *Stack the Cats*:

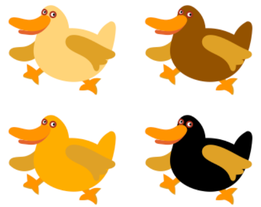
- Explore how many different ways you can stack five different objects.

Activities

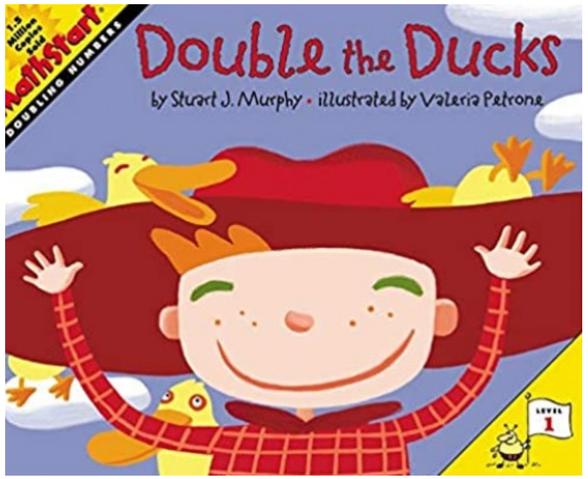
Double Time Duck Nap



Game Pieces

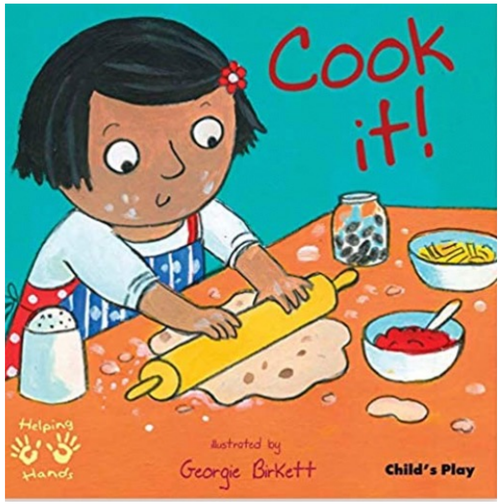


Discovering the Math: Book Guide



Double The Ducks

by Stuart J. Murphy



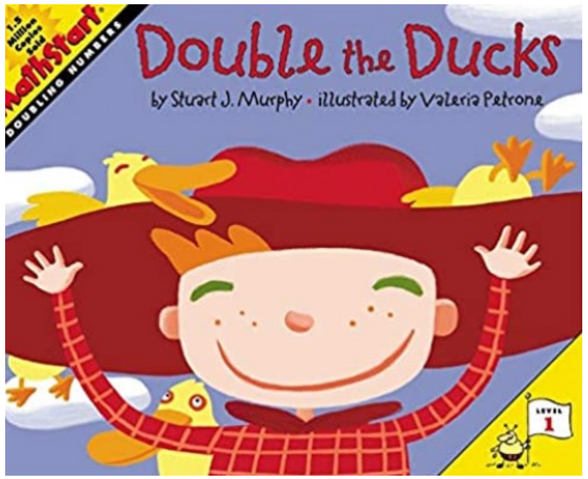
Cook It!

by Georgie Birkett

The Shape Song Swingalong

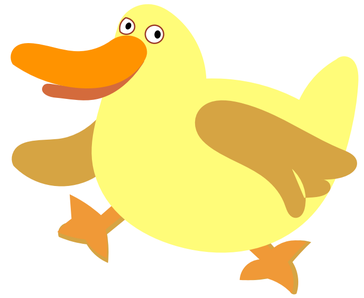
by Stevesongs

Activities To Do Together

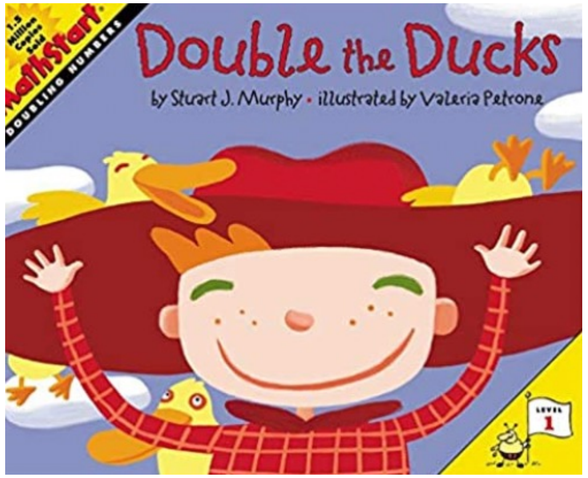


Before:

- Look at the book cover together and read the title of the story. Ask your child what they think will happen in this story.
- Talk about what it means to double something.



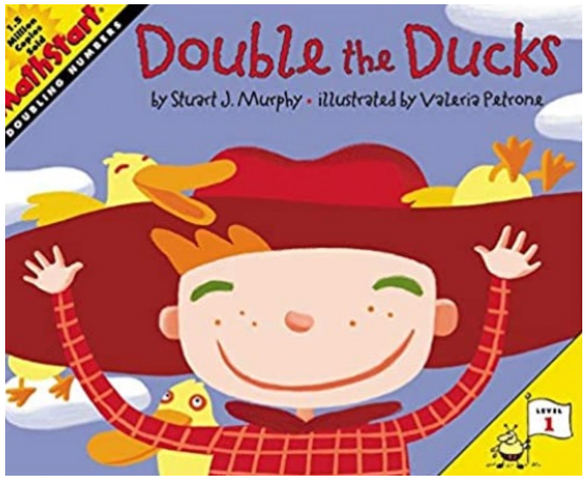
Activities To Do Together



As you read:

- Count the ducks.
- Describe what the ducks are doing and where they are located using words like “on,” “beside,” “behind,” and “under.”
- Point out how the numbers are written as numerals and spelled as words.

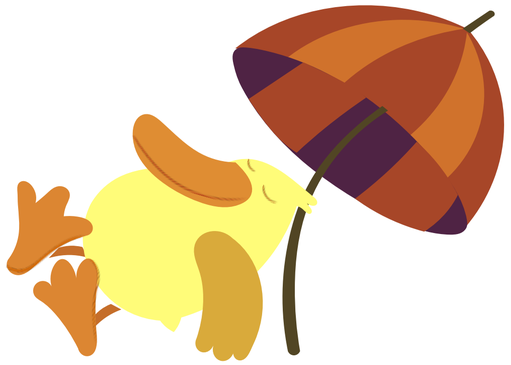
Activities To Do Together



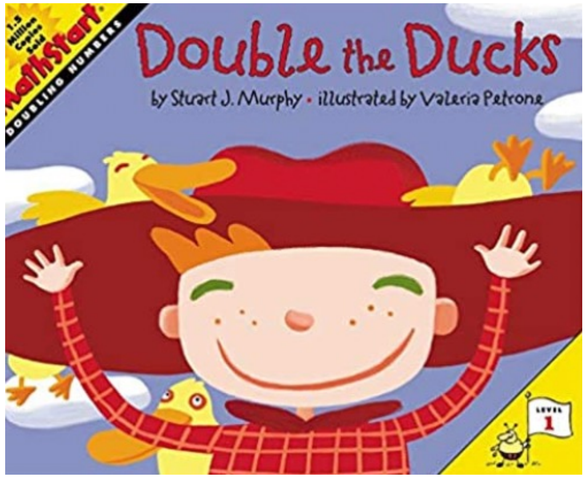
When You Are Done:

Finger Doubling Game

- Ask your child to hold up any number of fingers from one to ten.
- Follow along by holding up the same number of fingers your child is showing.



Activities To Do Together

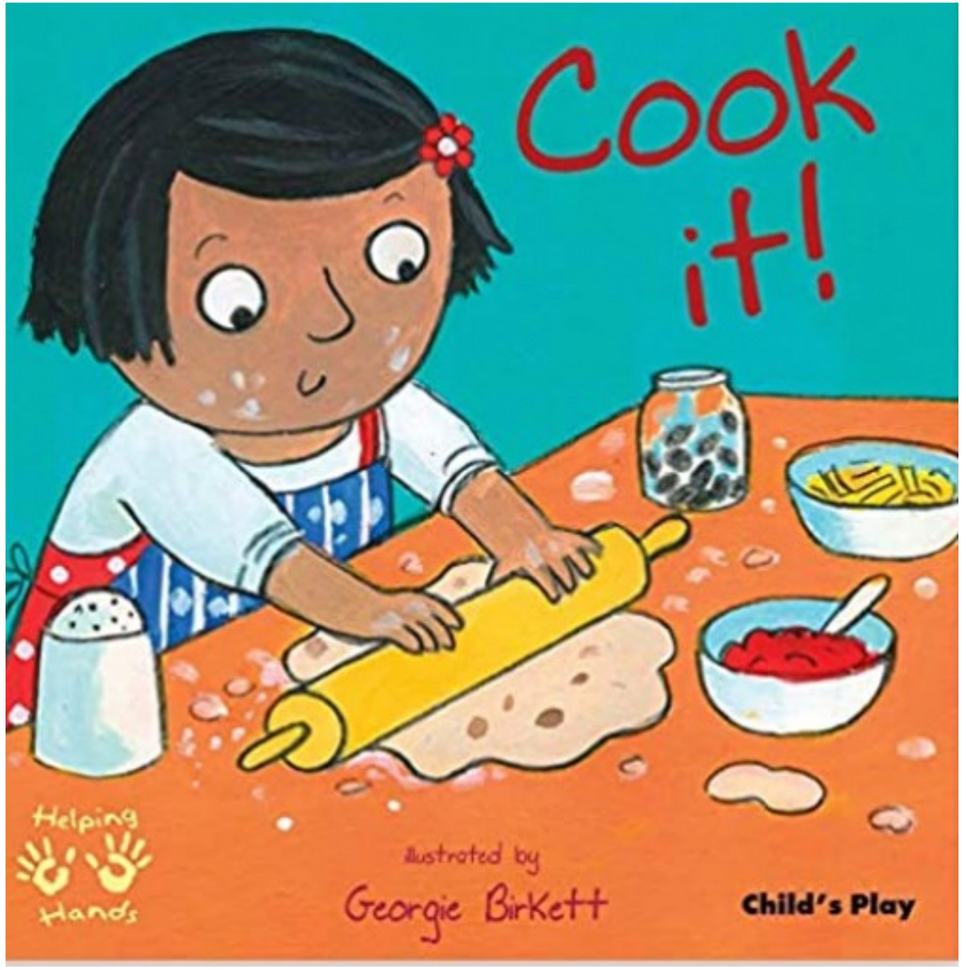


When You Are Done:

Mirror Images

- Use a mirror to explore doubling.
- Collect a small group of objects to place in front of the mirror.
- Count the objects and their reflections in the mirror.

Cook It! Read Aloud



Extension Conversations During Daily Routines with Infants and Toddlers

Snack Time

Make a snack pattern with your child - start with an AB pattern.

Extension Conversations During Daily Routines with Infants and Toddlers

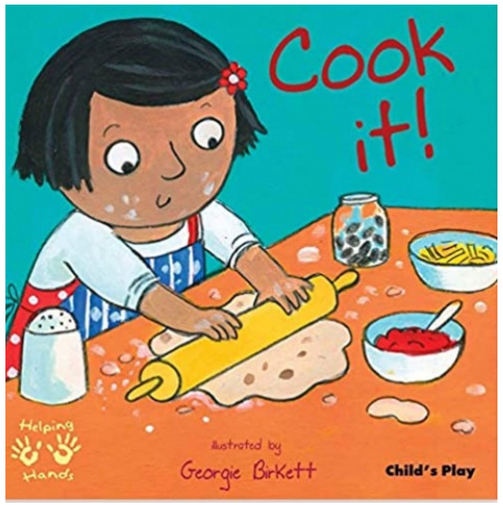
Clean Up Time

Talk about which container is the best fit for your leftovers. Which containers are too small? Which containers are too large?

Questions for Mathematical Thinking

- What would you do if you ran out of a needed ingredient while cooking a recipe?
- How else can you measure flour if you do not have a scale?
- If you made a pizza, what shape would it be?

Vocabulary for Building Math Concepts:



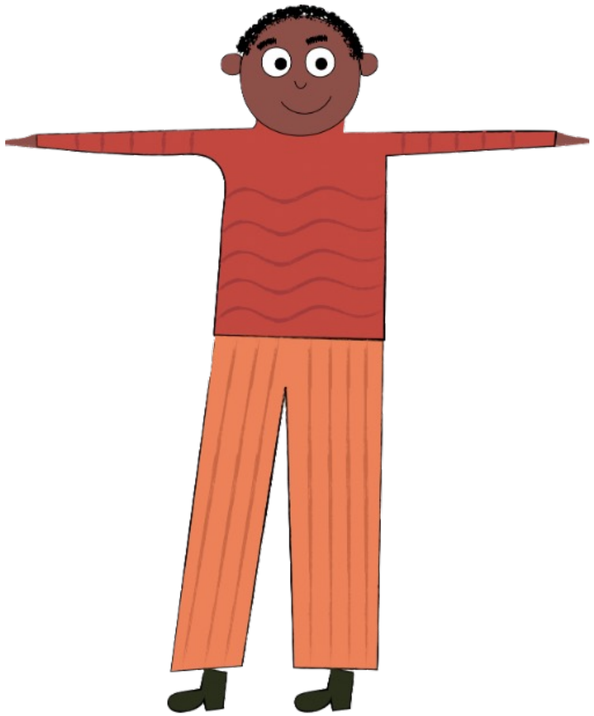
enough	far
heavy	long
lots	more
nearly	shape

The Shape Song Swingalong by SteveSongs

https://www.youtube.com/watch?v=Umu58RxNL7I

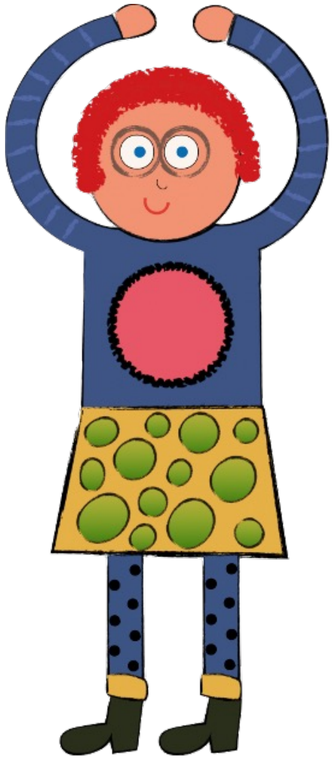
Early Math Project Resources

Shape Song Stretch Break



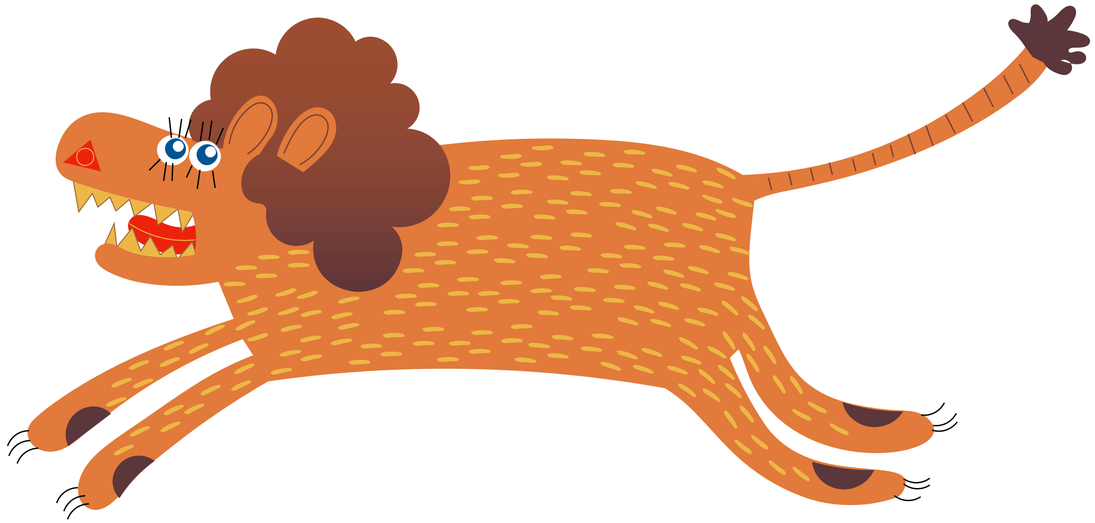
Early Math Project Resources

Shape Song Build a Shape



Early Math Project Resources

Shape Song Make This Shape



www.earlymathca.org

DISCOVERING THE MATH: BOOK GUIDE

The Shape Song Swingalong

What can you make with a line, circle, square, and triangle?

Topics: classification, counting, geometry, shapes, transformations

AUTHOR:
Steve Songs

Sing along with *The Shape Song Swingalong* and explore everything that can be created with a line, circle, square, and triangle.

Ages: 3 to 7 years

ATOS Reading Level:
N/A

Lexile: N/A

ISBN: 9781846866791

Copyright: 2011

Activities To Do Together:

Before you read the book *The Shape Song Swingalong* with your child:

- Ask your child to tell you which shape they think is most interesting and why.
- Ask your child to tell you about the shapes they are familiar with and where they see those shapes.

While you read *The Shape Song Swingalong* with your child:

- Ask your child to pick one illustration from the story and tell you about the shapes they see.

When you are done reading *The Shape Song Swingalong*:

- Create a Shape Song Swingalong Dance! Teach it to someone.
- Make up a song about different shapes. Make a song about rectangles, pentagons, and/or hexagons. What other shapes can you write a song about?
- Use combinations of different shapes to make a collage of boats, skyscrapers, sand castles, animals or anything else that captures your imagination.
- Draw something using lines, circles, triangles, and squares.
- Choose a picture in the story - the owl, lion, boat, or any image that interests your child. Ask your child to tell you about how lines, circles, squares, and triangles were combined in the illustration.

Early Math Project

EARLY MATH PROJECT LITERATURE REVIEW

Cook It!

What is your favorite pizza topping?

Topics: order, comparison, sorting, counting, measurement, shapes, time, problem solving

AUTHOR:
Georgie Birkett

Cook It! takes you on a cooking adventure where ingredients are weighed, mixed, and chopped in the kitchen.

Ages: 0 to 5 years

ATOS Reading Level:
Not Available

Lexile: Not Available

ISBN: 9781846432842

Copyright: 2010

Activities To Do Together:

Use the book *Cook It!* to explore math in the kitchen. Encourage your child to become a chef along side you.

While reading the book ask your child:

- To count the number of vegetables pictured on the cookbook in the story. Then compare the vegetables, what colors are they? What shapes are they? Compare the sizes of the different vegetables. How are they different than the vegetables you have seen? How are they the same?
- To predict what the girl and her father are going to make for dinner. Was your prediction correct?
- How many vegetables does the little girl draw? How many items do you think they will need to get at the store?
- To point out which vegetable is the largest on the store's shelf. Which vegetable is the smallest? How many bell peppers are on the shelf?
- What else do you think weighs as much as the flour? What may weigh more?
- To point out the many vibrant colors they see in the illustrations.

When you have finished reading the story try the following:

- Make a snack together. Arrange the snack in a pattern. For example, if you are having strawberries and crackers, lay them out on the plate as follows; strawberry, cracker, strawberry, cracker…
- Look through a cookbook together and find a new recipe to make. Gather the needed ingredients and follow the directions.
- Estimate how long it takes to cook your favorite food. Cook it and time how long it takes. Was your estimate close?
- Make a grocery list together. If your child is not yet writing ask them to draw the items needed. If the quantity needed is more than one, include that in the drawing.
- Talk about the value of coins and dollar bills. Point out what each is worth.
- Talk about the steps involved in cooking. Use ordinal words to describe what you do in the kitchen. For example, **first**, we will pick out what to make, **second**, we will read the ingredients list.

Early Math Project

DISCOVERING THE MATH: BOOK GUIDE

Double the Ducks

How would you take care of a duck?

Topics: counting, doubling, mathematical reasoning, addition, multiplication

AUTHOR:
Stuart J. Murphy

Taking care of five ducks is a lot of work. When five ducks are joined by five friends, it's twice the work.

Ages: 2 to 5 years

ATOS Reading Level:
2.2

Lexile: N/A

ISBN: 9780064462495

Copyright: 2002

Activities To Do Together:

Before you read the book *Double the Ducks* with your child:

- Look at the book cover together and read the title of the story. Ask your child what they think will happen in this story.
- Talk about what it means to double something.

As you read *Double the Ducks* with your child:

- Count the ducks.
- Describe what the ducks are doing and where they are located using words like "on," "beside," "behind," and "under."
- Point out how the numbers are written as numerals and spelled as words.

When you are done reading *Double the Ducks*:

- Talk about the boy's daily routine caring for his ducks. What does he do first, second, next?
- Encourage your child to lead a finger doubling game by holding up any number of fingers from one to ten. Follow along by holding up the same number of fingers your child is showing. For example, if your child holds up four fingers, you will also hold up four fingers. Ask your child to count the total fingers shown and tell you the doubled amount of fingers.
- Use a mirror to explore doubling. Collect a small group of objects. Place them in front of a mirror. Count the objects and their reflections in the mirror to figure out how many you would have if the objects were doubled.
- Use two dice to practice doubling. Roll one of the dice. Ask, "What is double that number?" To find out, arrange the other dice to show the same number as on the first dice. Count the spots on both dice to find the doubled number.
- Place a collection of pennies in a bag. Remove some pennies. Count them. Then remove enough additional pennies from the bag to have double the original amount taken from the bag. How many total did you remove from the bag?

Early Math Project

Activities for children birth through Grade 3 - www.earlymathca.org

Pizza Art

Goal: Explore shapes, counting, and measuring while making a pizza collage.

You will need:

- Scissors
- Construction paper
- Crayons, markers, etc.
- Tape or glue

What to do:

- Cut paper to represent your pizza dough. What shape will you cut?
- Choose the toppings that you want to include on your pizza art. Cut them out of paper. Have fun drawing and coloring them too!
- Assemble your pizza by glueing your ingredients to your paper dough.

To think about:

- What is the width or diameter of your pizza?
- How do the sizes of your toppings compare? Which topping is the largest? Which topping is the longest?
- How many hands long is your pizza?
- How many layers does your pizza have?
- Could you make your pizza with real ingredients?

Early Math Project

Inspired by *Cook It!* by Georgie Birkett

Simon Says "Shape Up!"

This is a game for three or more people.

Goal: Have fun making shapes using your body.

You will need:

- Space to move around

How to play:

- Designate one person as Simon. The others are the players.
- Simon: Stands in front of the other players and challenges them to make different shapes with their bodies.
- Players: Follow only the directions that begin with the words "Simon says." For example, if Simon says "Simon says make a circle," a player might connect their thumb and index finger to make a circle and another player might round their arms over their head to make a circle.
- Players that perform directions that do not begin with the words "Simon says" should sit out until the next round of the game.
- Simon: Continues giving directions until only one player remains. That one player is the new Simon and the game begins again.

To think about:

- Rather than having players make shapes with their bodies, draw shapes out on the ground using chalk or masking tape. Challenge players to run, skip, hop on one leg, crab-walk, etc. to each shape called out by Simon.
- If there is more than one player, challenge them to make shapes with all of their bodies together. For example, players may join hands and stand together in an oval formation. Players may also arrange their feet together to make a star.

Early Math Project

Inspired by *The Shape Song Swingalong* by Steve Songs

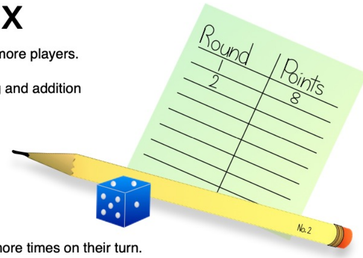
Thirty-Six

This is a game for two or more players.

Goal: To practice doubling and addition

You will need:

- A partner or partners
- A dice
- Paper
- Pencil



The Rules:

- Players can roll one or more times on their turn.
- When a dice is rolled, the player doubles the number shown and announces the number out loud.
- If a player decides to roll more than one time on their turn, they double each number rolled and add this to their total for the round. At the end of the turn, the player writes their score from the round on a piece of paper.
- If a player rolls the number one, their turn is over.
- If a player rolls the number six they lose the points from their current round, but not the points earned from any of their prior rounds, and their turn is over.

What to Do:

- Identify the youngest player. The youngest player goes first.
- Follow the rules of the game above.
- Keep track of the score you earn each round by writing it on a piece of paper.
- The first player with a total of 36 wins the game.

To think about:

Do you think it is important to write down the score you earn each round so it's separate from the scores you earned in prior rounds ? Why or why not?

Early Math Project

Inspired by *Double the Ducks* by Stuart J. Murphy

Thanks for joining us today!

Connect with us:

earlymathca.org