

# Make Math Part of Your Child's Life Every Day

It is easy to show your child beginning math concepts wherever you are. At home, at the grocery store, or almost anywhere else that you go, there are objects to count, measure, and estimate.

You can introduce math skills as a part of other activities:

## **Cooking**

- Divide and count out portions
- Measure ingredients
- Divide pizzas and pies

## **Doing household chores**

- Count buttons on clothes
- Pair up shoes and socks
- Set the table

## **Outside**

- Count the steps it takes to walk to the car, or to the corner
- Count the legs on bugs or petals on flowers

**Music** - Sing counting songs

## **Reading & Talking**

- Recite counting rhymes
- Read counting stories
- Count things on the pages of books that you read

You give your child the best learning experiences through actions. Young children learn things easier when the learning involves doing. Just telling a three year old, that 1 and 1 make 2, will mean little to them. But give them one toy and then another, then count them and touch them, makes real learning happen.

Look for opportunities around you where your children can see number concepts in concrete ways.

Here are some math activities that you can do at home with your child.

### **KITCHEN MATH**

- Have your child help by placing a napkin for each person on the table.
- Ask your child if they want their sandwich cut into two rectangles, four squares or two triangles.
- Let your child help you by measuring out one cup of milk or by bringing you two eggs.

### **BATH TUB MATH**

- Give your child a set of plastic measuring cups and have her discover how many  $\frac{1}{2}$  or  $\frac{1}{4}$  cups it takes to fill up 1 cup.

### **CAR MATH**

Children are often bored while riding in the car. Use this time to play simple math games.

- Count with your child the number of red trucks you see.
- Count how many seconds pass until the light turns green.

### **GROCERY STORE MATH**

The grocery store is filled with ways to learn math. When you have time, let your child help you

- Weigh fruits and vegetables.
- Pick out three red apples.
- Locate the larger or smaller size of a product, like boxes of cereal or cans of tomatoes.
- Estimate how many bags your groceries will be put into.

### **PLAY TIME MATH**

One of the best times to teach your child math skills is during their normal play times.

- Play with blocks, and see how many they can stack up, counting the blocks as they go, before the stack falls down.
- When putting toys away, have your child pick up a certain number of toys, like six toys. Have her count as she picks up and puts each toy away.

Adapted by Ellin Klor from *Preschool Math* by Jean Warren

# Family Math Games and Ideas

Items marked with an **asterisk** \* are included in your family math kit.

## Learning To Count

- Practice anywhere, in the house, outside, or in the car.
- Start with a few numbers, and add more when your child can remember those.
- When they lose interest, stop. Don't force them- keep it a game.

Things to count-

### - **Poker chips\***

- Sort by color. Count how many there are of each color.

- Then count all the chips.

### - Pennies

- Grab a handful. Guess how many there are. Count them out. Did you guess the right number?

- Buttons on your dress

- Stripes on your shirt

- Foods as you eat them- olives, carrot sticks, chips, anything!

- Windows, doorknobs or beds in your house



## **Poker Chip\* Game**

*Set-up*

1. You need 3 colors of poker chips and dice.

2. One color of chip is worth 1 point, a second color is worth 10 points and the third color is worth 100 points.

*Playing the Game*

1. Roll the dice. The number you roll is the number of chips you earn. You earn 1 point chips.

2. When you have 10 chips, you can trade them for a ten-point chip.

3. The goal is to trade in 10 ten-point chips for a 100-point chip to win.

4. If your child gets frustrated, quit the game when they are ahead.

- When playing this game you can model early addition skills. If you roll a 12, then at first you would count out 12 chips and then trade 10 of them, but eventually you should model taking a 10-point chip and two 1-point chips. (adapted from *Top Score-Triangle Test Prep blog, December 21, 2012*)



## **Dice\* Counting Games**

### **Number “Sign” Game**

#### *Set-up*

Make number signs by writing each number 1 to 6 on an index card and tape each card to a popsicle stick. These are your “signs.”

One or two dice

#### *Playing the Game*

1. Roll the dice
2. Count the number of dots on the dice.
3. Have the child hold up the sign that has that numeral on it.

#### *Variation*

- Make the game more challenging by rolling two dice and using number signs from 2 to 12. Encourage your child to add the number of dots rather than count them. “This dice has two dots and this dice has 5 dots. Two added to five equals ...”

### **Roll and Count**

#### *Set-up*

You need a bowl of dry breakfast cereal (Cheerios, Rice Krispies, any type) or crackers (Goldfish crackers are good.)

One dice

#### *Playing the Game*

1. Roll the dice.
2. Count the dots that come up. Say (for example) “ You got a five.” “You won five pieces of cereal.”
3. Count out five pieces.
4. Take turns rolling the dice and counting out cereal pieces.
5. Play until you empty the bowl or your child is bored. Count up how many each person has.

### **Simple Dice Game:**

#### *Set-up*

Use 1-2 dice for this game. Also have a pencil and piece of paper for keeping score.

#### *Playing the Game*

1. Choose a number and roll the dice. You score a point every time you roll that number. When you roll that number, you get another turn. When that number is not rolled, your turn is over.
2. Make a tally mark on your paper for each time you roll the number.

3. First one to a score of 10 points wins! (You can set the point total lower for young children and higher for older ages.)

### **A Different Roll and Count Dice\* Game**

#### *Set-up*

1. You will need dice, small items to count (20 for each player), small bowls or cups
2. Place a bowl for each child next to the playing space, as well as a die.
3. Give each child 20 small items for counting. (Use the **pasta shapes\*** from your math kit, pennies, beans, paper clips, etc.)

#### *How to Play*

The object of the game is to be the first person to get all your items in your bowl.

1. The first player rolls one dice and places that many of his/her items in the bowl.
2. Then the second player does the same thing.
3. Play continues back and forth until one person gets all of his/her items in the bowl!

#### *Variations*

– Children can also play this game independently.

### **Add-It Dice\* Game (Advanced)**

\*\*You can also play this game with a younger child if you help them count the number that they roll on each turn and you do the addition for them. Doing the addition out loud models for your child how addition is done. "Last turn you rolled a 9. This turn you rolled a 6. 9 plus 6 equals 15."

#### *Set-up*

You need 2 dice and paper and pencil.

#### *Playing the Game*

1. Each player starts with two dice and takes turns rolling.
2. Write down the sum of each roll -- for example, if Player 1 rolls a two and a five on her first turn, write "seven" on the first line.
3. Add up the results of each turn as you play -- if Player 1 rolls a four and a five on her second turn, write "nine" on the second line, and then add the two sums together and write "16" to the right of the dice sum.
4. Keep adding sums from each turn, practicing both one- and two-digit addition skills, until someone reaches 50 to win! For advanced players, you can use a larger winning number.



## Playing Card\* Math Games

### Put in Order

Use your cards to practice counting and ordering numbers correctly.

- Younger kids start with just a few to put in order at a time.

- Older kids can time themselves to see how fast they can put a larger group into numerical order.

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### Go Fish

#### *Set-up*

1. Have a set of playing cards and a paper and pencil to keep score.
2. Deal 5 cards to each player (a group of 2, 3 or 4 people). The remaining cards are spread out face down in a pile between the players. Players hold their cards so that only they are able to see them.

#### *Playing the game*

1. To start the game, all players put any pairs (2 cards of the same kind) that they have down and earn a point for each pair.
2. Start with the youngest player and moving clockwise, the player asks an opponent, "Do you have a \_\_\_\_" The card requested should be one the player has in their hand.
3. If the opponent has the card, they must give it to the person who asked, and that player earns a point for making a match. If the opponent does not have the card they say "Go Fish!"
4. The player must then pick a single card from the face down pile of cards. If they make a pair, they place it down and earn a point.
5. Continue taking turns around the circle.
6. If a player runs out of cards, they pick five from the pile of cards.
7. The game is won one of two ways (you choose how you wish to play):
  - by the person with the most points when all the cards are gone
  - by the person who gets 10 points first

## **War**

This game involves comparing number values and helps children develop number sense; preparing them for success with addition and subtraction.

### *The Object of the Game*

For 2 players. The player who captures all the cards wins.

### *Set-up*

1. Use a deck of playing cards without the Jokers
2. Shuffle the cards.
3. Deal the cards between the two players.
4. Players place their cards in a stack face down and do not look at them.

### *Playing the Game*

1. Players turn over the top card of their deck. Cards rank from 2 (lowest) to 10, Jack, Queen, King, Ace (highest).
2. Whoever turned over the higher valued card "captures" the opponent's card and adds both cards face down to the bottom of their deck.
3. Both players turn over the next card and play continues.
4. If both players present cards of equal value, they both lay down four cards. The first three cards are placed face down while the fourth is placed face up. The player whose fourth card is the highest captures all ten cards. If the fourth cards are equal the process is repeated until someone wins.

### *Winning the Game*

The player that captures all the cards is the winner.

### *Variation*

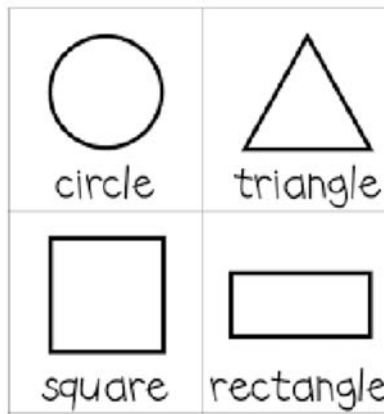
To shorten the length of play some people choose to end the game after three battles are won. This may be the option to use when playing with young players.

## **Hi Low**

Older children who are beginning to add and subtract numbers can play a variation of War called Hi Low.

1. Instead of turning over 1 card, each player turns over 2 and adds them (or subtracts them).
2. The player with the higher answer wins the round.

# Learning Shapes



## Simple Shape Activities Playing Card\* Shapes

1. Sort the diamond and heart cards out from your deck of cards.
2. Find the cards from 1 (Ace) to 10 and arrange them in numerical order for each shape
3. Together, count the diamonds or hearts on each playing card.

## Make Shapes with Grapes

### Set-up

You will need grapes and toothpicks

### Activity

1. Make a simple shape like a triangle using the grapes and toothpicks.
2. Then try other shapes like squares, pentagons and cubes.
3. Once kids understand what to do, let them engineer their own structures.  
*(adapted from Coffeecupsandcrayons.com, July 16, 2015)*

## Learn about Shapes Using Paper Plates and Yarn (or String)

### Set-up

You will need: Paper plates, a pencil, scissors, yarn or string. (Optional) paint, markers or crayons.

### Activity

1. If you want to, paint or color your plates before you start
2. Draw and cut out a single shape (circle, star, heart, rectangle or square) in the center of each of the paper plate.
3. Wrap the paper plate with colored yarn or string. Tie the end of the yarn securely around the paper plate. Use a piece of yarn about 2 yards, not a whole ball.
4. Help your child pass the yarn through the shape and wrap it around the shape frame. The strands of yarn will naturally fall into the points and properties of each shape. You can talk about what shapes have edges, which do not, and which shapes have points.

*(adapted from Laughingkidslearn.com, April 2, 2016)*





## **Snack Shapes**

Be sure to point out the shapes of the foods when you serve them.

### **Sandwiches**

1. Make sandwiches on bread, pita or tortillas with a soft filling, such as peanut butter, cream cheese, or tuna, and cut them into familiar shapes.
2. Use a round cookie cutter to make circles. Use a knife to make squares, triangles, and rectangles.

### **Circle shaped snacks**

1. Serve banana or carrot slices
2. Round cookies

### **Rectangle shaped snacks**

1. Rectangular graham crackers spread with fruit-sweetened cream cheese.
2. Cut carrots into rectangular sticks to eat with a favorite dip.

### **Triangle shaped snacks**

1. Cut cinnamon toast diagonally to make two large triangles or four small triangles.
2. Serve triangular crackers with cheese slices or luncheon meats cut into matching triangle shapes. (*adapted from Preschool Express by Jean Warren*)

## **Shape Concentration**

### *Making Game Cards*

Use 3"x5" index cards to make your concentration cards. On one side only, either draw the same shape on two cards (to make a pair to match) with markers, or use sticker shapes.

Possible shapes are: Circle, Triangle, Rectangle, Diamond, Square, Star, Heart, Oval

\*\*For older children, the game can be more complicated if you make pairs that have two or more of the same shape on them- two stars, four circles.

### *Playing Shape Concentration*

1. Shuffle 3 pairs. Lay them out face down. (You can add more pairs as your child has more practice playing the game.)
2. The first player turns 2 cards face up. If the cards match, the player keeps the pair and takes another turn.
3. If the pair doesn't match, the player turns the cards face down, and the next person plays.
4. Play until all the matches are made. The person with the most pairs "wins."

# Matching Games

Matching means “These things are the same” or “These things are different.” Equal or not equal is an important basic math concept.

## Dominoes\*

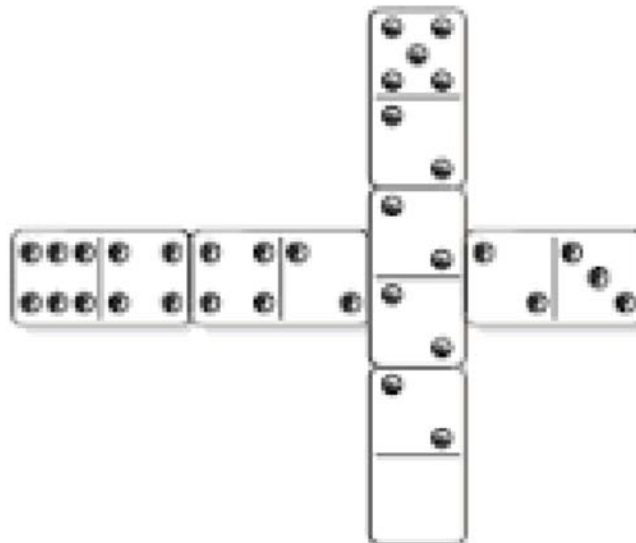
### Simple ideas for playing with dominoes

(if your child doesn't want to play a “game.”)

- Count the number of dots on each tile
- Find matching tiles and stack them together
- Line up tiles end to end by matching up the number of dots on each tile
- Form stacks of a specific number of tiles (1, 2, 3, 4, etc.)
- Write different numbers on different pieces of paper and ask your child to place the correct number of tiles on the corresponding piece of paper.

### Beginning Domino Game

1. Set out 10 dominoes, face down.
2. Pick one domino and turn it face up (so the dots show)
3. Count the dots on each end of the tile- “This end has 1, 2, 3 dots, and that end has 1, 2 dots.”
4. Pick another domino. “Does it match?” Yes? Set the domino so the matching groups of dots touch. No? Then put that domino aside, face up.
5. The next player picks a new domino from the pile and tries to make a match.
6. Play until all the dominoes are used.



## **Advanced Domino\* Game- “Draw Dominoes”** (for elementary school age children & adults)

Number Of Players: 2 to 4

### *Setup*

1. After shuffling the dominoes, each player draws tiles to make up their hand. The number of tiles drawn depends on the number of players: 2 players draw 7 tiles each; 3 players draw 5 tiles each; 4 players draw 5 tiles each

The remainder of the tiles make up the boneyard (or "stock"), and are held in reserve to be drawn upon as needed.

### *How to Play*

1. Choose a player to put down the first domino.
2. Each player adds a domino to an open end of the layout, if she can. A double-double domino like a 5-5 or 1-1 is placed crossways to allow building from either direction..
3. *Drawing Tiles*- If a player is unable to make a move, he must draw dominoes from the boneyard until he can make a move. If there are no dominoes left, then the player must pass.
4. *Ending A Hand*- A game ends either when a player plays all his tiles, or when a game is blocked. A game is blocked when no player is able to add another tile to the layout.
5. When a hand ends, the player with the fewest number of dots on their dominoes wins.

## **Make a Match**

Use coins, paper clips, pencils, rubber bands, silverware- you can use any everyday objects, but you need two of each to make a match.

In your math kit, you will have **colored pasta shapes\*** that you can use for this game.

1. Put the pairs of items on the floor or table, mixing them up.
2. Pick one item, hold it up and say, “Match me.”
3. Let your child find the matching item.
4. Take turns, letting your child pick the next one.

## Same or Different Game

Do this one just with your hands.

1. Close your fists and count, "One, two, three."
2. Open them, holding some fingers up and leave others down in a fist. Sometimes have the same number of fingers showing on both hands, and sometimes show a different number on each hand.
3. Ask your child if your hands are the same or different.

## Sort and Make Patterns

Learning to sort and see patterns are basic skills that we use every day. Grouping similar things together, like sorting laundry, or making separate piles of vegetables for a pot of soup are examples of sorting.

### Simple Sorting Games

#### Laundry Sort

Ask your child to help you separate the laundry- by the person it belongs to, "This is your shirt, these are my socks," or type of item, "Let's put all the socks together."

#### Colored Pasta\* Sort

Randomly pour out some pasta shapes. Sort them by color or by shape, or by both.

- Other things to sort: buttons, beans, pebbles, keys, plastic containers.
  - You can mix different things together and -

\*\*Use an egg carton as a sorting box. Put similar items together in the same hole in the carton.

- Write a number in each section of the egg carton and put that number of objects in that section.

### Playing Card\* Games

#### Card Sort

Sort your cards by

- color • number • shape (heart, diamond, etc) • people cards
- Older kids can group them by odds and evens.

#### Make Patterns

Lay out cards in a numerical pattern: 1-3-1-3, 5-6-5-6 or a visual pattern: by suit, heart-club-diamond-heart-club-diamond or picture: king queen-king-queen

#### Poker Chip\* Patterns

1. Set out a single line of poker chips, such as, two red, two white.

2. Have your child repeat your line by placing the same identical chips under each one of yours.
3. Repeat this game, each time making your line a little more complicated.

### **More Pattern Game Ideas**

- Make a pattern with food on your child's plate- alternate slices of apple or orange.
- Put chunks of fruit on a skewer to make a pattern- banana-orange-strawberry-banana-orange-strawberry.
- Make a pattern with toys- tall block-short block-tall block-short block.
- When you are walking, make a movement pattern- Say out loud as you do it, "Big step-little step-big step-little step." Repeat it until your child can mimic what you are doing.

These ideas were adapted from:  
Allison, Linda and Martha Weston. *Eenie Meenie Miney Math!* Little, Brown, 1993.°

## Teacher/Parent Supply List for the Family Math Workshop

### • Math Kit Contents\*

The contents of each box costs about \$15.00.

- Boxes (“Colored Corrugated Mailing Boxes,” 11 ¼’ x 8 ¾” x 4”) were purchased from Papermart.com.
- Labels, made in house, are printed 2 per sheet on Avery Full-Sheet Labels (Product # 8165)
- 6 x 9” Manila envelope to hold Activity Guide
- Poker chips (30, 10 of each color). (Purchased from Walmart.com)
- Four (4) dice. (RAFT or Walmart.com.)
- Six (6) colored popsicle sticks (Michael’s or Lakeshore Learning)
- Twelve (12) 3x5” index cards. Six index cards are cut in half (12 halves) for the Shape Concentration Game.
- Deck of playing cards (Costco or Walmart.com)
- Shape stickers. (Amazon.com) You can also cut shapes from colored paper & glue them down or draw them with a marker.
- Dominoes (Walmart.com)
- Colored pasta shapes (Amazon.com) As an alternative, you can use a collection of pairs of every day objects- two or more paper clips, rubber bands, buttons, etc.
- Egg carton

\* each “loose” activity element is placed in a plastic sandwich bag

### • Additional Activity Items

- Dice activities- small paper cups, Goldfish crackers, Cheerios, or similar
- Shape activities- toothpicks, fresh grapes, lightweight paper plates, colorful yarn or string cut in 6 foot lengths
- Scrap paper for scorekeeping

### • General Supplies

- Markers
- Crayons
- Children’s pairs of scissors
- Tape
- Gluesticks (if using cut paper shapes for Shape Concentration Game)

