

## DICE GAMES

### How Many Books?

Roll the dice to find out how many books (or chapters) you read with your child before bed.

**Fill the Cup** Have your child predict a number, and then roll. How many rolls of the dice it will take to fill a cup with cubes, stones or other small objects? You could also count how many items you collect in ten rolls of the dice.



**Roll and Build** Gather a pile of blocks. Roll the dice and use that many blocks to build a structure. Roll again and add that many to the structure. Play until all of the blocks have been used or it falls down. How many were you able to use?

**More!** You need at least 10 dice for this game, more is better. Put all the dice in a big pile. Each of you takes a die and rolls it. Whoever has the higher number gets both dice. If you roll the same number, those dice stay in the middle and you both roll again. Whoever gets the higher number gets all four dice. At the end of the game you count your dice to see who has more.

**Run to the Number** Tape numbers from 1 to 6 on the wall. Have your child roll a dice and then call out the number and run to the corresponding number on the wall. Good fun and a bit of exercise too!

# MATH ACTIVITIES

## A Parent Guide

Parents are a child's first and **most important** teacher. They set expectations, nurture curiosity and encourage a love of learning. This kit is designed to encourage you to **play** with your child in a relaxed way that promotes positive attitudes toward mathematics. Doing mathematics together using these games and play based activities will introduce skills and support the understanding of math concepts. Research shows that children learn best through play, exploration and inquiry. This kit encourages child-initiated, adult supported activities.

The activities have been designed to build on a child's day to day experiences.

You can help your child see the patterns and relationships in mathematics by playing card games to practice basic skills, sorting laundry or groceries, and finding math on walks and while shopping.

Follow your child's lead in play and build on opportunities to naturally include math in the activity. For example, when your child is playing with blocks you might say "That's very **tall**. I wonder **how many** blocks you used. Let's **count** them."

Have fun together as you discover that **MATH IS EVERYWHERE!**



**ESTIMATING** develops a sense of number. This activity also helps your child develop problem solving skills and the idea that there is a range of possible answers when estimating. Finding a reasonable answer demonstrates an understanding of number. This is a skill that is developed through practice and discussion. Start with a simple container such as a jar or a clear plastic container and a small number of the same object such as marbles or goldfish crackers.

For older children, use more objects and objects with size variations or irregular shapes such as rocks, buttons or Lego bricks.



## MEASUREMENT

Linear measurement: measure objects such as the length of a table or the height of a chair using non-standard measures such as a piece of yarn, or a pair of shoes. Placing the unit of measure repeatedly and accurately end to end and counting the number of units provides a concrete beginning for counting linear measure. For older children using tape measures or rulers and measuring in centimetres and metres is appropriate

Estimate and then measure:

1. How many toilet paper sections make up your height?
2. How many toilet paper sections go around your waist?
3. How many toilet paper sections high is the door?
4. Measure and compare your estimate to the actual amount. Then try a few other items.

**Board games** are great for counting, estimating and problem solving.

**Card games** - Simple card games help develop number recognition and matching while more complex games reinforce adding, subtracting and problem solving skills. These games also help a child develop persistence – the ability to stick with a problem or activity. A good starter game is Go Fish. Crazy Eights is a little trickier and Rummy is a good next game. For instructions and more card games visit: <https://www.classicgamesandpuzzles.com/Card-Games.html>

**Go on a Math Walk** – use a math concept as a focus for observing the environment.

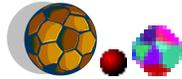
Math Walks help your child understand that **math is everywhere**. This game can be played on a walk, in the car, in the house or waiting at the grocery store.

This game reinforces math concepts and is an excellent conversation starter when you are out and about or need a simple in home activity.

Here are a few ideas to get you started:

- Look for **numbers**.
- Look for a **shape** - rectangles, circles, squares...
- **Count** how many – things that are red, cars, dogs, squirrels – something you might see on your walk. For older children, **tally** the numbers of things you find:  $\overline{\text{N}}$  III
- Look for things that are **smaller** than your hand or perhaps **bigger** than a car.
- Look for **patterns**.
- Invite your child to decide what you will look for on your math walk.

## Play **Will it fit?**



- Start with one box and one ball. Have your child predict if the ball will fit in the box. Why or why not?
- Use lots of comparing words such as big, bigger, small, smallest, more, less, sphere, cube, rectangular cuboid....
- Bring out another container of a different size. Ask your child to predict whether the ball will fit in this container. Have them test their answer.
- Line up three containers and three spheres of different sizes. Ask your child to fit each ball into a container. Discuss how your child decided to match them – perhaps the biggest sphere in the biggest container.
- Try the game using a different shape, such as sponges instead of balls.



**Graph** items by an attribute – length, width, colour, shape, or Halloween candy by types...

- Use blocks to build towers with length or height equal to other objects. i.e. A line of blocks the length of the table or as tall as your boot.
- Count the number of steps it takes to get somewhere – across the hall, down the stairs, etc.
- Measure different sizes of containers and their capacity – how much water or how many pieces of macaroni they can hold.



## **FUN IN THE TUB**

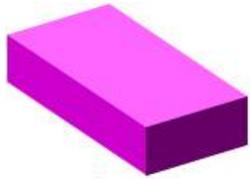
Young children often believe that tall, narrow containers hold more than wide, flat ones. Provide experiences pouring water from one container to another to develop their understanding of capacity and volume.

Provide a variety of plastic containers and encourage them to predict how many times they will have to fill the small container and dump the water into the larger container in order to fill it up. Then try it. Use the small container to fill another container. Compare and discuss the results.

Older children can also predict fractions – “It will take one and one half containers to fill the blue bowl”



## GEOMETRY and SPATIAL SENSE



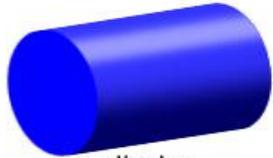
rectangular prism



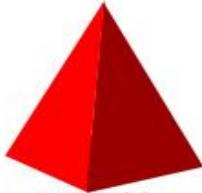
sphere



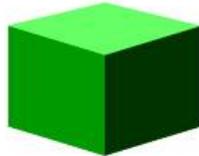
cone



cylinder



pyramid



cube

- Hunt for shapes - for a more active game, look for geometric solids around the house or for a quieter activity look for geometric shapes in books or magazines
- Put a shape in a bag and have your child feel the shape without looking at it.



- Use pieces of masking tape to make large outlines on the floor of a **circle**, **square**, **triangle**, **rectangle**, etc. Invite your child to walk, crawl or hop around the edge of the shapes. Play “Simon says” - “jump in the circle” “lay down in the square”

## KITCHEN MATH!

The kitchen offers many opportunities for **sorting**, **patterning**, **measuring**, **counting** and **geometry**.

- Cubes – sugar cubes, boxes
- Rectangular cuboids – cereal boxes, pasta boxes
- Spheres – balls, oranges
- Cylinders - cans, paper towel rolls

Gather various cans, boxes and round objects. Examine them with your child. Talk about how some have corners, some roll and some stack. Show your child which ones are cylinders, which are spheres and which are cubes or rectangular prisms.

Mix them up and invite your child to play with them. They may experiment with building, sort them by size or shape, make a pattern or some other activity. Follow their lead, but try to use math vocabulary.

You can also play a game by putting an item in a bag and have them guess what it is by feeling it. For older children, put more than one item in the bag.

Invite them to find shapes in the kitchen or around your home and tally them on the chart 