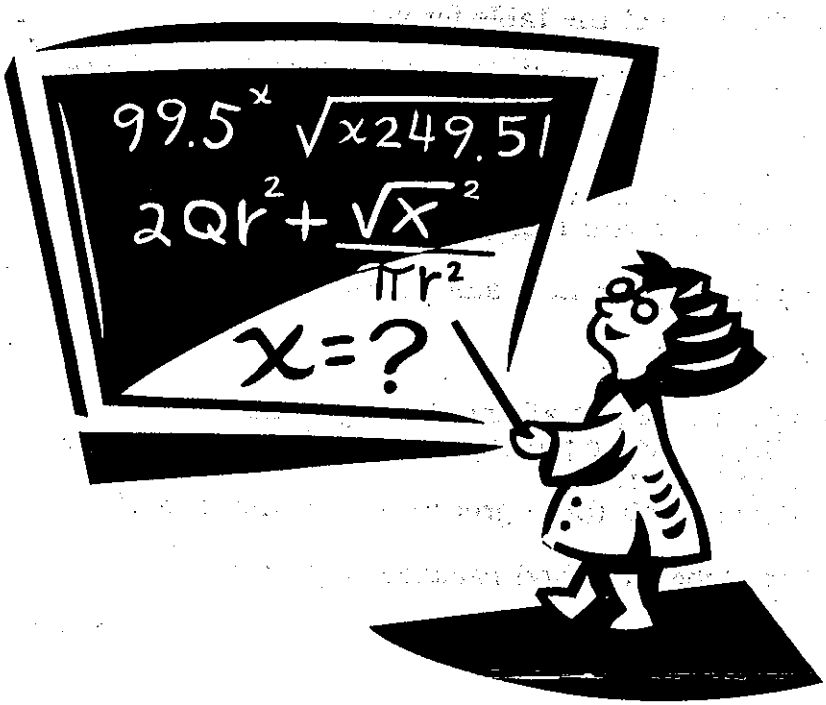
Maths Matters



Activities for Parents & Children From "Parents Count

IN THE KITCHEN

The kitchen is one of the first places a child sees maths in action. Guessing how much rice is needed for a meal, measuring ingredients and calculating cooking time are everyday events we do without thinking.

There is no need to plan special learning sessions in the kitchen. Just allow your child to become involved in your everyday routine.

Remember to encourage children's efforts and listen to them discover maths in the kitchen.

1. Show them how to set the table for a meal.

   Allow them to set the table for you.

   Practise counting out the number of places set, plates needed, etc.

   Ask your child:

   How many do we need?
   If we have two more people what do we need to do?

2. Allow your child to help stack away the groceries.

   Ask your child:

   Why do we put all the tins together?
   Why are some packages made of cardboard while others are made of tin?
   How can all these groceries fit in that space?

3. Read the labels on food packages together.

   Check the instructions on packages to see the recommended temperature for storage.

   Ask your child to check "use by" dates on frozen food. Find these dates on the calendar.

4. When storing meat or cooked foods in the freezer suggest that the child labels the packages with:

   the name of the food
   the date to be used by
   the mass of food
   the number of servings.

5. When making pastry, biscuits, noodles:

   weigh the ingredients using the kitchen scales
   roll out the pastry
   cut out biscuit shapes ... circles, triangles ... etc.
   place on tray, count rows.

6. Follow a recipe from a recipe book.

7. Help your child make a personal recipe book.

   Each recipe could have a page so there would be room at the bottom for comments and 'hints for next time'.

8. Watch chocolate change:

   You need:

   one block of cooking chocolate
   one heat resistant container
   one saucepan and very hot water.

   Heat the chocolate pieces in the container over the very hot water.
   What happens to the chocolate? Talk about it together.

   Pour the melted chocolate over scoops of ice-cream.
   What happens now?
   Why?

9. Fill things.

   Let your child:

   fill the sink to wash up
   fill the sugar bowl when it's empty
   fill the water jug for the fridge
   put the left-overs in the fridge in a container
   make the cordial ready to be used.

   The list is endless! Allow your children to do these things and they will discover many things about volume and capacity for themselves.

   Ask your child:

   How much water do you think we need to wash up?
   How many litres of milk do we need for the day?
   How many teaspoons of sugar does the sugar bowl hold?
   How many glasses of water can we get from the water jug?
   How many grams of tinned fruit fill the container?
   How many glasses of cordial does a two litre bottle contain?
   Keep a tally of the number of glasses made up.

10. Allow your child to help divide the food into portions.

    Your child could help serve:

    the pizza
    the cake
    the apples
    the bread.

    Ask your child questions such as:

    How can we share a bunch of grapes equally amongst the six of us?
    If there are 4 people and 2 buns, how much will each person get if we share them equally?

GOING SHOPPING

Every time we go shopping, we use mathematics. We estimate how much the groceries are going to cost (so we have enough money) and we check the change we are given when we buy goods.

Children learn these important skills by watching, listening, and doing these things for themselves. But they need your help.

Try some of the following activities with your children and then make up some more.

Remember: Be positive and make shopping fun!

1. Make up the shopping list together before you go.

   Check the local papers for specials and cut them out if you want them.

   Compare the special price with the usual cost and discuss the savings.

   Work out the savings using a calculator whilst doing the shopping.

2. Let your child add up the groceries on the calculator as you shop. This is a good way to find out if you have overspent! Also, it allows your child to see the need for a calculator.

   Ask your child:

   > About how much money will we need for the groceries? $20? $50? $100? $150?
   > About how much change will we get?

3. Look at the shape of grocery items in the supermarket (and how they are stacked).

4. Include consumer awareness questions.

   Ask your child questions such as:

   > Is the packet full? Why? Why not?
   > How much does it weigh?
   > Is the weight of the food shown on the packet?
   > Which drinks are in tins and which are not? Why?

5. Count the surfaces (faces), edges and corners (vertices) on things.

   Ask your child:

   > Which things are the same shape as:
   > the soap box? (rectangular prism)
   > jars and tins? (cylinder)
   > What other shapes can you find?

6. Allow your child to help pack the groceries into the boxes or bags ready to go home. This gives children further practice at "filling things".

7. Try this:

   If the tuna costs $2.95 and the cat food costs 89c and the cereal costs $3.55 ...
   then we pay about $3 + $1 + $4 = $8.

It's called rounding off and we adults do it all the time but children need to talk about these things to understand them.

We usually go further than this:

   If the groceries cost $8 then a $10 note will be enough.

Talk through your thoughts whilst you are at the shop so your child can understand what you are doing.

8. Compare goods at the store.

Ask your child to help you select items.

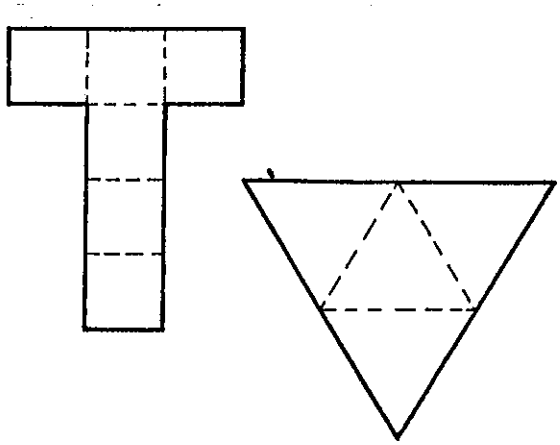
Ask your child:

   Which is the cheapest brand?
   Which bottle has the most mL?
   Which is the heaviest / lightest?
   Which is the best buy, the two litre bottle of juice or the 8 x 250 mL pack?

9. When buying in bulk ask your child:

   If there are five of us in the family, how can we share the bag of oranges?
   How many will we each get?
   Can we afford any more?

At home make a collection of cardboard packages. Undo them carefully, opening them out flat into nets (see Glossary, page 36). Trace some onto cardboard or coloured paper, taking care where the folds are. Make up some of your own.



10. When buying clothes:

    read the labels
    check labels for percentage of fabric, e.g. cotton/polyester
    check labels for washing instructions
    encourage your child to know his or her size and to identify clothes that fit
    compare the clothes with those of their friends, cousins and others.

    Clothing sizes are in scales. Compare these scales with other measuring scales, e.g. centimetres.

11. Plan a party together.

    Investigate:

    How many packets of balloons will we need so we can have six in every corner of the room?
    How many packets of party hats will we need so everyone invited gets one?
    Buy the food for the party together, discussing the amounts needed.
    How much will the party cost?

12. While at the fruit market or at home ask your child:

    Which is the largest tomato, bunch of celery ... etc.?
    Do these two pieces of fruit have the same mass?
    How can we find whether two potatoes have the same mass?
    You could practise using the scales provided or you could heft them (See Glossary, page 36).
    How will we use the scales to find a kilogram of onions?
    How much will this piece of pumpkin cost? First estimate whether it is more or less than one kilogram, two kilograms, etc. Then use the scales to find out.

IN THE GARDEN

A great deal of mathematics can be done in the garden or with pot plants. Whether you are growing plants, tidying up the yard or looking after your indoor pots, children can help.

Allow them to investigate some of the activities you do together and let them work out the answers.

Remember, the garden contains many challenges which can be solved in a variety of ways so allow your children to approach tasks in their own way on some occasions.

1. As your children become readers, allow them to read the instructions for growing plants.

   Ask your children questions like these:

   How high will this plant grow?
   How deep do we have to dig the hole to plant?
   During what months do the flowers bloom?
   What is the best way to find out the depth of the hole or the height of a plant?

2. Plant seeds in rows, taking care that they are the same distance apart.

   Ask your children:

   If we have 12 seeds, what's the best way to plant them in the space available?
   How can we measure the distance between each seed? (e.g. thumb, tape measure ...)
   Experiment with different measures to find the most useful one.

3. Measure the height of plants as they grow. These can be potted plants or plants in the ground.

   Chart the growth of the plant.

4. Filling things can be done in the garden too!
   Try these:

   Fill the pots with soil ready for planting.
   Discuss with your child which is the best tool for filling the pot, such as a teaspoon, a spade, a cup, etc.
   Ask them why they chose the tool they did.

5. When preparing the garden for fertilising, ask your child how to measure the size of each bed. If you measured the length and the width of the garden bed, could that help find the size? (area)

   Measure the area of each garden bed, and then work out a way to draw the bed on paper. (scale)

6. Plan your garden beds before you dig. Mark out the beds with peg and string.

7. Make tea from suitable herbs in the garden (mint, chamomile, lemon balm).

   You need:

   750mL water (3 cups)
   1/4 cup finely chopped herb
   15mL honey (1 tbsp.)
   1/2 lemon (sliced)
   a saucepan
   a strainer.

   Mix the above and boil in the saucepan for 10 minutes.

   Strain tea and serve it in mugs.

   Your child can:

   measure the ingredients
   time the ten-minute boiling period
   fill up the mugs.

   That's all mathematics!

8. Share out a packet of seeds or a punnet of seedlings so each family member has an equal number to plant.

   Ask your child:

   How can we share them out equally?
   How many packets / punnets do we need if we all want to have three each?
   How do you know?
   Will a punnet of 12 seedlings give everyone in our family four seedlings each?
   How did you work out your answer?
   Have you thought about this ... to help you find your answer ...?

9. Activity using fertiliser.

   Given the size of a bag and the recommended amount per square metre, how many bags are required for the garden beds?

PLAYING AND LEARNING

As well as being fun, playing with your child can be a learning experience for both of you.

Make sure you give your child plenty of time to think and try things before you help. That doesn't mean that you can't talk about your child's game, problem or puzzle and suggest different solutions.

Make games a fun way to learn, not a chore!

1. Whatever game, puzzle or material you decide to make, borrow or buy, make sure you give your child lots of time to play freely with it first.

   LISTEN to your child and ask:

   What are you going to do with that?
   Can you make anything else?

2. A sand pit holds the key to many maths concepts. Try these:
   Make shapes in the sand.
   Use different tools to fill things such as egg cups, teaspoons, plastic cups, soup ladles, spades.

3. Have some shadow fun.

   Cut out interesting shapes from magazines or from empty cardboard packets.

   Trace shapes onto the paving using chalk.

4. Try a magazine search:
   Cut out pictures.
   Make funny pictures using different heads and bodies.
   Sort them according to colour, size, shape, topic.
   Make a personal book of these pictures.
   Add to each page.
   Make new pages.

5. Make your own jigsaws by sticking magazine pictures on cardboard and cutting them up.

6. Make Play Dough (see recipe in the Things to Make section, page 34). Use it to make shapes or models.

7. Model building:
   Use straws, matches, soft wire, cardboard, toothpicks and anything else you can think of, to build models of houses, farms, scenes from story books or favourite movies, trucks, aeroplanes etc., etc.

8. Games with special skills.

Noughts and Crosses - teaches your child to plan ahead

Playing Cards - revises number facts, pairing, ordering, sorting, memory skills

Jigsaws - shows the relationship between spaces

Building Blocks - shows how things fit together

Battleships - helps in plotting points, finding coordinates, mapping skills

Connect 4 - helps in strategy skills and the use of vertical, horizontal and diagonal lines

Chess - helps in strategy skills and in flexibility to modify strategies

Monopoly - uses money and number facts

Dice games, e.g. *Snakes and Ladders.*

OUT AND ABOUT

Most of us use our local community a great deal. There are parks to play in, schools to attend, libraries to borrow from, places to shop ... the list goes on.

The local community offers much mathematical learning. We need to take advantage of situations as they come along.

Remember: talk to your children about things as they happen.

1. When going somewhere, ask your child questions like:

   How far do you think it will be?
   How much time will it take to get there?
   How many steps to the corner shop?
   How many large / small steps to the bus stop?
   How far to the hospital? (in minutes, metres)
   How long will it take to get to school?

2. As an extension of Activity 1, ask your child to find out whether the guesses were close.

   Count out the number of steps to the corner shop.
   Try counting your steps to the bus stop.
   (Does everyone make the same number of footsteps?)
   Time a trip to the hospital or school on your watch or stopwatch.

3. Start observing things as you walk through your neighbourhood.

   Discuss:

   the direction you are walking in (north, south, east, west)
   the length of streets
   why there are streets, roads, avenues, etc.
   how far it is to the back paddock
   where streets meet
   how far the settlement is from town.

4. Draw a freehand map of the area.

   Mark in places you use, e.g. your house, the playground, a friend's house, the street names, etc.

5. Begin using the street directory or town map to plan your walk before you go.

   Ask your child:

   Where will we go?
   How can we use the directory to help us?

Younger children may only be interested in features of short walks. Older children may wish to explore much more with the directory, such as converting the scale distance to the real distance covered on a walk.

6. Use the street directory to find the grid coordinates for your house, your school, the bus stop, and so on.

7. Use your neighbourhood walking time to hunt for:

   Patterns:

   lines in window panes
   rows of trees
   markings on the playing field
   pine cones and flower petals
   plough furrows.

   Shapes:

   triangles on a building
   squares in the tiled walkway
   rectangular paling fences.

8. Have a symmetry search (see Glossary, page 36). Look for symmetrical patterns around you. Try folding paper to investigate symmetry.

9. Use the home-delivery food price lists to order take-away food.

   Allow your child to help:

   read the price list
   work out the order
   calculate the total cost of the order (you could use a calculator)
   decide how much money is needed and the change that will be given.

10. Visit the local Post Office.

    Allow your child to:

    put the stamp on the letter
    buy the stamps
    post the letter in the correct box (local, other letters, parcels)
    work out the cost of 2 letters (3, 4 ...)
    guess the mass of a letter / parcel
    weigh a letter / parcel
    read the price list for airmail letters / parcels
    work out the price of an overseas letter
    discuss whether a parcel should be sent by air or sea.

11. Discuss:

    How many kilometres between towns?
    How many kilometres on the school bus ride?
    How many kilometres from the gate to the farmhouse?
    How many people live in the community?

SPORT, HEALTH AND EXERCISE

Many parents and children are involved in sporting activities and exercise programs.

Use this part of your lifestyle to increase your child's awareness of 'real-life mathematics' without their even knowing it!

Athletics and Swimming

1. Use a stop watch to time:

   laps of the pool
   how long it takes to run around the oval, 100 metres, ...

2. Find out:

   how many steps in 100 metres
   how many strokes to swim 50 metres.

3. Use a tape measure to find out:

   how far your child can jump
   the length of a step.

4. What are:

   the longest races?
   the shortest races?

5. Explore:

   the depth of the local pool (metres are written on the sides)
   the marked sections of a running track.

6. Ask:

   why don't runners start next to each other in a 400 metre race?

Netball

Encourage your child to find out:

the number of penalties awarded

the number of times the ball goes outside the court

the number of toss-ups

the number of orange quarters consumed and therefore the number of oranges (or vice versa)

the top goal scorer

the number of goals

the competition draw

the competition ladder

the number of possessions before a goal is scored

the height of the best players

whether the tallest player is the top goal scorer.

Football

Encourage your child to:

tally the number of wins / losses for their favourite football team.

record all the teams' scores for the season

find the total point-score and discover some ways the team could have achieved it.

A **Rugby League or Rugby Union** team scored 16 points:

Perhaps the points were for:
4 tries or
3 tries and 2 conversions.

Ask your child:

'What are some other ways the team could have scored 16 points?'

(For Rugby League:
a try is 4 points; a conversion 2 points;
a penalty goal 2 points; a field goal 1 point.)

(For Rugby Union:
a try is 4 points; a conversion 2 points;
a penalty goal 3 points; a field goal 3 points.)

An **Australian Rules** team's score was 12 9 81.

What does this mean?

(6 points for a goal;
1 point for a behind)

Soccer

Ask your child to compare the relative positions that teams would be on the competition table when using 2 points for a win (as in National Soccer League) compared with 3 points for a win (as in certain European Football Leagues).

Children will know that a cross-field kick in front of an unmarked player who is onside gives that player an advantage in getting to the ball.

Ask your child to estimate the player's advantage in terms of metres to the ball. Compare with the defender who has to run from another part of the field.

Cricket

1. Work out a batting average for your child.

e.g. Batting Average

RUNS	HOW OUT
27	bowled
38	not out
0	caught
84	not out
16	bowled
165	

Batting average = 165 ÷ 3 = 55

(Note: you divide by 3 because the person batting was out only 3 times.)

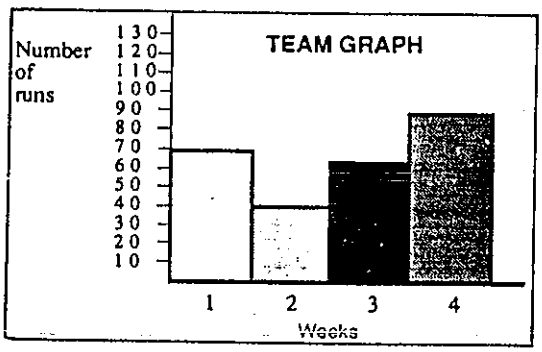
Work out a bowling average:

e.g. Bowling Average

WICKETS		RUNS
2	-	39
0	-	86
5	-	28
2	-	36
9	-	189

Bowling average = 189 ÷ 9 = 21

2. Keep a graph showing the team scores each week.



3. Keep a running total of scores for:

your child's team
the N.S.W. team
the Australian team
a favourite player.

4. Make a draw for the season's competition.

Points to consider:

the number of rounds
the number of times each team will play each other
each team plays each other at least once.

TRAVELLING

Whether travelling by car, bus, train, ferry or aeroplane, you and your child can have fun with mathematics.

Travelling is full of investigations, so take the opportunity to enrich your child's maths experiences in 'real-life' situations.

In the Car

1. Count the number of houses, buildings, marker posts, signs ...
   Count the street numbers.

2. Count using ordinal numbers, i.e. first, second, third ...

3. Encourage your child to explain positions in different ways, such as:

   The house that is fifth from the corner; next to the brick shed; close to the corner; a long way from home.

   Remember: understanding language is an important part of mathematical learning.

4. Use street directories and road maps whenever you can.

   Discuss how to find streets, suburbs, and so on.
   Work out together the best way to get from one town to another.
   When travelling long distances, try to find out which town is next.
   Guess how long it will take to get there.

   Look at the speedometer. Discuss what it tells you and how to read it.

5. Play *I Spy*

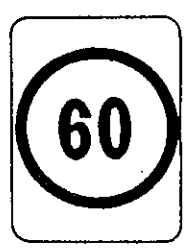
   Make tallies of interesting things you see while travelling.

   Look at:

   - the colours of vehicles you see
   - the makes of car passed
   - numbers of cars, buses, trucks, etc.

6. Suggest that your child watches for road signs and pictures.

   Ask your child the meaning of:



7. Calculate the average speeds of journeys.

8. At the petrol station:

   Show your child the tyre air pump. Explain the use of the tyre gauge.
   Fill the petrol tank and observe the price per litre / number of litres the car takes / total cost for petrol.
   Let your child pay for the petrol and receive the change.

On the Bus, the Train and the Ferry

1. Get the timetable from a public transport information centre.
   Find out the departure and arrival times.
   Suggest that your child works out the amount needed to pay for the trip.
   Investigate ways of finding out how long your journey will take and its length.

2. Observe the number of stops you have.
   Work out ways of explaining which stop you want,
   e.g. We'll be getting off at the:
   - 6th stop
   - stop after the shopping centre
   - stop after Lismore.

Going by Air

1. Collect and sort brochures, tickets and pictures to help you plan your trip.

2. Discuss the plane timetable. Try to work out the number of flying hours.

3. Find out the distance of your trip. Find out from a schedule how long the trip will take and calculate the average speed of the plane.

4. Find out the amount of luggage allowed per passenger.

5. Lay out your clothes on the bed, deciding what will fit in your suitcase, then pack it and see how close you were.

   Guess how heavy each suitcase is when packed.
   Weigh each suitcase before packing / after packing.

   Ask your child:

   How can we find out how much our clothes weigh?

6. If going overseas, check, with your child, the maximum size of cabin bags. Which bags do you have already that would satisfy this size requirement?

At the Airport

1. Practise reading the arrival and departure boards.
   Observe and discuss how airports use 24-hour time.

2. Find out the distance of your trip.

   Discover the aeroplane's speed and how long the trip will take.

   OR

   Find out how long the trip will take and calculate the plane's average speed.

ON HOLIDAYS

During every holiday, we use lots of mathematics without thinking about it. The following activities feature *estimating skills*: guessing what a fair answer would be.

There are many places people go on holidays. Try the activities below or change them to suit your holiday.

At the Beach

Build sandcastles, towers, animal shapes, etc.

Ask your child:

What shapes are you using in your building?
How much sand do you need for your castle? (guess in handfuls, bucketfuls, grams ...)

Count the handfuls of sand as you put them in the bucket.

Collect shells, sort them according to colour, size, shape.

At the Movies

Look in the paper to find the movie guide. Pay particular attention to the times of showings. Discuss with your child which showing would be suitable. Count the number of movies to choose from.

Let your child pay for the tickets. Discuss the different prices for adults and children.

Time the length of the movie you watch.

Ask your child:

How long do you think the movie went for?

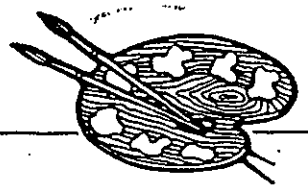
Work out how much money you spent. Include refreshments, travel expenses, etc. Use paper and pencil or a calculator (or both) to work this out.

Going Camping

Write a list of the food you'll need to take. Estimate the quantities that will be needed by each person. Then decide the total amount needed, e.g. the number of apples for each person and the number for everyone. Two apples per person per day, 4 people going camping for 4 days means that we need 2 x 4 x 4 = 32 apples.

Pack the backpacks together. Share the load, e.g. 8 apples in each backpack.

Pack the food boxes together.



INTERESTS AND HOBBIES

Both girls and boys can do all of the following activities. Most children love to help to 'do jobs' and all children, whether girls or boys, need to become familiar with a variety of activities that may develop into interests and hobbies. By encouraging girls and boys to take part in a full range of activities, you are encouraging them to learn in different ways and to become confident in using a variety of materials.

If children show an interest in something you are doing, take the opportunity to listen to them and answer their questions. Allow them to learn about the kind of work you do, whether it be in or out of the home, tell your children how you learnt to do the things you are good at and share with them your own interests and hobbies.

Painting

Look at painting colour charts together. Discuss the way colours are arranged. Cut up an old chart and create a new one, sort the colours, use them for games.

If you are thinking of painting, ask your child:

How much paint would we need to paint the ...?
How did you work that out?
What are some other ways to get the answer?

Woodwork

Allow your child to watch you measure the wood for sawing and copy your work on an offcut of wood.

Let your child have some offcuts of wood to make or build objects.

Tiling

Look carefully at the tile pattern on the bathroom floor.

Ask your child:

Which pattern is repeated?
Show me some other repeated patterns.

When shopping, browse through the tiling section of a shop. Discuss the various patterns, textures and sizes of the displayed tiles.

Allow your child to help measure the floor before you re-tile, carpet or re-cover it.

Observe the use of tiling patterns in buildings, on walkways, walls ... the list is endless.

Sewing

Measure the material for the new curtains. Use different ways of measuring, e.g. thumb / finger spans, handspans, tape measure.

Cut out a sewing pattern. Allow your child to practise cutting out patterns,

e.g. cut out a large picture or use an old pattern you don't need, attach it to an old scrap of material, cut it out.

Knitting and Crocheting

Teach your child to knit and / or crochet.

Read a pattern together. Discuss it.

Count stitches together, making sure your child has the correct number.

The Building Site

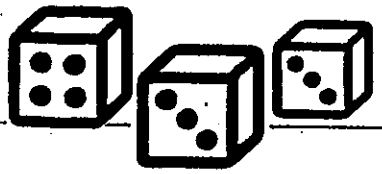
Take an interest in the construction of new buildings, roads, bridges, fences. Talk about

- the different materials used
- the horizontal and vertical lines
- diagonal struts.

Investigate the spirit level.

Make a house frame model using matches and fast-setting glue, soft wire or other suitable materials.

Guess the length, width, perimeter of a fence. Discover ways to measure it.



LOOKING FOR SOMETHING TO DO?

On some days, such as on rainy Sundays, you feel like doing something different together ... something challenging and fun.

Why not try some activities that allow your child to gain further understanding of mathematical concepts?

Remember: You can make these activities easier or more difficult, appropriate to the needs of your child.

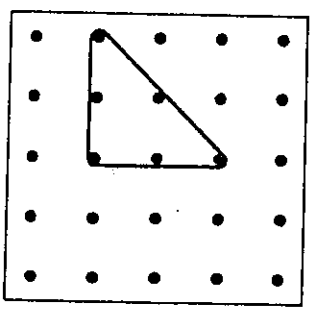
Make a Geoboard

Geoboards are a fun way to learn about plane shapes, symmetry, area, perimeter and many other mathematical concepts. They can be used by children of all ages.

Using a geoboard could mean your child can make a shape he or she cannot draw.

You will need:

a wooden board (large enough to nail 5 rows of 5 nails into),
25 roundhead nails,
rubber bands (perhaps coloured).



N.B. 10 x 10 boards are also popular.

Hammer the nails in exactly the same distance apart until you have 5 equal rows of 5 nails (see diagram). You now have a geoboard ready to use!

Ways to use a geoboard:

make shapes using the rubber bands
copy shapes already made
enlarge a shape
copy a shape upside down, turn the shape east, west
make a mirror image.

Fun Ways to Learn Mathematics

Three Dice

In turn each player throws 3 dice and adds the numbers together. The first player to reach 25 is the winner. The winner must reach 25 exactly.

Make it Easier!
Use 2 dice or 1 die.

Make it a Challenge!
Make the winner the first player to 57, 99, 150 ...

Dice 1000

You will need 2 dice, a piece of paper and a pencil.

In turn, each player throws 2 dice and multiplies the numbers shown to find the answer. The answers are added until one player scores 1000 points exactly.

Make it Easier!
Use one die and make the winner the first to 20, 50 ... adding up as you go.

Make it a Challenge!
Use 3 dice.

Dice Tables

Throw 1 die. Each answer is multiplied by 2 until one player scores 100.

Other Ideas:

Multiply each answer by 5, 8 ...
Increase the target score to 1 000.
Decrease the target to 50.
Keep score on the calculator.
When playing board games multiply instead of adding dice.

Dividing Dice

You will need 3 dice, pen and paper, and a calculator.

The game helps to revise division number facts.

Decide the order of play by throwing one of the dice.

The player has to use the numbers thrown to make a division number sentence. One die must show the dividing number (the number of shares). The other two dice show the number being divided. Remainders are ignored.

For example, if a player throws a 6, a 4 and a 2 he or she can make a division number question such as 64 ÷ 2 = ___. The answer to this question is the player's score for that round. So the player would score 32 points. If the player had divided 24 by 6 then the score would be 4.

The way this game is played can be changed each time it is played. For example, players could decide that the best score after five rounds wins.

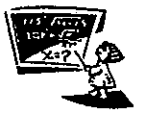
The game can be made harder by making the aim to score exactly 100 points. In this case players could choose to throw only two of the dice as their total scores come closer to 100.

Dice 999

You will need 3 dice, pen and paper and a calculator (optional).

Each player starts with 999 points. The object of the game is to have no points left.

Decide the order of play by throwing one of the dice.



The first player throws all three dice together. The numbers showing on the dice are used to make a three digit number to take away from 999. For example if the player throws a 3, a 6 and a 1, then 631 can be taken away from 999.

Each player has a turn. The number shown by the dice is taken away from the remaining total. If the player throws a 5, a 4 and a 1 he or she could make 154 to take away from 368. The player could not take away 541 or 451, for example, since the answer would be less than zero. The turns continue until one player's score is exactly 0. Players do not have to throw all the dice each time.

Measure your Pet

Find out the mass of your dog. Ask your child how this could be done.

e.g. Child holds pet and stands on bathroom scales.
Child is then weighed separately.
Mass of child and pet, take away the mass of child = mass of pet.

Make a Daily Timetable

Help your child set out a daily time chart. You make one too!

e.g.

ME		DAD	
7.30	get up	6.30	have a shower
8.00	have breakfast, etc.	7.00	dress, shave, etc.

Coin Rubbings

You will need a collection of different coins.
Place a coin on the table and put paper over it.
Use a lead pencil to rub over the paper where the coin is underneath. Try using different coins.

Investigate which parts of the coins come out lightest / darkest.
Make patterns using the coin rubbings.
Discuss the animals on the coins. If possible, visit these animals at a zoo, wildlife sanctuary or animal park.
Use plasticine or play dough (see recipe p. 34) to make coin pressings.

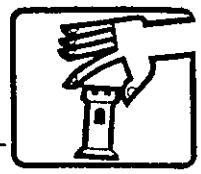
Make a Dollar

You will need 1 cent, 2 cent, 5 cent, 10 cent, 20 cent, 50 cent and $1.00 coins.

Roll 2 dice and collect from the "bank" an amount in cents equal to the total of the dice. As the game continues, trade 1 cent coins for 2 cent, 5 cent coins etc. The winner is the first player to have a dollar coin.

Using 1 cent, 10 cent and 1 dollar coins only will help to reinforce ideas of the base 10 number system.

THINGS TO BORROW



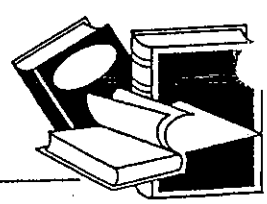
How often have you bought a toy, game or puzzle for your child, who promises to play with it forever and NEVER get tired of it! So you spend a great deal of money, only to find that your child DOES get tired of it! Well, perhaps Toy Libraries are for you.

Toy Libraries are excellent places to borrow from. They usually stock lots of games, puzzles and toys that not only keep children amused but help develop all kinds of number, space and measurement concepts.

There could be a Toy Library near you, run either by the local council or privately. If not, and you are interested in helping start one, contact your school or local council about it.

Remember, these libraries are excellent resources and provide a way of allowing your child access to toys, games and puzzles like those listed below without you having to buy them.

- Pattern blocks
- Polydrons
- Lego
- Lego Technics
- Duplo
- Duplo Mosaic Tiles
- Mobilo
- Jigsaws
- Chess
- *Mastermind*
- *Connect 4*
- *Twister*
- Multilink
- Construction toys
- Ludo
- Chinese Checkers
- Draughts
- Dice games / board games, e.g. *Snakes and Ladders*



THINGS TO READ

Picture books, songs, rhymes, traditional stories and other reading material can be used to develop mathematical concepts.

Ask questions such as ...

What is the story about?
What happened first, second ...?

Bookshops or libraries may be able to help you with further suggestions. A variety of activities can be used to develop mathematical concepts. Some of these are discussing photographs, reading books, saying rhymes, telling stories, singing songs and reading signs, labels and maps.

COLLECTING INFORMATION

1. Use the calendar. Mark in special events ... family birthdays, parties, visits, things to remember!

2. Make a height/mass chart with your child. (You can buy these, but be warned, they are expensive!)

   Start this chart as early as possible and continue it over the years.

   Measure the family's heights; weigh each person.
   Use the tape measure and bathroom scales to do this.

   Discuss monthly / yearly differences.

   Compare each person's height / mass.

   Ask your child:

   Who is the tallest / shortest?
   How can we find out how much you've grown since last year?
   Can we arrange the family members from lightest to heaviest?

3. Read the thermometer together each day.

   Make this activity harder by:

   - Keeping a temperature record. Talk about degrees, Celsius.
   - Take the temperature at the same time each day.
   - Add 7 days' readings together and divide by 7 for the weekly average. You could use the calculator to do this.
   - Compare with the TV news.
   - Do this for each month / season.
   - Begin predicting what might happen to the weather. What might the temperature be tomorrow, next month, same time next year?
   - Use the newspaper to examine world weather patterns. Compare the temperatures in cities around the world.

4. Make a car log of the distance travelled and the petrol used.

5. How much milk does the family use in a week?

THINGS TO MAKE

Play Dough

1 cup of plain or self-raising flour
1/2 cup of salt
2 tablespoons of cream of tartar
1 cup of hot water
1-2 tablespoons of oil.

Method

Use a wooden spoon to mix all ingredients in a saucepan at a medium heat for 10-15 minutes.

When dough leaves the sides of the saucepan, take it off the heat and knead with hands (put oil on your hands if the mixture is sticky).

Use food colouring to colour dough.

This mix makes enough for 1 or 2 children to play with.

The play dough should keep for 3-4 months in an airtight container.