Hampshire Services
HIAS SCHOOL IMPROVEMENT

HIAS HOME LEARNING RESOURCE

Practical Mathematical Tasks in the Home

All age prompts and questions

HIAS Maths Team
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Overview

Learning through fun, everyday activities at home.

Below are ideas, questions and suggestions for activities that parents can use at home with their children. They are everyday activities that are engaging and interactive and even part of children's everyday routine. The suggestions below are designed to give parents ideas regarding engaging their children into mathematical discussions and tasks using the resources that children may have access to. Most importantly we hope this supports parents to have fun with their children whilst they are learning maths!

This document is designed to support parents with all different aged children. The colour coding used in this document gives suggestions as to the sorts of questions or tasks that can be used with and adapted for children working within different year groups. The colours represent the suggested year groups although these can be flexible:

Suitable for children working in the Early Years (Nursery or Reception)

Suitable for children working in Key Stage 1 (Years 1 and 2)

Suitable for children working in Lower Key Stage 2 (Years 3 and 4)

Suitable for children working in Upper Key Stage 2 (Years 5 and 6)

Activities at home:	Learning focus & activities	Questions and prompts to engage mathematical thinking:
Cooking *Counting, measuring, proportion*	Get children involved in weighing ingredients and reading scales. Ask them to estimate how much before checking the amount. Get them to look the weight or capacity of food in packets to help them estimate and get a sense of the weight or capacity. Older children should think about the proportions of a recipe and how to make more or less as required.	Can you count the cake cases as I lay them out? To make the cakes I need 3 cups of sugar. Can you help me measure the sugar? I have 250g of butter and I need 325g of butter. How much more butter do I need? Read the weighing scales, which number is half way between… and ….? This butter comes in 250g packets. Can you estimate how much to cut off if we need 100g for our recipe? The recipe tells me how much of each ingredient I will need to make 12 cakes. Can you help me work out how much ingredients I will need to make 6, 24 or 18 cakes?
Play dough	Use everyday language and encourage the more mathematical use of sides, equal and corners (vertices)	Can you make a pizza that is a circle? Can you make a pizza that is a square? Rectangle? Triangle?

Fractions/shapes	to describe 2D flat shapes or edges and faces is used with 3D shapes. With fractions children need to talk about each piece being equal in size and know how many equal pieces make a whole.	I am going to make a pizza using my play dough. Can you cover half the pizza with tomatoes and half the pizza with green peppers? How about quarters? Make a pizza that has 8 slices. If I eat 3/8 of the pizza, how much of the pizza is left? Make a pizza that has 8 slices. If a person eats 1 slice of pizza, how many pizzas do you need to make in order to make enough for 17 people?
Bath time Use a selection of different measuring jugs and everyday bottle and containers. *Measuring capacity*	Encourage children to look at the shape and size of different containers and bottles. They should understand that even though some may be taller, this does not always mean they hold the most as some are shorter yet wider. They should be able to talk about some of the common bottles they use and know how much they hold and see which are the same by pouring the contents of one into the other.	Can you fill the different containers to the top so they are full? Can you make them half full/half empty? Which containers do you think hold the same amount of water? How can you check? How many of the 500ml (1/2 litre) containers will fill a 1 litre container? Look at other containers too asking similar questions.
Getting ready for bed *Estimating time*	Children should be familiar with what the length of a minute feels like and use this to compare and estimate other units of time. They should know there are 60 minutes in 1 hour.	Time children cleaning their teeth for 1 minute. Ask them to stop when they think a minute is up. Repeat with other tasks until children have a sense of a length of a minute. What time did we start getting ready for bed? How long did it take you? What time is it now?
Daily routines and reflections *Telling the time*	Children should be able to order events throughout the day and use some of the time connectives to help them order them. Get them involved in making timetables and talking about their routines.	Talk about the day and use words such as 'first, then, next, after, finally' to order events and activities throughout the day Make a daily timetable and write the times of each activity. What will the minute/hour hand be on at… (time)?
Completing puzzles *Shape and pattern*	Jigsaws are important to develop children's understanding of pattern and their logic e.g. "that piece can't go in there as it has 2 interlocking holes"	Do you think… piece will fit there? Why/why not? Can you pick a range of pieces that could fit in that space? Why might they work? Try Sudoku from the newspapers or puzzle books. Where did you start? Where could it go/not go?

Playing board games *Number and counting*	Playing games are a fun way for children to develop their counting and ability to keep track and develop strategies,	Can you count the number of spaces with your counter? Where will your counter land? If you needed to land on…, how much will you need to throw with the dice? Play with 2 dice. How many different ways could you throw ….?
Making drinks *Make a drink of squash, diluting the drink with water.*	Mixing liquids in an everyday context to develop pupils understanding of ratio and proportion. Get them to make drinks using the same amount of juice in 2 different sized glasses. Fill both to the top with water. Which is weaker/stronger in flavour? Why?	Can you put the glasses/cups in order of which you think will hold the most/least drink? Can you measure out the juice and water to make a drink- 50ml juice and 200ml water? How much do you think the glass will hold in ml? Can you use a measuring jug to check? If I make the squash with 1 part juice and 5 parts water, what fraction of the drink is water/squash? (1 out of 6 parts juice $\frac{1}{6}$) What is this as a ratio? (1 juice to every 5 parts water 1:5) If I used a larger glass, what would I need to do to make squash of the same strength?
Bead threading – making jewellery *Patterns, fractions and ratio and proportion*	Developing the ability to spot and continue patterns is important as pattern spotting is a key maths skill in number and shape too and helps children to look for relationships between learning. You can use dry pasta threaded if you don't have beads- and do have pasta!!	Can you copy my pattern that I have created with the beads? Can you make a pattern so that half of the necklace is red, and the other half is blue? What if I added the colours yellow and green? Can you now make it so that there is the same amount of yellow and green as there is red and blue? What fraction of the whole necklace is yellow now? Can you create a pattern that uses different coloured beads? You need to follow these rules: 1/8 of the necklace needs to be blue. There must be 32 beads on the necklace. How many blue beads will you need? Can you make a necklace following these rules? 1/8 of the necklace need to be blue. ½ of the necklace needs to be red, 1/4 of the necklace can be yellow and 1/8 can be green. How many beads could be on your necklace? For every one red there has to be three blue beads. What is this as a ratio? If I have 12

		blue beads in total on my necklace, how many red beads would I have?
Bead strings *Counting and number.*	Knowing number bonds to 10 and within 10 helps children to confidently and efficiently calculate without having to count on their fingers. By practising these skills over and over, they start to remember and apply these facts. You will need shoelaces or string and beads or other items to thread.	Attach 10 beads, pegs or holed pasta onto a string or shoelace and tie at each end to make a bead string (a counting aid used in maths). Slide groups of beads to show a model of a number sentence for addition or subtraction e.g. 7+ 3 +10 or 10 – 6 = 4. Make a bead string using ten beads of one colour and then ten of another. Can you slide groups of beads to show number sentences showing number bonds to 20 e.g. 10 + 3 + 7 = 20 or 13 + 7 = 20
Creating a dance *Shape and position and direction*	Language associated with turning, moving helps us to follow directions which is a key life skill. Try giving directions to a blindfolded partner around a simple course using the language listed. (stay with them for safety!)	Create a dance that must have 5 jumps, 8 claps and 10 hops. Create aa dance that must have a half turn, a quarter turn and a three quarter turn Create a dance that includes parallel arms and perpendicular arms at some point during the dance Create a dance that includes a 90 degree, 180 degree, and 360 degree turn.
Bug hunt *Statistics*	Estimate and count bugs, leaves or other natural items. Sort them and record in different ways. This practises valuable counting skills and encourages children to record effectively then talk about what they have found.	Go on a bug hunt and count the bugs that you find in the garden. Create a tally chart of how many of each bug you find. Show how many of each bug you found in either a pictogram or tally chart. Which did you find most/least of? Show how many bugs you found in either a bar chart or pie chart. How many more… than… did you find?

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