

P7 – S1 Mathematics and Numeracy Activities

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| Area | Experience and outcome | Benchmark  | Activities to help you achieve the bench mark |
| Estimating and rounding | I can use my knowledge of rounding to routinely estimate the answer to a problem then, after calculating, decide if my answer is reasonable, sharing my solution with others. MNU 2-01a | * Recognises the number of objects in a group, without counting and uses this information to estimate the number of objects in other groups.
* Checks estimates by counting.
* Use the relevant vocabulary including:
	+ less than, longer than, more than and the same
 | Look in cupboards and drawers around the house.  Estimate how many items there are.  Then count to check.  Was your estimating close? What makes it easy to estimate what makes it trickier? Remember to put everything back again when you finish. Extension – If there are 38 houses in your street and they all have the same amount of items, how many would there be altogether in the street?Great website for practicing estimation – estimate based on an image, then clues to determine the actual number.<https://stevewyborney.com/2019/09/51-esti-mysteries/>Ask family to choose 2 objects and hide them behind their back. They will tell you what they are but not show you.  Can you guess which one is bigger, longer etc.  Have a look at them – were you right?  Can you describe and compare the objects.  Eg the pencil is long and thin but the rubber is shorter.  Choose a room in the house and list the items you see from largest to smallest.Starting with the largest item how many cm do you think it is? If you have a ruler check your answer.Once you have your measurements can you convert the cm to meters? (remember there are 100 cm in a meter and remember your decimal point)* 32cm = 0.32m

This website is a good tool to show the numbers moving when multiplying or dividing by 10, 100, 1000.<https://mathsbot.com/tools/placeValue> |
| Number and number processes | I have extended the range of whole numbers I can work with and having explored how decimal fractions are constructed, can explain the link between a digit, its place and its value. MNU 2-02a Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others. MNU 2-03aHaving explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems. MTH 2-03c | * Reads, writes and orders whole numbers to 1 000 000, starting from any number in the sequence.
* Explains the link between a digit, its place and its value for whole numbers to 1 000 000.
* Partitions a wide range of whole numbers.
* Adds and subtracts multiples of 10, 100 and 1000 to and from whole numbers and decimal fractions to two decimal places.
* Adds and subtracts whole numbers and decimal fractions to two decimal places, within the number range 0 to 1 000 000.
* Uses multiplication and division facts to the 10th multiplication table.
* Multiplies and divides whole numbers by multiples of 10, 100 and 1000.
* Multiplies whole numbers by two digit numbers.
 | Roll a dice 5 times to create a numbers and partition it.What is the largest number you can make?What is the smallest number you can make?What is the largest odd number?Can you make a number that is a multiple of 3? Can you make a number that is a multiple of 4?Watch this video, it may help!<https://www.youtube.com/watch?v=f6tHqOmIj1E>Ask someone at home to write a 5 digit number, can you read it and write it in words?Using a dice roll it once and then again, multiply the two numbers togetherExtension: roll the dice 4 times to create two 2 digit numbers and multiply those together using the grid method.Use your knowledge of partitioning to carry out the grid method. If you don't have a dice you can search for – Dice roller on google ☺ Roll the dice or ask someone to give you a 4 digit number with 2 decimal places e.g 25.41 Multiply it by 10, 100, 1000. Try multiplying it by 20, 300, 6000.Practice your times tables.Here are some games that could help you. <https://www.topmarks.co.uk/maths-games/7-11-years/times-tables><https://www.timestables.co.uk/games/><http://www.maths-games.org/times-tables-games.html>Create your own multiplication worksheets using the link below - <https://worksheetgenius.com/maths_worksheets.php> |
| Multiples, Factors and Primes | Having explored the patterns and relationships in multiplication and division, I can investigate and identify the multiples and factors of numbers. MTH 2-05a  | * Identifies multiples and factors of whole numbers and applies knowledge and understanding of these when solving relevant problems in number, money and measurement.
 | Make your own 100 square (blank paper and ruler and create a grid 10 x 10, fill in the numbers 1 – 100).With a different colour for each number put a dot in the box for 2 times table, 3 times table, 4 times table, etc up to 10.These are multiples. <https://mathsbot.com/manipulatives/hundredSquare>The blank numbers are prime numbers. Write a list of the multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10 and the prime numbers.Challenge : Isla’s says her Dad’s age is a multiple of 7, but after his next birthday it will be a multiple of 6. Can you work out how old he is? |
| Fractions, Decimal Fractions and Percentages | I have investigated the everyday contexts in which simple fractions, percentages or decimal fractions are used and can carry out the necessary calculations to solve related problems. MNU 2-07a I can show the equivalent forms of simple fractions, decimal fractions and percentages, and can choose my preferred form when solving a problem, explaining my choice of method. MNU 2-07b I have investigated how a set of equivalent fractions can be created, understanding the meaning of simplest form, and can apply my knowledge to compare and order the most commonly used fractions. MTH 2-07c  | * Uses knowledge of equivalent forms of common fractions, decimal fractions and percentages, for example, $\frac{3}{4}$ = 0.75 = 75%, to solve problems.

 * Calculates simple percentages of a quantity, and uses this knowledge to solve problems in everyday contexts, for example, calculates the sale price of an item with a discount of 15%.
* Calculates simple fractions of a quantity and uses this knowledge to solve problems, for example, find $\frac{3}{5}$ of 60.
* Creates equivalent fractions and uses this knowledge to put a set of most commonly used fractions in order.
* Expresses fractions in their simplest form.
 | Create your own fraction wall, showing equivalent decimals and percentages. <https://mathsbot.com/manipulatives/fractionWall>If you have lego, can you make a lego equivalence wall? Start with the biggest block you have as a base, that is 1.Use a sheet of newspaper as your dance floor and put some music on. Every time the music stops you must half the paper, 1, ½, ¼, 1/8 etc. How small can you go?Write out your name, each letter represents a fraction e.g Lauren , each letter is 1/6 of the full name. 3/6 are vowels 3/6 are consonants. Can you do this for everyone in the house?If you set up a shop in your house (see money section) shop for various items then calculate a 10% discount and a 25% discount. How much will you pay now? How much have you saved? What if the discount was 1/3 off? Use this website to convert between fractions, decimals and percentages.<https://mathsbot.com/printables/commonFDP> (hit random then copy into jotter and fill in the blanks)Roll a dice twice, or use 2 playing cards, to make a fraction (put the smaller number on the top). By multiplying the numerator and denominator by the same number, can you make some equivalent fractions?<https://www.topmarks.co.uk/maths-games/7-11-years/fractions-and-decimals> |
| Money | I can manage money, compare costs from different retailers, and determine what I can afford to buy. MNU 2-09a I understand the costs, benefits and risks of using bank cards to purchase goods or obtain cash and realise that budgeting is important. MNU 2-09b I can use the terms profit and loss in buying and selling activities and can make simple calculations for this. MNU 2-09c | * Carries out money calculations involving the four operations.
* Compares costs and determines affordability within a given budget.
* Demonstrates understanding of the benefits and risks of using bank cards and digital technologies.
* Calculates profit and loss accurately, for example, when working with a budget for an enterprise activity
 | Make a shop in your house – write price labels for your items. You can create coins and notes from paper. Take turns with your family to buy items remembering to count out your money to the right amount.  Set yourself a budget between - £20 - £150 can you buy yourself an outfit for different events? The outfit must come under budget.* Outfit for a disco
* A sport event
* A wedding
* A holiday

**Using the same skills can you budget a holiday for you and your family?** Set a budget £1000- £9000* Where will you go?
* Will you fly or take a train?
* Will you stay in a hotel, flat or cruise ship?
* How long will you be on holiday for?

**FURTHER CHALLENGE*** Complete the task with a smaller budget
* Look at the cost of your school uniform can you purchase it all for £50?
* Using Asda can you plan breakfast lunch and dinner for your family?

**Pretend you own a cafe*** You must make an item for your menu
* How much would it cost for you to make?
* How much would you sell the item for?
* How much profit would you make?

**Slime maker*** Can you make your own slime?
* How much are the ingredients?
* How much would you charge for a tub?

**Make a poster*** What are the benefits and risks of using digital payment methods like – apple pay, pay pal, online banking and contactless?

This is a great website regarding family finance. Some great information about debt, changes in circumstances, bank and building societies, tax etc. <http://www.moneymatterstome.co.uk/default.htm> |
| Time | I can use and interpret electronic and paper-based timetables and schedules to plan events and activities, and make time calculations as part of my planning. MNU 2-10a I can carry out practical tasks and investigations involving timed events and can explain which unit of time would be most appropriate to use. MNU 2-10b Using simple time periods, I can give a good estimate of how long a journey should take, based on my knowledge of the link between time, speed and distance. MNU 2-10c  | 1. Reads and records time in both 12 hour and 24 hour notation and converts between the two.
2. Knows the relationships between commonly used units of time and carries out simple conversion calculations, for example, changes 1 3 4 hours into minutes.
3. Uses and interprets a range of electronic and paper-based timetables and calendars to plan events or activities and solve real life problems.
4. Calculates durations of activities and events including situations bridging across several hours and parts of hours using both 12 hour clock and 24 hour notation.
5. Estimates the duration of a journey based on knowledge of the link between speed, distance and time.
 | * Create a time table of how you will spend your time over the week. Make sure you include times.
* Can you use a bus time table to plan a journey?
* Select a start date and time
* Where would you be leaving from
* Where would you be traveling to?
* What time do you have to leave your house to reach the bus stop?
* How long will your journey take?

CHALLENGE – work with an adult* You must travel to Glasgow airport and you must be there 2 hours before your flight leaves
* Your flight time is at 1:00pm
* What time must you leave your house to arrive at the airport 2 hours before the flight leaves?
* How will you get to the airport?
* If you must use public transport you must ensure you leave in plenty of time.
* Will you be travelling during peak hours? Consider this when planning your journey.

FURTHER CHALLENGE – work with an adult* You decided to travel from Manchester airport and your flight is at 6:00pm
* What time will you leave Glasgow to arrive at Manchester airport 2 hours before your 6:00pm flight time?
* Find an analogue and digital clock (if you don't have one at home you will be able to find one on google). Throughout the day you check the time. Can you write the time in different ways? Can you convert the time from 12 hour to 24 hour time? Calculate the time in between your logged times.
* Make tonight’s dinner – adult supervision
* Check how long it takes to cook everything
* You must check the time
* Set a timer
* Remember you don't want to burn anything

**Clean your room*** Estimate how long you think it will take
* You can set a timer
* Was your estimate accurate?
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| Properties of 2D shapes and 3D objects | Having explored a range of 3D objects and 2D shapes, I can use mathematical language to describe their properties, and through investigation can discuss where and why particular shapes are used in the environment. MTH 2-16a Through practical activities, I can show my understanding of the relationship between 3D objects and their nets. MTH 2-16b I can draw 2D shapes and make representations of 3D objects using an appropriate range of methods and efficient use of resources. MTH 2-16c | 1. Describes 3D objects and 2D shapes using specific vocabulary including regular, irregular, diagonal, radius, diameter and circumference. Applies this knowledge to demonstrate understanding of the relationship between 3D objects and their nets.
2. Identifies and describes 3D objects and 2D shapes within the environment and explains why their properties match their function.
3. Knows that the radius is half of the diameter.
4. Uses digital technologies and mathematical instruments to draw 2D shapes and make representations of 3D objects, understanding that not all parts of the 3D object can be seen.
 | Make a list of all the 3D and 2D shape names you can* Find objects in your house that are 3D objects
* What 2D faces do they have?
* Can you list the properties of the shapes?
* Try sketching shapes and labelling their properties
* Practice counting the properties of 3D objects

Selecting a 3D object design your own hand sanitizer ☺ * What would you call it?
* What shape would you choose?

Drawing 3D shape* Taking the skills, you were taught practice drawing a range of 3D objects
* What was the trickiest and why?
1. Have you attempted to draw an octagonal prism?
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| Angle, symmetry and transformation | I can use my knowledge of the coordinate system to plot and describe the location of a point on a grid. MTH 2-18a / MTH 3-18aI can illustrate the lines of symmetry for a range of 2D shapes and apply my understanding to create and complete symmetrical pictures and patterns. MTH 2-19a / MTH 3-19a | 1. Describes, plots and records the location of a point, in the first quadrant, using coordinate notation.
2. Identifies and illustrates line symmetry on a wide range of 2D shapes and applies this understanding to complete a range of symmetrical patterns, with and without the use of digital technologies.
 | **REMEMBER – Along the corridor and up the stairs*** Play battle ships ( if you can’t remember how to create a grid click the link and it will show you ☺ ( You will need a partner to play.) <https://free-printable-paper.com/printable-battleship-game/>
* Create a grid using numbers and letters on the X and Y axis. Putting objects on the grid can you describe their position?
* Do you have a chess board? If so play chess at home using the coordinates.
* Draw a grid and ask a parent to plot points, write down the point coordinates.

**Lines of symmetry**REMEMBER - **an object is symmetrical when one half is a mirror image of the other half. • it may be divided by one or more lines of symmetry*** Using your skills of drawing 2D shapes draw a shape, cut it out and fold it into the lines of symmetry or draw the lines of symmetry.
* Create a fortune teller – they have many lines of symmetry – here’s a link if you aren’t sure how to do it. <https://www.youtube.com/watch?v=SAhiIlTxUYA>
* Collect leaves from your garden (if you can), cut one in half and try to draw the other half symmetrically.
* Can you draw your face? How symmetrical is it? How many lines of symmetry does it have?

Position and movement * Blind fold someone – can you direct them across the room using the correct vocabulary – left right, quarter turn, half turn
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| Data and analysis | Having discussed the variety of ways and range of media used to present data, I can interpret and draw conclusions from the information displayed, recognising that the presentation may be misleading. MNU 2-20a I have carried out investigations and surveys, devising and using a variety of methods to gather information and have worked with others to collate, organise and communicate the results in an appropriate way. MNU 2-20bcan display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams and graphs, making effective use of technology. MTH 2-21a / MTH 3-21a | 1. Can collect data in the most suitable way for the given task.
2. Collects, organises and displays data accurately in a variety of ways including through the use of digital technologies, for example, creating surveys, tables, bar graphs, line graphs, frequency tables, simple pie charts and spreadsheets.
3. Analyses, interprets and draws conclusions from a variety of data.
4. Draws conclusions about the reliability of data taking into account, for example, the author, the audience, the scale and sample size used.
5. Displays data appropriately making effective use of technology and chooses a suitable scale when creating graphs.
 | **HELP SORT OUT THE WASHING**How many items are going for: * Dark washing
* Light washing white washing
* Bedding items

Create a grid and use tally marks to show how many items will be in each coloured wash.Take this information and create a graph* What does it tell you about the most common colour of clothes?
* Can you create questions about this graph?

Put the washing away* Tally who has the most items at home
* Put this information in a graph ( pictograph, pie chart or bar graph)
* Who wears the most clothes?
* Can you create questions about this?

Organise the food cupboard * How much of each item do you have?
* Display this information
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