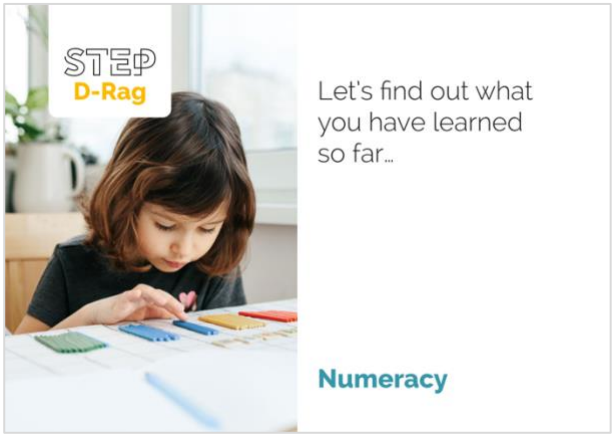


TEACHERS' NOTES

Digital Rapid Assessment Guide (D-RAG) for nomadic learners

ASESSEMENT FOCUS: NUMERACY

This resource focusses on Numeracy across Curriculum for Excellence (CfE) Early, First and Second levels.

Teachers' Notes D-Rag - Numeracy
Key points • ***Gypsy/Traveller learners may only be in school for a short time*** • ***Gypsy/Traveller learners should be 'fast tracked' so that they can progress quickly and experience success in the different subject areas.*** • ***Gypsy/Traveller learners should be included in peer group learning and teaching wherever possible*** • ***Use culturally appropriate resources, for example stories and pictures from the Gypsy/Traveller community*** • ***Use initial discussions about travelling, home culture and types of learning within the family to gauge the child's interest, learning styles and range of abilities.***
Who is this resource for? • ***The Digital Rapid Assessment Guide (D-RAG) is designed to support teachers working with Gypsy/ Traveller learners.*** ***What does it do?*** • ***The resource gives a pathway through assessment of children's abilities using accessible activities and cultural resources. It is particularly useful when children arrive or return after periods of travelling.*** ***How should it be used?*** • ***There are three separate D-RAG resources. They highlight outcomes and benchmarks in numeracy, reading and writing as initial assessment priorities. However, where possible, the assessments should be introduced as part of an integrated learning context that recognises a child's strengths and cultural interests.*** ***Remote learning*** • ***Links for activities which can be used when travelling have been included where appropriate***
D-RAG: Numeracy ***This resource focusses on Numeracy across Curriculum for Excellence (CfE) Early, First and Second levels.*** • ***In the following pages you can align Key Outcomes and Benchmarks with pupil learning activities offering a way to assess the pupils' levels.*** • ***Included are CfE links, oral instructions and/or strategies to support the activity.*** • ***It is not intended that learners should work through the entire guide. Teachers should select the appropriate pages for assessing specific learners***

Notes Page

Assessment opportunities

- ***What observations do learners make?***
- ***How much scaffolding did they require?***
- ***Can they make links between mathematical concepts?***
- ***What prior learning are they processing?***
- ***What conclusions do learners draw?***
- ***Are there any misconceptions that need addressed?***
- ***Are there any gaps in learning?***

Assessment activities - Numeracy

Early Level Numeracy Assessment

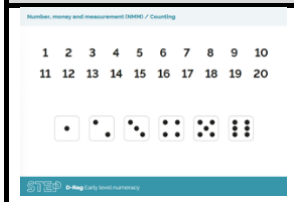
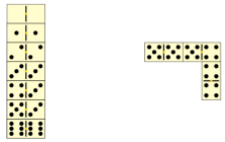
Number, money and measurement (NMM) / Number recognition

Preparation, materials and activities		Key outcomes and benchmarks
	***Materials/Preparation/Activities / Question Suggestions / Online Activities*** Sheet to record responses/assessment information *Ask the learner if they recognise the numbers, which ones do they recognise? *What is the number between? *What is the number before/after?	**I have explored numbers, understanding that they represent quantities, and I can use them to count, create sequences and describe order MNU 0-02a** **Recalls number sequence* **Identifies and recognises numbers* **I can use practical materials and can 'count on and back' to help me understand addition and subtraction, recording my ideas and solutions in different ways. MNU 0-03a**

Notes Page

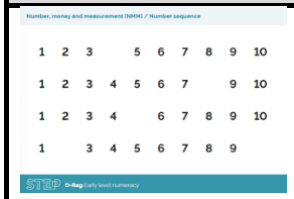
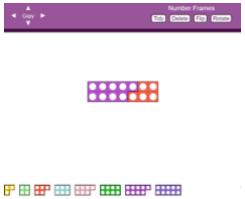
	*Ask the learner to count backwards from 10/20/30 *How many stars? *How many triangles? *How many red shapes? *What is one less than/more than? *Play 'How many?' games Using technology this page can be interactive, for example: "Draw a circle round the number after 2" Tools for counting Manipulatives - MathsBot.com  Subitising (mathsbot.com)  Number pairs - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	*Recalls the number sequence forwards within the range 0 - 30, from any given number. *Uses the language of before, after and in-between. *Counts on and back in ones to add and subtract. *Uses appropriately the mathematical symbols +, − and =. *Uses one-to-one correspondence to count a given number of objects to 20. *Identifies 'how many?' in regular dot patterns, for example, arrays, five frames, ten frames, dice and irregular dot patterns, without having to count (subitising). *Uses ordinal numbers in real life contexts, for example, 'I am third in the line'.

Notes Page

Number, money and measurement (NMM) / Counting	
Preparation, materials and activities	**Key outcomes and benchmarks**
	Counting on and back Play dominoes, promote recognition of patterns Play games with dice Dominoes (mathsbot.com)  Dice (mathsbot.com)  Counting on - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot) Counting sets – early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot) Counting forwards - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I use practical materials and can 'count on and back' to help me understand addition and subtraction, recording my ideas and solutions in different ways. MNU 0-03a** *****_Identifies 'how many?' in regular dot patterns, for example, arrays, five frames, ten frames, dice and irregular dot patterns, without having to count (subitising)._

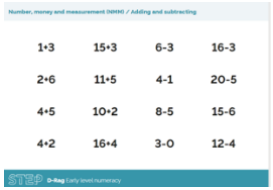
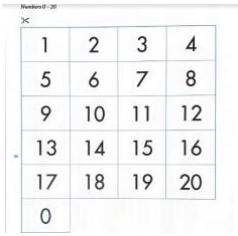
	Counting backwards - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	

Number, money and measurement (NMM) / Number sequence

Preparation, materials and activities		Key outcomes and benchmarks
	"Tell me the missing numbers" Numicon (or similar) materials Numicon activities Number Frames (mathsbot.com)  Sequencing numbers 0 to 20 – early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I have explored numbers, understanding that they represent quantities, and I can use them to count, create sequences and describe order MNU 0-02a** ***Recalls number sequence**

Notes Page

Number, money and measurement (NMM) / Adding and subtracting

Preparation, materials and activities		Key outcomes and benchmarks
	Play snap, number rhymes, order number cards, matching games, etc. If learner is confident, attempt sums with or without concrete materials Number to 20 PDF resources  Addition and subtraction within 10 – early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I use practical materials and can 'count on and back' to help me understand addition and subtraction, recording my ideas and solutions in different ways. MNU 0-03a** **Counts on and back in ones to add and subtract.* **Uses appropriately the mathematical symbols +, − and =.*

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
0			

Number, money and measurement (NMM) / Recognition - coins

Preparation, materials and activities		Key outcomes and benchmarks
	Where possible use real coins and notes. Ask learner to identify coins and notes Ask learner to order from smallest value Ask learner how many 1p's in 10p etc. Using technology this page can be interactive, for example: "Draw a circle round the coins that make 5p "	**I am developing my awareness of how money is used and can recognise and use a range of coins. MNU 0-09a** **Identifies all coins to £2.* **Applies addition and subtraction skills and uses 1p, 2p, 5p and 10p coins to pay the exact value for items to 10p.*

Notes Page

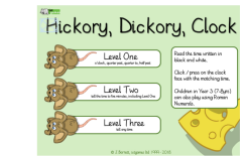
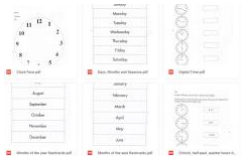
	Coins Game for 4-10 year olds (topmarks.co.uk)  Toy Shop Money Game (GBP) – Topmarks  Recognising coins - early | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	

Notes Page

Number, money and measurement (NMM) / Using money to 20p		
Preparation, materials and activities		**Key outcomes and benchmarks**
	If possible, use real coins to support Can the child use the vocabulary of money? Does the child use the vocabulary of counting, addition and subtraction? Observe how children are using, understanding and recognising coins to 10p. Print PDF sheet if using Coins PDF Resources Money resources Using technology this page can be interactive, for example: “Draw a circle round the two coins that pay 10p”  Use of money – early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I am developing my awareness of how money is used and can recognise and use a range of coins. MNU 0-09a** **Identifies all coins to £2.* **Applies addition and subtraction skills and uses 1p, 2p, 5p and 10p coins to pay the exact value for items to 10p.*

Notes Page

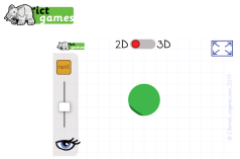
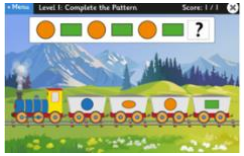
Number, money and measurement (NMM) / Time

Preparation, materials and activities		Key outcomes and benchmarks
	Follow the link to an interactive clock Print pages if required Set a time on the clock and ask the learner what time it is. Ask the learner to set the correct time given. Ask the learner what the time is 1 hour later or if a journey took 1 hour, what time would they arrive. PDF Resources Clock demonstrator (ictgames.com)  Hickory Dickory Clock: A tell the time game (ictgames.com)  Time resources 	**I am aware of how routines and events in my world link with times and seasons, and have explored ways to record and display these using clocks, calendars and other methods. MNU 0-10a** **Reads analogue and digital o'clock times (12 hour only) and represents this on a digital display or clock face* *Links daily routines and personal events to time sequences.*

	Measuring time – early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	
Number, money and measurement (NMM) / Measure		
Preparation, materials and activities		**Key outcomes and benchmarks**
	***Measuring in Centimetres (topmarks.co.uk)*** ***Mostly Postie - mobile friendly (ictgames.com)*** Measuring using everyday items– early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I have experimented with everyday items as units of measure to investigate and compare sizes and amounts in my environment, sharing my findings with others. MNU 0-11a** **Shares relevant experiences in which measurements of lengths, heights, mass and capacities are used, for example, in baking.* **Describes common objects using appropriate measurement language, including tall, heavy and empty.* **Compares and describes lengths, heights, mass and capacities using everyday language, including longer, shorter, taller, heavier, lighter, more and less.* **Estimates, then measures, the length, height, mass and capacity of familiar objects using a range of appropriate non-standard units.*

Notes Page

Shape, position and movement (SPM) / 2D shape

Preparation, materials and activities		Key outcomes and benchmarks
	2d shapes 3d shapes Use physical objects Sort the 2D shapes and 3D shapes Discuss the objects using terminology such as straight, round Use technology to sort and match shapes Ask the learner to sort the shapes into groups e.g. same shape, same colour Make a repetitive pattern, ask the learner to continue the pattern Shifting Shapes (ictgames.com)  Shape Patterns (topmarks.co.uk)  2-D shapes and 3-D objects - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I enjoy investigating objects and shapes and can sort, describe and be creative with them. MTH 0-16a** **Recognises, describes and sorts common 2D shapes and 3D objects according to various criteria, for example, straight, round, flat and curved.* **I can explore computational thinking processes involved in a variety of everyday tasks and can identify patterns in objects or information TCH 0-13a** **Uses knowledge of colour, shape, size, etc to match and sort items in a variety of ways* **Collects and organises objects for a specific purpose*

Notes Page

Shape, position and movement (SPM) / 2D and 3D shape		
Preparation, materials and activities		**Key outcomes and benchmarks**
	Range of 2d and 3d shapes Construction materials Identify shapes Discuss sides, corners, edges, etc Identify 2D shapes in 3D shapes Build towers or structures with physical shapes 2-D shapes and 3-D objects - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I enjoy investigating objects and shapes and can sort, describe and be creative with them. MTH 0-16a** **Recognises, describes and sorts common 2D shapes and 3D objects according to various criteria, for example, straight, round, flat and curved.*
Information handling (IH) / Sorting and matching		
Preparation, materials and activities		**Key outcomes and benchmarks**
	Sorting materials including leaves or similar Use physical objects such as counters, buttons, soft toys, lego, etc. Collect different leaves and sort into size or colour Use technology to make connections by drawings lines between items Discuss relationships between items Sort into groups e.g. baby/adult or living/non living	**I can explore computational thinking processes involved in a variety of everyday tasks and can identify patterns in objects or information TCH 0-13a** **Uses knowledge of colour, shape, size, etc to match and sort items in a variety of ways* *Collects and organises objects for a specific purpose*

Notes Page

	Sid the Science Kid . Games . Sorting Box | PBS KIDS  Matching and sorting - early level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	

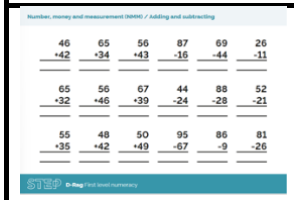
First Level Numeracy Assessment

Number, money and measurement (NMM) / Place value

Preparation, materials and activities		Key outcomes and benchmarks
	Ask learner to write down numbers from the abacus Ask learner to order numbers from smallest to largest or vice versa ictgames || html5 Home Page 	**I have investigated how whole numbers are constructed, can understand the importance of zero within the system and can use my knowledge to explain the link between a digit, its place and its value. MNU 1-02a** **Uses numbers to 1000* **Understands place value* **I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed. MNU 1-03a** **Solves addition and subtraction with 3 digit whole numbers*

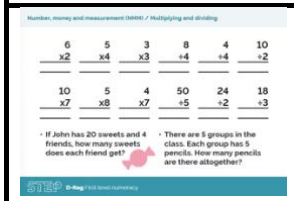
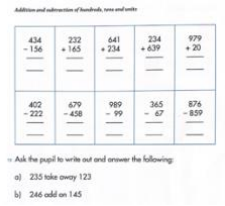
	Understanding place value 1 - first level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	*Can use multiplication and division facts to solve numbers to 1000 *Multiplies and divides whole numbers by 10 and 100

Number, money and measurement (NMM) / Adding and subtracting

Preparation, materials and activities		Key outcomes and benchmarks
	Place value materials Place value games and activities Place Value Chart (mathsbot.com)  Subtraction – first level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I have investigated how whole numbers are constructed, can understand the importance of zero within the system and can use my knowledge to explain the link between a digit, its place and its value. MNU 1-02a** *Uses numbers to 1000 *Understands place value **I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed. MNU 1-03a** *Solves addition and subtraction with 3 digit whole numbers *Can use multiplication and division facts to solve numbers to 1000 *Multiplies and divides whole numbers by 10 and 100

Notes Page

Number, money and measurement (NMM) / Multiplying and dividing

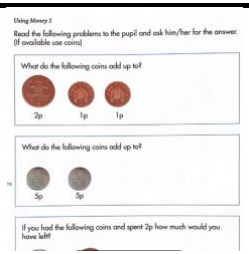
Preparation, materials and activities		Key outcomes and benchmarks
	Print PDF pages if required PDF resources Numbers to 100  Numbers to 1000  Multiplying and dividing whole numbers by 10 - first level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I have investigated how whole numbers are constructed, can understand the importance of zero within the system and can use my knowledge to explain the link between a digit, its place and its value. MNU 1-02a** **Uses numbers to 1000* **Understands place value* **I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed. MNU 1-03a** **Solves addition and subtraction with 3 digit whole numbers* **Can use multiplication and division facts to solve numbers to 1000* **Multiplies and divides whole numbers by 10 and 100*

Number, money and measurement (NMM) / Recognition – coins and notes	
Preparation, materials and activities	**Key outcomes and benchmarks**
	Where possible use real money Ask learner to identify coins and notes Ask learner to order from smallest value Ask learner how many 1p's in 10p etc. Technology can be used to circle or link the coins which can be used to pay for goods Coins Game for 4-10 year olds (topmarks.co.uk)  Toy Shop Money Game (GBP) – Topmarks  Money - toys and games – primary | Numeracy and mathematics activities | Scotland Learns | National Improvement Hub (education.gov.scot)	**I can use money to pay for items and can work out how much change I should receive. MNU 1-09a** **Identifies and uses all coins and notes to £20, explores different ways of making same total* **I have investigated how different combinations of coins and notes can be used to pay for goods or be given in change. MNU 1-09b** **Can give pay and give change for items to £10*

Notes Page

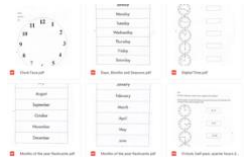
Number, money and measurement (NMM) / Using money to find change	
Preparation, materials and activities	**Key outcomes and benchmarks**
	If possible, use real coins to support Money resources Money - toys and games – primary | Numeracy and mathematics activities | Scotland Learns | National Improvement Hub (education.gov.scot)	***First*** ***I can use money to pay for items and can work out how much change I should receive. MNU 1-09a*** **Identifies and uses all coins and notes to £20, explores different ways of making same total* ***I have investigated how different combinations of coins and notes can be used to pay for goods or be given in change. MNU 1-09b*** **I can pay and give change for items to £10*

Number, money and measurement (NMM) / Using money to £20 and finding change	
Preparation, materials and activities	**Key outcomes and benchmarks**
	If possible, use real coins to support. Show me the notes/coins used to buy the football etc. Print PDF sheet if using coins / notes Money resources	**I can use money to pay for items and can work out how much change I should receive. MNU 1-09a** **Identifies and uses all coins and notes to £20, explores different ways of making same total* **I have investigated how different combinations of coins and notes can be used to pay for goods or be given in change. MNU 1-09b** **I can pay and give change for items to £10*

	 Money - toys and games – primary | Numeracy and mathematics activities | Scotland Learns | National Improvement Hub (education.gov.scot)	

Number, money and measurement (NMM) / Time

Preparation, materials and activities		Key outcomes and benchmarks
	Follow the link to an interactive clock Print pages if required Set a time on the clock and ask the learner what time it is. Ask the learner to set the correct time given. Ask the learner what the time is 1 hour later or if a journey took 1 hour, what time would they arrive. PDF Resources Clock demonstrator (ictgames.com)  Hickory Dickory Clock: A tell the time game (ictgames.com)	**I can tell the time using 12-hour clocks, realising there is a link with 24 hour notation, explain how it impacts on my daily routine and ensure that I am organised and ready for events throughout my day.** **MNU 1-10a** **Tells time using half past, quarter past/to in digital and analogue* ***I can use a calendar to plan and be organised for key events for myself and my class throughout the year.*** ***MNU 1-10b*** **Uses calendars and timetables to plan* **Orders months of year and relates to seasons*

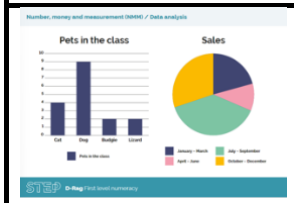
	 Time resources  Interactive clock, games and more resources https://www.topmarks.co.uk/time/teaching-clock	

Number, money and measurement (NMM) / Measuring

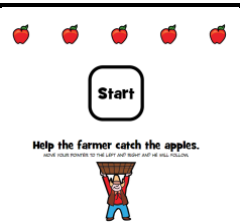
Preparation, materials and activities		Key outcomes and benchmarks
	Suitable objects to compare Range of measuring tools Ruler, tape measure, scales, jug Ask learner to guess how long the objects might be What would they use? What would the unit used be on the ruler? Move the hand on the scales to show different weights If possible, use a range of measuring tools – ruler, tape measure, jug, etc. to assess ability to read the measurements ***Measuring in Centimetres (topmarks.co.uk)***	**I can estimate how long or heavy an object is, or what amount it holds, using everyday things as a guide, then measure or weigh it using appropriate instruments and units. MNU 1-11a** **Uses knowledge of everyday objects to provide reasonable estimates of length, height, mass and capacity.* **Makes accurate use of a range of instruments including rulers, metre sticks, digital scales and measuring jugs when measuring lengths, heights,*

	 ***Mostly Postie - mobile friendly (ictgames.com)*** 	*mass and capacities using the most appropriate instrument for the task*

Number, money and measurement (NMM) / Data analysis

Preparation, materials and activities		Key outcomes and benchmarks
	What is the most popular pet in the class? What is the least favourite pet? How many more … What is the total number of pets in the class? Do we know if anyone in the class had no pets? Which months had most sales? Which months had the least sales? What information is missing from this pie chart? Create own graphs and charts using technology ***Fishing Pictograph Game | 2nd Grade Math Games | Toy Theater*** ***Fruit Fall Pictograph Game | Grade Math Games | Toy Theater***	**I have explored a variety of ways in which data is presented and can ask and answer questions about the information it contains. MNU 1-20a** **Asks and answers questions to extract key information from a variety of data sets including charts, diagrams, bar graphs and tables.*

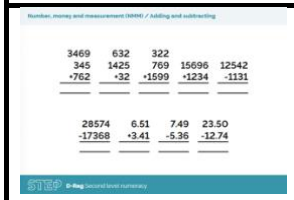
Notes Page



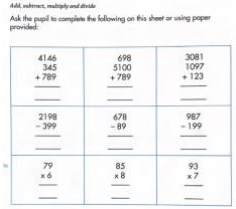
Second level numeracy

Number, money and measurement (NMM) / Adding and subtracting

Preparation, materials and activities



Print PDF pages if required
Edit as necessary. Sometimes by adding a £ sign, learners understand the decimal point.
Numbers to 10000



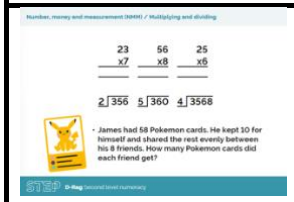
2nd level Maths and Numeracy - Scotland - BBC Bitesize

Key outcomes and benchmarks

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
**Uses and understands numbers to 1000000*
**Solves addition and subtraction with 3 digit whole numbers*
**Uses multiplication and division facts to the* 10th *multiplication table*
Having determined which calculations are needed, I can solve problems involving whole numbers using a

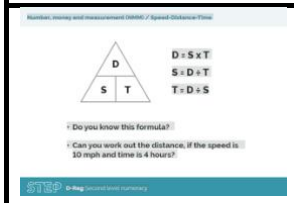
		range of methods, sharing my approaches and solutions with others. MNU 2-03a **Multiplies and divides whole numbers by multiples of 10, 100 and 1000.* **Multiplies whole numbers by two digit numbers* **Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems. MTH 2-03c* **Applies the correct order of operations in number calculations when solving multi-step problems.*

Number, money and measurement (NMM) / Multiplying and dividing

Preparation, materials and activities		Key outcomes and benchmarks
	Free Multiplication Math Games | Multiplication.com Multiplication Games  2nd level Maths and Numeracy - Scotland - BBC Bitesize	**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** **Uses and understands numbers to 1000000* **Solves addition and subtraction with 3 digit whole numbers* **Uses multiplication and division facts to the 10th multiplication table* **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 2-03a**

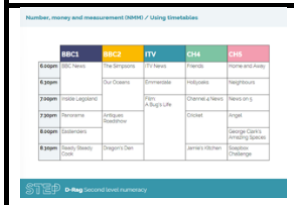
		Multiplies and divides whole numbers by multiples of 10, 100 and 1000.* **Multiplies whole numbers by two digit numbers* **Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems. MTH 2-03c ** Applies the correct order of operations in number calculations when solving multi-step problems.*

Number, money and measurement (NMM) / Speed-distance-time

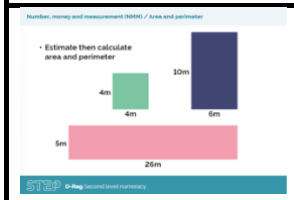
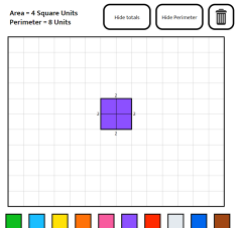
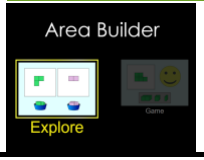
Preparation, materials and activities		Key outcomes and benchmarks
	Time resources Estimates duration of a journey based on knowledge of the link between speed, distance and time **Estimated time to complete activity** **Materials/preparation** Laptop or desktop with slide open Sheet to record responses/assessment information *The page can be used as a drag and drop activity.* *Copy and paste to add more shapes* **Script** **Online Activities** **Record responses** Journey times 1 – second level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**I can use and interpret electronic and paperbased timetables and schedules to plan events and activities, and make time calculations as part of my planning. MNU 2-10a** **Estimates duration of a journey based on knowledge of the link between speed, distance and time*

	Journey times 2 – second level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot) Speed, distance, time - secondary | Numeracy and mathematics activities | Scotland Learns | National Improvement Hub (education.gov.scot) Fastest animals – second level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	

Number, money and measurement (NMM) / Using timetables

Preparation, materials and activities		Key outcomes and benchmarks
	What time does the film, Bug's life start? What time does the Cricket finish? If you watch all the news at 6pm, will you see the start of Neighbours? Plan your evening viewing Interpreting timetables – second level | Numeracy and mathematics activities | Resources for practitioners | Scotland Learns | National Improvement Hub (education.gov.scot)	**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** **Reads and records time in both 12 and 24 hour and converts between two* **Uses and interprets a range of electronic and paper based timetables and calendars to plan events*

Notes Page

Number, money and measurement (NMM) / Area and perimeter	
Preparation, materials and activities	**Key outcomes and benchmarks**
	**I can use my knowledge of the sizes of familiar objects or places to assist me when making an estimate of measure. MNU 2-11a** **Uses the comparative size of familiar objects to make reasonable estimations of length, mass, area and capacity. *Estimates to the nearest appropriate unit, then measures accurately: length, height and distance in millimetres (mm), centimetres (cm), metres (m) and kilometres (km); mass in grams (g) and kilograms (kg); and capacity in millilitres (ml) and litres (l).* **Calculates the perimeter of simple straight sided 2D shapes in millimetres (mm), centimetres (cm) and metres (m).* **I can explain how different methods can be used to find the perimeter and area of a simple 2D shape or volume of a simple 3D object. MNU 2-11c** **Estimates to the nearest appropriate unit and measures accurately* **Calculates perimeter of square or rectangle* **Calculates area of square or rectangle*
Area Perimeter Explorer | Geometry for Kids | Toy Theater  area and Perimeter – GeoGebra  https://phet.colorado.edu/sims/html/area-builder/latest/area-builder_en.html 	

Notes Page