Old Town Infant School and Nursery

Coastal Learning PARTNERSHIP

MATHS MEDIUM TERM PLANNING

Year 1 – Measure: Mass and Volume (Approximately 2 weeks)	
Objectives from Progression Document	**compare and describe mass and weight,** e.g. heavy/light, lighter than **measure and begin to record mass/weight** **solve practical problems for mass/weight**
Previous Learning	**compare weight, using comparative language, such as 'heavier than'** **use comparative language to group objects** **compare capacity, using comparative language, such as 'than'** **use comparative language to group objects**
Vocabulary	estimate, close to, about the same as, just over, just under, mass, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales, litre, half litre, capacity, volume, full, empty, more than, less than, half full, quarter full, holds, container
Key fact(s)	To know that equal groups have the same amount To know that capacity is how much a container can hold To know that volume describes the amount of something inside a container
Number facts for fluency	Fluency Bee Stage 3: Subtract 2 (including fact families)
DfE Ready to Progress Guidance Pages https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897806/Maths_guidance_KS_1_and_2.pdf	Not applicable
NCETM Ready to Progress Exemplification https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/	Not applicable
Problem Solving and Reasoning Skills Objectives	try a range of possible solutions to solve problems
Pre-assessment:	EYFS measure: weight - compare mass, using comparative language

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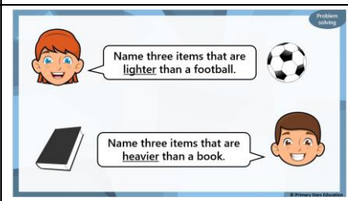
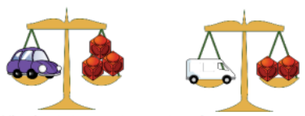
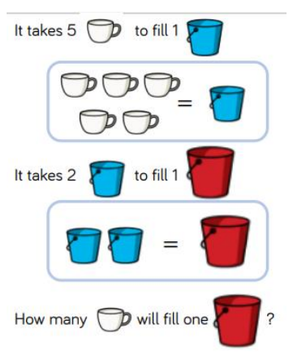
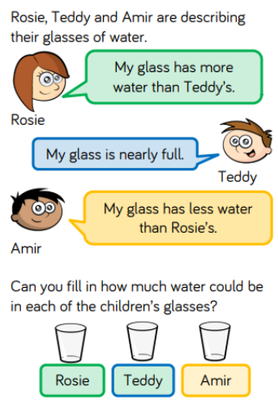
Sequence of Learning						
White Rose Small Steps	**Learning Intention**	**Key Questions**	**Sentence Stems**	**Problem-solving links**	**Comments**	**Extension and Greater Depth Opportunities**
Heavier and lighter	**To use scales to identify which objects are heavier and lighter**	Which object do you think is heavier/lighter? Is a heavier or lighter than a ___? How can you show which object is heavier/lighter? Are large objects always heavier than small objects? How do you know? How does the balance scale show which object is heavier? If two objects are the same size and shape, does that mean that they have the same mass? How do you know?	The ___ is heavier/lighter than the ___. The ___ has the same mass as the ___. I know which object is heavier/lighter because…		Children may think that larger objects are always heavier. Children may think that if an object can hold something inside, it must be heavy.	 Is the biggest item always the heaviest item? How do you know?
Measure mass	**To use non-standard units of measure for mass**	What does it mean when the scales are balanced? How do you know if two objects have the same mass? If you add one more cube, what will happen? If you take away one cube, what will happen? Which classroom objects are the best units to measure the mass of the object? Why? Why should you not use a variety of objects to measure the mass of an object? What is the mass of the in cubes?	The mass of the ___ is the same as the mass of ___ cubes. The mass of the ___ is ___ cubes.		Children may find it difficult to balance objects exactly using non-standard units. When using objects as non-standard units for measuring, children may think that a certain type of object has a certain mass.	I'm thinking of an object. It is heavier than a pencil, but lighter than a dictionary.  What object could Jack be thinking of? Prove it. How many objects can you think of? Look at the balance scales below.  Which statements are true? • The car is heavier than the van. • The van is heavier than the car. • The car is lighter than the van. • The van is lighter than the car. • The car and van weigh the same amount. Can you make a problem like this for your partner?
Compare mass	To compare the mass of two objects, using non-standard units of measure	What does it mean when the scales are balanced? What is the mass of the in cubes? Which of the two objects is heavier/lighter? How do you know? How much heavier/lighter is the than the ___? Why do you need to use the same unit to measure the masses of the objects?	The mass of the ___ is ___ cubes. I know that the ___ is lighter/heavier than the ___ because… The heaviest/lightest object is the ___.	Seesaw Shenanigans (maths.org) Interactive tool to compare mass on a balance	Children may try to use different non-standard units to measure the masses of objects, which will not allow accurate comparisons to be made	
Full and empty	**To describe volume using mathematical vocabulary**	Which container do you think can hold more water? Why? Can two glasses that look different hold the same amount of water? Why? Does a taller/wider glass always hold more water? What does "full"/"empty" mean? How are "nearly empty" and "nearly full" different?	I think that this container can hold more water because… The glass is full/empty because… The glass is nearly empty/nearly full because…		Children may believe that different shapes or sizes of containers must have different capacities or that a taller container must have a greater capacity than a shorter one, regardless of width.	 What else can you find out? 
Compare volume	To use 'more than' and 'less than' when comparing volume	What does "empty"/"nearly empty"/"nearly full"/"full" mean? If the glasses are the same size and shape, how do you know which has more water in it? How can you order the volumes from greatest to smallest? What do you know about two glasses that are the same height, but one is wider than the other?	The glass is ___. Glass A has ___ water than glass B. I know that there is ___ water in glass ___ because…	Holds more or less?	When comparing volumes in different-sized containers, children may believe that if the water level is higher up the container, then the volume of water must be greater.	
Measure capacity	**To measure capacity, using non-standard units of measure**	How can you measure how much liquid fills this container? What else can you fill the container with? How many cups of sand are needed to fill the container? How many marbles are needed to fill the container? Which unit of measure is more accurate? Why? If the cubes/marbles are smaller, will it take more or fewer cubes/marbles to fill the container than larger ones?	___ cubes are needed to fill the container. The capacity of the container is ___ cups of water.	Thirsty? (maths.org) Exploring the language of capacity Bottles (1) (maths.org) Bottles (2) (maths.org)	Children may not completely fill the container or the unit of measure, for example a cup. Children may use pebbles or marbles of different sizes when measuring the capacity of a container.	Choose three containers. Investigate how you could compare the capacity of each one. 

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		If a cup is larger, will it take more or fewer cups to fill a container? How do you know?		Exploring relative sizes of bottles		Always, Sometimes, Never? The tallest container holds the most liquid. Identical containers can have a different capacity. Show me.
Compare capacity	To compare the capacity of different containers	What can you use to measure the capacities of the containers? How many cups of water can the container hold? Which container can hold more marbles? Does container A hold more or less water than container B? Which container has the greater capacity? How do you know? How many more does container A hold than container B?	Container A has a ___ capacity than container B. I know that container ___ has a ___capacity because… I need to use the same unit of measure because…	Compare size, weight and capacity	Children may not completely fill each container. Children may not use the same units of measure for each container. Children may confuse the inequality symbols for “greater than” and “less than”.	
Post-assessment:		WRH end of mass and volume assessment – snip as feel appropriate				