

Dereham Church of England Infant and Nursery Academy- Mathematics

	Year group: 1	Area/topic: Mathematics- Mass and volume
	• Compare, describe and solve practical problems for: lengths and heights; mass/weight; capacity and volume; time • Measure and begin to record the following: lengths and heights; mass/weights; capacity and volume; time	

Prior learning	Future learning
Children have had lots of hands on practical experience of measuring in the EYFS	Children will apply these skills and knowledge when focussing on mass, capacity and temperature in Year 2 and also when answering questions covering mass and volume in regular maths meetings

What pupils need to know or do to be secure	
Key knowledge and skills	Possible evidence
Heavier and lighter Measure mass Compare mass Full and empty	Photos of children weighing a variety of items on balance scales Ask children to find some natural items outside, when returning to the classroom use the balance scales to see how many cubes they weigh Answer problem solving questions about the mass of 2 items

Compare volume Measure capacity Compare capacity	Challenge children to see which container can hold the most water Photos of children using a range of containers to compare which holds the most Measure a range of containers using sand and then water. What do the children notice? Complete reasoning questions
Key vocabulary	
Heavier, lighter, mass, balance, heaviest, lightest, full, empty, nearly full, nearly empty, capacity, greater capacity, smallest, greatest,	
Common misconceptions	Books linking to this area

• Children may think that larger objects are always heavier. • Children may think that if an object can hold something inside, it must be heavy. For example, they may think a box must be heavy because it can hold things inside it. • Children may find it difficult to balance objects exactly using non-standard units. For example, an object may be heavier than 3 bricks, but lighter than 4 bricks. • When using objects as non-standard units for measuring, children may think that a certain type of object has a certain mass, for example that all cubes have the same mass, or all bricks have the same mass. • Children may try to use different non-standard units to measure the masses of objects, which will not allow accurate comparisons to be made. For example, if the mass of an apple is 5 cubes and the mass of	So light, so heavy by Susanne Strasser Mighty Maddie comparing weights by Stuart Murphy A beach for Albert: capacity by Eleanor May
an orange is 2 bricks, this does not necessarily mean that the mass of the apple is greater. • 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. • 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.	
Memorable first hand experiences	Opportunities for communication

Opportunities to measure using a range of containers Weighing a range of items using balance scales	Ask key questions and discuss Discuss and answer stem sentences provided by White Rose Discuss/debate What's the same/what's different?
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DCINA Reasonable adjustments for pupils with SEND

Communication and Interaction

Use a range of visual aids
Give clear instructions one at a time
Repetition
Provide simple instructions
Pre teach vocabulary
Use working wall where modelling is displayed
Give children thinking time Model task

Cognition and Learning

Check understanding regularly
Allow rest breaks
Give thinking time
Colour code signs that could be confusing
Work checklists
Break down tasks into small steps
Give opportunities for over-learning

Social, Emotional and Mental health

Allow access to a quiet and calm space
Give child a special role to increase self esteem
Provide a visual support- what to do if you are stuck
Provide a movement break
Seat pupil by more confident peer
Now and next board
Sand timers
Movement breaks
Break down tasks into small steps

Sensory and Physical

Consider carpet space position
Reduce background noise
Provide a range of manipulatives- dienes may be too small
Appropriate seating
Wobble boards
Writing slope
Enlarge text
Variety of writing tools available