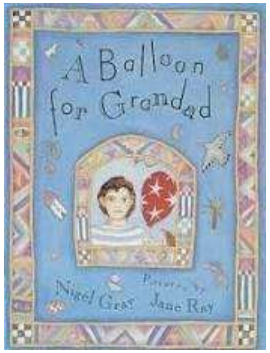
Measures books

This list includes books with particular potential to develop children's understanding of different measures, with sections focusing on length, weight, capacity and other measures such as size and speed. For each book, we have suggested some key ideas relating to measurement that could be developed. Many of the books focus on comparison (e.g. heavier/heaviest and lighter/lightest, taller/tallest and shorter/shortest, bigger/biggest and smaller/smallest), but some prompt thinking about non-standard and standard measures. Most also provide opportunities for developing a range of number, spatial and other areas of maths. We have suggested age ranges from two to seven years but the focus may vary depending on the age and experience of the children. Finally, we also offer some guidance for using the books to develop mathematical understanding, including useful links to other sites and lists.

Some of these books may be out of print, but are available second hand or from library services. You can view the books via the Youtube links provided, or by accessing https://archive.org. Please note that some Youtube videos are preceded by adverts which may not be suitable for children.

Books focussing on length and distance		Description	Developing the maths
	***A Balloon for Grandad*** Nigel Gray 3 to 6 https://www.youtube.com/results?search_query=A+Balloon+for+Grandad%2C+Nigel+Grey	Sam's balloon blows away across many different and detailed landscapes, all the way to his Grandad. A lovely story focussing on distance.	How far might a balloon travel in the room? How could we find out? What would be the same/different outside?
	***A letter to Amy*** Ezra Jack Keats 3 to 7 https://www.youtube.com/watch?v=Ru2eFBRJds0	Peter goes out to post his letter to Amy, inviting her to his birthday party. The wind blows the letter out of his hand, but he gives chase and manages to catch it and post it. Amy does come to the party!	How far away is the post box from Peter's house? How could we estimate the distance? Draw a map and mark the story locations on it to help estimate distances. How far is the nearest post box? How could we find out? Take small groups of children to the nearest post box to post a letter to the school. How long does it take to arrive? Have you ever had a letter? How far did it travel to reach you? Mark the locations on a map of the UK (or the world) and display the envelopes.

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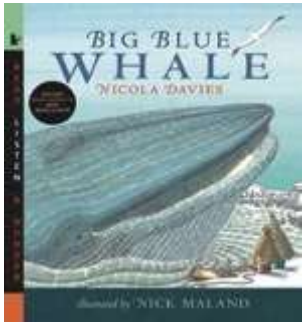
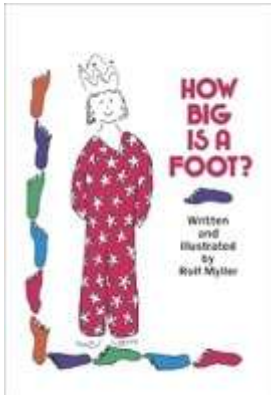
	***Big blue whale*** Nicola Davies and Nick Maland 2 to 5 https://www.youtube.com/watch?v=7ly6qU7k0Mg	Factual information about blue whales, including comparing their size and features such as eyes and ears to other animals, children and everyday objects.	Work with children to measure the everyday objects mentioned to find the size of parts of a whale. Make an eye, ear or spout and use to help imagine or draw a blue whale, perhaps using chalk in the playground.
	***How big is a foot?*** Rolf Myller 4 to 8 https://www.youtube.com/watch?v=5S-Dgk7ml40	The King wants to give the Queen something special for her birthday. He decides to give her a bed, and measures how long and wide it needs to be using his feet. The carpenter's apprentice makes the bed but it is too small. How can that be?	A book to stimulate comparing and measuring with feet. Draw around and cut out a template of everyone's foot, including the adults. You could also include a giant's foot. How are they all the same? How are they all different? Measure objects with two different feet. What can you say about the results?

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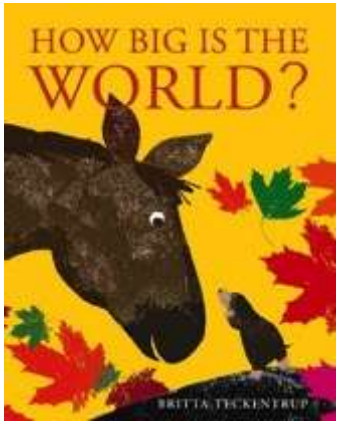
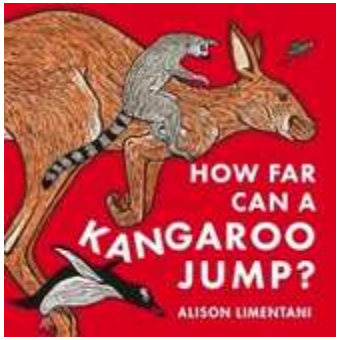
	***How big is the world?*** Britta Teckentrup 3 to 6 https://www.youtube.com/watch?v=dSR2SCb6qao	Mole goes on an epic journey to find out how big the world is.	Discuss the comparisons given for the size of the world as the story progressed. Are they useful comparisons for the creatures involved and for us?
	***How far can a kangaroo jump?*** Alison Limentani 3 to 5 https://www.youtube.com/watch?v=Vzs1WRaF3Kg	A factual book about how far various animals can jump. The length a kangaroo can jump is compared with how far other creatures can jump. It then asks how many kangaroo jumps would it take to get all the way around the earth? The distance each creature can jump is detailed on the back cover pages.	How far can children jump? What about leaps and hops? How could we measure and compare your jumps, leaps and hops? Can you improve your jump distance each day? How could you record it?

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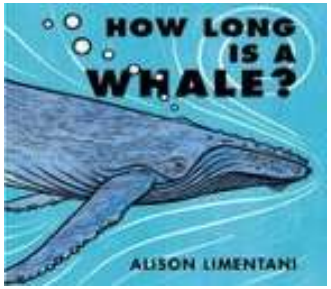
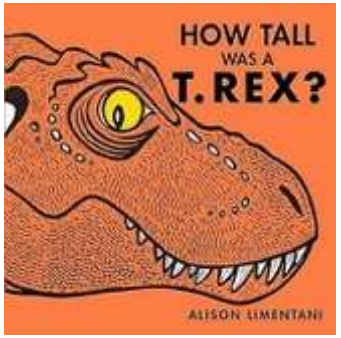
	***How long is a whale?*** Alison Limentani 3 to 5 https://youtu.be/icKWkoe5vrU	A factual book about whales. The book compares the length of a single whale to 10 sea otters, 9 yellowfin tuna, 8 sealions and so on. There is a fold out 4 page spread to compare the length of a blue whale with a mixture of sea creatures. The final pages also gives the lengths of the different sea creatures in metres.	Use metre sticks to get an idea of the length of each creature and to make life-sized drawings, chalked outlines or simple models of them. Use these to make a range of comparisons.
	***How tall was a T.Rex?*** Alison Limentani 3 to 5 https://www.youtube.com/watch?v=4cW1l2XyDf4	Factual information about a T-Rex, including comparing its size and features such as eyes and ears to other animals, children and everyday objects. This would be very useful within a wider topic on dinosaurs.	Support children to measure the everyday objects mentioned to find the size of parts of a T-Rex. Children could make life-sized drawings or simple models of the parts of a T-Rex and/or a whole T-Rex! The book also mentions other measurements such as mass and capacity.
	***Is it larger? Is It smaller?*** Tana Hoban 2 to 5 https://youtu.be/Zmka6A_WEqE	A wordless book of pictures that focuses on comparisons.	Invite children to compare similar objects in the setting to help them develop the language of comparison, including more specific terms, such as ‘taller’ and ‘wider’. Children could also measure their chosen objects in different ways to compare them.

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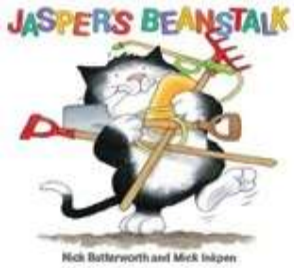
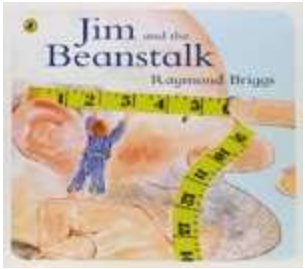
	***Jack and the beanstalk*** Emma Fucci 2 to 4 https://www.youtube.com/watch?v=FD-gVMzXA_Q	The traditional tale of Jack and the beanstalk. A useful book to support a growing and measuring topic.	Plant seeds and measure the plants as they grow. Begin with something like cress that grows quickly and is edible. Make sandwiches using the cress, taking note of any allergies. Plant beans and observe the plants including measuring growth each week. There is also the opportunity to discuss what the plants need to grow e.g. how much and how often to water them
	***Jasper's beanstalk*** Nick Butterworth and Mick Inkpen 3 to 5 https://www.youtube.com/watch?v=23INhyreb8M	Jasper plants and tends a bean, impatient to go giant hunting! Another useful book for a growing topic, which also uses the days of the week.	As with the story of *Jack and the Beanstalk*, plant seeds and measure the plants as they grow.
	***Jim and the beanstalk*** Raymond Briggs 3 to 7 https://www.youtube.com/watch?v=pLOj9vtldcg	Jim climbs a beanstalk and meets a giant. He measures him for reading glasses, false teeth and a wig, paid for with good gold.	Use a large PE or yoga ball, or something similar, to make a giant's head. Add ears, eyes, nose and a mouth then invite children to measure and then make his glasses, false teeth and wig. Check that the things made fit the giant's head.

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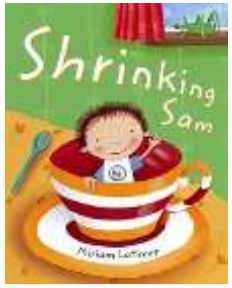
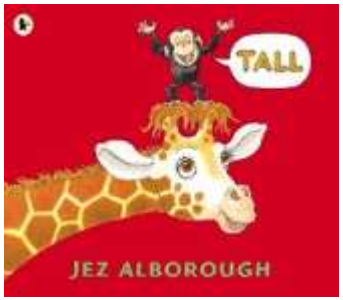
	***Shrinking Sam*** Miriam Latimer 3 to 7 https://www.youtube.com/watch?v=iETBB0-z3K4	As Sam's family ignores him, he shrinks and is washed down the sink plug hole.	Children can use real life objects to recreate the pictures in the book and estimate or measure how tall Sam is at each stage of the story.
	***Tall*** Jez Alborough 2 to 5 https://www.youtube.com/watch?v=wkRU92wRM7w	Bobo the baby chimp is upset that all the other animals in the jungle seem taller than he is than he is. He tries to make himself taller than the others by climbing on top of increasingly tall animals: a lion, an elephant, eventually a giraffe. Then he falls from that height but is caught by his mother just in time. He realizes that perhaps he is the right size after all.	This book offers opportunities to use more precise language, such as 'higher' and 'shorter'. Children could compare heights of different objects. Children could stack toys on top of each other (avoiding breakables!) and see how high they get. Blocks, Lego bricks, etc. can also be used for more precise comparisons.

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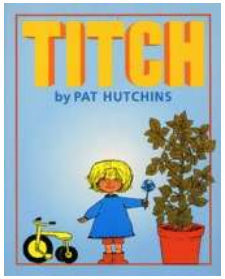
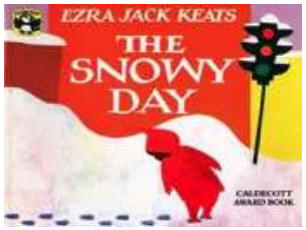
	***Titch*** Pat Hutchins 3 to 5 *https://www.youtube.com/watch?v=CgoihSunrfQ*	Titch is the youngest and smallest in his family. He envies his siblings for their greater height and the size of their possessions. But then he plants a seed and they all see it grow tall.	This book could encourage comparing the height of different objects, and matching objects (people or animals) to clothes or other possessions of suitable size. This can be done with toys or drawings. It can also be used to encourage children to watch plants grow, and perhaps to plant seeds of their own- though one must give realistic expectations for how long the growing will take.
	***The queen's hat*** Steve Antony 3 to 5 https://www.youtube.com/watch?v=6Q8MQPVq_vg	The Queen and members of her household chase her favourite hat as it blows off her head, until it finally lands in Kensington Palace.	A lovely book to help you focus on distance. Track the journey of the Queen's hat on a map of central London. Measure the distance between the places on the map.
	***The snowy day*** Ezra Jack Keats 1 to 5 https://www.youtube.com/watch?v=PzzWi-5IB7o	The book describes Peter's adventures in the snow. He enjoys the sound and tracks his feet make and goes on to make a snowman and snow angels. A lovely book for when there is snow.	Who can make the longest track? What will they make it with? Set other challenges for children to explore in the snow. (NB. Ensure that children are appropriately dressed for the weather and, if necessary, limit how long they can be outside in the cold.)

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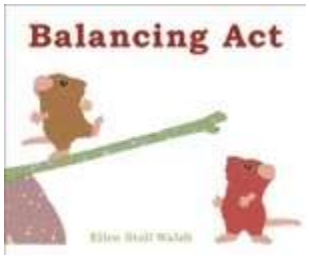
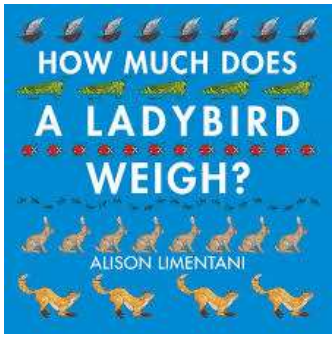
Books focussing on weight		Description	Developing the maths
	***Balancing act*** Ellen Stoll Walsh 4 to 8 https://youtu.be/EkpJtf5QOsQ	Two mice use a stick and a rock to make a see-saw. A range of friends help them to balance again and again.	Give children a set of balance scales to explore weight and balancing using any of the objects in the setting. Encourage them to predict what will happen before they add objects. Leave the book next to the balance scales to encourage the children to explain and discuss.
	***How much does a ladybird weigh?*** Alison Limentani 1 to 5 https://www.youtube.com/watch?v=bhEtwYh1Hw8	Beginning with *10 ants weigh the same as 1 ladybird*, the book continues to compare the weights of different creatures, for example, *5 starlings weigh the same as 1 grey squirrel*. The weight/mass of each creature is given in grams or kilograms on the last 2 pages.	Children could use balance scales to make similar comparisons to those in the book, starting with light objects like counters and pencils, and working up to heavier objects, like balls or shoes, making their own suggested comparisons.

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	***Who sank the boat?*** Pamella Allen 2 to 4 https://www.youtube.com/watch?v=0CmXIntGElQ	A cow, a pig, a donkey, a sheep and a tiny mouse go for a row in a boat – with disastrous results!	A lovely book to discuss who sank the boat and to prompt exploration of floating and sinking, with objects of different sizes and weights. Provide boats and a range of small world animals for children to use.
	***Just a little bit*** Anne Tompert *https://www.youtube.com/watch?v=DSE-VAeglXk*	Elephant and Mouse play on a seesaw, with their obvious difference in weight causing a problem. Many other animals join to try to balance the seesaw, until the problem is finally solved by a flying beetle.	This story provides a stimulus for children and adults to explore and use the language of weight. Children could move on from investigating weight/mass with a seesaw outside to using balance pans inside.

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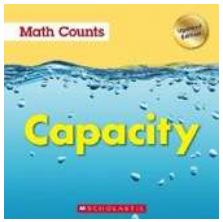
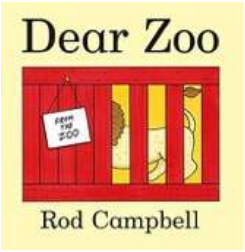
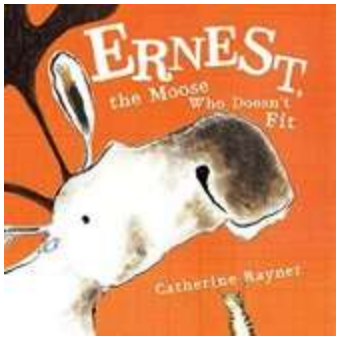
Books focussing on capacity		Description	Developing the maths
	***Capacity*** Henry Pluckrose 3 to 7 https://www.youtube.com/watch?v=M5UqTJDJSdA	Real-world examples and corresponding photos help children to understand the concept of capacity i.e. how much a container can hold.	Provide similar objects to those used in the book for children to explore capacity. Provide some short, wide containers and tall thin ones, and challenge children to predict which will hold more. Pour a cupful of coloured water into each of various transparent containers and discuss why the water levels are different.
	***Dear zoo*** Rod Campbell 1 to 5 https://www.youtube.com/watch?v=ZqGYWRHOV6E	Lift the flaps to discover the animals the zoo has sent – a monkey, a lion and even an elephant! But will they ever manage to send the perfect pet?	Provide a range of boxes and crates as well as the animals from the story for children to explore which animal will fit into each box or crate. Challenge children to find a suitable sized container for a particular animal (e.g. a cuddly toy) from the setting.
	***Ernest, the moose who doesn't fit*** Catherine Rayner 2 to 6 https://www.youtube.com/watch?v=023eDGndFdk	Ernest is a rather large moose with a rather large problem. He is so big he can't fit inside his book! Luckily, Ernest is and his little chipmunk friend aren't going to give up easily. With some tape, odd bits of paper, and plenty of enthusiasm, the pair construct an enormous page by themselves, and everything fits together in the end.	Ernest wanted to fit in the book. Explore toy animals in the setting – what would each animal like to have e,g. a bed, house, car or book? Challenge the children to make what is needed to fit. See also *Mathematical Moments: 3 & 4 year olds water play,* where Oliver finds baths to fit a range of animals

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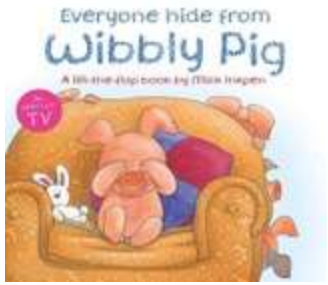
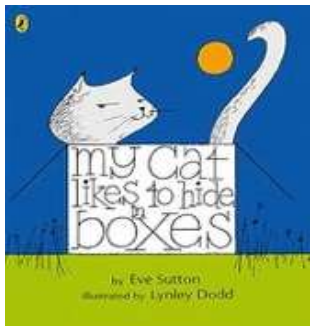
	***Everyone hide from Wibbly Pig*** Mick Inkpen 1 to 3 https://www.youtube.com/watch?v=KbOd1mKRQOA	The book explores a game of hide and seek, with lots of flaps to lift as part of the search.	Play hide and seek with the children, then discuss a range of questions such as: Where is a good place to hide? What makes it a good place to hide? Can it be a small space or must it be a big space?
	***My cat likes to hide in boxes*** Eve Sutton 2 to 5 https://www.youtube.com/watch?v=TaxCVUFjTNM	Lots of cats all around the world do exciting things like fly aeroplanes or play the violin - but my cat, an ordinary round-the-house cat, likes to hide in boxes.	Provide a range of boxes and bags for children to hide different toys animals in. You could also hide a toy animal each morning for children to find.

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Books focussing on size, speed and mixed measures		Description	Developing the maths
	***Actual size*** Steve Jenkins 4 to 8 https://www.youtube.com/watch?v=-qphR4aEj_A	This book gives the length and weight of different creatures and makes comparisons. The last 4 pages give more information on each creature, including running speeds and comparisons or other facts.	This book is a useful addition to any animal topic and is likely to inspire children to take a range of different measurements.
	***How many mice make an elephant? And other big questions about size and distance*** Tracey Turner 7 to 10	While intended for older children, and full of facts involving huge numbers, this is a stimulating book about relative sizes: e.g. the largest dinosaur was the size of 11 elephants; fleas can jump 200 times their length, equivalent to us jumping over 30 buses. With lovely illustrations by Aaron Cushley.	Young children could be asked simpler questions about relative size and invited to draw their own pictures, e,g something a bit smaller than a cat, something much smaller, something a bit bigger and something much bigger. Older children could investigate the actual size of dinosaurs etc. Some will enjoy facts involving very large numbers.

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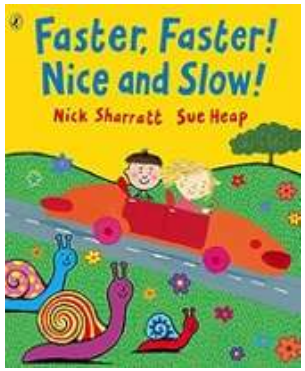
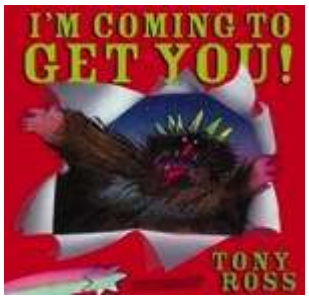
	***Faster, faster! Nice and slow!*** Nick Sharratt, Sue Heap 2 to 6 https://www.youtube.com/watch?v=BxyjwPYKe6U	This contains all sorts of opposites, including a quiet cat and a noisy dog, a freezing cold or a hot and sunny day or a super fast leopard and a family of slowly-slow snails.	Children can talk about as opposites as relative distance in their own setting, e.g. something being near one place while far from another. With toy cars they could compare the distance travelled to the same place on a wiggly or a straight road or make ramps of different heights so cars go fast or slow.. The book also offers the opportunity to explore opposites such as light and heavy and refine language such as big and small.
	***Home*** Carson Ellis 2 to 4 https://www.youtube.com/watch?v=vLFblsz8pN0	Home might be a house in the country, a flat in the city, or even a shoe. Homes can be by a road or the sea, in the realm of fantasy, or in the artist's own studio.	Encourage children to talk about the home they live in or would like to live in. Invite them to make a model of a home or one of the ones in the book. Model making will involve a range of measurements and comparisons.
	***I'm coming to get you!*** Tony Ross 3 to 5 https://www.youtube.com/watch?v=TSscmBuLA24	A monster that likes to destroy planets comes to Earth, but turns out to be far too small to have an effect. A humourous introduction to the concept of scale.	A useful book to encourage size comparisons. Does the story make the monster sound scary? How do children feel when they see the size of the monster? Compare small world animals with pictures of animals in real settings to explore the difference in size. What could happen if a real zebra (or other animal) was in the setting?

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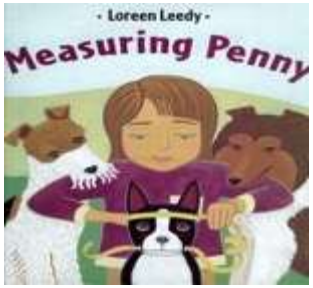
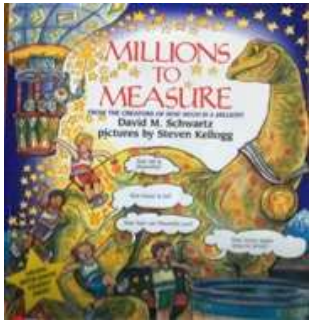
	***Measuring Penny*** Loreen Leedy 4 to 7 https://www.youtube.com/watch?v=YXxj3TfTFM4	Lisa decided to measure Penny, her Boston Terrier, for her homework project. Measuring is explained and explored. This uses a mixture of imperial and metric measures.	Encourage children to choose toy animals in the setting to measure –and decide what to measure and how to measure it.
	***Millions to measure*** David M Schwartz and Steven Kellogg 4 to 8 https://www.youtube.com/watch?v=z_PQEOTnpqs	Marvelosissimo the Mathematical Magician shows a group of children how people measured many years ago and today. Distance, length, weight, volume are all covered. Although imperial units are used, the book ends with metric measurements.	Encourage children to explore different types of measuring within the setting. Invite children to compare their measurements and share how they measured.
	***Sally's secret*** Shirley Hughes 2 to 6 https://www.youtube.com/watch?v=lRd-zPEnZ_0	Sally likes to make houses in all sorts of places, but they keep being tidied away. She makes a house in the woods in the garden and has lots of visitors before bedtime.	Explore measuring through den building: How tall or wide does it have to be so we can get in? What length sticks etc do we need?

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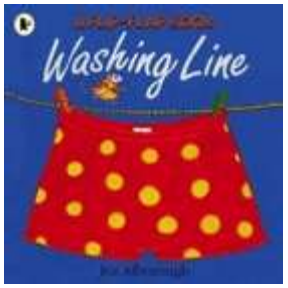
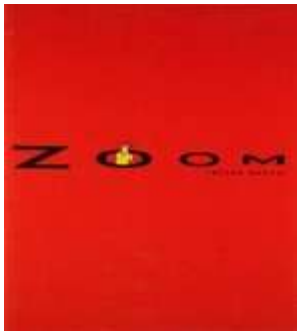
	***The smartest giant in town*** Julia Donaldson 3 to 5 https://youtu.be/cfiPrA8E3qE	The scruffiest giant in town becomes the smartest giant in town, for a while. He uses parts of his new outfit to help different animal friends and ends up rescuing his original outfit from the bin. His friends give him a gold paper crown because he is the kindest giant in town.	Invite children to discuss the size of each item of clothing and how is used in the story. How long was the giant's tie to be the giraffe's scarf, and how big was the shirt to become a boat sail, or the sock to fit a fox?
	***Washing line*** Jez Alborough 2 to 6 https://www.youtube.com/watch?v=t5IcFgYRFQs	The story identifies who owns each piece of washing on the washing line.	Encourage children to talk about how they know who the washing belongs to. Could each item belong to someone else? Who else would it fit?
	***Zoom*** Istvan Banyai 4 to 8 https://www.youtube.com/watch?v=JMhUujrN4iU	A wordless book that zooms from a farm to a ship to a city street to a desert island, in a way which is quite mind-blowing!	Provide magnifying equipment for children to look at objects more closely. Take close up, distant or unusual pictures of everyday objects and ask children to identify what the object is. Can they describe where the photographer must have been to take the photo, using the language of distance such as near, far, close and so on?

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