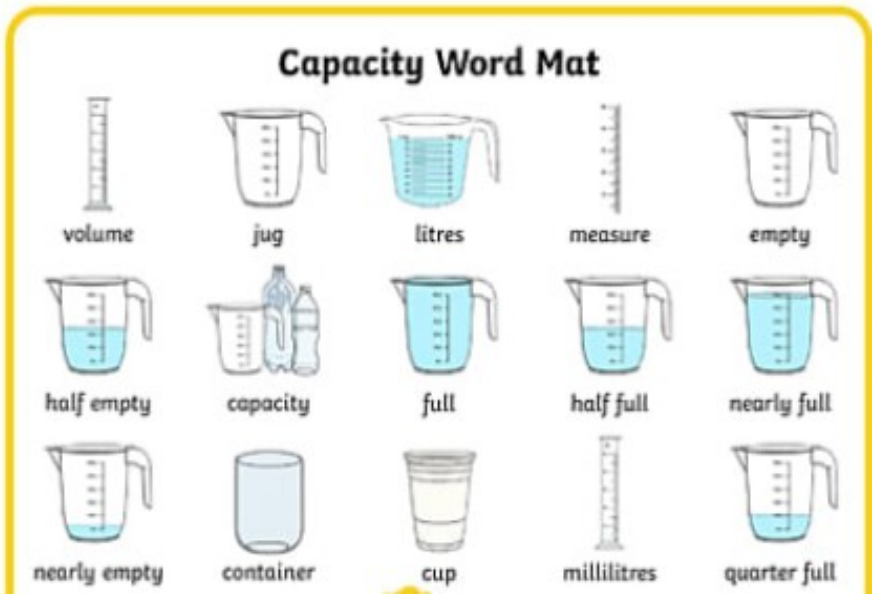
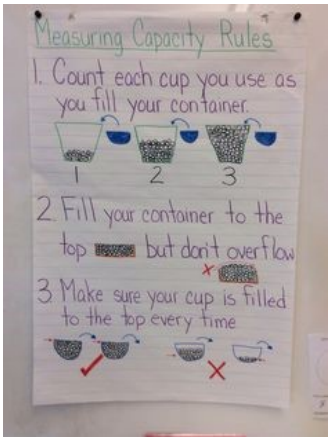


Marvellous Maths

Year 1:

This week we would like you to focus on capacity. The aim is for your child to compare, describe and solve practical problems for capacity/volume (using vocabulary such as full/empty, more than, less than, half/ quarter).



The language around volume and capacity can be tricky. The words are not frequently used in daily conversation and can be confusing. For example, when your container is full, the capacity is equal to the volume but when your container is empty the capacity is the same but the volume is zero.

What is capacity? ***Capacity is how much space there is available to hold something.***
What is volume? ***Volume is a measure of the space taken up by something.***

1 You will need a jug or similar container that water can be poured from and some cups that are all the same (plastic cups, egg cups etc).

Review vocabulary of capacity and volume. Why do we need to know about capacity?

Ask your child to fetch their favourite soft toy. Explain that their toy wants to know how many cups they can fill with one jug so they know how many other toys they could invite for a drink (and snack). How could we work this out? How many cups does your child think they can fill using the jug/container? Find out how many cups can be filled. Were they right? What will happen if we only half fill them? (Emphasise vocabulary above during this activity e.g. that cup is nearly full! Now fill the empty cup etc). How many toys can be invited to the party? If they want to, your child could now have a tea party for their toys!

2. Ask your child to find 3-5 different containers that could be filled with water. Ask your child to put them in order of capacity and take a photo. How could your child work out if the order they have guessed is right? Encourage your child to think about this independently and work it out by trial and error. When they have worked it out, ask them to show you and explain their strategy. Match the order they have now chosen with their original guess. Were they right? Were there any surprises? Sometimes children assume the taller an container the more it will hold.

3. You need to find a collection of jars and bottles of different sizes and shapes, like those in the picture below:

Remember you can also use tall vases, cups, buckets, shallow bowls, as many different shapes as you can find!

I wonder which holds the most/least liquid?
Use estimation first of all.
How could you find out? Explore!

Can you find a way of counting how many "small container-fulls" each will hold? (tip—use the same small container for filling each time, as a 'non-standard measure'). Put all your containers in order from least to most.
Can you find a better way?

4. Try the same activity, but this time empty each container into a measuring jug—talk about millilitres and litres, teaching the idea that this is a 'standard measure' - look for ml and l on washing-up liquid, drinks bottles, milk bottles, washing liquid, shampoo bottles etc—can the children work out which holds the most? Can they make the same volume in their measuring jug?

5. Capacity is not just concerned with liquids! Can you estimate the capacity of your shoe? Use an eggcup and lentils or rice to measure it. Do all your shoes have the same capacity? Think about your family's shoes. Whose shoe has the largest capacity? Whose has the least? Which 2 shoes have the same capacity?

   Try finding the capacity of toys in your sandpit if you have one, estimating and checking with your measuring jug, or maybe have fun with a 'mud kitchen', making recipes using one cupful of mud, two teaspoons of grass etc.

And just for fun — there are some fun science-y activities on this webpage linked to capacity — making a fizzy potion, a lava lamp or experimenting with density—enjoy!

https://www.science-sparks.com/capacity-and-volume/