

Friday 21st August

Recall - Video

Yesterday's measurement activities. Can you remember what "kilo" means in the word "kilometre"? Where did you walk to yesterday? How tall are you?

Let's have another look at millimetres, centimetres, metres and kilometres in relation to each other.

- There are 1000 metres in a kilometre
- "Centi" in centimetre means one hundred. There are 100 centimetres in a metre. Get a measuring tape and count the centimetres up to 100. When you reach 100, you have reached 1 metre. How many more centimetres do you have to count to get to 2 metres?
- "Milli" in millimetre means one thousand. There are 1000 millimetres in a metre. Have a look at your tape measure again. Look at the centimetres and the little tiny lines inside the centimetre. How many millimetres can you count inside a centimetre? Each centimetre has 10 millimetres. See if you can count by ten millimetres at a time all the way to 1000. When you reach 1000, you will have reached 1 metre, which is the same as 100 centimetres.

Story/Introduction

In the olden days, as we know, people had many ways of using their bodies to measure the length of things. However, not everything could be measured in length. In the marketplaces, all kinds of things were sold and some goods needed to be measured in a very different way. It was quite easy to sell lengths of cloth or a certain number of apples or potatoes, but some other goods were harder. Grains, beans, lentils, spices all of these things could not be counted for they were far too small and measuring the length was of no use either. So, people started to measure some goods, by their weight, by how heavy they were. Of course, in those days, there were no measuring scales and people had nothing to use but their own body.

How do you think you would measure the weight of something with your body?

Azra sold all kinds of grains, legumes and spices at his market stall. He was a strong, friendly young man and his business thrived. Not because he was friendly or because his products were good quality. Over time, people had worked out, that it was best to go to Azra's stall, because he was strong. You see, people measured the weight of their goods by how heavy they felt in their hands. Azra was very strong, so when he picked up goods, they felt very light and he wouldn't charge his customers so much. However, people also worked out that it was better to visit Azra early in the day, because by the end of the day, his arms would grow tired and things would feel much heavier.

When Azra got married, his wife Selma began to help him in the marketplace. She was a very clever young lady and she soon saw what was happening. Even though the business was doing well, she could see that things were not being measured properly. Furthermore, when she picked up a bag of grain it felt much heavier to her than it did to her husband and often they could not agree on the correct price to charge their customers. A solution needed to be found. There needed to be some way to know that the same amount of grains was being sold each time for the correct price. Selma thought about it all night and finally, when the sun began to rise, she had an idea. She sprung out of bed, went straight outside and started

gathering stones. When her husband woke up, she excitedly explained to him that they would compare the weight of the goods they sold to the stones, so that they would know that the right amount was being sold each time. Azra agreed that this was a very good idea. From then on, Azra would hold a stone in one hand and a bag of grain in the other. More grain would be added to the bag until it felt as heavy as the stone.

Customers soon started to see that Azra and Selma were charging very fair and consistent prices for their goods and business increased each day. Soon, people from all the nearby towns were buying large amounts of goods from their stall. Azra was having to weigh bigger and bigger bags of grain against much larger stones. By the end of the day, his arms and back were terribly sore and weary. There had to be a better way.

Selma once more had a sleepless night as she thought long and hard about a solution. She pictured her husband standing tall and strong with his arms stretched out; one hand holding grain, the other holding a stone. His arms moved up or down from the weight they carried, but all the while, he stood still and straight, like a tree with moving branches. An idea was beginning to form in Selma's mind. She kept picturing her husband's arms like long moving branches, until it finally occurred to her that perhaps a tree branch could be used instead. Selma took a piece of parchment and began to sketch her ideas. Finally, she had drawn a contraption that looked much like the shape of the letter T. A tall, straight, strong branch stood upright and was held in place at the base. Another straight branch was attached across at its middle so that it moved up and down. To the ends of the branches, were baskets tied with rope. She imagined that if a stone was placed in one basket, it would be weighed down to the ground while the other basket would rise high in the air. But as more and more grain is added to the other side, it would come down and when both sides held the same weight, the branch would be perfectly level. Selma excitedly showed Azra who was amazed once more at his clever wife. Together, they built a balance scale and Azra never suffered from sore arms ever again.

Set Up

Have 10 objects of varying weight set out for your child. **It is important that they do not help with the set up.**

Activity - Video

Look at the objects and without touching them, estimate the order of their weight from lightest to heaviest. Ask someone in your family to place them in the order you think they should go, so that you do not touch the objects.

Now that you have estimated the weight of the objects by looking at them, you can now pick them up and see if you were correct. Reorder the objects if you need to from lightest to heaviest.

Sometimes, it can be hard to know if one object is lighter or heavier than another if the two objects are similar in weight. So now that you have weighed the objects with your hands, I'd like you to see if you can make your own balance scale to double check if you are correct about the weight of all the objects.

You will need to be resourceful and use whatever you can find around your house to make your own scale. A balance scale is a little bit like a see-saw, where there is a centre-point or fulcrum and the two sides of the see-saw move up and down. You need to think of some way, to make a contraption, with two sides that can move up and down. If you've had a long hard think about it and you find that you are still stuck, you can have a look at the scale that I have made from things I have in my house.

See the picture below.

Optional Activity

If you are able to set up a see-saw, you can compare your weight to other people in your family.

Bookwork

Draw the balance scale you made and write a description about how you made it in your main lesson book (large red book).

Maths – Video Explanation

Do the following sums in your maths practice book (medium red book). Please try all of them if you can. Hopefully they won't take too long once you get the hang of it.

Centimetres to Millimetres

How many mm is there in 4cm?

How many mm is there in 9cm?

How many mm is there in 12cm?

How many mm is there in 20cm?

How many mm is there in 110cm?

How many mm is there in 300cm?

Millimetres to Centimetres

How many cm are there in 50mm?

How many cm are there in 80mm?

How many cm are there in 110mm?

How many cm are there in 180mm?

How many cm are there in 380mm?

How many cm are there in 1080mm?

