

Game 2M3: Weight

Strand: Measures

Strand Unit: Weight

Curriculum Objectives Covered:

- Estimate, compare, measure and record weight using non-standard units
- Select and use appropriate non-standard measuring units and instruments
- Estimate, measure and record weight using kilogram, half kilogram and quarter kilogram and solve simple problems
- Explore and discuss instances when objects or substances that weigh 1kg vary greatly in size

Name: “How Heavy?”

Aim: For every child in the circle to complete a weight-related task involving different types of weighing instruments and weighing units.

Activity Area: Classroom

Duration: 40 minutes

Resources:

- Set of ‘Questions and Tasks’ (attached)
- 1 balance, 1 kitchen scales and 1 bathroom scales
- Building blocks, beads, a paper weight, a quarter kilogram weight, a half kilogram weight and a 1 kilogram weight
- 1 stapler, a pencil case, 1 CD player, 1 school bag, 1 mug, 500g bag of flour, 1 apple, 1kg bag of sugar and a 250g tub of butter
- ¼kg bag of polystyrene
- Whiteboard
- Whiteboard marker

Set Up:

1. Open the attached set of ‘Questions and Tasks’ for use throughout the activity.
2. The children sit in a large circle on the carpet.
3. Put the balance, the kitchen scales and the bathroom scales into the centre of the circle.
4. Put the building blocks, the beads, the paper weight, the quarter kilogram weight, the half kilogram weight and the 1 kilogram weight into the centre of the circle.
5. Put the stapler, the pencil case, the CD player, the school bag, the mug, the lunch box, the apple, the 1kg bag of sugar and the 250g tub of butter and the ¼kg bag of polystyrene into the centre of the circle.

Start Playing:

1. The teacher reads out the first bullet point from the set of Questions and Tasks (attached) to any one child e.g. *Which do you think will be heavier, the stapler or a pencil case? Hand-weigh the 2 items and say which you think will be heavier.*
2. The child follows the instructions on the card and says which item he/she finds to be heavier.
3. The teacher then reads out the next bullet point from the Questions and Tasks and the next child in the circle performs the task e.g. *Weigh the stapler using the balance. Which weighing unit do you think is best to use with the balance?*
4. The child should carefully place the stapler onto one side of the balance and her chosen weighing unit/units onto the other side e.g. the quarter kilogram and some beads. If the scales do not balance exactly, the child should add or remove some weighing units until the scales balance exactly. When the scales are exactly balanced we can tell the weight of the stapler, because we will be able to see that it is the same weight as whatever is on the other side of the scales. For example, the stapler might equal $\frac{1}{4}$ kilogram + 14 beads in weight.
5. The teacher then reads out the next bullet point and the next child in the circle must perform the task e.g. *Write the weight of the stapler on the whiteboard.* The child should write the weight in the following format e.g. Stapler = $\frac{1}{4}$ kilogram + 14 beads in weight.
6. After the child has performed the task, the teacher reads out the next bullet point and the next child in the circle performs the next task and so on. The activity continues around the circle, with the teacher guiding discussion throughout, until every child in the class has had an opportunity to address a question.

Questions and Tasks:

- Which do you think will be heavier, the stapler or a pencil case? Hand-weigh the 2 items and say which you think will be heavier.
- Weigh the stapler using the balance. Which weighing unit do you think is best to use with the balance?
- Write the weight of the stapler on the whiteboard in the following format e.g. Stapler = $\frac{1}{4}$ kilogram + 14 beads in weight.
- Weigh the pencil case using the same type of weighing units as were used for the stapler.
- Write the weight of the pencil case on the whiteboard in the following format e.g. Pencil case = $\frac{1}{4}$ kilogram + 3 beads in weight.
- Look at the weights written on the whiteboard. Which was heavier, the stapler or the pencil case? Can you think of a quicker way to find out which of the two is heavier? Try it out. Did you get the same answer? Did the person who hand-weighed both objects earlier also get the same answer? Which method/methods of weighing the items do you think is the most accurate? Why?
- Which type of scales do you think would be best to find out how many kilograms you weigh? Now weigh yourself to find out and write your weight on the whiteboard.
- What weight is the tub of butter? Does it say it on the container? Weigh it to find out if the scales show the same weight as the container.
- Use the balance to find out if the 250g tub of butter is exactly the same weight as any of the measuring units in the centre of the circle. Is it? Which measuring unit?
- Which type of scales do you think would be best to find out the weight of the CD player? Now weigh it to find out its weight and write the weight on the whiteboard.
- Which do you think will be heavier, the bag of sugar or the bag of polystyrene? Why? Use the balance to see which is heavier.
- Which type of scales do you think would be best to weigh the bag of sugar? Weigh the bag of sugar.
- Write the weight of the bag of sugar on the whiteboard.
- Is the bag of sugar the same weight as any of the measuring units in the centre of the circle? Use the balance to verify your answer.
- Which type of scales do you think would be best to weigh the bag of polystyrene? Weigh the bag of polystyrene.

- Write the weight of the bag of polystyrene on the whiteboard.
- How much heavier was the sugar than the polystyrene? (Use the whiteboard and marker to work it out if you need to.) What does this tell us about the size of objects in relation to their weight?
- How many blocks weigh half of a kilogram? Use whatever you need from the centre of the circle to find out.
- How many beads weigh a quarter of a kilogram? Use whatever you need from the centre of the circle to find out.
- Which type of scales do you think would be best to weigh a school bag? Weigh the school bag and write the weight on the whiteboard.
- Which type of scales do you think would be best to weigh a mug? Weigh the mug.
- Write the weight of the mug on the whiteboard.
- Which do you think will be lighter, a bag of flour or an apple? Hand-weigh the 2 items and say which you think will be lighter.
- Weigh the bag of flour using the balance. Which weighing unit do you think is best to use with the balance?
- Write the weight of the bag of flour on the whiteboard in the following format e.g. Bag of flour = 16 blocks in weight.
- Weigh the apple using the same type of weighing units as were used for the bag of flour.
- Write the weight of the apple on the whiteboard in the following format e.g. Apple = 7 blocks in weight.
- Look at the weights written on the whiteboard. Which was heavier, the bag of flour or the apple? Can you think of a quicker way to find out which of the two is heavier? Try it out. Did you get the same answer? Did the person who hand-weighed both objects earlier also get the same answer? Which method/methods of weighing the items do you think is the most accurate? Why?
- Weigh the bag of flour using the kitchen scales and write the weight on the whiteboard in the following format e.g. Bag of flour = 500g.
- Look at the information written on the whiteboard. We now know the weight of the bag of flour in non-standard measuring units (beads/blocks etc), and also in standard measuring units (g, kg). Can we tell the weight of the non-standard measuring units that we used to weigh the bag of flour from this information?