



Master Lesson Plan

For

How Heavy How Light

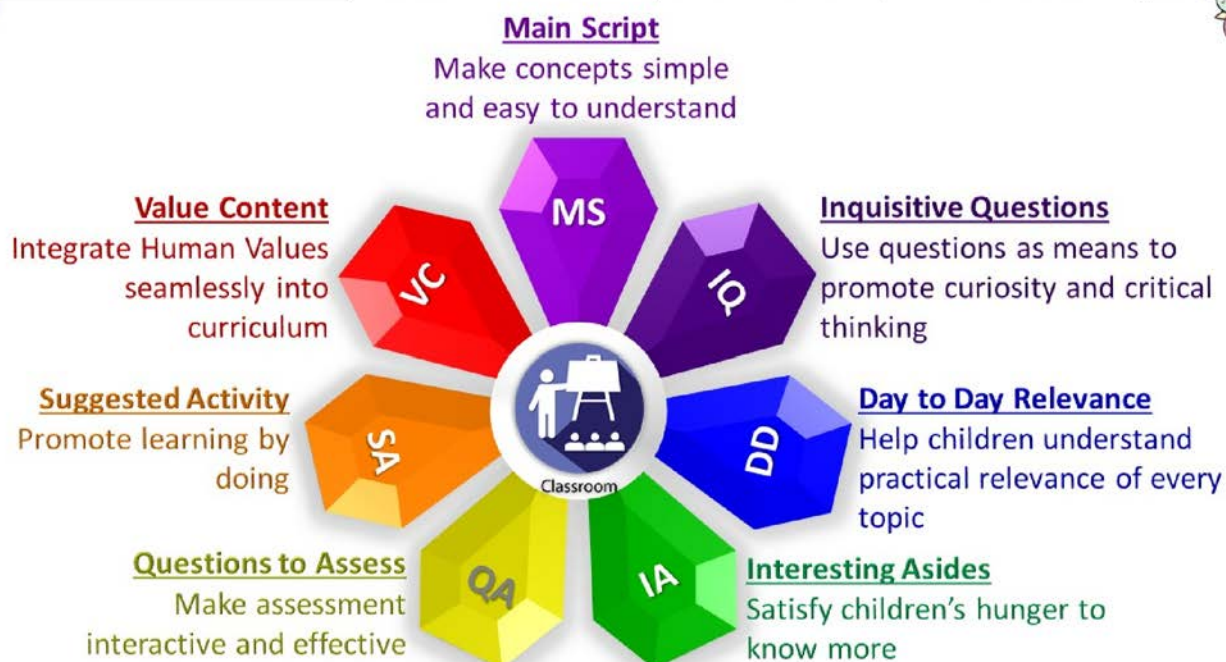
Board	Standard	Subject	Chapter	Language	Reference Link	Creation
CBSE	STD IV	Mathematics	How Heavy How Light	English	How Heavy and How Light	2020-09

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Master Lesson Plan (MLP) - Covers the entire chapter with the help of these 7 asset types



For more information on how to use the lesson plan effectively, please scroll to the guidelines at the end of this document.

How Heavy How Light

1. MS_Objective_How Heavy, How Light?

Notes to the teacher: This asset lays down the proposed plan for transacting this chapter.

It states the asset objectives of the MLP.

This asset is for teacher's reference and need not be taught to the students.

Students will be able to:

- Compare weights
- Solve and decide how to balance the weights.
- Relate to the significance of Kilograms and Grams as unit of measurement .
- Calculate and convert from Kilograms to Grams and vice versa.
- Apply addition, subtraction and multiplication of numbers that have kilograms and grams as units.
- Solve weight related word problems.
- Make their own weighing scale
- Relate to the various places and the various items for which weight is used.
- Calculate and solve weight related word problems.
- Relate to different units of weight.
- Recognize the need to worry less

Time to teach	Asset Type	Theme	Sub Theme
3 Minutes	Main Script	Measurement of Weights	Heavier and Lighter

2. IQ_Importance of Weight

- **Why is weighing important in the food industry (hotels)?**

Suggested Answer:

Weighing is critical for restaurants and other food industries sell food. Meats, fruits and vegetables are usually sold by the Kilogram or gram; if we cannot correctly weigh an item the price per KG or Gram could differ from the actual weight. Thus, even a small error can have a large impact on a business's profit. Quality and taste of food would also be affected if the ingredients are not properly weighed.

- **Why is weighing important for Healthy living or in Hospitals**

Suggested Answer:

Weighing is an essential thing to maintain the health of our body and measuring the progress of a growing child. For example, The National medical council uses a person's weight to calculate a Body Mass Index(BMI) that can determine if you are under or overweight. To calculate BMI you divide your height in inches divided by total weight in pounds. An average BMI is around 18 to 24 range.

In drug industry chemicals are accurately measured and mixed before they are packed and labeled. Doctors prescribe medicines accordingly.

- Explain with example why weighing is important in Science experiments?

Suggested Answer:

Chemists often deal with chemical equations, in order to make specific amounts of substances and different concentrations of solutions.

For example, if we want to make 1 gram of a 20 percent solution of salt water, we would need to measure out 0.2 grams of salt and 0.8 grams of water, otherwise you cannot get an exact 20 percent solution of salt water.

If, you are managing the post office counter, how much will you charge for the following parcel packets?
You can take the required details from the chart below

Quantity of Packet (Nos.)	Weight (Grams)	Distance (Kms.)	Applicable rate in rupees (Student to write)	Total rupee to be paid (Students to calculate)
5	40	100		
2	300	Local		
1	1000	350		

The weight and distance chart applicable is given below for reference.

Weight	Local (Within Municipal Limits)	Upto 200 Kms.	201 - 1000 Kms.	1001 - 2000 Kms.	Above 2000 Kms.
Up to 50 Gms.	18.00	41.00	41.00	41.00	41.00
51 Grams to 200 Grams	30.00	41.00	47.00	71.00	83.00
201 Grams to 500 Grams	35.00	59.00	71.00	94.00	106.00
501 Grams to 1000 Gram	47.00	77.00	106.00	142.00	165.00

Answer:

Quantity of Packet (Nos.)	Weight (Grams)	Distance (Kms.)	Applicable rate in rupees (Student to write)	Total rupee to be paid (Students to calculate)
5	40	100	41	41x5=205
2	300	Local	35	35x2=70
1	1000	350	106	106x1=106

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Inquisitive Questions	Measurement of Mass	

3. MS_Heavy and Light Weights

Teacher may introduce to the class the topic **“Weights”** by writing on the board.

Teacher may say Weighing is done by using a balance to measure the weight of an object or to compare the weight of two objects.

Teacher may ask the following question to the students:

- What they mean by heavy and light?
- When you pack your school bag what are the items that you put inside your school bag?

The answer can be items like Books, Notebooks, Pencil Box, Lunch Box, Water Bottle are put in a School Bag.



Further questions can be that -What items they find heavy and what items light?

The heaviness is compared relative to each other. One item can be heavier than other but lighter than something else.

For example, a notebook can be heavier than pencil box but lighter than a book.

Teacher may ask students to list the items of the school bag in order from light to heavy?

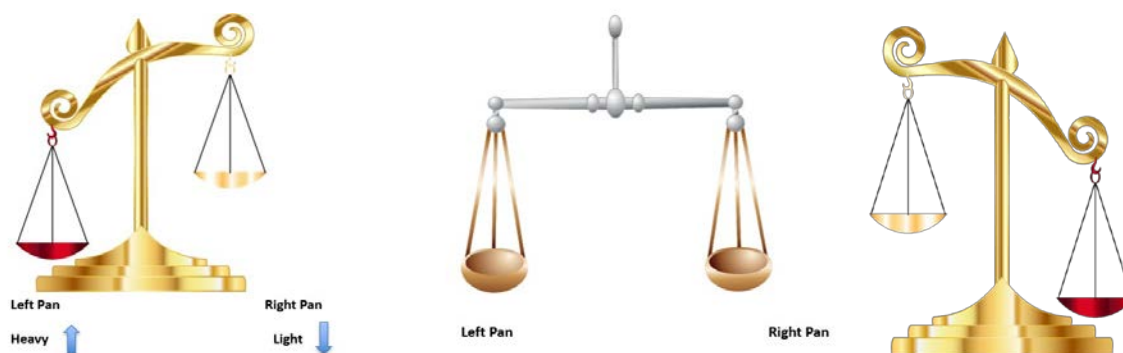
Answer can be in order of Pencil Box, Notebook, Lunch Box, Book, Water Bottle



Weight is a measure of the heaviness of an item. Heavier an item, the more is its weight, less heavy an item, less is its weight.

We use Balance Scale to find- What is heavy and what is light? By placing things to be weighed either side of the pan, the pan with heavy item goes down, the pan with light item goes up. When both pans have equal weight, both pans are at the same level. Then it is said that the weight of both the items are in Balance.

The following levels of the balance scale denotes which side of the weight is heavier or lighter or are in balance to each other.



Teacher can ask students to identify whether Right pan is heavier or lighter or balance with respect to Left Pan of a balance scale.

Image source:

<https://openclipart.org/detail/221789/golden-off-balance-scale>
<https://openclipart.org/detail/160099/school-bag>
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<https://openclipart.org/detail/238204/sacdecourcol>
<https://www.kisspng.com/png-sports-drink-water-bottles-clip-art-water-bottle-c-550638/>
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Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Main Script	Measurement	

4. QA_Balancing Weights

Balancing Weights



You have few stones that are of different weights in Kilogram (kg) and Gram(g). Kilogram and Gram are a measure of weight. You are supposed to put few stones on the Left Pan and few on the Right Pan of a Balance Scale so that both pans are Balanced. Please write your weight choices for each pan in the respective column.

Sr.No.	Available stone pieces with their weights	Add weight to Left Pan	Add weight to Right Pan
1	9kg,7kg,5kg,3kg		
2	10kg,10kg 25kg,5kg		
3	2.5kg-4 nos, 5kg		
4	5kg – 6nos.		
5	25g-2 nos, 50g, 150g, 250g,		

Answers

Sr.No.	Available stone pieces with their weights	Add weight to Left Pan	Add weight to Right Pan
1	9kg,7kg,5kg,3kg	9kg+3kg	7kg+5kg
2	10kg,10kg 25kg,5kg	25kg	10kg+10kg+5kg
3	2.5kg-4 nos, 5kg	5kg+2.5kg	2.5kg+2.5kg+2.5kg
4	5kg – 6nos.	5kg+5kg+5kg	5kg+5kg+5kg
5	25g-2 nos, 50g, 150g, 250g,	150g+50g+25g+25g	250g

Image Source:

<https://www.pexels.com/photo/photography-of-stones-1029604/>
<https://openclipart.org/detail/244044/brass-scales-of-justice>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Assessments	Measurement	

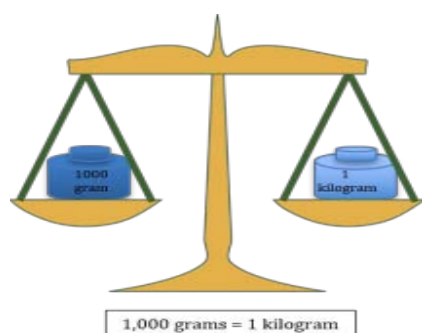
5. MS_Significance of Kilogram and Gram

Teacher may start the class highlighting the **Significance of Kilogram and Gram**

There is an internationally accepted unit of weight. The heavier weights are measured in **Kilogram** and the lighter ones in **Gram**. In short Kilogram is written as '**Kg**' and Gram as '**g**'.

1 kg = 1000g and so 1g=1/1000kg.

We have standard weights available for different values as 10kg, 5kg,2kg, 1kg, 500g, 250g, 100g, 50g and more on lighter side and on the heavier side.



Weights are measured by

1. Putting one desired standard weight on one side of the scale and put item/s to be weighed on the other side of the scale till they balance. Like 5 kg of apple.



- 2) Putting item/s to be weighed on one side of the scale and put different standard weights on the other side to balance the scale. Like 1 bag of Rice weighs 5kgs.
- 3) Putting one item on one side of the scale and another item on the other side of the scale till the scale balance. 1 bag of Rice is equal to another bag of Rice.

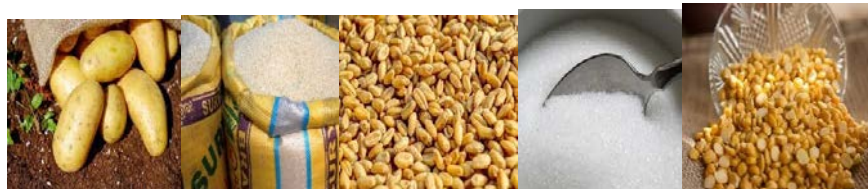


List a few items which we weigh in “**Grams**”

Masala Powder, Tooth Paste, Face Cream, Biscuits, Sauce, Jam, Chocolate etc.



List a few items which we weigh in “**Kilograms**”



The teacher may start the class by saying we buy different things having different weight and size. Some in large quantity and some in small quantity as their usage differs in our daily life.

The teacher can draw the following table on the black board and then ask the students to name things that we usually buy in different weight units as in Kilogram or Gram. Students may be asked to fill the table as shown on the blackboard.

Few possible answers are given below, however, students may have their own answers and needs

In grams	In kilograms
1. Spices	1.Rice
2.Tea	2.Wheat
3.Toothpaste	3.Sugar
4. Soap	4. Dal
5.Biscuit	5.Potato

Teacher may conclude by saying different things are bought in different weights and advise the students to observe at their homes the quantities of things bought at their home.

Standard weights available for different values



Image Source:

<https://pixabay.com/en/scales-balance-weight-just/>
<https://pixabay.com/en/windfall-fruit-rusty-antique-scales-959033/>
<https://pixabay.com/en/weight-kilogram-old-measurement-1504305/>
<https://pixabay.com/en/weight-kilo-kilogram-metal-71113/>
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<https://pixabay.com/en/weight-horizontal-weigh-old-kg-2541654/>
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<https://www.pexels.com/photo/potatoes-144248/>
<https://pixabay.com/en/wheat-grain-agriculture-seed-crop-381848/>
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Time to teach	Asset Type	Theme	Sub Theme
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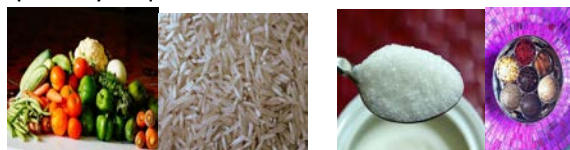
10 Minutes	Main Script	Measurement	
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6. DD_Uses of Weights in Daily Life

Uses of Weight

In our daily use we use various items be it cooking, medicine, post office, grocery purchase, vegetables purchase and almost everywhere.

In cooking we use various types of items in different quantities. Rice, wheat will be more, vegetables may be moderate and spices, salt, sugar small. They are purchased in quantities as Kilogram (kg) or gram (g) depending on the quantity required.



Though in kitchen actual weighing scale may not be used but, a quantity measure is done by a small container, cup, spoon, pinch and by feeling the weight as a quantity measure.

In Medical area a doctor prescribes different doses of medicines to be taken. Any less quantity taken may not be effective and a larger quantity may be dangerous. Medicines are taken in small quantities. At times more than one medicine are mixed together.

The quantities of components of medicine decides its strength and hence different doses are prescribed by the doctor. These parts are very small and are measured in quantities less than a Gram like milligram. 1Gram (g)= 1000 milligram(mg)



In post office you can send letters, envelopes and parcels of on payment. You can buy pre-printed stamps and paste them on your letters and envelopes.

You can send parcels also through post office. They charge money based on the weight of the parcel packet and the distance of the destination to which the parcels are to be sent. Postmaster, who manages the counter has standard chart, to make the calculation for the money to be charged.



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<https://pixabay.com/en/rice-kitchen-cooking-loose-eating-2951951/>
<https://pixabay.com/en/rice-spoon-spoon-rice-eat-food-2294365/>
<https://pixabay.com/en/sugar-spoon-cutlery-sweeteners-485050/>

<https://pixabay.com/en/masala-spices-box-kitchen-ayurveda-1649416/>

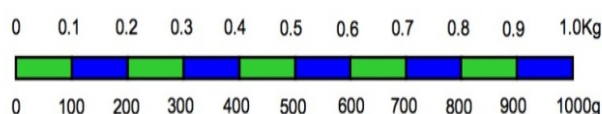
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<https://pixabay.com/en/medical-medicines-tablets-drug-1441446/>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Day-to-day Relevance	Measurement of Mass	

7. MS_Conversions - Kg to g and g to Kg

The following scale gives a ready conversion of kilograms (kg) to gram(g) and gram to kilogram. Top line shows figures in kg to one decimal places and gram up to 1000.



Kilogram(kg) weight when multiplied by 1000 converts it to the units of grams(g).

Gram(g) weight divided by 1000 converts the weight unit to kilograms(kg).

$$1\text{kg} = 1 \times 1000 = 1000\text{g}$$

$$1\text{g} = 1/1000 = 0.001 \text{ kg}$$

$$900\text{g} = 900/1000 = 0.900 \text{ kg} = 0.9 \text{ kg}$$

$$200\text{g} = 200/1000 = 0.200 \text{ kg} = 0.2 \text{ kg}$$

$$100\text{g} = 100/1000 = 0.100\text{kg} = 0.1 \text{ kg}$$

Kg is presented as full number, 1kg, 2kg

Gram is expressed in kg after dividing by 1000 and expressed in decimal to three places.

$$100\text{g} = 100/1000 = 0.100 \text{ kg it can also be expressed as } 0.1\text{kg}.$$

Kg is expressed in Gram after multiplying by 1000.

$$1\text{kg} = 1 \times 1000 = 1000\text{g}$$

Combination of kg and Gram is represented in kg as full number and gram after decimal to three places.

$$1\text{kg } 300\text{g} = 1 + 300/1000 = 1.300\text{kg}$$

$$= 1 \times 1000 + 300 = 1300\text{g}$$

Kg (decimal)	Kg and g	g
1.250kg	1kg 250g	1250g
1.700kg	1kg 700g	1700g
2.30Kg	2kg 300g	2300g
2.400kg	2Kg 400g	2400g
2.800kg	2kg 800g	2800g

Students can be asked to fill the following chart on the board, that gives figures written in **black** and the desired answers are written in **blue**.

Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Main Script	Measurement of Weights	Heavier and Lighter

8. QA_Conversion of Units of Weights

1) Ram weighs 42.3kgs. Jack weighs 1800g less. How much does Jack weigh?



Answer:

1. Ram weighs $= 42.3 \text{ kg}$
2. Jack weighs **1800g less** than Ram $= 1800/1000 = 1.8 \text{ kg}$
3. **Jack weighs (a-b) $= 40.5 \text{ kg}$**

2) One packet weighs 1470g. A second packet weighs 700g more. What is the combined weight of the packet in kg?

Answer:

1. One packet weighs $= 1470 \text{ g}$
2. Second packet weighs **700g more** than (a.) $= 700 \text{ g}$
3. Second packet weighs (a+b) $= 2170 \text{ g}$
4. Combined weight of the packets (a+c) $= 3640 \text{ g}$
5. **Combine Packet weighs 3640/1000kg $= 3.640 \text{ kg}$**

3) Your school bag has 3 books weighing 400g, 350g and 300g respectively. It also contains 2 note books containing 250g and 100g, a pencil box of 275 g. The bag itself weighs 600g. Water Bottle of 1 kg and Tiffin Box $\frac{1}{4}$ kg. What is the total weight that you carry to school?

Give your answer in Kilogram(kg), in Gram(g) and a combination of Kilogram and Gram.

**Answer:**

Let all the figures of different weights are converted to one unit, say Gram(g)

$$\text{Books} - 400+350+300 = 1050 \text{ g}$$

$$\text{Note books} - 250+100\text{g} = 350 \text{ g}$$

$$\text{Pencil Box weighs} -275\text{g} = 275 \text{ g}$$

$$\text{Water Bottle} - 1 \text{ kg} (= 1 \times 1000) = 1000 \text{ g}$$

$$\text{Tiffin Box} - 1/4 \text{ kg} = 1000/4\text{g} = 250 \text{ g}$$

$$\text{The School Bag weighs} = 600 \text{ g}$$

$$\text{Total weight that I carry to school} = \mathbf{3525 \text{ g}}$$

$$\text{also, can be expressed as: } 3525/1000\text{kg} = \mathbf{3.525 \text{ kg}}$$

$$\text{or, } 3000 \text{ g} + 525\text{g} = 3000/1000\text{kg} + 525 \text{ g} = \mathbf{3\text{kg } 525 \text{ g}}$$

- 4) You have 15 boys and 10 girls in your class. The boys weigh 40 kg and Girls weight 5000g less.
What is the total weight of students in your class?

Answer:

$$\text{Weight of all the boys} = 15 \times 40 = 600\text{kgs}$$

$$\text{Weight of one girl} = 40\text{kg} - 5000\text{g}$$

$$= 40\text{kg} - 5000/1000\text{kg}$$

$$= 40 - 5 = 35\text{kgs}$$

$$\text{Weight of all the Girls} = 10 \times 35\text{kgs} = 350\text{kg}$$

Total weight of students in my class

$$(\text{Boys and Girls combined}) = (a+c) = 950\text{kg}$$

- 5) You purchased 500g of Sugar, 2 kg of Rice, 100g of Salt. How much more kg of vegetables you can buy so that the bag you are carrying does not weigh more than 4kg?



Answer:

- Sugar purchased = 500g
- Rice purchased 2kg = 2×1000 = 2000g
- Salt purchased = 100g
- Total purchase so far (a+b+c) = 2600g
- You can carry 4 kg maximum = 4×1000 = 4000g
- You can further buy vegetables weighing (e-d) = 1400g
- You can further buy vegetables = $1400/1000$ = 1.4 kg

Image Source:

<https://pixabay.com/en/rice-food-healthy-cuisine-meal-498688/>
<https://pxhere.com/en/photo/986088>
<https://pixabay.com/en/sugar-spoon-cutlery-sweeteners-485050>
<https://openclipart.org/detail/238204/sacdecourcol>
<https://pixabay.com/en/water-bottle-hydration-water-bottle-962934/>
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<https://openclipart.org/detail/302890/stack-of-books-4>
<https://pixabay.com/en/back-to-school-school-pencil-cases-2737003/>

Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Assessments	Measurement of Weights	

9. IA_Other Units of Weight

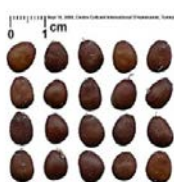
There are various other units of measuring weight other than Kg and g.

US weight units:

1 US ton

1 lb (pound)

1 oz (ounce)



Carat

The weight of a Carate is about 200 milligrams. It is the standard unit of measurement for precious stone or Jewelry. It is based on the weight of the carob seed, which was once used as a weighing standard by jewelers in Africa and the Middle East. The word "Carat" itself is believed to be derived from an Arabic word meaning "bean" or "seed."



Stone

A stone is a unit of weight equal to 14 pounds avoirdupois (or international lbs). By turn, this makes a stone equivalent to 6.35029kg.

The GRAIN was originally supposed to be equal to the weight of a single grain of wheat, the gram of 15.432 grains is also used in the avoirdupois, troy, and apothecaries' system of weights.

The basic unit of the metric system of weights is the GRAM, which contains 15.432 grains.

Image Source:

<https://pixabay.com/en/plant-carob-medicinal-plant-fruits-3648874/>
https://commons.wikimedia.org/wiki/File:Ceratonia_seeds.jpg
<https://pixabay.com/en/beans-carob-food-fruit-ingredient-72058/>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Interesting Asides	Measurement of Mass	

10. MS_Weights Addition Subtraction and Multiplication

Teacher may explain that to do addition, subtraction, and multiplication of weights it is important to give attention to their given units. All should be in the same unit. If the weights are given in different units, they are required to be converted to same Units.

Before calculation starts. Need to recall that $1\text{kg} = 1000\text{g}$, $1\text{g} = 1/1000\text{kg}$.

Explain with examples

1) $2475\text{ g} + 1.5\text{kg} = ? \text{ Kg}$

The required result is in kg (Kilogram), so we need to change all the weights to 'kg' first

$$2475\text{ g} = 2475/1000\text{kg} = 2.475\text{ kg}$$

$$2475\text{ g} + 1.5\text{ kg} = 2.475\text{ kg} + 1.5\text{ kg} = 3.975\text{ kg}$$

2) $5730\text{ g} - 4.850\text{kg} = ?$

The required result is in g(Gram), so we need to change all the weights to 'g' first

$$4.850\text{ kg} = 4.850 \times 1000\text{ g} = 4850\text{ g}$$

$$5730\text{ g} - 4.850\text{ kg} = 5730\text{ g} - 4850\text{ g} = 880\text{ g}$$

3) $14\text{kg } 825\text{ g} \times 3 = ?$

This means 14kg and 825g is to be multiplied by 3

$$= (14\text{kg} + 825\text{g}) \times 3$$

First, multiply the kilogram $14 \times 3 = 42\text{ kg}$

Then, multiply grams $825 \times 3 = 2475 \text{ g} = 2\text{kg and } 475 \text{ g}$

We need to add now kg with kg and gram with gram

$$\begin{aligned}
 14\text{kg } 825 \text{ g} \times 3 &= 42 \text{ kg } 2475\text{g} = 42 \text{ kg and } 2475 \text{ g (2kg and 475g)} \\
 &= 2 \text{ kg } 475 \text{ g} \\
 &= 44 \text{ kg } 475 \text{ g}
 \end{aligned}$$

You purchased 2.5 kg of Potato, 1 kg of Onion, 100 g of Chili, half kg of Tomato and put them in your shopping bag. How much kg's of total vegetables will be in the shopping bag?

Potato =	2.5 kg
Onion =	1 kg
Chili = 100g. = 100/1000kg	0.1 kg
Tomato = 1/2 kg	0.5 kg
Total	4.1 kg

Total Vegetables in the shopping Bag is 4.1 kg



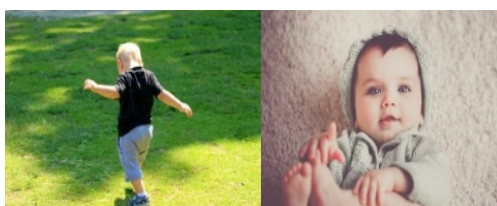
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Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Main Script	Measurement	

11. QA_Word Problems - Kilograms and Grams

- 1) Boy weighs 9 times as much as his baby sister. The boy weighs 36 kg. How much does his baby sister weigh in grams?



Solution A (first find the weight of the baby sister in kg and at final stage convert it to gram, as required) Boy's weight

$$= 36 \text{ kg}$$

$$\text{Boy's weight} = 9 \times \text{baby sister's weight.}$$

$$\text{Baby sister's weight} = \text{Boy's weight} / 9 = 36 \text{ kg} / 9 = 4 \text{ kg.}$$

$$\text{We know } 1 \text{ kg} = 1000 \text{ g}$$

$$\text{Therefore, } 4 \text{ kg} = 4 \times 1000 \text{ g} = 4000 \text{ g}$$

$$\text{Baby sister's weight} = 4000 \text{ g}$$

Solution B (first convert to weight of the boy to gram and then find the weight of the baby sister in gram, as required)

$$\text{Boy's weight} = 36 \text{ kg}$$

$$= 36 \times 1000 \text{ g}$$

$$= 36000 \text{ g}$$

$$\text{Boy's weight} = 9 \times \text{baby sister's weight.}$$

$$\text{Baby sister's weight} = \text{Boy's weight} / 9$$

$$= 36000 \text{ g} / 9 = 4000 \text{ g.}$$

$$\text{Baby sister's weight} = 4000 \text{ g}$$

We notice that Solution A calculations are easy and uses smaller numbers, but both steps reach a correct solution.

- 2) **Your class has 40 students. 25 boys and 15 girls. Boys weigh 30 kg each and girls weigh 5 kg less. In a picnic a boat can take 520 kg load. If 10 girls are already there in the boat how many Boys can further join the boating?**

Answer:

$$\text{Each Boy weight} = 30 \text{ kg}$$

$$\text{Each Girl weight} = (30 - 5) = 25 \text{ kg}$$

$$\text{Weight of 10 girls on boat} = 10 \times 25 = 250 \text{ kg}$$

$$\text{Total weight that a boat can take} = 520 \text{ kg}$$

$$\text{Balance weight that the boat can further take} = 520 - 250 = 270 \text{ kg}$$

$$\text{Nos of Boys that can make } 270 \text{ kg} = 270 / 30 = 9 \text{ nos. (Each Boy weight is } 30 \text{ kg)}$$

Number of Boys that can further join the boating = 9 nos.



- 3) A shopkeeper has gone to wholesale market with his tractor to buy items. He buys 5 bags of wheat each weighing 100kg, 3 bags of rice each weighing 40 kg, 2 bags of Dal each weighing 15 kg, 20 packets of salt each weighing 250g. On the way back, he takes out 1 bag of wheat and 1 bag of rice and 3 packets of salt at his home and balance he took to his shop. What is the total weight of items in kg that he unloaded at his shop?



Answer

Quantity of items loaded :-

Item	Quantity	Total Weight
100 kg Wheat bags	5	500 kg
40 kg Rice bags	3	120 kg
15 kg Dal bags	2	30 kg
250g Salt packets (1g= 1/1000kg, 250 g = 250/1000 = 0.250kg)	20	5 kg
Total		655 kg

Items Quantity taken out on the way back at home

Item	Quantity	Total Weight
100 kg Wheat bags	1	100 kg
40 kg Rice bags	1	40 kg
250g Salt packets (1g= 1/1000kg, 250 g = 250/1000 = 0.250kg)	3	0.750 kg
Total		140.75 kg

The total weight of items unloaded at his shop

Quantity of items loaded - Quantity of items unloaded

$$= 655 - 140.750 \text{ kg}$$

$$= 514.250 \text{ kg}$$

Image Source:

<https://www.maxpixel.net/Little-Man-Child-Boy-Childhood-First-Steps-3432416>

<https://pixabay.com/en/baby-girl-cap-jacket-child-1426651/>

<https://pxhere.com/en/photo/1342285>

<https://pixabay.com/en/dragon-boat-festival-china-cartoon-1445655>

<https://pixabay.com/en/children-kids-child-girl-boy-163541/>
<https://pixabay.com/en/boy-walk-cartoon-animation-figure-312238/>
<https://pixabay.com/en/salt-nature-eat-food-spice-91539/>
<https://pixabay.com/en/daal-chana-lentils-indian-cuisine-166985/>
<https://www.maxpixel.net/Bag-China-Rice-1028635>
<https://pixabay.com/en/sack-bag-grains-rice-open-wheat-309849/>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Assessments	Measurement	

12. SA_Make My Own Balance Scale

Aim: To make our own Balance Scale

Materials required for making (sizes are only for reference):

1. Straight piece of stick/ rod (approx. $\frac{1}{2}$ meter long x 12 mm diameter) - 1 no.
2. Steel/Plastic plate/lid of equal size (approx. 150mm dia.) - 2nos.
3. Thick string to withstand load of weight intended for say 2kg of weight-1no.



Preparation:

1. Make three holes in each of the plates at equal distribution along the circumference near the outer edge.



Procedure:

1. Cut the cord to get 6 smaller cords of approx. length of 400mm
2. Insert one end of the cord in each of the holes of the plate and give a knot to get it fixed
3. Take the loose end of the three cords, fixed with a plate and tie them together at one end of the stick
4. Repeat the process with the cords of the second plate.
5. Tie a small cord at the middle of the stick
6. The Balance Scale is Ready



Check the readiness to use

Once you hold the stick with the middle cord tied to the stick, the plates should hang at the same level and the stick should remain horizontal. If not, it is required to make it so by adding/cutting down some weight or adjusting cord.

Correct Not correct

Now, the Balance Scale is Ready for Use.

Instructions to Teacher: Inform the students to bring the materials from home or if it is demonstration activity by the teacher, ensure that materials are kept ready.

The material sizes recommended for making a balance are just for example. Other sizes can be used depending on the required use for weight like light/heavy.

Precautions: Teacher should ensure safety of the students while making the holes in the plates.

Troubleshooting: NA

Image Source:

<https://pixabay.com/en/wood-stick-brown-rustic-hole-576398/>
<https://pixabay.com/en/cord-tangle-cylinder-child-custody-212293/>

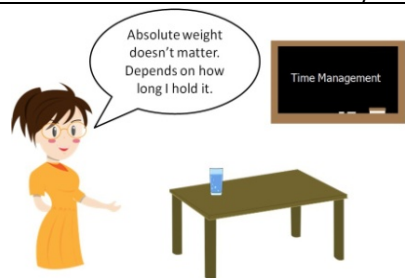
Time to teach	Asset Type	Theme	Sub Theme
20 Minutes	Suggested Activity	Measurement of Mass	

13. Do not worry too much

A teacher walked around a classroom while teaching Stress Management to the students.

As she raised a glass of water half filled with water, everyone expected they'd be asked the "Half empty or Half full" question.

Instead, with a smile on her face, she inquired: "How heavy is this glass of water?"



Answers called out ranged from 8 gm to 20 gm.

She replied, "The absolute weight doesn't matter. It depends on how long I hold it.

If I hold it for a minute, it's not a problem.

If I hold it for an hour, I'll have an ache in my arm.

If I hold it for a day, my arm will feel numb and paralyzed.

In each case, the weight of the glass doesn't change.

But the longer I hold it, the heavier it becomes."

She continued, "The Stresses and Worries in Life, are like that Glass of Water...

Think about them for a while and nothing happens.

Think about them a bit longer and they begin to hurt.

And if you think about them all day long, you will feel paralyzed – incapable of doing anything." Remember to put the Glass Down.

Lesson learnt? Stresses and worries are part of life. They will sort out in course of time. There is no point in worrying about them and ruining our health.

Image Source:

1. Teacher - Clipart, CC <https://openclipart.org/detail/99193/teacher>
2. Table – Clipart, CC <https://openclipart.org/detail/29252/wooden-table>
3. Blackboard – Clipart, CC <https://openclipart.org/detail/236432/black-chalkboard>
4. Water – Clipart, CC <https://pixabay.com/vectors/water-cup-the-drink-glass-drink-4211792/>

Time to teach	Value Type	Value Sub Type	Value Attribute
5 Minutes	Peace		Stories

14. MS_Summary_How Heavy, How Light?

In this lesson we learnt:

- Unit of measurement of weight – Kilograms and Grams

- Conversion of Units of Weight
- Compare Weights
- Apply Addition, Subtraction and Multiplication to derive weight
- Different units of weight other than Kg and g
- Recognize the need to worry less
-

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Main Script	Measurement of Weights	Heavier and Lighter,

Master Lesson Plan

Seven Asset Methodology for MLP

What is the purpose of this Master lesson Plan?	This Master Lesson Plan (MLP) prepared by Sri Sathya Sai Vidya Vahini (SSSVV), covers the entire chapter for the given board. The MLP for the chapter given in the textbook is broken down into smaller modules known as assets. Any chapter can be taught using the 7 asset types in SSSVV methodology. Several different assets together complete the entire chapter. Depending on the requirement, each asset is supported by teaching aids such as animated presentation, audio, video, and learning aids such as worksheets. The MLP is for the teacher's preparation and the teaching aids are for use in the classroom.
How to use it?	You can prepare for your class with this MLP by following 3 simple steps: 1. Read your textbook; 2. Go through the information given in the assets (document & multimedia); 3. Prepare your teaching notes. Great! Now you are ready to transact the chapter.
Duration	Kindly note the duration given for each asset. Due care has been taken in planning the assets, to ensure the chapter is completed within the time specified by the Board. Note: Preparation time is not included in the asset duration. The teaching time depends on the duration of the teaching aids and is not impacted by the length of the MLP.
What is a 'Main Script' (MS) Asset?	The Main Script asset is there for explaining the main concepts of the chapter clearly. The information given in the textbook is simplified, organised and structured to give more clarity. Additionally, you may find a video or mnemonics or a graphic organiser to deepen the understanding of the concept.
How to teach using the MS asset?	Please use the blackboard, slides and interaction to develop the concept.
What is an 'Inquisitive Questions' (IQ) asset?	The Inquisitive Questions asset uses questions to promote higher order thinking like the n^{th} why, what-if, new perspectives, cause-effect, and others, creating curiosity.
How to teach using the IQ asset?	You may use the questions to connect with the students, encourage exploration to engage them in the learning process. You may allow multiple responses and instead of rejecting any of the responses, ask why, before revealing the suggested answer or hints.
What is a 'Day to day Relevance' (DD) Asset?	The Day to Day Relevance asset helps students understand the practical relevance of every topic, making them eager participants in the classroom. If students connect the concepts to their environment, they would learn meaningfully without dislike or simply memorizing for exams.

How to teach using the DD asset?	You may use the asset by asking questions about their experience and use it to establish why they are learning the topic. If necessary you may substitute with a recent or local example.
What is an 'Interesting Aside' (IA) asset?	The Interesting Aside asset uses attention grabbing tidbits or anecdotes to bring joy and satisfy the child's hunger to know more. This is a quick/short asset intended to bring attention back to the main concept being taught.
How to teach using the IA asset?	You may use this asset to give a piece of interesting information relevant to the topic, without prolonged explanation/discussion. You may suggest appropriate books for further reading.
What is a 'Suggested Activity' (SA) Asset?	The Suggested Activity asset provides a detailed step by step procedure for the teacher to conduct a hands-on activity. This promotes Activity Based Learning.
How to teach using the SA asset?	You may use this asset to energise your students to learn by doing simple, fun-filled activities based on the topic. The asset includes - preparation, activity, and follow-up. You may engage the students in the preparation and follow-up stages to develop collaboration and responsibility. You could try it once, yourself, before the actual delivery to be more comfortable with it. Note: The duration mentioned in the asset is usually for the activity part only.
What is a 'Value Content' (VC) Asset?	The Value Content asset integrates Universal Human Values (such as empathy, inclusivity, respect for nature that translates into responsible behaviour) seamlessly into the curriculum, as the "End of education is character".
How to teach using the VC asset?	You may use this asset to engage with the students to bring out their innate values and connect with the intrinsic values in the topic/concept. The asset includes pointers on the specific pedagogical technique followed.
What is a 'Questions to Assess' (QA) asset?	The Questions to Assess asset uses an interactive approach to check learning of different types of learners, and provides feedback to the teacher for appropriate action. The questions cater to all the levels of Bloom's Taxonomy. Questions from 'Apply' level and above enable students to reflect on their learning.
How to teach using the QA asset?	You may go through the slides to understand its flow and know when to click for the answer (slides include suggested answers). While presenting in the class, you may display the question and encourage multiple responses, before revealing the answer. In some cases, this asset may include extra questions/worksheet that can be given as homework.