



Master Lesson Plan

For

Smart Chart

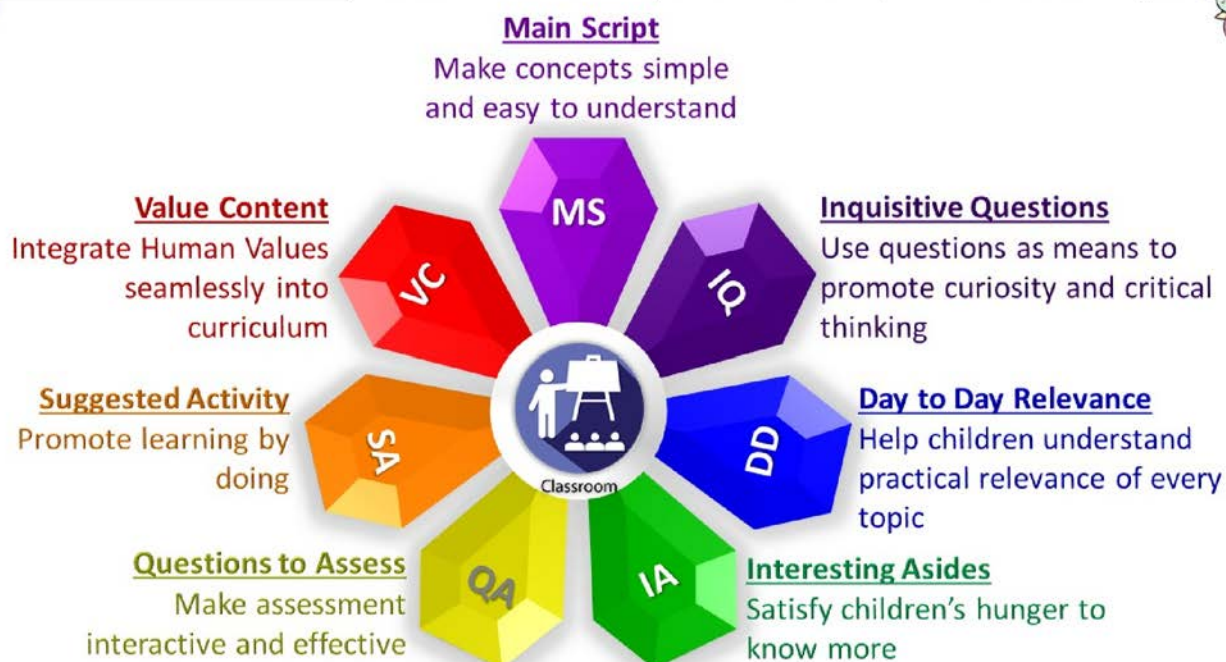
Board	Standard	Subject	Chapter	Language	Reference Link	Creation
CBSE	STD IV	Mathematics	Smart Chart	English	Smart Chart	2020-09

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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.

Smart Chart

1. MS_Objectives_Smart Chart

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:

- Interpret Pictographs
- Draw Pictographs
- Create Pictographs
- Explain Pie Charts
- Draw Pie Charts
- Interpret Pictorial Data
- List the uses of Pictographs
- Know about invention of pictorial representation of data
- Evaluate the situation before judging anyone

Time to teach	Asset Type	Theme	Sub Theme
3 Minutes	Main Script	Data Handling	Pie Chart, Pictograph

2. IA_Did you know

1. The pictorial representation of data or information is an invention dating from the late 18th century. Before this, the method of displaying data was purely numeric in the form of tables.
2. A pie chart is a circular or round chart and it is named after the way we normally divide a pie or chapati into slices.
3. It was invented by William Playfair, who was a Scottish Engineer and also credited for creating bar graphs, line graphs.

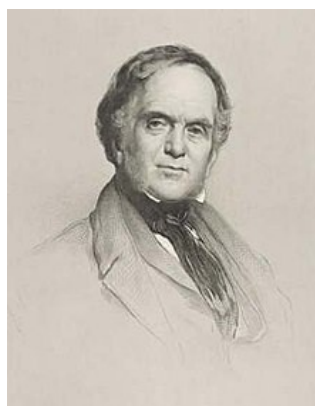


Image Source:

https://en.wikipedia.org/wiki/William_Henry_Playfair#/media/File:William-playfair.jpg

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Interesting Asides	Data Handling	

3. MS_Pictograph

The teacher may start the class by introducing the word 'Pictograph' by writing on the blackboard. She can say "A pictograph is a pictorial representation of information. These pictorial representation is also called a pictogram.

The following example demonstrates the number of fruits and the type of fruit collects by some students.

	Fruits Collected			
Banana				
Apple				
Orange				

A pictograph is another way of communicating information.

In newspapers, magazines or television, we come across a number of pictographs representing various kinds of information such as a weather report, rainfall, cricket scorecard, and temperature and so on.

Teacher may prompt the students to give similar examples.



Features of a Pictograph

A pictograph has the following features:

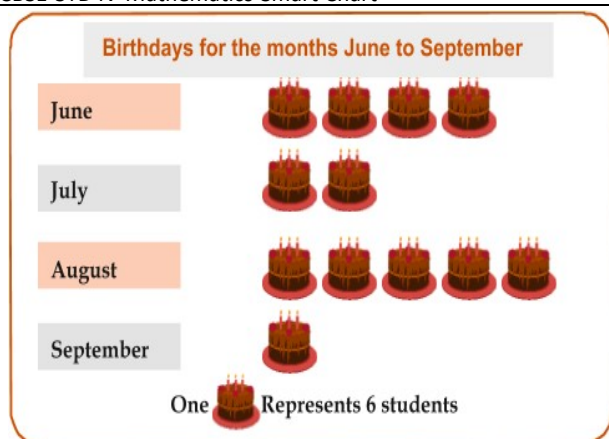
1. A pictograph has a title.
2. The symbols used in a pictograph are always defined.

Let us now learn how to understand a pictograph. Look at the examples that follow.

Understanding Pictograph

Information given in a pictograph can be read, understood and interpreted by us easily for our future action. Some examples of pictographs.

The following pictograph shows the number of students in a school who celebrated their birthdays during the months of June, July, August and September.



From the above pictograph, you will understand that the following number of students celebrated their birthdays in the given months.

June - $4 \times 6 = 24$ students

July - $2 \times 6 = 12$ students

August - $5 \times 6 = 30$ students

September - $1 \times 6 = 6$ students

From the above pictograph, you will also understand the following:

The month of August has the most number of birthdays, which is 30. The month of September has the least number of birthdays, which is 6.

The pictograph tells us how many birthdays are there in a given month and what preparation we need to make for the coming months.

Image Source:

<https://pixabay.com/en/sport-pictogram-olympia-water-swim-1580667/>
<https://pixabay.com/vectors/banana-yellow-fruit-tropical-food-42793/>
<https://pixabay.com/vectors/apple-red-fruit-vitamins-healthy-158419/>
<https://pixabay.com/vectors/tangerine-orange-mandarin-151616/>

Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Main Script	Data Handling	

4. SA_Ball Pictograph

Aim: Students will understand to create pictographs.

Resources: One small ball like –Tennis or table tennis ball, waste paper basket, pencil and paper.

Procedure:

1. Teacher shall divide the class into four or more groups.
2. Teacher shall mark one end of the classroom such that the waste paper basket at the corner is approximately at a distance of 3 meter from the students.
3. Teacher shall ask each student in each row to throw the ball into the basket and record the result.
4. Each student shall be allowed two free throws.

5. Record the number of successful free throws.
6. Four groups track their successful free throws of ball into a basket
7. Draw a pictograph to represent the throws

Example

Number of free throws made

Team A	  
Team B	    
Team C	 
Team D	



= Two throws

For the above example represented in the above pictograph and answer the following questions.

1) Who had the most free throws?

Answer: Team B

2) How many more free throws did team A make more than Team C?

Answer: 2

3) How many free throws did team D make?

Answer: 2

4) Which two teams shared the same number of throws?

Answer: None

5) Who scored the least amount of free throws?

Answer: D

6) How many throws did the teams score?

Answer: 22

Similarly, the class will prepare the pictograph and answer the above question and record the results.

Instructions to teacher:

Student shall not bring the tennis ball from home. Teacher shall arrange the same from the school.

Precautions:

While the ball is thrown towards the basket, the teacher shall ensure that students are not in the way.

Also, while returning the ball for the next player it shall not be thrown but given into the hands of the next player.

Trouble shooting:

Not Applicable.

Image Source:

<https://pixabay.com/en/tennis-ball-yellow-sport-game-2025095/>

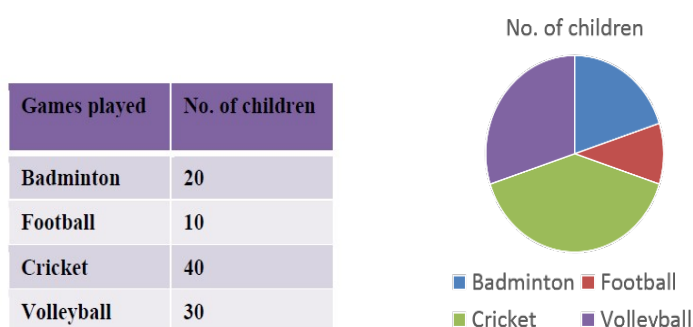
Time to teach	Asset Type	Theme	Sub Theme
15 Minutes	Suggested Activity	Data Handling	

5. QA_Pictograph

1) Draw a pictograph to represent the number of children who play different games in a school.

Games played	Badminton	Football	Cricket	Volleyball
No. of children	20	10	40	30

Answer:

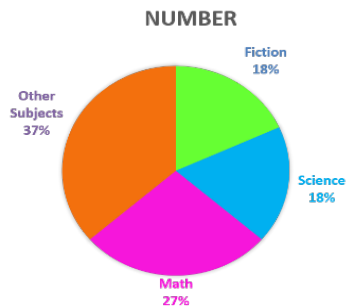


2) A school library has 200 fiction books, 200 science books, 300 maths books and 400 books in other subjects. Represent the data in a pictograph.

Answer:

1. Total number of books = 1,100

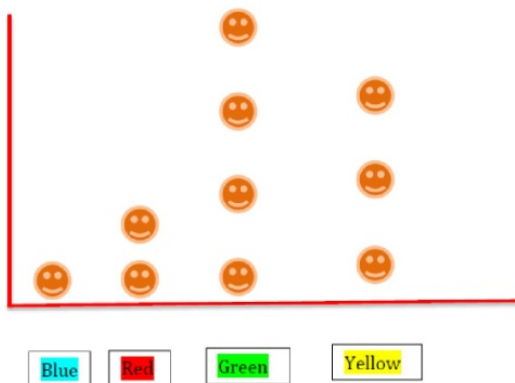
<u>Fiction Books</u>	<u>Science Books</u>	<u>Math Books</u>	<u>Other Subjects</u>
$= 200/1100 \times 100$	$= 200/1100 \times 100$	$= 300/1100 \times 100$	$= 400/1100 \times 100$
$= 18\%$	$= 18\%$	$= 27\%$	$= 37\%$



3) Observe this chart and answer.



= 4 Children



a) Number of children who like red colour = _____

Answer (4+4=8)

b) Number of children who like blue colour: _____

Answer (4)

c) Number of children who like Green colour _____

Answer ($4+4+4+4=16$)

d) Number of children who like Yellow colour _____

Answer ($4+4+4=12$)

e) Total number of children _____

Answer ($8+4+16+12=40$)

Time to teach	Asset Type	Theme	Sub Theme
15 Minutes	Assessments	Data Handling	

6. MS_Chapati Chart

Pie Charts

The teacher may start the class by introducing the word 'Pie Chart or Chapati Chart' by writing on the blackboard

She may then say "Another way of representing data is using a Chapati or a Pie Chart. It is represented by a circle and the circle is divided into sectors. Each sector represents part of the total. The larger the angle at the centre of the circle, the larger the frequency.

Pie charts are used to represent separate data, and the circle is used represents all the data. Sectors are used to show how the data is split into subsets, which are represented as a part of the whole. Generally, a pie chart should not have too many sectors, otherwise it can become difficult to interpret.

Features of a Chapati chart or Pie Chart

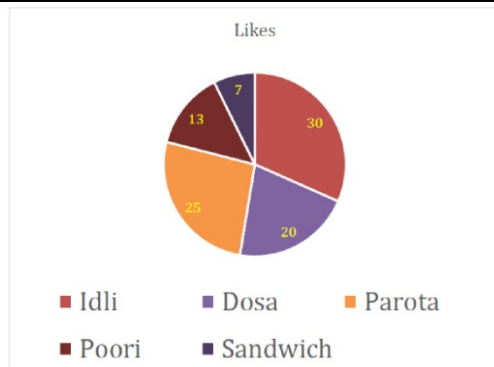
- A circle is used to represent all the data.
- Must have a title.
- Each sector must be labelled, or a key provided to aid interpretation Each sector is calculated as a part of the whole.
- When comparing pie charts, the total sample size should be provided.

The teacher may use the following example to interpret a pie chart.

Example 1:

Teacher may explain to the class that each color represents the type of food And the numbers indicate the number of people.

Pie Chart – Favorite Food



1) Which is the most favorite among the people?

Answer: Idli

2) How many people like Dosa?

Answer: 20 people

3) Which is the least favorite food?

Answer: Sandwich

4) How many customers voted for Parotta as their favorite?

Answer: 25 people

5) How many customers participated in the survey?

Answer: 95 people

Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Main Script	Data Handling	

7. IQ_Puzzle

Question

?	New Delhi	Hyderabad	Chennai	Kolkata	Bengaluru
Vijay					
Vikram					
Vinay					
Vimal					
Vignesh					

Complete this puzzle to determine where each family came from for the family reunion. Use the clues given below:

Clues

1) Vikram lives in the city where famous Indian Cricketer Ashwin was born.



(Ans: Chennai)

2) Vinay stays in the capital city of our country.



(Ans: New Delhi)

3) When we visited Vijay, we crossed the beautiful bridge on River Ganga.



(Ans: Kolkata)

4) Vignesh lives in a city which is closest to the city where Vikram lives.



(Ans: Bengaluru)

5) We used to enjoy the mouthwatering biryani whenever we visit the city where Vimal lives?



(Ans: Hyderabad)

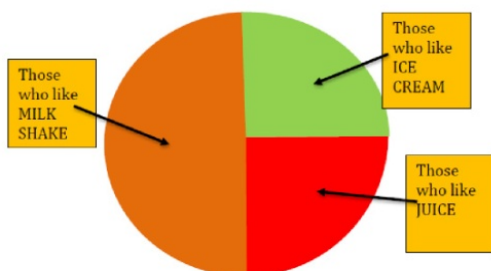
Image Source:

<https://pixabay.com/en/question-mark-question-help-info-434152/>
<https://pixabay.com/en/wizard-magic-magician-mystery-1454385/>
https://commons.wikimedia.org/wiki/File:Ravi_Ashwin.jpg
<https://pixabay.com/en/india-india-gate-new-delhi-712575/>
<https://pixabay.com/en/howrah-bridge-kolkata-india-sky-2964776/>
<https://pixabay.com/en/vikasa-soudha-vidhana-soudha-245035/>
<https://www.pexels.com/photo/rice-tomato-rice-623144/>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Inquisitive Questions	Data Handling	

8. QA_Chapati Chart

1) See the Chapati chart and answer the questions given below:



1) How many children like Ice cream?

- One – third
- One – fourth
- Three- fourth

Answer (2)

2) How many like Milk Shake?

- One – third
- Half

3. One fourth

Answer (2)

3) Which item are liked by equal number?

1. Milkshake and Juice
2. Milkshake and Ice cream
3. Ice-cream and Juice

Answer (3)

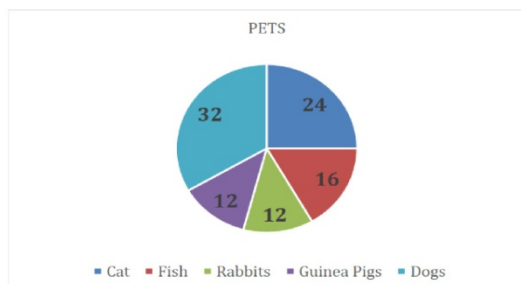
4) If total numbers of children are 400 then how many children like:

1. Ice – cream
2. Milk shake
3. Juice

Answer

1. 100 children
2. 200 children
3. 100 children

II) Pie Chart - PETS



1) Which pet animal was found twice as much as rabbits?

Answer : Cats

2) Which pet animal is half the number of Dogs?

Answer : Fish

3) How many Guinea pigs and Cats were in total?

Answer : 44

4) Which pet animal was found the most in her neighborhood?

Answer : Cats

5) Which two pets are equal in number?

Answer : Guinea Pigs and Rabbits

Link for images

All self-drawn

Time to teach	Asset Type	Theme	Sub Theme
15 Minutes	Assessments	Data Handling	

9. DD_Uses of Pictographs

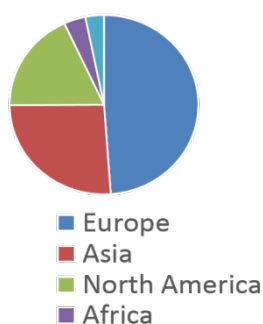
Teacher may start class by saying that all charts and graphs allows us to visualize the data and draw our conclusion. Hence care must be taken when preparing the charts or graphs.

A pictographs uses symbols instead of line or bars so it is easy to visualize.

A chapati chart, while looking at it we are able to compare easily contribution of each activity in the whole.

- Agriculturalists may use these to show comparison of land use in different states.
- Municipal Councils use chapati charts in annual reports to show how public money is spent.
- Newspapers may show sports coverage and to show Olympic Medals won per country.
- Opinion Polls or election results are shown using bar charts or pictographs so that viewer can easily understand the results

Total Medals won by Continents



Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Day-to-day Relevance	Data Handling	

10. VC_Never Judge Anyone

Never Judge Anyone

A chart is a powerful tool that allows you to visually display data in a variety of different data. In simple terms charts give us a clear picture of any information.



Children! Having a clear picture of a situation is necessary for us to arrive at any conclusion or judgement. We cannot make any judgement without knowing the facts. Look at this story.

A doctor entered the hospital in hurry after being called in for an urgent surgery.

He answered the call immediately, changed his clothes & went directly to the surgery block. He found the boy's father pacing in the hall waiting for the doctor. On seeing him, the dad yelled: "Why did you take all this time to come? Don't you know that my son's life is in danger? Don't you have any sense of responsibility?"

The doctor smiled & said: "I am sorry, I wasn't in the hospital & I came as fast as I could after receiving the call..... And now, I wish you'd calm down so that I can do my work"

"Calm down? What if your son was in this room right now, would you calm down? If your own son dies now what will you do?" said the father angrily.

The doctor smiled again & replied: "Doctors cannot prolong lives. Go & intercede for your son, we will do our best by God's grace"



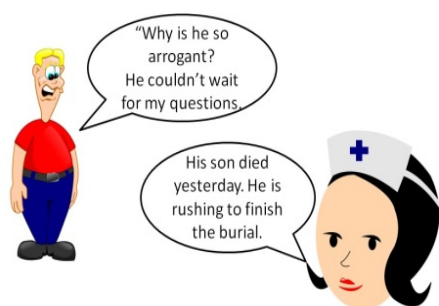
"Giving advise when we're not concerned is so easy," murmured the father.

The surgery took some hours after which the doctor went out happy, "Thank goodness! Your son is saved!"

And without waiting for the father's reply he carried on his way running. "If you have any questions, ask the nurse!!"

"Why is he so arrogant? He couldn't wait some minutes so that I ask about my son's state?" Commented the father when seeing the nurse minutes after the doctor left.

The nurse answered, tears coming down her face: "His son died yesterday in a road accident, he was at the burial when we called him for your son's surgery. And now that he saved your son's life, he left running to finish his son's burial."



Lesson? Never judge anyone. Because you never know how their life is & what they're going through.

(Story by Author unknown. Public domain story. Available in many sites).

Image Source:

Nurse: <https://pixabay.com/vectors/nurse-medical-aide-doctor-aid-309792/>

<https://pixabay.com/vectors/man-person-anxiety-blue-pants-red-160918/>

Patient : <https://pixabay.com/vectors/influenza-flu-fever-grippe-cold-156098/>

Father: <https://pixabay.com/vectors/man-person-anxiety-blue-pants-red-160918/> Doctor: <https://pixabay.com/illustrations/doctor-hospital-male-doctor-3871245/>

<https://pixabay.com/vectors/inspector-man-detective-male-160143/>

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

11. QA_Exercise in Tabular Form

I. Rewrite the given numbers using tally marks

a. 12

b. 4

c. 15

Answer:

a)

c)

b)

II. Match the following

1	3	a	
2	16	b	
3	21	c	
4	19	d	
5	7	e	

Answer:

1 – d

2 – c

3 - e

4 – b

5 – a

III. Answer the questions:

These are the runs scored by Indian cricket team vs New Zealand.

Name	Runs
Rohit Sharma	60
Shreyas Iyer	33
Shivam Dubey	5
Manish Pandey	11
Rahul Sharma	45
Sanju Samson	2

- Who scored the highest runs?
- Who scored the least runs?
- If New Zealand lost by 7 runs, how many runs did they score?

Answer:

- Rohit Sharma
- Sanju Samson
- Total runs scored by Indian team = 156

Since New Zealand lost by 7 runs, they scored 7 runs less.

$$=156-7 = 149$$

IV. Represent the following data in tabular form

Natraj pencils- Rs.30, sharpener Rs. 5, eraser Rs.1, glue stick Rs.20, Camlin colour pencils Rs.30, Cello tape Rs.30, Note book Rs.11.

Answer:

Sl.No.	Item	Price(Rs)
1	Natraj pencils	30
2	Sharpener	5
3	Eraser	1
4	Glue stick	20
5	Camlin colour pencils	30
6	Cello tape	30
7.	Note book	11

Time to teach	Asset Type	Theme	Sub Theme
15 Minutes	Assessments	Data Handling	Counting

12. MS_Summary_Smart Charts

In this lesson we learnt:

- Interpret and Draw Pictographs
- Explain Pie Charts
- Interpret and Draw Pie Charts
- Interpret Pictorial Data
- List the uses of Pictographs
- Evaluate the situation before judging anyone

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Main Script	Data Handling	Pie Chart, Pictograph

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.