



Master Lesson Plan

For

Play with Patterns

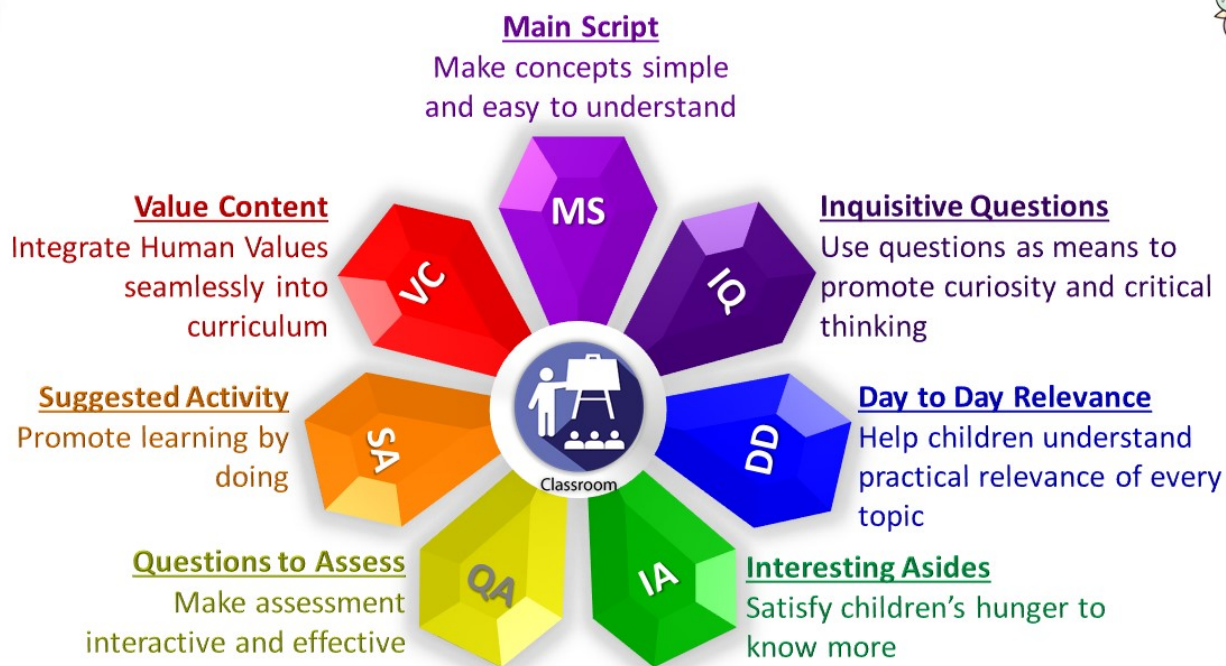
Board	Standard	Subject	Chapter	Language	Reference Link	Creation date
CBSE	STD III	Mathematics	Play with Patterns	English	Play with Patterns	2021-03-12 02:51:03

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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.

Play with Patterns

1. MS_Objectives_Patterns Around Us

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:

1. Relate various kinds of patterns formed around us
2. Explain the number series patterns of mathematics
3. Identify various patterns by understanding their formation
4. Use their concentration power to identify the repeating units
5. Comprehend how monuments are built using the concept of patterns and symmetry
6. Create their own pattern and design
7. Understand the need for order in their lives to ultimately achieve peace and happiness

Time to teach	Asset Type	Theme	SubTheme
2 Minutes	Main Script	Patterns	Patterns Around Us, Patterns Around Us

2. IQ_Shapes and Pattern

Shapes and Pattern

The teacher could present the following questions and allow the students to give their responses before summarizing their answers:

1. What shape is used for this pattern?
 - a) Rectangle
 - b) Triangle



2. How many colored triangles are used?

- a. 7
- b. 12
- c. 14
- d. 15

3. How many possible triangles are there in total?

- a. 2
- b. 12
- c. 14
- d. 20

Answer:

- 1. b - Triangle
- 2. b - 12 times
- 3. d - 20

Explanation:

Let us consider the smallest side of the triangle as 1 unit.

Now count and you will find out that we have $1 + 5 + 5 + 1 = 12$ triangles with the side 1 unit.

Number of triangles with side 2 unit = $1 + 2$ (triangles facing upwards) + $1 + 2$ (triangles facing downwards) = 6 triangles

Number of triangles with side 3 unit = 2 (a triangle facing upwards + a triangle facing downwards)

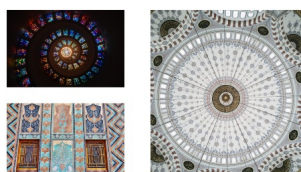
Summing them up, we have 20 triangles in total.

OC: Image is self created using MS PPT and MS Paint

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Inquisitive Questions	Patterns	Patterns Around Us, Patterns Around Us

3. MS_Patterns around us

The teacher may start the session by defining patterns and showing appropriate pictures of patterns.



Pattern is a set of shapes repeated again and again in specific format or numbers listed in a specific manner.

Teacher may then ask the following questions and summarise the answers given by students:

1. Name some patterns you have seen in this classroom (Also give suggestive answers)

Teacher may then summarize as below:

1. Patterns are found in nature, in science, in buildings and in mathematics
2. Patterns are present in every part of our lives
3. Patterns are formed using shapes, drawing an image and its reflected image

Patterns that we see in nature



Patterns using shapes:



Patterns in buildings:



Patterns in mathematics

6 8 10 _ _ _ Add 2 to the previous number

13 17 21 _ _ _ Add 4 to the previous number

140 150 160 _ _ _ Add 10 to the previous number

40 38 36 _ _ _ Subtract 2 from the previous number

17 22 27 _ _ _ Add 5 to the previous number

200 190 180 _ _ _ Subtract 10 from the previous number

31 26 21 _ _ _ Subtract 5 from the previous number

List of the image links in the asset:

Spiral stain glass <https://pixabay.com/photos/stained-glass-spiral-circle-pattern-1181864/>

FAÇADE <https://pixabay.com/photos/mosaic-pattern-facade-building-2689720/>

Celling <https://pixabay.com/photos/cami-texture-pattern-architecture-4094440/>

Butterfly: <https://pixabay.com/photos/vanessa-cardui-butterfly-edelfalter-1568926/>

Sea shells: <https://pixabay.com/photos/shell-sea-beach-nature-summer-2780351/>

<https://pixabay.com/illustrations/geometric-pattern-grey-background-1129898/>

<https://pixabay.com/illustrations/form-abstract-modern-color-787240/>

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Patterns	Patterns Around Us, Patterns Around Us

4. MS_Formation of patterns

Teacher may explain the concept of how patterns are formed by shapes, designs, images and numbers.

Patterns are formed by Shapes, Designs and images as follows:

a) By repeating a shape or a unit of a pattern or design.



b) By repeating a sequence of the above



Suppose we have a block that looks like below. Is this a pattern?



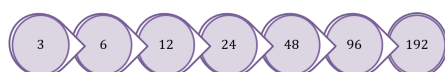
Are the following designs showing various patterns?



Suppose we have numbers that look like below, Is this a pattern?



Yes the above table shows the sequence by adding 2 to the previous number.



Yes the above table shows the sequence by multiplying 2 to the previous number.

List of the image links in the asset:

Designs: <https://pixabay.com/illustrations/decorative-pattern-shape-abstract-1091576/>

OC: Self created using MS

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Patterns	Patterns Around Us, Patterns Around Us

5. DD_Patterns Patterns Everywhere

The teacher could relate the following examples of the patterns around us with the help of the pictures projected on the screen.

Many items we see around us exhibit different patterns

Fruits and vegetables:

They have a pattern on their skin and some of them also have the seeds in them arranged

as a pattern:

- When you cut a kiwi fruit, the seed exhibits patterns of lines arranged uniformly
- Pine cones have a beautiful pattern



Cones of Pine Trees

Vegetables like onions show patterns when we cut them, whereas peas have sequential arrangement of seeds in the pods:

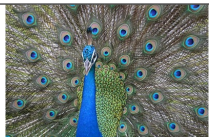


Animals: Their skin display beautiful patterns

- The starfish has lines which are arranged in a sequential pattern
- The fish and turtle skin exhibits rich designs in uniform shapes



The peacock with open feathers shows us the amazing symmetry and unique patterns. The skin of a zebra and leopard have nice arrangement of patches on their skins.



Decorations: Have you observed the doorstep of your houses? Rangoli is made with colour powder, flowers etc. in different patterns.



Dress: The dresses we use display rich patterns.



List of the image links in the asset:

Cut Kiwi fruit <https://pixabay.com/photos/fruit-kiwi-food-juicy-tropical-3246127/>

Pine Cone <https://pixabay.com/photos/cones-forest-nature-macro-closeup-3463933/>

onion <https://pixabay.com/photos/cook-close-up-red-onion-onion-cut-3304425/>

Peas <https://pixabay.com/photos/pea-pod-macro-vegetables-green-1466939/>

Star fish <https://pixabay.com/photos/starfish-sea-red-animal-beach-74535/>

Peacock <https://pixabay.com/photos/peacock-bird-feather-nature-4497688/>

Zebra <https://pixabay.com/photos/zebra-safari-wildlife-savanna-3044577/>

Rangoli <https://pixabay.com/photos/flower-rangoli-folk-art-india-593791/>

Dress <https://pixabay.com/illustrations/japanese-kokeshi-doll-white-937706/>

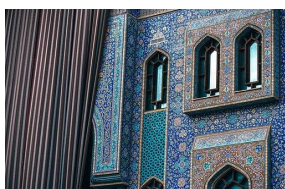
Saree <https://pixabay.com/photos/sari-teal-turquoise-woman-fashion-358317/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Day-to-day Relevance	Patterns	Patterns Around Us, Patterns Around Us

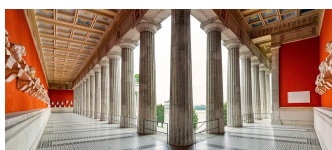
6. IA_Patterns in Monuments

Monuments are built on the concept of patterns and symmetry:

Arabian Architecture: Display of symmetry and pattern in the walls



Hall of fame: observe the floor patterns and pillars.



List of the image links in the asset:

<https://pixabay.com/photos/arabian-architecture-asian-2713819/>

<https://pixabay.com/photos/hall-of-fame-busts-columnar-4232948/>

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Interesting Asides	Patterns	Patterns Around Us, Patterns Around Us

7. SA_Let us Sketch and colour

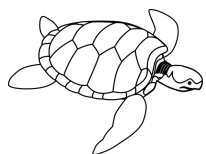
Aim: To make the students create their own pattern with shapes or designs

Preparation: Teacher may ask the students to bring the required materials

Materials required: Paper, pencil, Coloring material

Procedure:

1. Look and draw the outline or teacher may give print out
2. Children can draw patterns and color them.

**Instructions to Teacher include:**

- ✓ Independent activity
- ✓ Students to bring Pen, Pencils and Color materials
- ✓ Ask the children to pick up the sketches and request them to think of the symmetry or patterns that can be introduced on the sketches
- ✓ Teacher to observe the depiction of patterns and/or symmetry

Conclusion: This activity will help students to create their own patterns using shapes and further they will also be able to identify patterns around them.

List of the image links in the asset:

<https://pixabay.com/vectors/turtle-animal-green-ocean-reptile-150130/>

<https://pixabay.com/vectors/peacock-plumage-display-bird-312210/>

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Suggested Activity	Patterns	Patterns Around Us, Patterns Around Us

8. VC_Need for order in our lives

Patterns can be seen all around us in nature. The number of petals in flowers, peacock feathers, the tree rings, the patterns on a leaf, these are all examples of patterns in nature. These wonderful creations of God have a sense of “Divine order”.

It goes without saying that it's God's wish that we maintain an order in our life. Order balances our outlook, helps us to improve our lives and brings beauty to our lives.

Children! How can you bring a healthy pattern of order & beauty in your life with respect to your studies and general behavior?

Here are a few:

- Follow an order while entering the school or leaving the school or changing the class room etc. by always going in a line.
- Establish order in the class room by maintaining appropriate silence and attention towards the teacher.
- Maintain order and discipline in the playground through sportsmanship & team spirit and friendly attitude while playing.
- Maintain order & beauty in keeping your books and notebooks neat & clean.
- Maintain an order in your play time and rest time. Excess of any one of them may upset your performance.
- Bring an order to your study time by studying regularly the day's work done at school & homework.
- Maintain Punctuality and use your time efficiently.

Remember. Order in our day to day life adds beauty, joy, harmony & peace in life.

Quotation Time:

Where there is righteousness, there is beauty in the character. When there is beauty in the character, there is harmony in the home. When there is harmony in the home, there is order in the nation. When there is order in the nation, there is peace in the world.

- A. P. J. Abdul Kalam

Time to teach	Value Type	Value Sub Type	Value Attribute
3 Minutes	Peace	Happiness	Quotation

9. QA_Patterns around us Question Time

Patterns Around Us- Question Time

The teacher needs to distribute the worksheets to the students for solving the following questions. After each student completes solving the questions, the answers could be projected through the presentation given:

Colour the area in blue which shows a pattern of multiples of 9.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

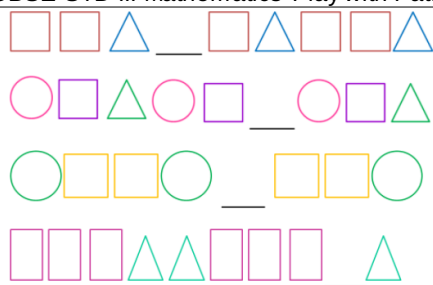
Colour the area in green which shows a pattern of multiples of 5.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Colour the area in Red which shows a pattern of multiples of 3.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Look at the patterns and draw the missing shapes.



Link to the images used in this asset:

OC: Images are self created using MS - table and shapes

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Assessments	Patterns	Patterns Around Us, Patterns Around Us

10. MS_Summary_Patterns Around Us

In this lesson we learnt:

1. To relate various kinds of patterns formed around us
2. To explain the number series patterns of mathematics
3. To identify various patterns by understanding their formation
4. To use their concentration power to identify the repeating units
5. To comprehend how monuments are built using the concept of patterns and symmetry
6. To create their own pattern and design
7. To understand the need for order in their lives to ultimately achieve peace and happiness

Time to teach	Asset Type	Theme	SubTheme
2 Minutes	Main Script	Patterns	Patterns Around Us, Patterns Around Us

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 titbits 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.