

**Cross-Curricular Resource: Lesson Plan Template**

<b>Subject(s)</b>	Math	<b>Lesson Title</b>	Shape Patterns
<b>Grade</b>	Three	<b>Developed by</b>	Nikol Ostrovski

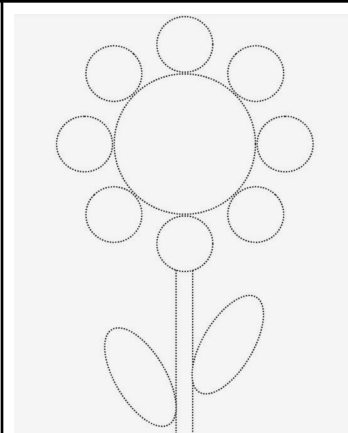
<b>Stage 1 — Identify Desired Results</b>	
<b>Outcome(s) &amp; Indicator(s)</b>	
<p>Demonstrate understanding of increasing and decreasing patterns including</p> <ul style="list-style-type: none"> <li>● observing and describing</li> <li>● Extending</li> <li>● Comparing</li> <li>● creating patterns using manipulatives, pictures, sounds, and actions.</li> </ul> <p style="text-align: center;"><i>Note: It is intended that decreasing patterns will not go past zero.</i></p> <p><b>Math Indicator (f):</b> - Create a concrete, physical, pictorial, or symbolic pattern (increasing or decreasing) and describe the pattern rule.</p> <p><b>Art outcome: CP3.8-</b> Create artworks using a variety of visual art concepts (e.g., contour lines), forms (e.g., drawing, sculpture), and media (e.g., pencils, pastels, found objects)</p> <p><b>Art Indicator (f) :</b> Recognize circles, squares, triangles, and rectangles as geometric shapes and apply this knowledge to artwork.</p> <p><b>English Outcome AR3.1:</b> Reflect on and assess their viewing, listening, reading, speaking, writing, and other representing experiences and the selected strategies they have used (e.g., using class-generated criteria).</p> <p><b>English Indicator (f) :</b> Apply criteria to judge the quality of their viewing, listening, reading, representing, speaking, and writing.</p>	
<b>Key Understandings (I can statements)</b>	<b>Essential or Key Questions</b>
<ul style="list-style-type: none"> <li>● I can recognize and describe increasing and decreasing patterns in numbers and shapes.</li> <li>● I can identify the pattern rule in the given pattern.</li> <li>● I can use shapes including circles, squares, triangles, and rectangles in my artwork.</li> <li>● I can incorporate patterns into my artwork using visual art concepts.</li> </ul>	<ul style="list-style-type: none"> <li>● What is a pattern in math?</li> <li>● How do you recognize and describe an increasing/ decreasing pattern</li> <li>● How can shapes be used in art?</li> </ul>

<ul style="list-style-type: none"> <li>● I can express creativity through the combination of geometric shapes and patterns in my artwork.</li> <li>● I can extend an existing pattern by adding more elements.</li> <li>● I can explain how patterns exist in both mathematical concepts and artistic creation.</li> <li>● I can explain my pattern by writing, and explaining about it</li> </ul>	<ul style="list-style-type: none"> <li>● How can you extend an existing pattern?</li> <li>● In what ways do patterns exist in both math and art?</li> <li>● Can I identify any shape patterns in the classroom?</li> <li>● Can I explain my pattern verbally and write it out?</li> </ul>
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<b>Big Ideas</b>	<b>Prerequisite Learning</b>	<b>Instructional Strategies</b>
<ul style="list-style-type: none"> <li>● Patterns in shapes</li> <li>● Patterns in colors</li> <li>● Patterns within the classroom</li> </ul>	<ul style="list-style-type: none"> <li>● Students should be familiar with counting, recognizing, and writing numbers up to 100</li> <li>● Understand the concept of addition and subtracting, and basic operations</li> <li>● Recognition of basic geometric shapes (circles, triangles, rectangles)</li> <li>● Recognition of simple patterns e.g ABA,</li> <li>● Familiarity with basic art supplies and their uses</li> <li>● Practice working in pairs or small groups for discussions and observations.</li> </ul>	<ul style="list-style-type: none"> <li>● Manipulative exploration</li> <li>● Visual representation</li> <li>● Peer collaboration</li> <li>● Class discussions</li> </ul>

**Stage 2 — Determine Evidence for Assessing Learning**

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<p>- Each student will be required to create an increasing and a decreasing pattern using wooden shapes on a piece of paper. Students will be required to write down what kind of pattern rule their pattern is following. I will also check in with students asking them these questions</p>	<p>Each student will create a picture of their choice-making pattern with the shapes to make their picture. For example, this picture of the slower has circles, ovals, and rectangles. Students will be choosing an object and creating their own pattern to make their object.</p>



### Stage 3 — Build Learning Plan

#### Set (Engagement)

**Time Required 10 minutes**

I will start by asking the students to observe the classroom quietly to look for pattern examples, this could include shapes and colors. Then I would have a class discussion and ask the class what patterns they noticed, where else we see these patterns in our everyday life, and why we think patterns are important. I will then put on a video introducing patterns and shapes

[▶ Patterns and shapes - Math Song | Nursery Rhymes & Kids Songs](#)

We then will get into understanding what increasing and decreasing patterns are, and I will show examples on the board of different shaped patterns including different shapes and colors.

#### Development

**Time Required 45 minutes**

I will begin by distributing wood-colored shapes to each student, I will instruct students to create an increasing pattern on their desks, and I will encourage creativity in the color shape arrangements, as students are creating their partners I would walk around the classroom and observe and check in with students and ask them what pattern they are working on and why?

I would then pair students up and have them share their created patterns with a partner, I would encourage students to ask questions and have a discussion about their patterns. I would then bring the class back together and facilitate a discussion by asking a few pairs who would volunteer to share their patterns with the class, as a class we would then discuss commonalities and differences between the patterns observed.

I would then introduce the concept of a decreasing pattern emphasizing that these patterns will not go past zero, I will provide an example on the board. I would now instruct students to create a decreasing pattern on their desks and this time I will get the class to circulate around the room to observe their classmates' shape patterns, then we will have a class discussion about the characteristics of decreasing patterns.

I would discuss the role of shapes in art and show examples of artworks that feature shapes. I would then ask the students to apply what we have learned I would then handout blank white paper and art supplies to the students. I would then instruct the students to start making patterns using shapes and start thinking of

objects that they can create with a shape pattern each student has to choose an object to make for the final hand copy to hand it in.

**Learning Closure**

**Time Required 15 minutes**

I would give more time for students to work on the object they are creating they will have to make a rough draft before they get to start working on their good copy. The good copy will have to include colours and students will have to use a ruler. When the students hand I will then conclude the lesson by asking students to briefly reflect on their experience

- What did you learn about patterns today, both in math and art?
- How did creating artwork enhance your understanding of mathematical patterns?

**Materials/Resources**

**Adaptations/Differentiation**

- Wood shapes
- Paper
- Coloring materials
- Sample artwork

- Provide additional support for students who may struggle with fine motor skills by offering larger-sized manipulatives.
- Challenge advanced learners by introducing more complex manipulatives or asking them to create intricate patterns.
- Consider using adaptive tools or alternative art supplies for students with physical disabilities.
- Arrange seating to accommodate students with mobility challenges or sensory sensitivities.
- Allow flexible seating options to cater to different learning preferences (e.g., sitting at a table, or on a cushion on the floor).
- Provide opportunities for students to choose how they want to present their artwork, such as on an easel or on a wall.
- Offer alternative modes of debriefing, such as verbal or written.

**Management Strategies**

**Culturally Responsive and Appropriate Integration**

- Clear instructions
- Transition signals
- Designated material station
- Collaboration guidelines
- Time management
- Teacher circulation
- Positive reinforcement

Diverse Examples of Patterns:

- Incorporate examples of patterns from various cultures and traditions, showcasing the richness and diversity of patterns worldwide. This can include patterns in textiles, architecture, or traditional artwork.

Inclusive Artwork Inspiration:

<ul style="list-style-type: none"> <li>● Student accountability</li> </ul>	<ul style="list-style-type: none"> <li>● Provide examples of artworks from diverse artists and cultures, highlighting how different cultures use geometric shapes and patterns in their artistic expressions.</li> </ul> <p>Celebration of Cultural Symbols:</p> <ul style="list-style-type: none"> <li>● Encourage students to incorporate cultural symbols or patterns from their own backgrounds into their artwork, fostering a sense of pride and connection to their heritage.</li> </ul> <p>Inclusive Representation:</p> <ul style="list-style-type: none"> <li>● Ensure that visual aids and examples used in the lesson represent a variety of ethnicities, genders, and cultural backgrounds, promoting inclusivity.</li> </ul> <p>Multilingual Support:</p> <ul style="list-style-type: none"> <li>● Provide multilingual support when necessary, ensuring that instructions and key concepts are accessible to students who may speak languages other than English at home.</li> </ul> <p>Global Patterns Exploration:</p> <ul style="list-style-type: none"> <li>● Explore and discuss patterns found in different parts of the world, emphasizing the global interconnectedness of mathematical concepts and artistic expressions.</li> </ul> <p>Respect for Cultural Practices:</p> <ul style="list-style-type: none"> <li>● Be mindful of cultural practices and traditions when assigning collaborative activities. Ensure that activities align with cultural norms and values.</li> </ul>
<p><b>Classroom Support Staff Roles</b></p>	<p><b>Safety Considerations</b></p>
<ul style="list-style-type: none"> <li>● Assistance with Materials</li> <li>● Individualized Support</li> <li>● Behavioral Support</li> <li>● Language Support</li> <li>● Adaptations for Diverse Needs</li> <li>● Facilitation of Peer Evaluation</li> <li>● Cultural Sensitivity and Inclusivity</li> <li>● Accessibility Support</li> </ul>	<p>Manipulative Safety:</p> <ul style="list-style-type: none"> <li>● Choose manipulatives that are age-appropriate, non-toxic, and free from small parts that could pose a choking hazard. Ensure that students use manipulatives responsibly and follow any safety guidelines provided.</li> </ul> <p>Art Supplies Safety:</p> <ul style="list-style-type: none"> <li>● Select art supplies that are safe for the age group and free from harmful materials. Be aware of any allergies students may have to art materials. Remind students about the proper use and storage of art supplies to prevent accidents.</li> </ul> <p>Collaborative Work Safety:</p> <ul style="list-style-type: none"> <li>● Emphasize the importance of respectful collaboration and safe behavior during partner and group activities. Set clear</li> </ul>

	expectations for working together and using materials responsibly.
<b>Stage 4 — Reflection</b>	
Will fill out after the lesson	