

Year Level/s: Prep

Date: 14 March 2016

Learning area (subject):

Mathematics

Duration: 60 min

What is the learning experience / broad issue / concept / focus of the learning from the unit that this lesson relates to?

Syllabus outcome:

Recognises, describes and continues repeating patterns MAe-8NA

(BOSTES, 2016).

- recognise, copy, continue and create repeating patterns using shapes, objects or pictures

**Lesson Objective:** What specific part of Learning Experience does **this** lesson aim to develop? A good objective must indicate “Given what, Do what, How well?”

By the end of this lesson, students will be able to identify, continue and complete missing parts of a pattern.

**Know and Do:** By the end of the lesson what knowledge (content and understandings) and skills (processes) do students need to develop?

Students need to **know** ...

- A pattern is only a pattern when it is repeated two or more times.

Students need to **be able to** ...

- Work collaboratively to develop an understanding of copying and continuing patterns
- Identify the pattern
- Apply strategies to determine the pattern

<b>Evaluation/Monitoring and Assessment:</b>		
<p><b>Prior Knowledge:</b> (How will I find out what the students know and/or remember?):</p> <ul style="list-style-type: none"> <li>• Class discussion on patterns, recall of previous lesson</li> <li>• Think: pair: share activity of students understandings of patterns</li> <li>• Video</li> </ul>	<p><b>Formative Assessment:</b> (How will I monitor student understanding along the way?):</p> <ul style="list-style-type: none"> <li>• Observe students</li> <li>• Utilise checklist, rating scales</li> </ul>	<p><b>Summative Assessment:</b> (How will I provide concrete evidence of student learning?):</p> <ul style="list-style-type: none"> <li>• Not applicable for this lesson: An end of unit summative assessment has been created: Students created their own pattern.</li> </ul>

<b>Resources needed:</b>
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<b>Teaching Strategies and Learning Steps</b>	<b>What to say</b>	<b>Organisation/Resources</b>	<b>Individualising learning</b>
<b>Introduction:</b> Key learnings and how they will be achieved (Consider strategies, relevance, individual/group work, clarify student understandings of task, etc.)			
<p><b>Time Allocation:</b> 15 min</p> <p><b>Students will:</b></p> <p>Students will be sitting in the learning zone and the teacher facilitates the discussion of patterns using concrete materials.</p> <p>Students are sitting in the learning zone and the teacher explains about the video students are going to watch.</p> <p><a href="https://www.youtube.com/watch?v=ERBcXh61QHE&amp;feature=player_embedded">https://www.youtube.com/watch?v=ERBcXh61QHE&amp;feature=player_embedded</a></p> <p>After the video, in pairs students reflect on the video.</p>	<p><b>Teachers will:</b></p> <p><i>What key messages will I convey?</i> Teacher explicitly tells the students a pattern is only a pattern when it is repeated two or more times.</p> <p><i>What strategies will I use to do this?</i> "I do" "you do"</p> <p>Teacher uses concrete materials found in the classroom to demonstrate copying, continuing and creating a pattern.</p> <p><b>Questions:</b></p> <p>What do you notice about the</p>	<p><i>What resources do I need?</i></p> <ul style="list-style-type: none"> <li>• Internet access</li> <li>• IWB</li> <li>• Laptop</li> <li>• Concrete materials (Beads, blocks, ribbon, M&amp;Ms).</li> </ul>	<p><i>How can I make adjustments to meet individual student needs?</i></p> <ul style="list-style-type: none"> <li>• Use of concrete materials</li> <li>• Have students explain their reflection to the teacher</li> <li>• Peer guiding</li> </ul>

	<p>pattern?</p> <p>What shapes did you see? What shapes were used to make the pattern?</p> <p>How did you know it was a pattern?</p> <p>Have a look around our classroom, can you see any patterns? What are they?</p> <p>What about when you are at home, did you see any patterns?</p> <p>What were they?</p> <p>Look at my pattern? What materials have I used? What colours? What did I do, to make it a pattern?</p>		
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**Lesson Body: - step by step outline of learning experience sequence (Consider HOTS tasks, monitoring understandings, provision and use of resources, general student responsibilities etc.)**

Time Allocation: 30 min	Teachers will:
<p><b>Students will :</b></p> <ul style="list-style-type: none"> <li>Move into their math groups and will continue some patterns. Students will be working from a worksheet and working with some attribute blocks. Students will continue the pattern using their attribute blocks following from the worksheet. Students will take note of the size, colour and shape of the pattern.</li> </ul>	<p><i>What strategies will I use to facilitate, guide and enable students to achieve the learning? "you do"</i></p> <ul style="list-style-type: none"> <li>Students work independently of finding the missing pattern.</li> </ul> <p>Teacher is nearby for student assistance.</p> <p>Student's are facilitators of</p> <p><i>What resources do I need?</i></p> <ul style="list-style-type: none"> <li>Worksheets</li> <li>Attribute blocks</li> <li>Unifix cubes</li> <li>Laptops</li> <li>Headphones</li> <li>Internet access</li> <li>IWB</li> </ul> <p><i>How will I know if students are achieving the learning objective/s?</i></p> <ul style="list-style-type: none"> <li>Reflections</li> <li>Through questioning</li> <li>Observing students in activities</li> </ul>

<ul style="list-style-type: none"> <li>Students move onto another concrete material activity. Student's are still in their groups and complete the missing part of the pattern. Students are going to use unifix cubes. One student going to make a pattern using the cubes but leaves some of the cubes out. The other student fills in the missing cubes. Students take turns. Students wait for direction, for next activity.</li> <li>Students log onto their laptops (with headphones) and complete an online activity where they are to find the missing monsters. This resource is used to reinforce the concept of patterns.</li> </ul> <p><a href="http://www.scootle.edu.au/ec/viewing/L1057/index.html">http://www.scootle.edu.au/ec/viewing/L1057/index.html</a> (Education Services Australia, 2013).</p> <ul style="list-style-type: none"> <li>Students move to the learning zone and as a class reflect/discuss the online activity.</li> </ul>	<p>group activities.</p> <p>Questions:</p> <p>What strategies did you use to find the missing monster?</p> <p>Sound was also used as a pattern, how did you find this?</p> <ul style="list-style-type: none"> <li>Patterns can come in many forms.</li> </ul>		
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#### Conclusion: Reviewing learning/Summarising/Articulating where to next (*Strategies to capture learning that occurred and move thinking forward.*)

Time Allocation: 15 min	Teachers will:		
<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>Students come together in the learning zone.</li> <li>Working off the IWB, students come up to the IWB and identify the missing parts of a pattern by pressing on the corresponding shape.</li> </ul> <p><a href="http://www.thegreatmartinicompany.com/Kids-Math/math-patterns.html">http://www.thegreatmartinicompany.com/Kids-Math/math-patterns.html</a></p>	<p><i>How will I help students to synthesise learnings? "you do"</i></p> <ul style="list-style-type: none"> <li>Oversee all activities</li> <li>Observe group activities and encourage student participation</li> <li>End of lesson discussion-</li> </ul>	<p><i>What plans are in place for those who finish early?</i></p> <ul style="list-style-type: none"> <li>This activity is done in a whole group.</li> </ul>	<p><i>What about those who need more time?</i></p> <ul style="list-style-type: none"> <li>This activity is done as a whole group</li> <li>Recall and reinforcement will continue on to next lesson.</li> </ul>

[pattern.html](#)

(Kid math, n.d.)

- After completing activity, students and teacher discuss what they have learnt today

reflection of patterns

- Provide constructive feedback
- Promote positive behaviour
- Connections to their real world experiences
- Making sure students have the concept of patterns in their minds (picture).

Questions:

What does a pattern look like?

What did find out about patterns today?

What was your favourite part about learning about patterns?

What was your least favourite thing to do?

## References

Boards of studies teaching and educational standards NSW [BOSTES]. (2016). New NSW syllabuses: Patterns and Algebra. Retrieved from <http://syllabus.bostes.nsw.edu.au/mathematics/mathematics-k10/content/684/>

Education Services Australia. (2013). *Monster Choir Missing Monsters*. Retrieved from <http://www.scootle.edu.au/ec/viewing/L1057/index.html>

Kids Math. (n.d.). *Pick a pattern*. (n.d.). Retrieved from <http://www.thegreatmartinicompany.com/Kids-Math/math-pattern.html>

Marshal Grover. (2008, September 15). *Sesame Street- The detective finds a pattern* [video file]. Video posted to [https://www.youtube.com/watch?v=ERBcXh61QHE&feature=player\\_embedded](https://www.youtube.com/watch?v=ERBcXh61QHE&feature=player_embedded)