

# LESSON PLANS: ALBERTA

## Grade 5: Patterns and Relations

### Repeating Patterns



45 MINS

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Mathletics

#### General Outcome:

- Use patterns to describe the world and to solve problems.

#### Specific Outcomes:

- Determine the pattern rule to make predictions about subsequent elements.

### Introduction to Lesson



5 MINS

#### Teacher Background:

- Give students a blank piece of paper. Have students create as many different number patterns as they can. Their number patterns can increase or decrease. Students can create geometric or numeric patterns. Have students represent number patterns in as many ways as they can, working collaboratively in their table groups.
- Have students determine what the rule could be for their pattern.



#### ITEMS NEEDED

- ✓ Interactive whiteboard
- ✓ Mathletics teacher login
- ✓ Student handouts from eBooks
- ✓ Computers/tablets
- ✓ Toothpicks
- ✓ Chart paper
- ✓ Markers
- ✓ Geometric pattern blocks



#### ASSESSMENTS

- ✓ Observations
- ✓ Collaborative/Group work
- ✓ Assess patterns on chart paper.
- ✓ Assess patterns made with toothpicks.



#### ACCOMMODATIONS/ MODIFICATIONS

- ✓ Allow students to use translucent geometric pattern blocks to help create their patterns.
- ✓ Encourage students to click on "Something Easier" and "Something Harder" within the Mathletics curriculum activities.



#### EXTENSION OF LEARNING

- ✓ Curriculum activities
- ✓ Year 5 eBook "Patterning and Algebra," Patterns and functions additional pages.
- ✓ Rainforest Maths Grade 5: Number Sequences for extra practice.

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#### The Lesson

 30 MINS

##### Collaborative Group Work

###### • Group 1—Matchstick Problems

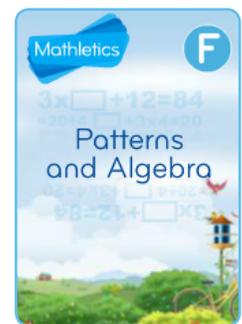
Print student handouts from the eBook > Year 5 Mathletics > Patterns and Algebra > Patterns and functions – matchstick patterns on pages 5 and 6. Have students use toothpicks to practice making a repeating geometric pattern. Students can complete a few of the tables found on these handouts. Ask students to then use the toothpicks to create their own geometric patterns and determine the function rule. Students should work together to create their pattern and glue it onto cardstock, displaying their rule at the bottom. These can then be displayed around the classroom for future reference.

**Note:** Students can also experiment with growing and shrinking patterns. Can students add on to their existing shape? How would the pattern look if the shape were repeated with flips, slides, and turns?

###### • Group 2—The Odd One Out

On the interactive whiteboard, log in to your **Teacher Console > Demonstrations > Curriculum activities > The odd one out** activity. Have students practice locating and recognizing the pattern that is occurring with the geometric shapes. After working through the questions collaboratively in their groups, students should create their own repeating patterns based on shapes or colours only. Have students create these on chart paper and circle the odd one out (the geometric shape or colour that does not fit), explaining the rule at the bottom.

**Note:** With collaborative group work students should be working together to come to a conclusion. All members of the team should be communicating and contributing to the group's mark. You can have students switch groups once they have completed one task and instruct students to complete the second task. This time should allow for both tasks to be completed.



#### After the lesson

 10 MINS

##### Discussion

- Have a quick discussion with your students about repeating patterns. **Prompting questions:** Where have you seen geometric patterns in real life? How do we grow or shrink a pattern? Where have you seen a numerical pattern? How did you know the function rule?



For more information contact our friendly team...

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