**Vancouver Island University Faculty of Education**

**BACHELOR OF EDUCATION - UNIT MATRIX**

Part 1

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| **Grade(s): 2 Title of Unit: Patterns**    **Overview of Unit Topic/Theme**:  -In this unit, students will learn about repeating patterns with up to two attributes that change. They will create and represent patterns using manipulatives, diagrams, letters, numbers, and sounds or actions. Students will use reasoning, visualization, and problem-solving strategies to identify, extend, and create patterns and cores of patterns. They will communicate their reasoning and describe pattern rules. They will select materials and strategies to create patterns, and select strategies to predict elements in patterns and extend patterns. They will make connections to geometry and data management as they identify attributes of shapes and other pattern elements. By reflecting on their discoveries, they will learn that repeating patterns result from repeated changes to attributes |
| **Rationale for Unit**:  -To teach students how to make predictions based on observations  -Prepare students for complex number concepts  -To help students with mental math |
| **List the Provincial Learning Outcomes (PLOs)**:  **Big Ideas:**  -The regular change in increasing patterns can be identified and used to make generalizations  **Curricular Competencies:**  -Develop mental math strategies and abilities to make sense of quantities  -Model mathematics in contextualized experiences  -Visualize to explore mathematical concepts  -Demonstrate, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving  -Explain and justify mathematical ideas and decisions  -Represent mathematical ideas in concrete, pictorial, and symbolic forms  **Content:**  -Repeating and increasing patterns  -Symbolic representation of equality and inequality |
| **Culminating Task(s)**:  -Pattern test (Jump Math) |
| **Resources:**  -Jump Math 2.1  -Pattern making materials |

Part 2

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| **Learning Outcomes** | **Description of Learning**  **Activities & Strategies** | **Assessment Method/Tool** | **Assessment Criteria** |
| What are the unit level learning outcomes? What do you want students to learn/understand/appreciate?  **Lesson 1: Cores of Patterns**  -Students will identify, extend, and create repeating patterns.  -Students will identify the core and the number of terms in the core. | What teaching strategies & activities will you utilize to enable students to achieve the learning outcomes?  **Lesson 1**  -Review repeating patterns (hand clapping)  -Define core of a repeating pattern  -Identify cores in a pattern  -Continue the pattern  -Students complete pages 42-43  -Give students materials to create repeating patterns | What method (e.g. write/say/do) and tool/instrument will you use to collect evidence of the learning?  **Lesson 1**  -Observation of students using materials to create repeating patterns  -Students are able to say what the pattern is | By what criteria do you decide that the outcome has been successfully met? What will you look for in the evidence?  **Lesson 1**  - Students will be able to identify the core of a pattern  -Students will be able to extend a repeating pattern |
| **Lesson 2: What Changes?**  - Students will identify, describe, extend, and create repeating patterns in which two attributes changes | **Lesson 2**  -Review repeating patterns  -Identifying attributes that change  -circles with different colors  -Sort items as class on overhead  -Introduce “properties”  -big, small, shape, size, colour,  direction  -Assign students page 46, extensions on page 44, 45, 47 | **Lesson 2**  -Observation of students using materials to create repeating patterns  -Students are able to say what the pattern is | **Lesson 2**  -Can identify, describe, extend, and create repeating patterns in which one attribute changes  -Can identify cores of patterns and the number of terms in a core |
| **Lesson 3: Pattern Rules**  -Students will explain the rules to create repeating patterns | **Lesson 3**  -Review pattern changes  -Introduce pattern rules, how to identify pattern in the shortest way (big, small, repeat)  -Describe patterns where properties change  -Partner work- one partner says pattern, other person draws pattern **(grid paper)** | **Lesson 3**  -Observation of students on-task, working together  -Students can verbalize pattern | **Lesson 3**  **-**Can identify a repeating pattern, cores and terms of patterns, and how attributes change |
| **Lesson 4/5: Showing patterns in different ways**  -Students will create and describe the same repeating patterns in different ways  -Students will identify and create matching patterns | **Lesson 4/5**  -Review patterns  -Create the same pattern using different elements  -BLM match game | **Lesson 4/5**  -Observation of students using letters to symbolize figures | **Lesson 4/5**  -Can identify a repeating pattern, cores and terms of patterns, and how attributes change |
| **Lesson 6: Patterns that don’t repeat**  -Students will understand that the first terms in a pattern aren’t always the start of a core | **Lesson 6**  -On overhead, draw pattern with the first term not being the start of the core  -Ask a volunteer to come circle the core  -What do you notice?  -Show patterns on the board, circle where the core begins | **Lesson 6**  -Observation of students understanding pattern cores | **Lesson 6**  -Students will be able to identify pattern cores, and where the core begins |
| **Lesson 7: Predicting Terms**  -Students will predict elements in repeating patterns using a variety of strategies and extend patterns to verify predictions | **Lesson 7**  -Guessing, present a repeating pattern and have students guess the next term and then a specific later term  -Using the length of the core to estimate | **Lesson 7**  -Students participate in class discussion, and make appropriate predictions based on lesson | **Lesson 7**  **-**Can identify the core of a pattern and extend single- and double-attribute patterns Can use ordinal numbers to 20th |
| **Lesson 8: Assessment Test**  -Culminating Activity | **Lesson 8**  -Go over what is expected during test  -Go over any difficult questions (terms, instructions)  -When finished, create patterns on a graph sheet | **Lesson 8**  -Test | **Lesson 8**  -Students apply their learning |