

GRADE 4 Patterns and Relations Specific Outcomes	Key Concepts in Patterns underpinning Curriculum Outcomes from FSIM: Operations Resource Book	Sample Diagnostic Tasks and Activities	Sample Learning Tasks Selected from FSIM: Operations Resource Book	Math Station Ideas:
P4.1 Demonstrate an understanding of patterns and relations by: - identifying and describing patterns and relations in a chart, table or diagram - reproducing patterns and relations in a chart, table, or diagram using manipulatives - creating charts, tables, or diagrams to represent patterns and relations - solving problems involving patterns and relations	Patterns and Algebra KU2: - Representing aspects of a situation with numbers can make it easier to see patterns in the situation. Patterns and Algebra KU3: - To describe a number pattern means to provide a precise rule that produces the pattern. Patterns and Algebra KU4: - There are strategies that help us become better at recognizing common types of patterns. Patterns and Algebra KU5: - Our numeration system has a lot of specially built-in patterns that make working with numbers easier. Patterns and Algebra KU6: - Some numbers have interesting or useful properties. Investigating the patterns in these special numbers can help us to understand them better.	Example: Math Live – Patterns: Assessment Task from www.learnalberta.ca	Operation Sense: Pages 234 - 236 - Material Patterns - Puppies - Triangle Toothpick Design Operation Sense: Pages 248-249 - Bicycles and Skateboards - What Comes Next? - Homework Patterns Operation Sense: Pages 257 - Farmyard - Doubling - Dot Patterns Operation Sense: Pages 265 - 267 - Hide the Numbers - Page Numbers 100 Grid Operation Sense: Pages 274-275 - Odd and Even Patterns - Times Tables Patterns - Factors	Carroll Diagrams (online interactive) Carroll Diagrams: choose criteria (online interactive) Venn Diagram and Sets Rally Game for 4th Grade (online interactive; teams) Times Table Grid (online interactive)

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P4.2 Demonstrate an understanding of equations involving symbols to represent an unknown value by: • writing an equation to represent a problem • solving one step equations.	Patterns and Algebra KU5: • Our numeration system has a lot of specially built-in patterns that make working with numbers easier. Patterns and Algebra KU6: • Some numbers have interesting or useful properties. Investigating the patterns in these special numbers can help us to understand them better. Operations KU2: • Partitioning numbers into part-part-whole helps us relate addition and subtraction and understand their properties. Operations KU5: • Repeating equal quantities and partitioning a quantity into equal parts helps us relate multiplication and division and understand their properties. Operations KU7: • Properties of operations and relationships between them can help us to decide whether number sentences are true.		Operation Sense: Pages 265 - 267 • Hide the Numbers • Answer Patterns • 100 Grid Operation Sense: Pages 274-275 • Twenty-Seven • Multiples of Three • Factors Operation Sense: Pages 44 - 45 • Number Relationships • Which Operation? • Unknown Number Operation Sense: Pages 76-77 • Constructing Arrays • Unknown Number Operation Sense: Pages 89-90 • Equals • Choose Your Numbers	Bike Racing Math: Algebra (easy or normal) (online) Math Tank Run (online) Pan Balance (online) Can You Make It? (link to instructions)

