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| STAGE 1 – DESIRED RESULTS | |
| **Learning Goals:**  **We are learning to determine and represent more complex patterns in a variety of ways.**  **We are learning that relationships between quantities can be represented using equations with variables.** | |
| **Understandings:** *Students will understand that…*   * A table of values can represent a pattern * Rules describe patterns * Arranging information into tables can make patterns easier to see * The use of variables in equations * Variables are unknown quantities * Variables can be changing quantities * Equations can be solved * Variables can be used to represent relationships | **Essential Questions:** *Students will be able to:*   * Create, identify, and extend more complex problems * represent a pattern using concrete materials, and a table of values * Predict missing terms in a pattern * Determine missing numbers in equations |

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| STAGE 2 – ASSESSMENT EVIDENCE | |
| **Performance Tasks:**  ONE - From Patterns to Algebra - p. 64 (Culminating Task Lessons 1-4)  TWO - Frayer Model - ‘Variable’ | **Other Evidence:**  Journal Entries  Observations |
| **Success Criteria:** | |

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| STAGE 3 – LEARNING PLAN | |
| **Summary of Learning Activities:**  **Patterns and Relationships**  **Unit Minds On:**  **-Guess my Rule - Robot activity, From Patterns to Algebra p. 6**  ***Identifying, Creating, Extending: (Concept 1)***  Minds On: (Open Questions p. 72) What numbers might go in the blanks? Why? Think of more than one possibility.  4, \_\_\_\_, 10, \_\_\_\_, \_\_\_\_, 19, \_\_\_\_,...  Working On It: Task 1 (Open Questions p. 75)- Create four increasing number patterns. Make one of the patterns increase by 7. Increase each pattern by a different number. Include the number 120 in all of the patterns. Describe which term is 120 in each pattern.  Consolidate…. (i.e. vocabulary)  Task 2 (Open Questions p. 74)- You predict that the 20th term of a growing number pattern is close to 600, but it is not exactly 600. What could the pattern be? Think of two or three possibilities. Explain how you created each pattern.  Consolidate…(Congress?)  Extend: (Open Questions p. 75) Create a growing number pattern and a shrinking number pattern that have the same 20th term. Explain how you know they have the same 20th term.  Practice activities:  Visualpatterns.org  Open Questions  Good Questions  mathtalks.net  ***Representing Patterns (Concept 2, Concept 4, Skill 2)***  Minds On (Open Questions p. 76)  Can you predict the 50th term value in this pattern? Are you sure?:  Working On It - Task 1 (Open Questions p. 78) - Create a number pattern that increased by 3. Then show two ways to model the pattern. Which model do you think makes it easier to see the increase of 3? Why?  Task 2 (Eyes on Math p. 150) - What collection will grow faster?  Consolidate…  Create a story that involves a growing or shrinking pattern. Represent this pattern in two different ways.  Extend: Journal Entry - “What do you think a table of values that describes a pattern is most useful for?  *OR*  “Do you think it is easier to figure out the pattern rule for a geometric pattern from looking at the shapes, or looking at a table of values?  Practice Activities:  **CULMINATING TASK ONE**  ***Algebra (Concept 5)***  Minds On:(Open Questions p. 81) Fill in the blanks to make a three-digit and a one-digit number. Explain how you chose your numbers.  \_\_ \_\_ = 80  Working On It: Task 1 - (Open Questions p. 82) What could the missing numbers be in this equation?  ⬜ 6 = △ 3  What do you notice about the various possibilities? Why does that make sense?  Task 2 - (Open Questions p. 81) S and T describe the amounts that Selena and Tammy have in savings. If you know that S + T is $180, what else do you know about S and T?  Consolidate….  Extend: The solution to four different equations is 5. One is an addition equation, one is a subtraction equation, on is a multiplication equation, one is a division equation. What could the equations be?  Practice Activities:  CULMINATING ACTIVITY TWO | **Differentiation:**  - Simplify Number pattern  - Provide manipulatives  - May be need additional instruction and 1 on 1 modeling  - Concrete support  - Simplify language  - Use fewer extra words |