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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 EntriesObservations |
| **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.orgOpen QuestionsGood Questionsmathtalks.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.\_\_ $÷$ \_\_ = 80Working On It: Task 1 - (Open Questions p. 82) What could the missing numbers be in this equation?⬜ $÷$ 6 = △ $÷$ 3What 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 |