Unit 7, Lesson 9

Generate Patterns

Let's explore rules and patterns.

Activity 1

What's the Pattern?

1. Jada and Priya create patterns using rules. Complete the table with the first 10 numbers of their patterns.

   Jada's pattern: Start with 0 and use the rule "Keep adding 4."

   Priya's pattern: Start with 0 and use the rule "Keep adding 8."

2. Jada and Priya continue their patterns. What number will be in Priya's pattern when Jada's pattern has:

   a. 40

   b. 60

3. Jada and Priya continue their patterns. What number will be in Jada's pattern when Priya's pattern has 192?

4. What relationships do you notice between the numbers in Priya's pattern and the numbers in Jada's pattern?

Activity 2

More Patterns

Partner A

1. Complete each table with the first 10 numbers of the pattern.

   Jada's pattern: Start with 0. Use the rule "Keep adding 2."

   Priya's pattern: Start with 0. Use the rule "Keep adding 6."

2. If the patterns continue:

   a. What number will be in Priya's pattern when Jada's pattern has 34? Explain or show your reasoning.

   b. What number will be in Jada's pattern when Priya's pattern has 120? Explain or show your reasoning.

3. What relationships do you notice between the numbers in Priya's pattern and the numbers in Jada's pattern?

Partner B

4. Complete each table with the first 10 numbers of the pattern.

   Jada's pattern: Start with 0. Use the rule "Keep adding 3."

   Priya's pattern: Start with 0. Use the rule "Keep adding 9."

5. If the patterns continue:

   a. What number will be in Priya's pattern when Jada's pattern has 54? Explain or show your reasoning.

   b. What number will be in Jada's pattern when Priya's pattern has 198? Explain or show your reasoning.

6. What relationships do you notice between the numbers in Priya's pattern and the numbers in Jada's pattern?