

Name \_\_\_\_\_

Date \_\_\_\_\_

## Generate and Compare Numerical Patterns

In this worksheet, we will practice generating two numerical sequences and comparing them. For this worksheet, we will always start with zero for addition, and one for multiplication.

For example,

Given the rule +4, generate a 5 term sequence: 0, 4, 8, 12, 16

Given the rule +2, generate a 5 term sequence: 0, 2, 4, 6, 8

The terms in the +4 sequence are (circle one) half of ( double ) triple the terms in the +2 sequence.

### Exercise Questions:

1. Generate a 5 term sequence, with the rule +2 \_\_\_\_\_  
Generate a 5 term sequence, with the rule +4 \_\_\_\_\_

The terms in the +2 sequence are (circle one) *half* *double* *triple* the terms in the +4 sequence.

2. Generate a 4 term sequence, with the rule +6 \_\_\_\_\_  
Generate a 4 term sequence, with the rule +2 \_\_\_\_\_

The terms in the +6 sequence are (circle one) *half* *double* *triple* the terms in the +2 sequence.

3. Generate a 6 term sequence, with the rule x2 \_\_\_\_\_  
Generate a 6 term sequence, with the rule x4 \_\_\_\_\_

4. Finish the sequences and write the rules:

0, 2, 4, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ Rule: \_\_\_\_\_

0, 4, 8, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ Rule: \_\_\_\_\_

5. Finish the sequences and write the rules:

1, 2, 4, 8, 16, \_\_\_\_\_, \_\_\_\_\_ Rule: \_\_\_\_\_

1, 3, 9, 27, 81, \_\_\_\_\_, \_\_\_\_\_ Rule: \_\_\_\_\_



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Given the rule +2, generate a 5 term sequence: 0, 2, 4, 6, 8

The terms in the +4 sequence are (circle one) half of ( double ) triple the terms in the +2 sequence.

### Answer Key

1. Generate a 5 term sequence, with the rule +2 0, 2, 4, 6, 8  
Generate a 5 term sequence, with the rule +4 0, 4, 8, 12, 16

The terms in the +2 sequence are ( half of ) double triple the terms in the +4 sequence.

2. Generate a 4 term sequence, with the rule +6 0, 6, 12, 18  
Generate a 4 term sequence, with the rule +2 0, 2, 4, 6

The terms in the +6 sequence are ( 1/3 of ) half of triple the terms in the +2 sequence.

3. Generate a 6 term sequence, with the rule x2 1, 2, 4, 8, 16, 32  
Generate a 6 term sequence, with the rule x4 1, 4, 16, 64, 256, 1024

4. Finish the sequences and write the rules:

0, 2, 4, 6, 8, 10 Rule: +2

0, 4, 8, 12, 16, 20 Rule: +4

5. Finish the sequences and write the rules:

1, 2, 4, 8, 16, 32, 64 Rule: x2

1, 3, 9, 27, 81, 243, 729 Rule: x3

