## Unit 5 Lesson 2: Patterns of Growth

### 1 Which One Doesn’t Belong: Tables of Values (Warm up)

#### Student Task Statement

Which one doesn't belong?

Table A

|  |  |
| --- | --- |
| 1 | 8 |
| 2 | 16 |
| 3 | 24 |
| 4 | 32 |
| 8 | 64 |

Table B

|  |  |
| --- | --- |
| 0 | 0 |
| 2 | 16 |
| 4 | 32 |
| 6 | 48 |
| 8 | 64 |

Table C

|  |  |
| --- | --- |
| 0 | 1 |
| 1 | 4 |
| 2 | 16 |
| 3 | 64 |
| 4 | 256 |

Table D

|  |  |
| --- | --- |
| 0 | 4 |
| 1 | 8 |
| 2 | 12 |
| 3 | 16 |
| 4 | 20 |

### 2 Growing Stores

#### Student Task Statement

A food company currently has 5 convenience stores. It is considering 2 plans for expanding its chain of stores.

Plan A: Open 20 new stores each year.

1. Use technology to complete a table for the number of stores for the next 10 years, as shown here.

| * year | * number of stores | * difference from previous year |
| --- | --- | --- |
| * 0 | * 5 |  |
| * 1 | * 25 |  |
| * 2 |  |  |
| * 3 |  |  |
| * 4 |  |  |
| * 5 |  |  |
| * 6 |  |  |
| * 7 |  |  |
| * 8 |  |  |
| * 9 |  |  |
| * 10 |  |  |

* 1. What do you notice about the difference from year to year?
  2. If there are stores one year, how many stores will there be a year later?
  3. What do you notice about the difference every 3 years?
  4. If there are stores one year, how many stores will there be 3 years later?

Plan B: Double the number of stores each year.

1. Use a technology to complete a table for the number of stores for the next 10 years under each plan, as shown here.

| * year | * number of stores | * difference from previous year | * factor from previous year |
| --- | --- | --- | --- |
| * 0 | * 5 |  |  |
| * 1 |  |  |  |
| * 2 |  |  |  |
| * 3 |  |  |  |
| * 4 |  |  |  |
| * 5 |  |  |  |
| * 6 |  |  |  |
| * 7 |  |  |  |
| * 8 |  |  |  |
| * 9 |  |  |  |
| * 10 |  |  |  |

* 1. What do you notice about the difference from year to year?
  2. What do you notice about the factor from year to year?
  3. If there are stores one year, how many stores will there be a year later?
  4. What do you notice about the difference every 3 years?
  5. What do you notice about the factor every 3 years?
  6. If there are stores one year, how many stores will there be 3 years later?

### 3 Flow and Followers

#### Student Task Statement

Here are verbal descriptions of 2 situations, followed by tables and expressions that could help to answer one of the questions in the situations.

* Situation 1: A person has 80 followers on social media. The number of followers triples each year. How many followers will she have after 4 years?
* Situation 2: A tank contains 80 gallons of water and is getting filled at rate of 3 gallons per minute. How many gallons of water will be in the tank after 4 minutes?

Match each representation (a table or an expression) with one situation. Be prepared to explain how the table or expression answers the question.

A.

B.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 | 3 | 4 |
|  | 80 | 240 | 720 | 2,160 | 6,480 |

C.

D.

E.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 | 3 | 4 |
|  | 80 | 83 | 86 | 89 | 92 |

F.



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