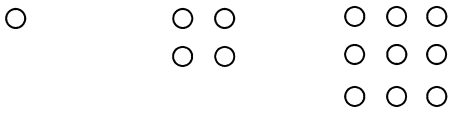
Activity 6-19: **Go Figure!** Name:

(*Taken from Lessons for Algebraic Thinking: Grades 6-8)*

**INVESTIGATION NUMBER 1**: Square numbers

1. The first three square numbers are shown below.



**1** **2** **3**

2. Draw the fourth and fifth square numbers in the space below.

3. Find a pattern for the number of dots column (how you go from one row to the next) and predict the number of dots needed to show the tenth square number and the one hundredth square number.

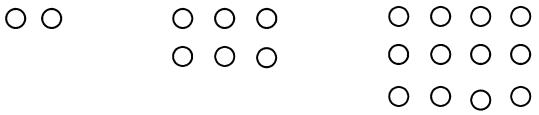
| Square Number | Number of Dots |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 10 | |
| 100 | |

4. Give a rule that will work for any square number (how do you get from the square number column to the number of dots column each time?).

(*Taken from Lessons for Algebraic Thinking: Grades 6-8)*

**INVESTIGATION NUMBER 2**: Rectangular numbers

1. The first three rectangular numbers are shown below.



**1** **2** **3**

2. Draw the fourth and fifth rectangular numbers in the space below.

3. Find a pattern for the number of dots column (how you go from one row to the next) and predict the number of dots needed to show the tenth rectangular number and the one hundredth rectangular number.

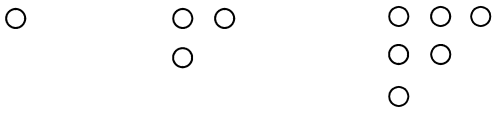
| Rectangular Number | Number of Dots |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 10 | |
| 100 | |

4. Give a rule that will work for any rectangular number (how do you get from the rectangular number column to the number of dots column each time?).

(*Taken from Lessons for Algebraic Thinking: Grades 6-8)*

**INVESTIGATION NUMBER 3**: Triangular numbers

1. The first three triangular numbers are shown below.



**1** **2** **3**

2. Draw the fourth and fifth triangular numbers in the space below.

3. Find a pattern for the number of dots column (how you go from one row to the next) and predict the number of dots needed to show the tenth triangular number and the one hundredth triangular number.

| Triangular Number | Number of Dots |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 10 | |
| 100 | |

4. Give a rule that will work for any triangular number (how do you get from the triangular number column to the number of dots column each time?).