Math Live – *Patterns*: Activity Sheet
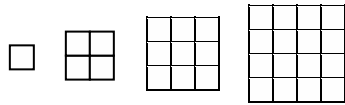
Grade: 4   **Strand**: Patterns and Relations (Patterns)   **Outcome:** 1, 2, 3, 4

1. Tiles are used to make this pattern.

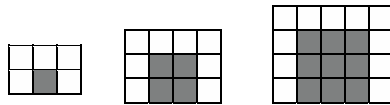   a. Draw the fifth diagram in this pattern.

    b. This pattern is shown in the following chart. Complete the chart.

Diagram Number	1	2	3	4	5	6
Perimeter (units)	4	8	12	16		
Area (square units)	1	4	9	16		

2. Black and white tiles are used to make this pattern.

    a. Draw the next diagram in this pattern.

    b. Create a chart to organize the data.

Diagram Number	1	2	3	4	5	6
Number of Black Squares						
Number of Total Squares						

3. In an elimination tournament, 64 teams play 32 games, then 32 teams play 16 games, then 16 teams play 8 games and so on.
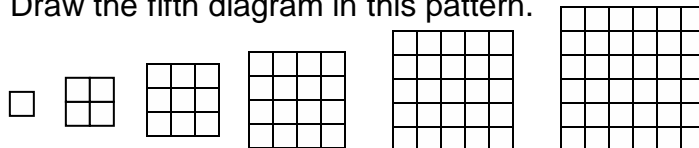
    a. Following this pattern, how many games will 4 teams play? Set up a chart to show the pattern and solve the problem.

b. Extend your chart to include the total number of games played. How many games are played in the entire tournament?

Math Live – *Patterns*: Activity Sheet Answer Key

1. Tiles are used to make this pattern.
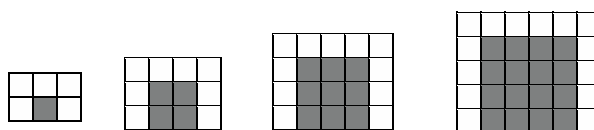
    a. Draw the fifth diagram in this pattern.

    b. This pattern is shown in the following chart. Complete the chart.

Diagram Number	1	2	3	4	5	6
Perimeter (units)	4	8	12	16	20	24
Area (square units)	1	4	9	16	25	36

2. Black and white tiles are used to make this pattern.

    a. Draw the next diagram in this pattern.

    b. Create a chart to organize the data.

Diagram Number	1	2	3	4	5	6
Number of Black Squares	1	4	9	16	25	36
Number of Total Squares	6	12	20	30	42	48

3. In an elimination tournament, 64 teams play 32 games, then 32 teams play 16 games, then 16 teams play 8 games and so on.
    a. Following this pattern, how many games will 4 teams play? Set up a chart to show the pattern and solve the problem.

Number of Teams	64	32	16	8	4	2
Number of Games	32	16	8	4	2	1

    b. Extend your chart to include the total number of games played. Then find how many games are played in the tournament.

    63 games will be played in total.