

Preliminary Planning Sheet Grade 3 – Circles and Stars

Domain(s)

Operations and Algebraic Thinking

Standard(s)

3.OA.A.1

Mathematical Practices

MP.1 MP.3 MP.4 MP.5 MP.6 MP.7

Major Underlying Mathematical Concepts

- Creating multiplication situations to match an expression
- Finding the product when both factors are known
- Number sense to 18
- Commutative Property

Problem Solving Strategies

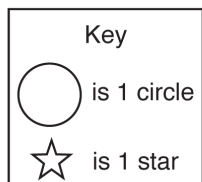
- Model (manipulatives)
- Diagram/Key
- Table
- Tally chart
- Number line
- Array

Formal Mathematical Language and Symbolic Notation

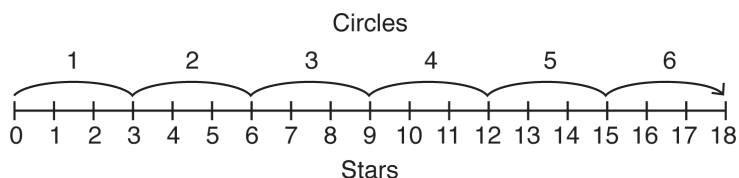
- Model
- Diagram/Key
- Table
- Tally chart
- Product
- Factor
- Set
- Array
- Row
- Column
- Number line
- Total/Sum
- Dozen
- Greater than (>)/Less than (<)
- Equivalent/Equal to
- Odd/Even
- $\frac{1}{2}$
- Rule
- Variable
- $3 \cdot c = s$
- $6 \cdot c = s$
- Equation
- Commutative Property
- Expression

Possible Solution(s)

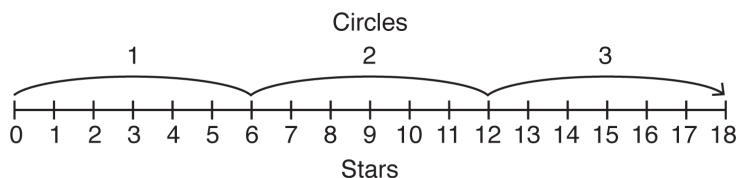
Sophie is correct, she did get the same total number of stars both times.



Circles	Stars
1	3
2	6
3	9
4	12
5	15
6	18



Circles	Stars
1	6
2	12
3	18



Possible Connections

Below are some examples of mathematical connections. Your students may discover some that are not on this list.

- Repeat the activity with other rolls of the number cubes.
- 6 is a half dozen.
- Patterns: Stars +3 or +6, Circles +1.
- When you add equal groups on a number line, you jump over the same number of spaces each time moving to the right, away from zero.
- Extend the number of equal sets of 3 beyond 6.
- Solve more than one way to verify answer.
- Relate to a similar task and state a math link.
- Rewrite the story with a new expression.
- Explain how 6×3 and 3×6 are both 18 but are used differently to represent the situation in the game.
- Generalize and prove the rules: $3 \cdot c = s$ and $6 \cdot c = s$ (key: c is circles, s is stars).