Preliminary Planning Sheet

Grade 4 – Apple Picking

Domain(s)

Operations and Algebraic Thinking

Standard(s)

4.OA.C.5

Mathematical Practices

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

Major Underlying Mathematical Concepts

- Identifying/Generating numerical patterns
- Ordinal numbers
- Number sense to 72
- Addition/Multiplication

Problem Solving Strategies

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

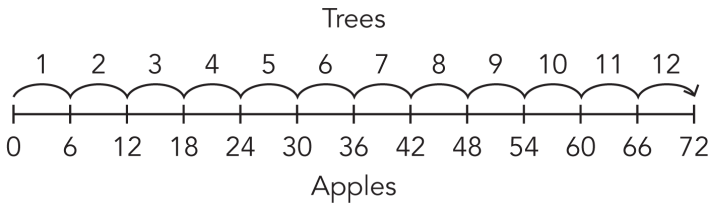
Formal Mathematical Language and Symbolic Notation

- Model
- Table
- Graph
- Number line
- Pattern
- Odd/Even
- Multiples
- Rule
- 6 • t = a
- Total/Sum
- Ordinal numbers: 1st, 2nd, 3rd ...
- Dozen
- Diagram/Key Axis
- Per
- Variable
- Input/Output
- Gross
- Equivalent/Equal to
- 1/2
- Tally chart
- Pictograph

Possible Solution(s)

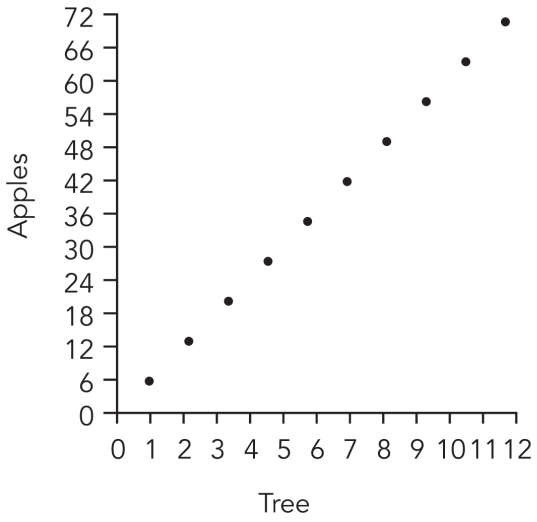
Evan will pick 72 apples from the 12th tree.

Tree	Total Apples
1	6
2	12
3	18
4	24
5	30
6	36
7	42
8	48
9	54
10	60
11	66
12	72



Rule
t is trees
a is apples

$6 \cdot \mathbf{t} = \mathbf{a}$



Possible Connections

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

- Patterns: Trees +1, Apples +6.
- Evan picked from a dozen trees. He picked a dozen apples from tree 2.
- Evan picked a total of 468 apples.
- 72 apples is 6 dozen. 12 dozen is a gross.
- Recreate the task with a different total of apples per tree.
- The pattern is an equal amount of apples ($\frac{1}{2}$ dozen) per tree (6, 12, 18 ...).
- Generalize and prove the rule 6 • t = a.
- Relate to a similar task and state a math link.
- Continue the table for more trees and apples.
- Graph pattern and function.