

Preliminary Planning Sheet Grade 4 – Packages of Crayons

Domain(s)

Operations and Algebraic Thinking

Standard(s)

4.OA.A.3

Mathematical Practices

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

Major Underlying Mathematical Concepts

- Multi-step word problems with whole numbers
- Number sense to 36

Problem Solving Strategies

- Model (manipulatives)
- Diagram/Key
- Table
- Chart
- Array
- Graph
- Number line

Formal Mathematical Language and Symbolic Notation

- Model
- Diagram/Key
- Table
- Chart
- Array
- Number line
- Total/Sum
- Product
- Dozen
- Equivalent/Equal to
- Pattern
- Multiples
- Rule: $12 \cdot p = c$
- Running total
- Input/Output
- Area model for multiplication

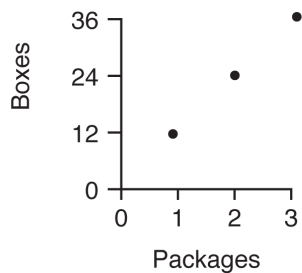
Possible Solution(s)

The class needs 3 packages of crayons.

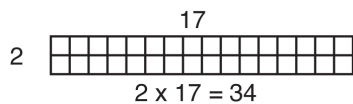
Rule
p is package
c is total boxes of
 crayons
 $12 \cdot p = c$

Packages	Total Boxes of Crayons
1	12
2	24
3	36

$$\begin{array}{r} 17 \\ + 17 \\ \hline 20 \\ 14 \\ \hline 34 \text{ boxes} \end{array}$$

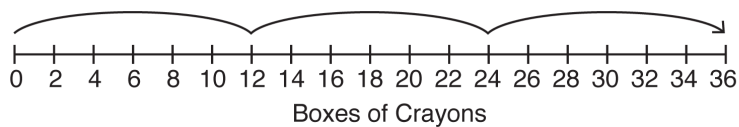


Key
 □ is 1 box of crayons



Packages

$$2 \left[\begin{array}{|l|l|} \hline 10 & + & 7 \\ \hline 2 \times 10 = 20 & 2 \times 7 = 14 & 20 + 14 = 34 \\ \hline \end{array} \right]$$



Possible Connections

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

- 12 boxes is a dozen.
- 2 extra boxes of crayons is the remainder.
- Patterns: Boxes of crayons +12, Packages +1
- There are enough remaining boxes of crayons for 1 new student to join the class.
- The table is continued for more packages of crayons.
- Relate to a similar task and state a math link.
- Solve more than one way to verify the answer.
- Rule: $12 \cdot p = c$
- Input/output are graphed.