

Integers with 4-group Number Patterns

Egg cartons represent negative numbers



-1



-2



-3



-4



-5



-6



-7



-8



-9



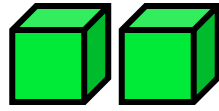
-10

Integers with 4-group Number Patterns

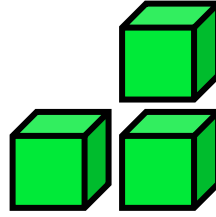
Cubes represent positive numbers



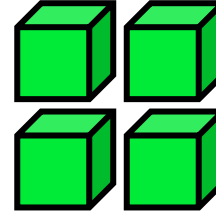
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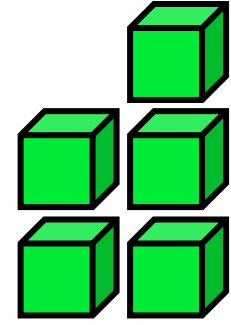
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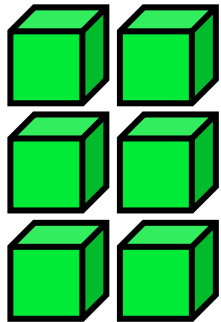
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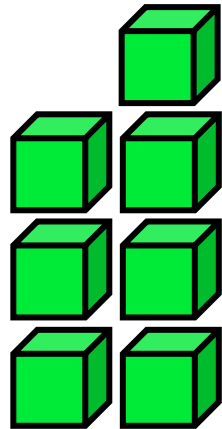
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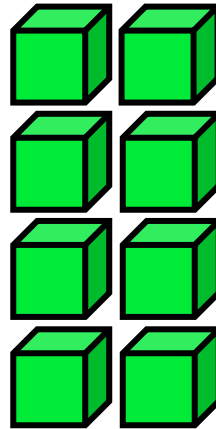
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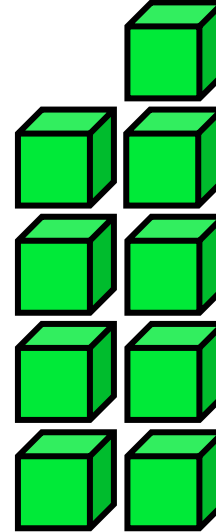
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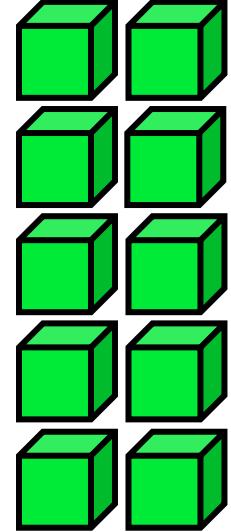
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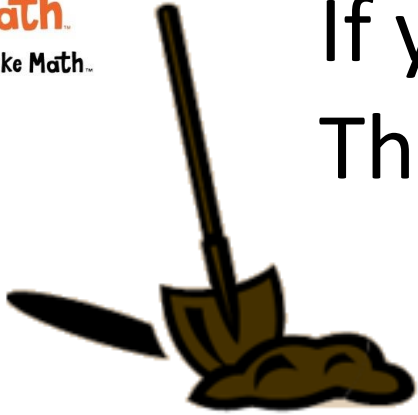
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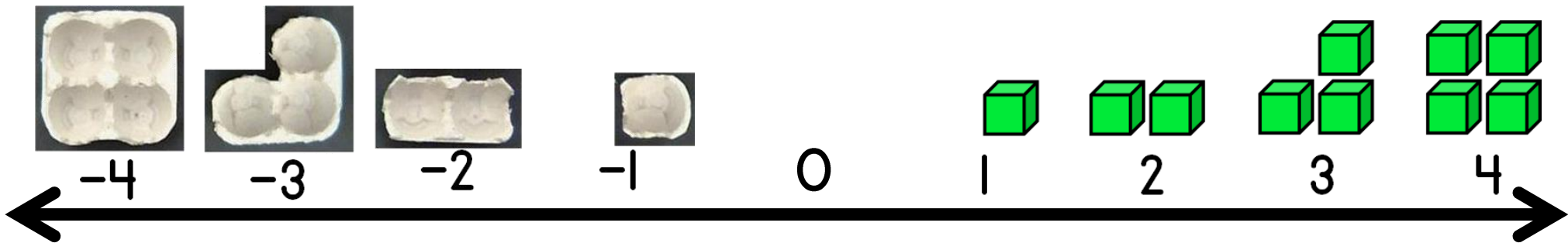
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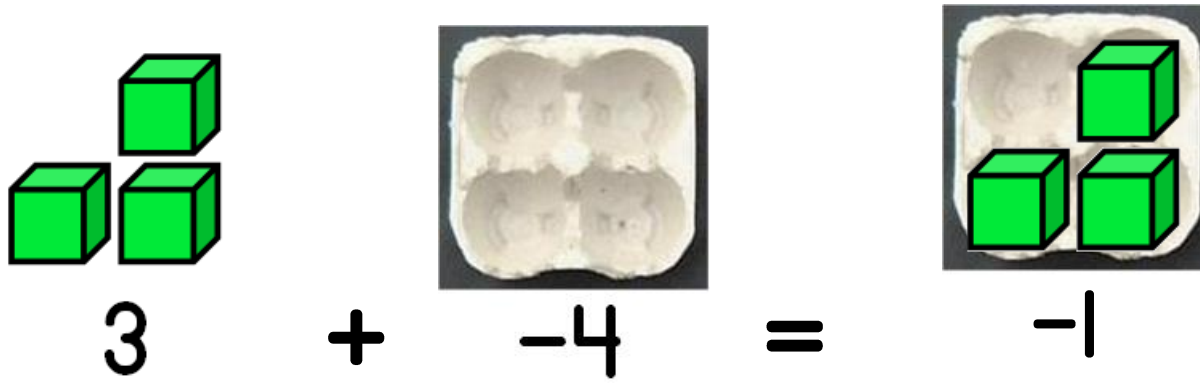


If you dig a hole, you have -1.
The pile of dirt from the hole is +1.
Put the dirt back in the hole
and you have zero.

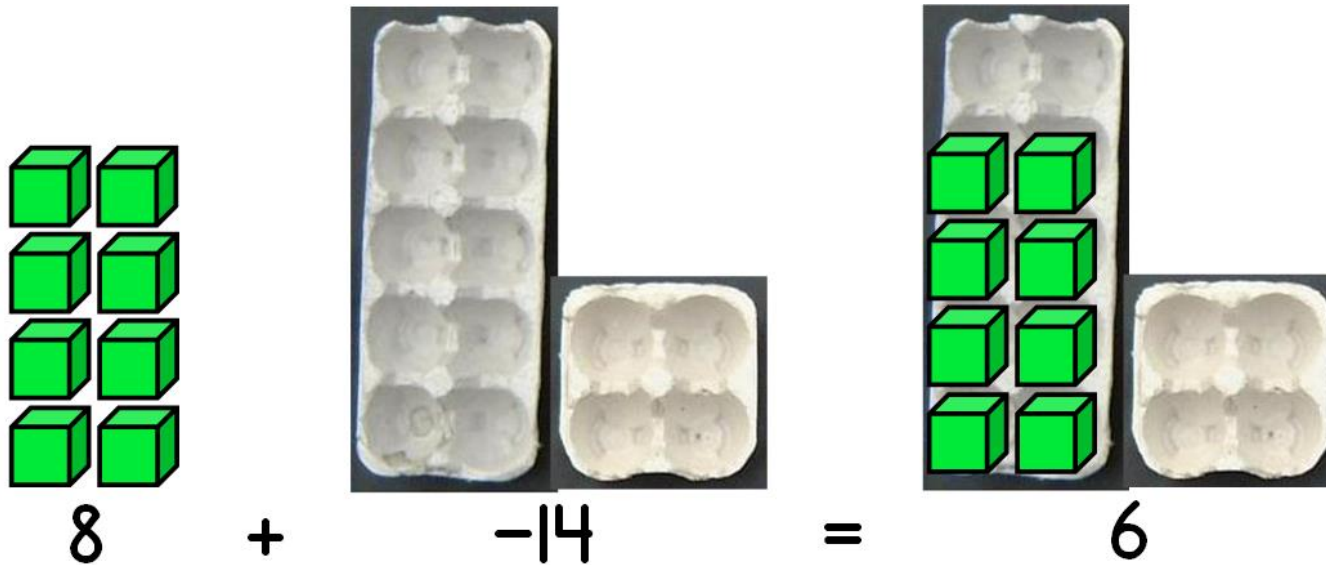


$$\begin{array}{c} \text{[hole]} \\ -1 \end{array} + \begin{array}{c} \text{[cube]} \\ 1 \end{array} = \begin{array}{c} \text{[cube in hole]} \\ 0 \end{array}$$

Example 1: positive + negative



Example 2: positive + negative

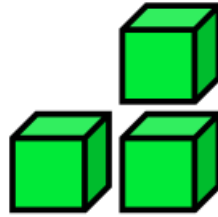


Example 1: negative + positive



-4

+



3

=



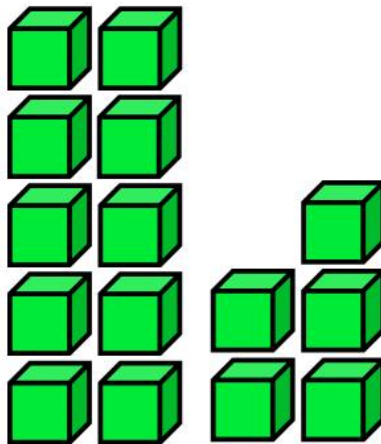
-1

Example 2: negative + positive



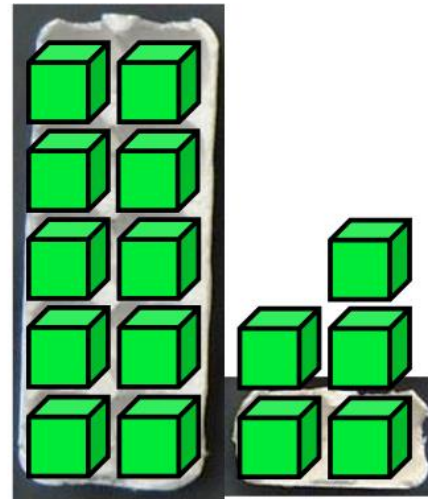
-12

+



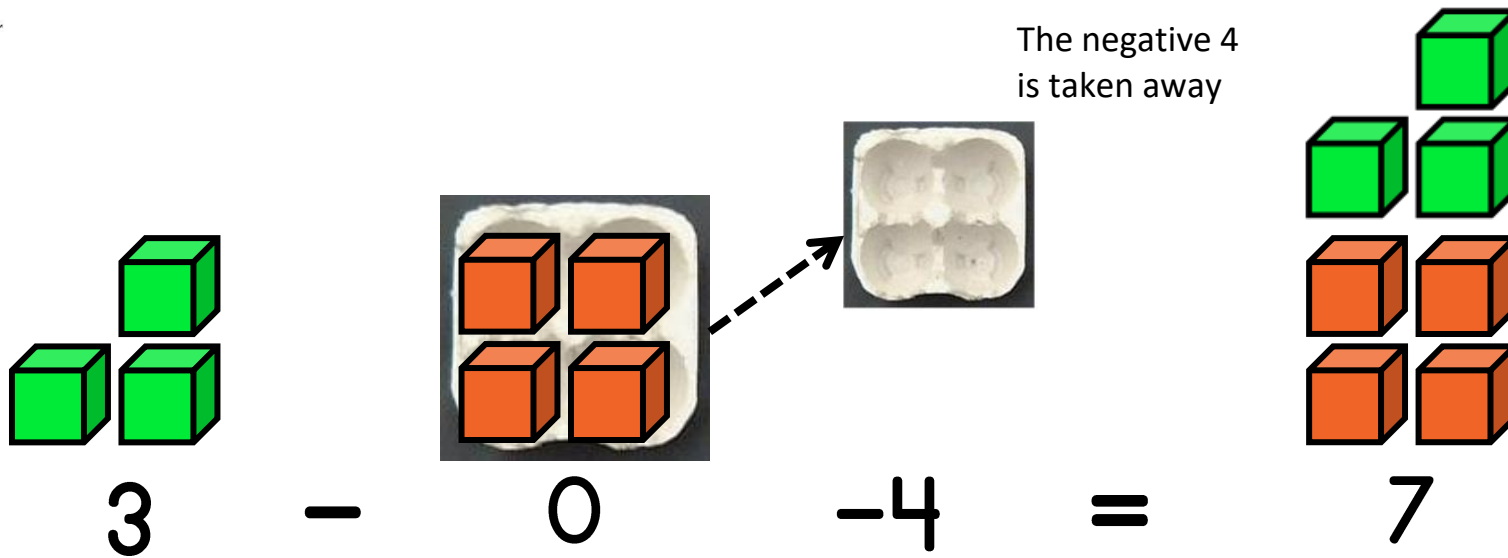
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=

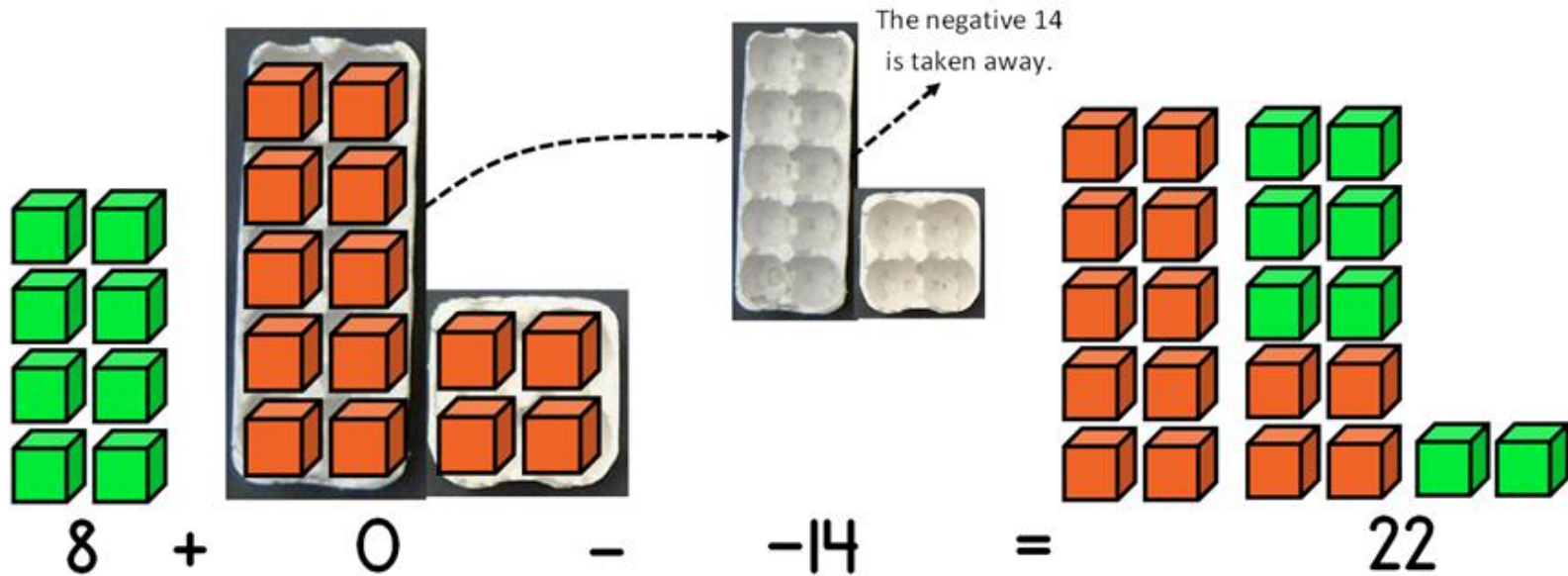


3

Example 1: positive - negative



Example 2: positive - negative



Example 1: negative - negative

The negative 4 is taken away

$-3 - 0 - (-4) = 1$

Example 2: negative - negative

The negative 14 is taken away.

$-8 - 0 - (-14) = 6$

Example 1: negative - positive

The diagram illustrates the subtraction $-3 - 0 - 4 = 7$. It starts with a negative 3 represented by an L-shaped egg carton. Then, a zero is added, represented by a full egg carton containing four orange blocks. A dashed arrow points from these blocks to a separate group of four orange blocks, with the text "The positive 4 is taken away". Finally, the result is a positive 7, represented by an L-shaped egg carton.

$-3 - 0 - 4 = 7$

Example 2: negative - positive

The diagram illustrates the subtraction $-14 + 0 - 8 = -22$. It starts with a negative 14 represented by two egg cartons (one full, one with two blocks). Then, a zero is added, represented by a full egg carton containing eight green blocks. A dashed arrow points from these blocks to a separate group of eight green blocks, with the text "The positive 8 is taken away". Finally, the result is a negative 22, represented by three egg cartons (two full, one with two blocks).

$-14 + 0 - 8 = -22$