## Unit 3 Lesson 14: Using Diagrams to Represent Addition and Subtraction

### 1 Do the Zeros Matter? (Warm up)

#### Student Task Statement

1. Evaluate mentally:
2. Decide if each equation is true or false. Be prepared to explain your reasoning.

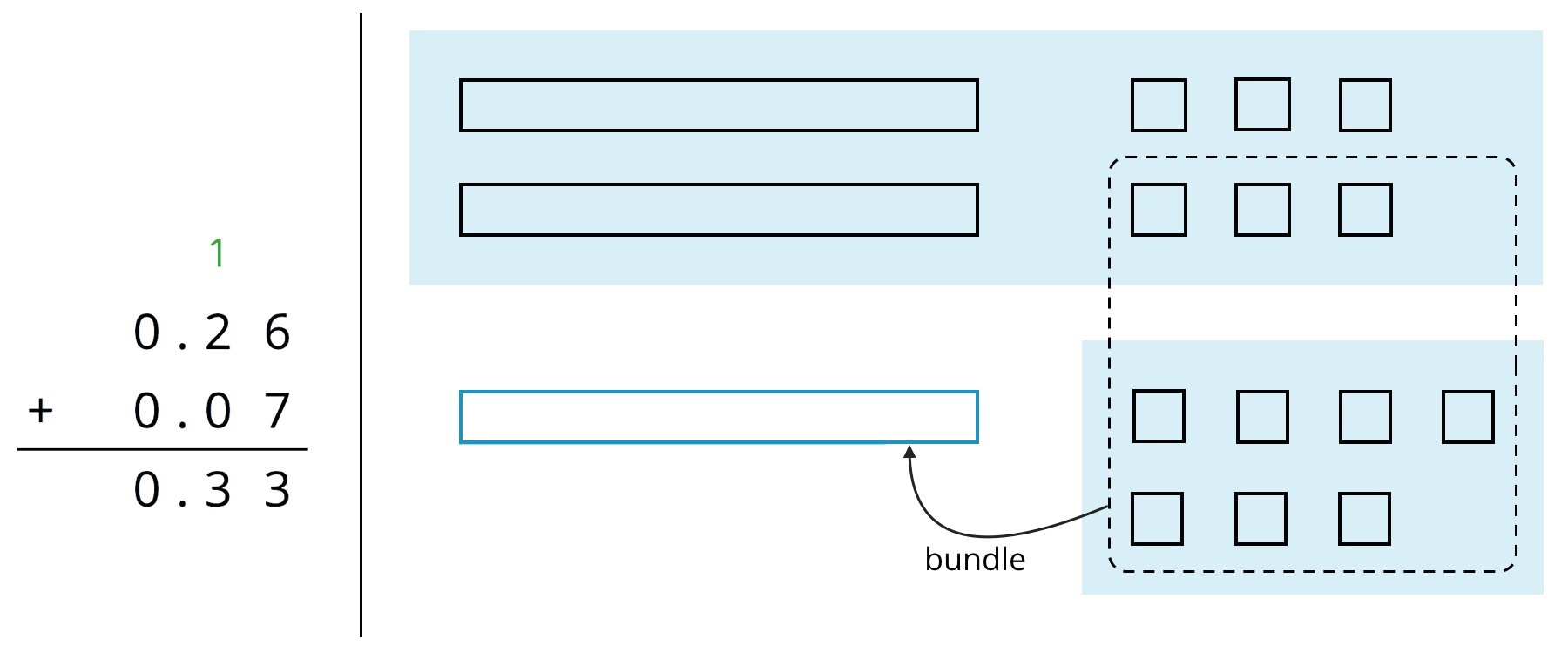
### 2 Finding Sums in Different Ways (Optional)

#### Images for Launch

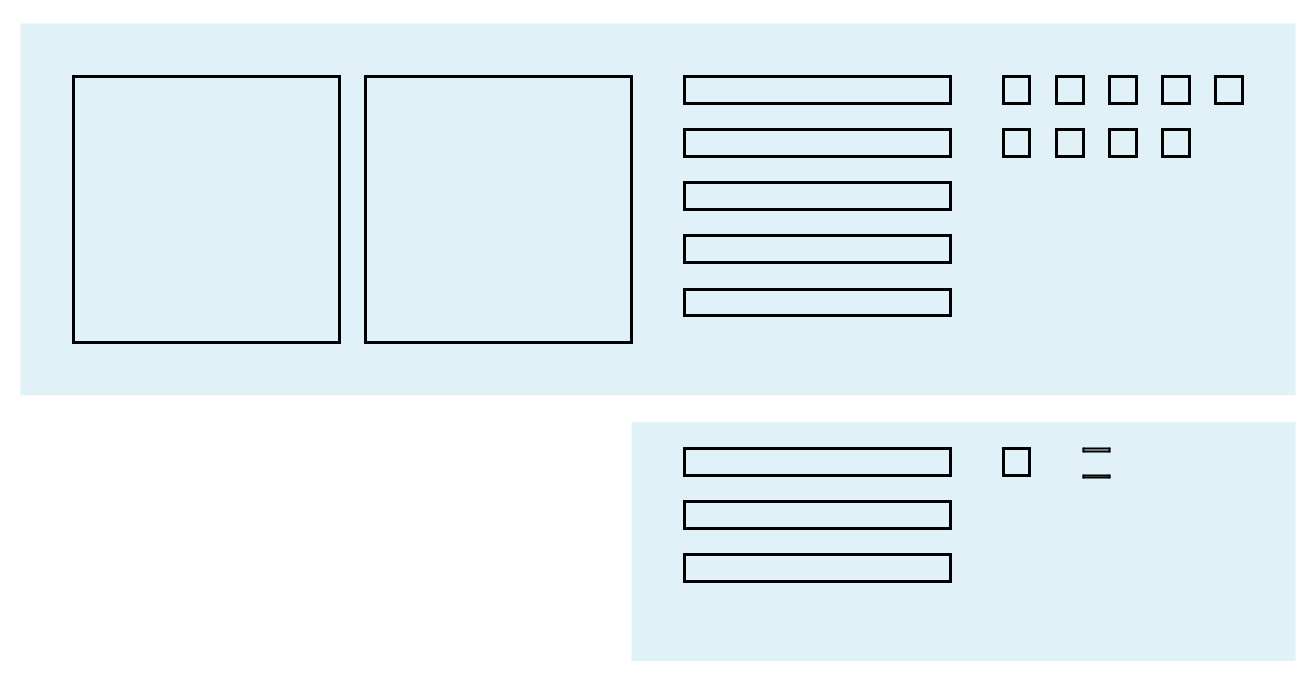
The Move tool

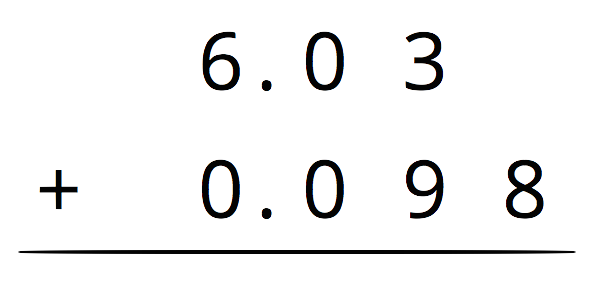
#### Student Task Statement

1. Here are two ways to calculate the value of . In the diagram, each rectangle represents 0.1 and each square represents 0.01.

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* Use what you know about base-ten units and addition to explain:
  1. Why ten squares can be “bundled” into a rectangle.
  2. How this “bundling” is represented in the vertical calculation.

1. Find the value of by drawing a diagram. Can you find the sum without bundling? Would it be useful to bundle some pieces? Explain your reasoning.
2. Calculate . Check your calculation against your diagram in the previous question.
3. Find each sum. The larger square represents 1.

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### 3 Subtracting Decimals of Different Lengths

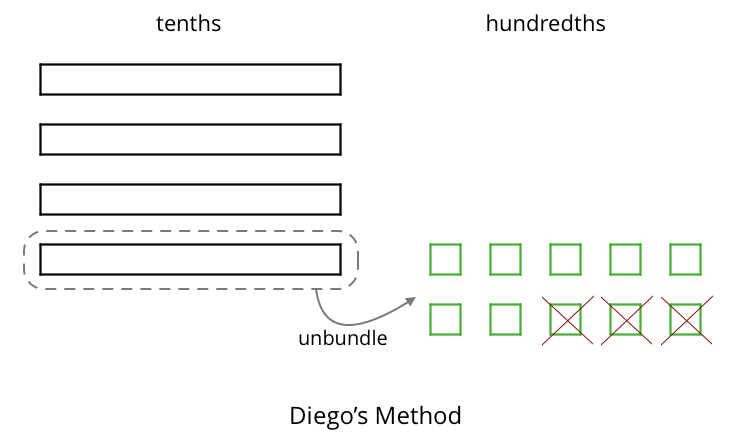
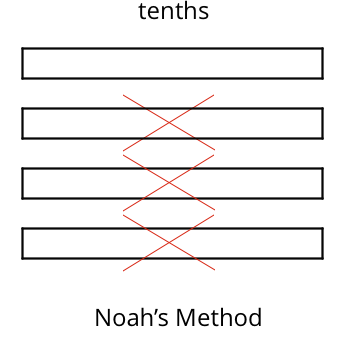
#### Images for Launch

The Move tool

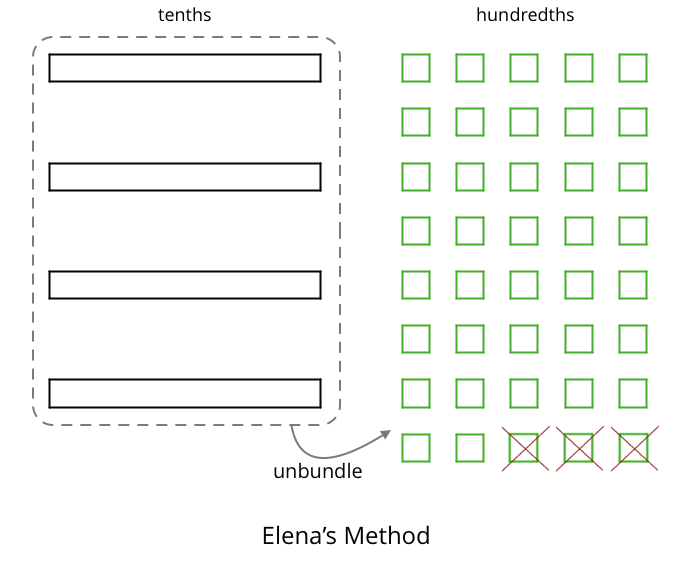


#### Student Task Statement

Diego and Noah drew different diagrams to represent . Each rectangle represents 0.1. Each square represents 0.01.

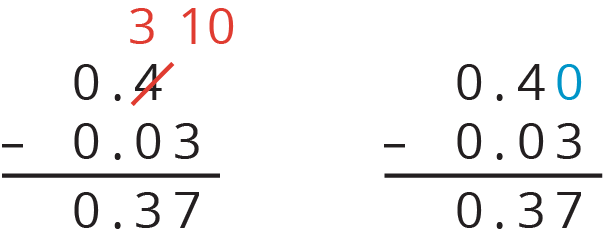
* Diego started by drawing 4 rectangles to represent 0.4. He then replaced 1 rectangle with 10 squares and crossed out 3 squares to represent subtraction of 0.03, leaving 3 rectangles and 7 squares in his diagram.
* 
* Noah started by drawing 4 rectangles to represent 0.4. He then crossed out 3 rectangles to represent the subtraction, leaving 1 rectangle in his diagram.
* 

1. Do you agree that either diagram correctly represents ? Discuss your reasoning with a partner.
2. Elena also drew a diagram to represent . She started by drawing 4 rectangles. She then replaced all 4 rectangles with 40 squares and crossed out 3 squares to represent subtraction of 0.03, leaving 37 squares in her diagram. Is her diagram correct? Discuss your reasoning with a partner.

* 

1. Find each difference. Explain or show your reasoning.

#### Activity Synthesis





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