## Unit 3 Lesson 19: Dividing Numbers that Result in Decimals

### 1 Keep Dividing (Warm up)

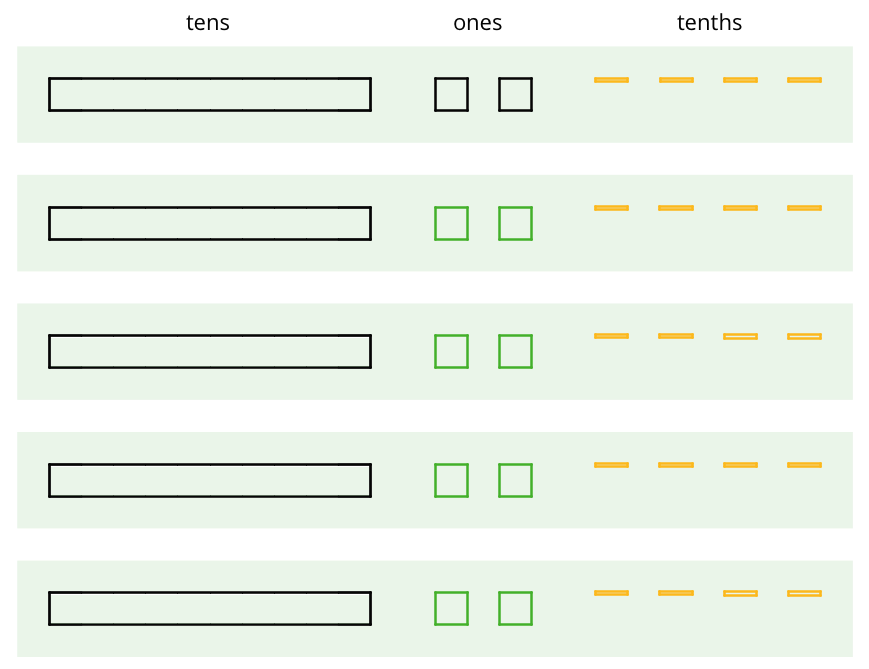
#### Student Task Statement

Mai used base-ten diagrams to calculate . She started by representing 62.



She then made 5 groups, each with 1 ten. There was 1 ten left. She unbundled it into 10 ones and distributed the ones across the 5 groups.

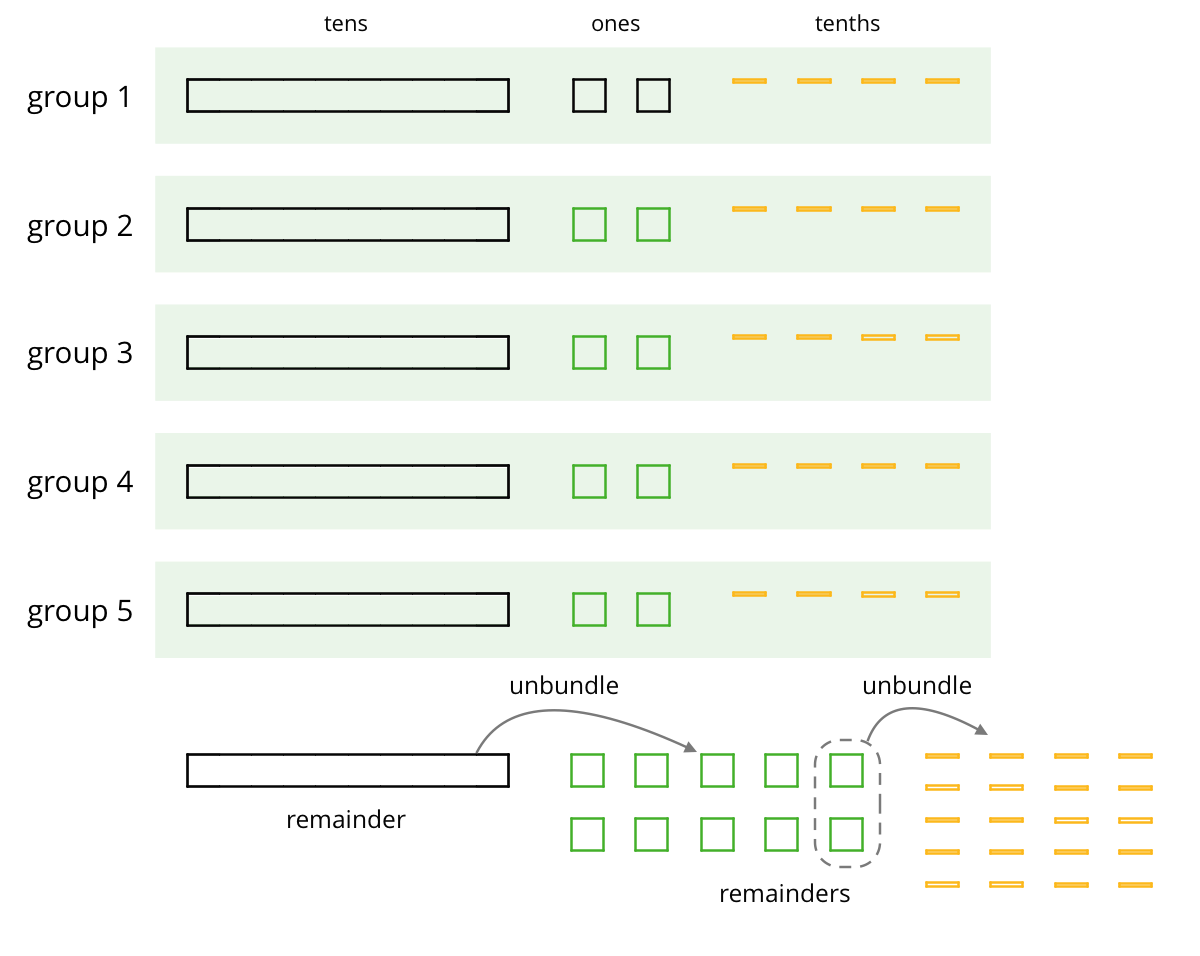
Here is Mai’s diagram for .



Discuss these questions with a partner and write down your answers:

1. Mai should have a total of 12 ones, but her diagram shows only 10. Why?
2. She did not originally have tenths, but in her diagram each group has 4 tenths. Why?
3. What value has Mai found for ? Explain your reasoning.

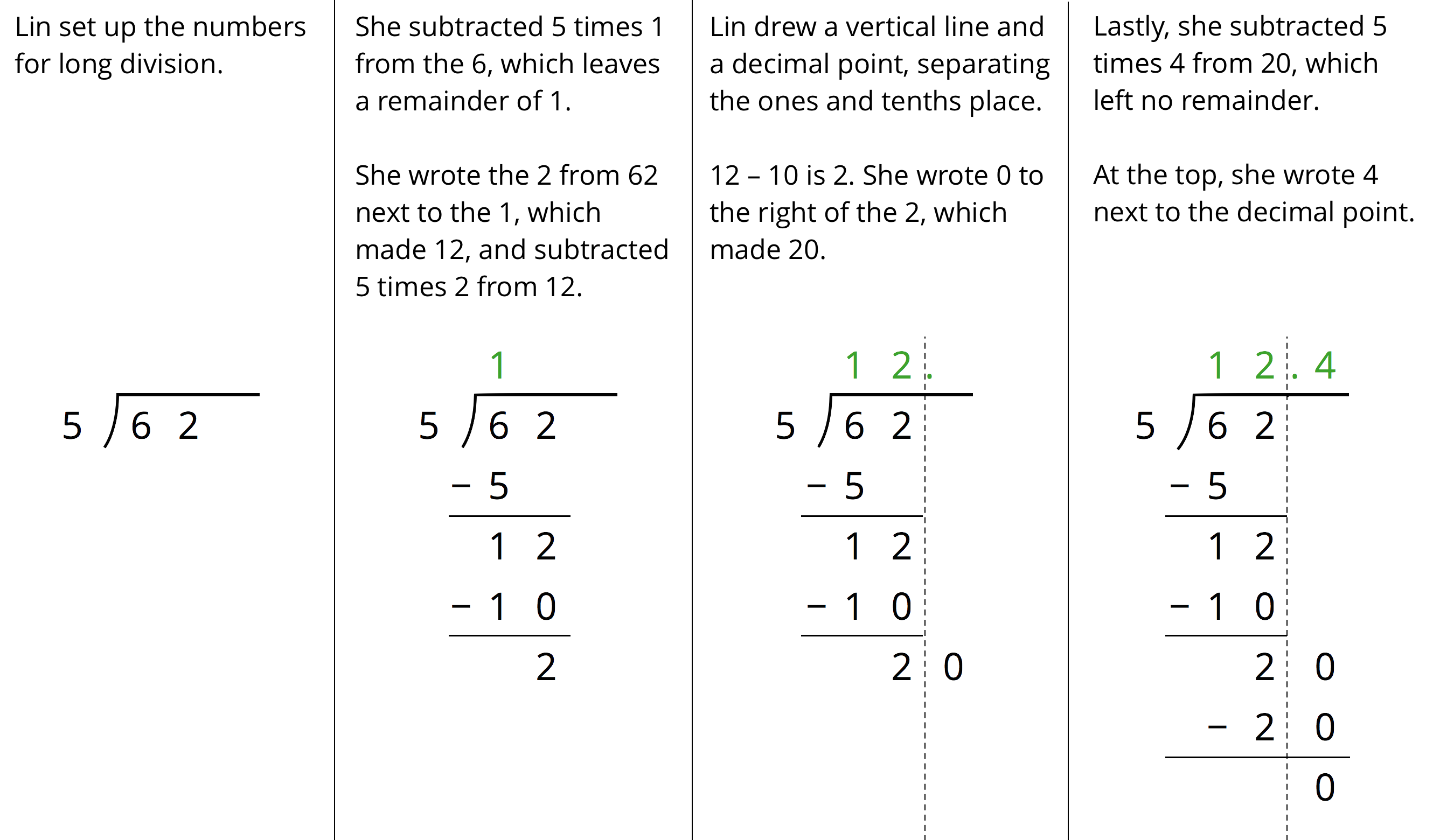
#### Activity Synthesis



### 2 Using Long Division to Calculate Quotients

#### Student Task Statement

Here is how Lin calculated .



1. Discuss with your partner:
   * Lin put a 0 after the remainder of 2. Why? Why does this 0 not change the value of the quotient?
   * Lin subtracted 5 groups of 4 from 20. What value does the 4 in the quotient represent?
   * What value did Lin find for ?
2. Use long division to find the value of each expression. Then pause so your teacher can review your work.
3. Use long division to show that:
   1. , or , is 1.25.
   2. , or , is 0.8.
   3. , or , is 0.125.
   4. , or , is 0.04.
4. Noah said we cannot use long division to calculate because there will always be a remainder.
   1. What do you think Noah meant by “there will always be a remainder”?
   2. Do you agree with him? Explain your reasoning.

### 3 Using Diagrams to Represent Division

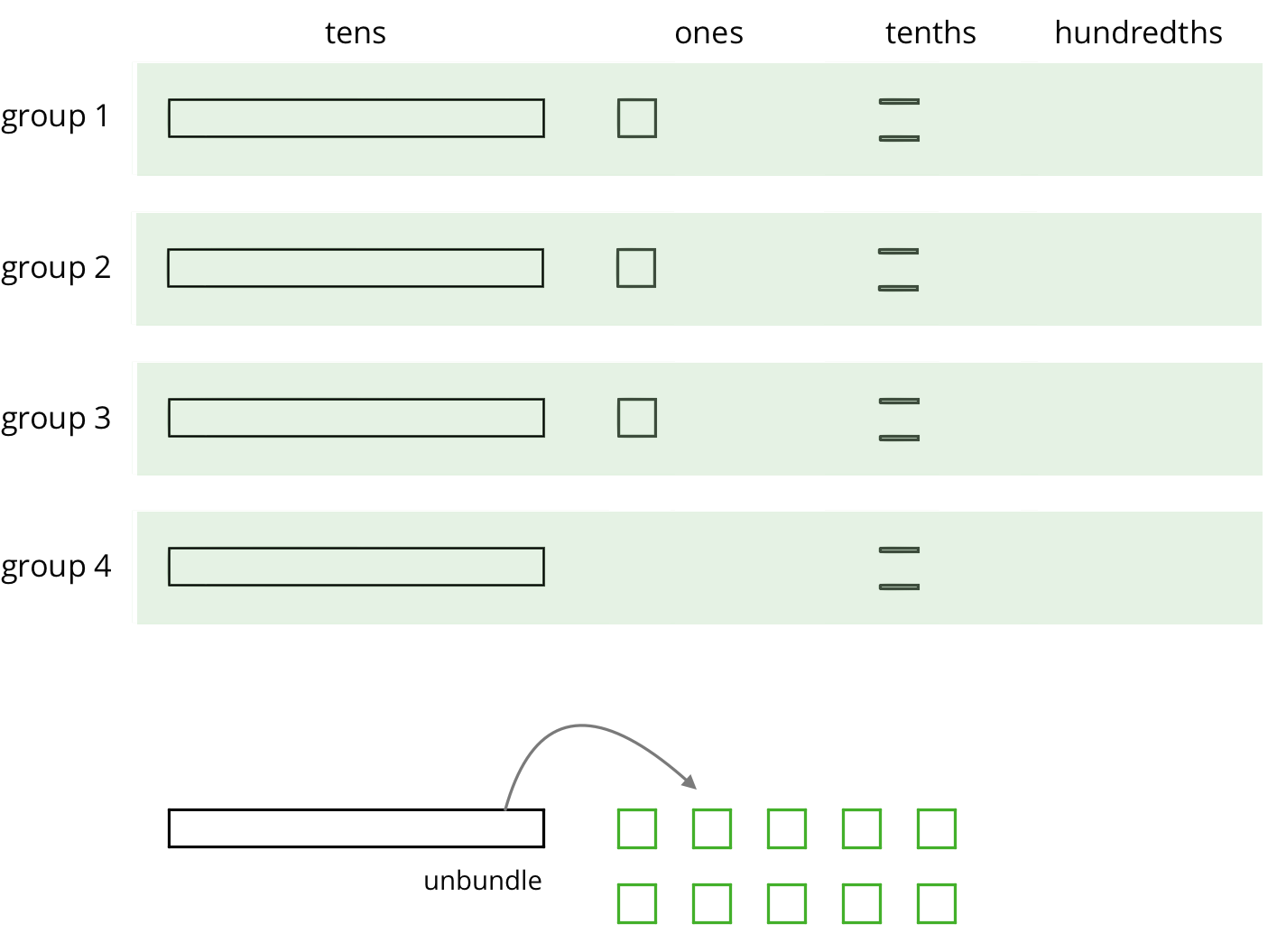
#### Student Task Statement

To find using diagrams, Elena began by representing 53.8.



She placed 1 ten into each group, unbundled the remaining 1 ten into 10 ones, and went on distributing the units.

This diagram shows Elena’s initial placement of the units and the unbundling of 1 ten.



1. Complete the diagram by continuing the division process. How would you use the available units to make 4 equal groups?

* As the units get placed into groups, show them accordingly and cross out those pieces from the bottom. If you unbundle a unit, draw the resulting pieces.

1. What value did you find for ? Be prepared to explain your reasoning.
2. Use long division to find . Check your answer by multiplying it by the divisor 4.
3. Use long division to find . If you get stuck, you can draw diagrams or use another method.



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