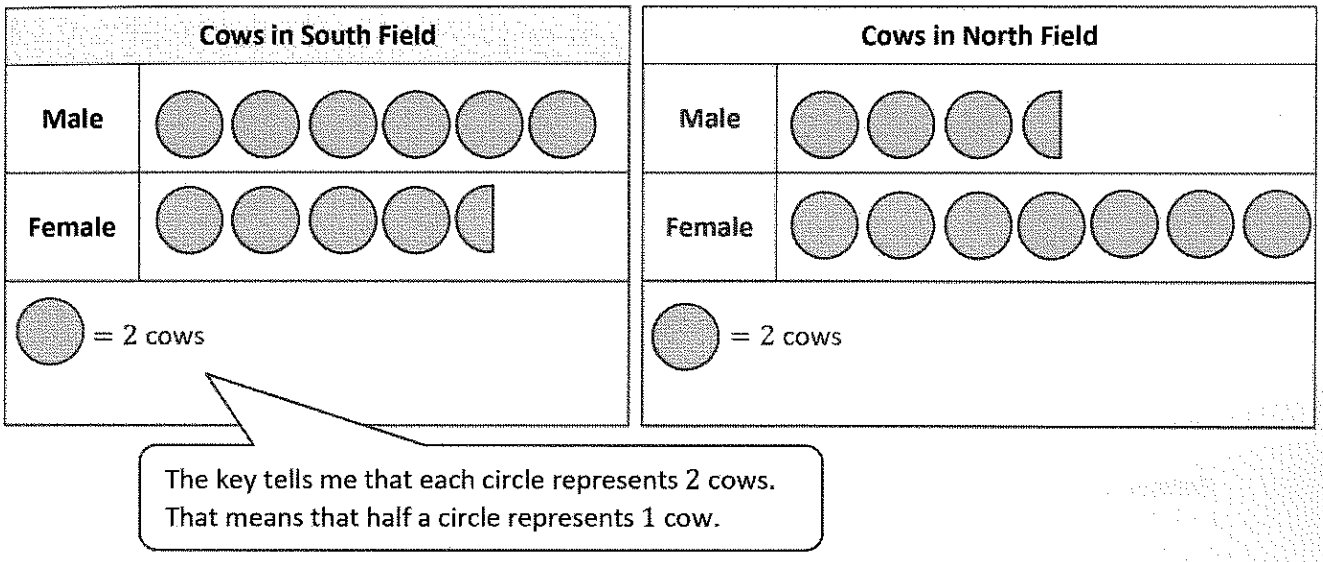
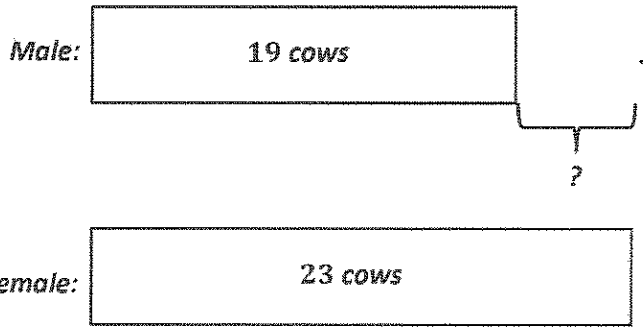
G3-M6-Lesson 4

1. Farmer Brown collects the data below about the cows on his farm.



The key tells me that each circle represents 2 cows. That means that half a circle represents 1 cow.

a. How many fewer male cows does Farmer Brown have than female cows?



I can draw tape diagrams to represent the number of male cows and female cows in the south and north fields. My tape diagrams help me see that I can subtract 19 from 23 to solve.

$23 - 19 = ?$

$24 - 20 = 4$

I can use compensation to subtract. When I add 1 to each number, I have a much easier problem to solve!

Farmer Brown has 4 fewer male cows than female cows.

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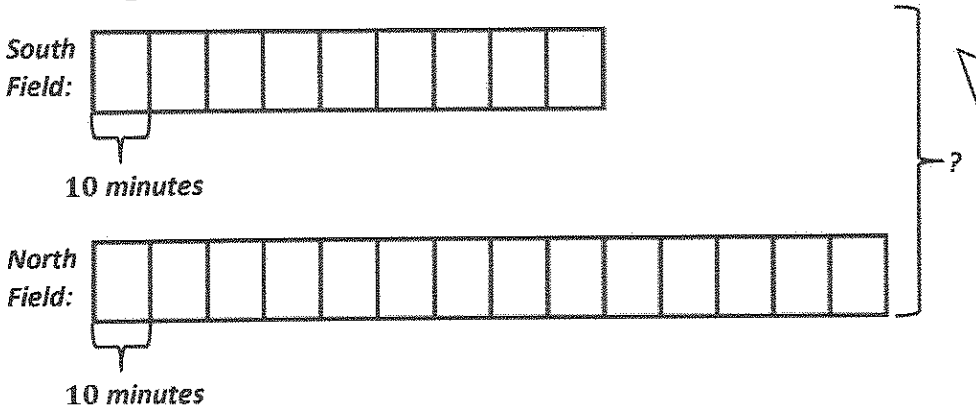
b. It takes Farmer Brown 10 minutes to milk each female cow. How many minutes does he spend milking all of the female cows?



I can draw tape diagrams to model the problem. Each unit in the tape diagrams represents the 10 minutes it takes to milk 1 cow.

$23 \times 10 = ?$

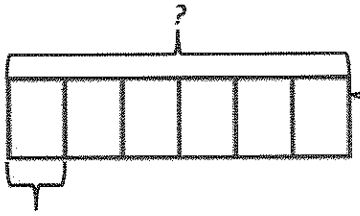
$(20 \times 10) + (3 \times 10) =$

$200 + 30 = 230$

I can see in my tape diagrams that there are 23 units of 10, which I can represent with 23×10. I can use the break apart and distribute strategy to solve. Or I can find the total minutes for the cows in each field and then add.

Farmer Brown spends 230 minutes milking all of the female cows.

c. Farmer Brown's barn has 6 rows of stalls with 8 stalls in each row. How many empty stalls will there be when all the cows are in the barn?



I can draw a tape diagram to model the rows of stalls in the barn. I can multiply to find the total number of stalls.

$6 \times 8 = 48$

$23 + 19 = ?$

22 1

$19 + 1 = 20$

$20 + 22 = 42$

I know there are 19 male cows and 23 female cows from my work in Problem 1(a). I can add to find the total number of cows, 42. Then, I can subtract the number of cows from the number of stalls to solve for the number of empty stalls.

$48 - 42 = 6$

There are 6 empty stalls when all of the cows are in the barn.

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