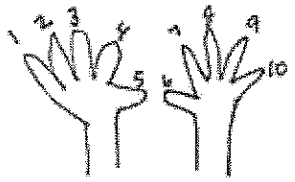
G3-M3-Lesson 14

1. Tracy figures out the answer to 7×9 by putting down her right index finger (shown). What is the answer? Explain how to use Tracy's finger strategy.

Tracy first lowers the finger that matches the number of nines, 7. She sees that there are 6 fingers to the left of the lowered finger, which is the digit in the tens place, and that there are 3 fingers to the right of the lowered finger, which is the digit in the ones place. So, Tracy's fingers show that the product of 7×9 is 63.

In order for this strategy to work, I have to imagine that my fingers are numbered 1 through 10, with my pinky on the left being number 1 and my pinky on the right being number 10.



2. Chris writes $54 = 9 \times 6$. Is he correct? Explain 3 strategies Chris can use to check his work.

Chris can use the $9 = 10 - 1$ strategy to check his answer.

$$\begin{aligned} 9 \times 6 &= (10 \times 6) - (1 \times 6) \\ &= 60 - 6 \\ &= 54 \end{aligned}$$

He can also check his answer by finding the sum of the digits in the product to see if it equals 9. Since $5 + 4 = 9$, his answer is correct.

A third strategy for checking his answer is to use the number of groups, 6, to find the digits in the tens place and ones place of the product. He can use $6 - 1 = 5$ to get the digit in the tens place, and $10 - 6 = 4$ to get the digit in the ones place. This strategy also shows that Chris's answer is correct.

Chris can also use the add 10, subtract 1 strategy to list all the nines facts, or he can use the break apart and distribute strategy with fives facts. For example, he can think of 9 sixes as 5 sixes + 4 sixes. There are many strategies and patterns that can help Chris check his work multiplying with nine.