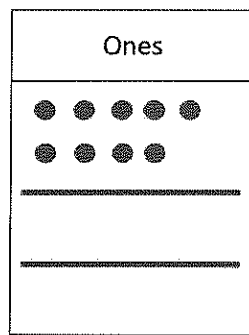


G4-M3-Lesson 16

Show the division using disks. Relate your work on the place value chart to long division. Check your quotient and remainder by using multiplication and addition.

1. $9 \div 2$

To model, the divisor represents the number of equal groups. The quotient represents the size of the groups.



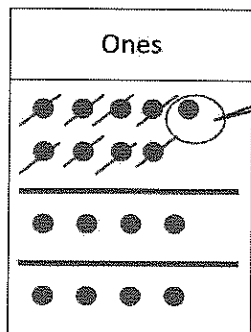
I represent 9 ones, the whole, using place value disks.

I make space on the chart to distribute the disks into 2 equal groups.



9 ones distributed evenly into 2 equal groups is 4 ones in each group. I cross them off as I distribute.

1 one remains because it cannot be distributed evenly into 2. I circle it to show it is a remainder.



This is the quotient.

$$\begin{array}{r} 4 \text{ R}1 \\ 2 \overline{) 9} \\ \underline{- 8} \\ 1 \end{array}$$

quotient = 4

remainder = 1

Check your work.

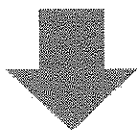
$$\begin{array}{r} 4 \quad 8 \\ \times 2 \quad + 1 \\ \hline 8 \quad 9 \end{array}$$

I check my division by multiplying the quotient times the divisor. I add the remainder. The sum is the whole.

2. $87 \div 4$

I represent the whole as 8 tens and 7 ones. I partition the chart into 4 equal groups below.

Tens	Ones



Tens	Ones

} 2 tens 1 one

$$\begin{array}{r} 2 \\ 4 \overline{) 87} \\ \underline{- 8} \\ 0 \end{array}$$

$8 \div 4 = 2$
8 tens distributed evenly among 4 groups is 2 tens.

$2 \times 4 = 8$
2 tens in each of the 4 groups is 8 tens.

$8 - 8 = 0$
We started with 8 tens and distributed 8 tens evenly. Zero tens and 7 ones remain in the whole.

$7 \div 4 = 1$
7 ones distributed evenly among 4 groups is 1 one.

$$\begin{array}{r} 2 \text{ R}3 \\ 4 \overline{) 87} \\ \underline{- 8} \\ 0 \\ \underline{- 4} \\ 3 \end{array}$$

$4 \times 1 = 4$
1 one in each of the 4 groups is 4 ones. Only 4 of the 7 ones were evenly distributed.

$7 - 4 = 3$
We started with 7 ones and distributed 4 ones evenly. 3 ones remain in the whole.

I record the remainder next to the quotient.

quotient = 21
remainder = 3

Check your work

2	1	8	4
×	4	+	3
8		8	
4	4	7	7