Guy wants to share 9 apples with 3 friends. He sets out 4 plates, one for himself and one for each of his friends. He puts one apple at a time on a plate:

9 apples cannot be shared equally into 4 sets. Each person gets 2 apples, but one is left over.

\[ 9 \div 4 = 2 \text{ Remainder 1} \quad \text{OR} \quad 9 \div 4 = 2 \text{ R 1} \]

1. Can you share 7 apples equally onto 2 plates? Show your work using dots and circles:

2. Share the dots as equally as possible among the circles.
   a) 8 dots in 3 circles
   b) 13 dots in 4 circles

   ____ dots in each circle; ____ dots remaining
   ____ dots in each circle; ____ dot remaining

3. Share the dots as equally as possible. Draw a picture and write a division statement.

   Example: 9 dots in 2 circles

   \[ 9 \div 2 = 4 \text{ R1} \]

4. Five children want to share 22 sea shells. How many shells will each child receive? How many will be left over?

5. Find two different ways to share 29 pens into equal groups so that one is left over.

6. Four friends have more than 7 stickers and less than 13 stickers. They share the stickers evenly. How many stickers do they have? (Is there more than one answer?)
Nina wants to find $13 \div 5$ mentally.

**Step 1:**
Counting by 5s, she raises 2 fingers (she stops before she reaches 13).

**Step 2:**
Nina stopped counting at 10.
She subtracts 10 from 13 to find the remainder.

$13 \div 5 = 2 \text{ Remainder } 3$

1. Try to answer the following questions in your head (or by skip counting):

   a) $22 \div 5 = \underline{4}$ Remainder $2$
   b) $17 \div 5 = \underline{3}$ Remainder $2$
   c) $31 \div 5 = \underline{6}$ Remainder $1$

   d) $27 \div 5 = \underline{5}$ Remainder $2$
   e) $13 \div 5 = \underline{2}$ Remainder $3$
   f) $7 \div 5 = \underline{1}$ Remainder $2$

   g) $13 \div 3 = \underline{4}$ Remainder $1$
   h) $17 \div 3 = \underline{5}$ Remainder $2$
   i) $23 \div 3 = \underline{7}$ Remainder $2$

   j) $23 \div 7 = \underline{3}$ Remainder $2$
   k) $19 \div 6 = \underline{3}$ Remainder $1$
   l) $25 \div 8 = \underline{3}$ Remainder $1$

   m) $37 \div 9 = \underline{4}$ Remainder $1$
   n) $43 \div 7 = \underline{6}$ Remainder $1$
   o) $29 \div 8 = \underline{3}$ Remainder $5$

   p) $13 \div 6 = \underline{2}$ Remainder $1$
   q) $47 \div 9 = \underline{5}$ Remainder $2$
   r) $64 \div 7 = \underline{9}$ Remainder $1$

   s) $53 \div 9 = \underline{6}$ Remainder $1$
   t) $46 \div 6 = \underline{7}$ Remainder $4$
   u) $23 \div 4 = \underline{5}$ Remainder $3$

2. Richard wants to divide 18 peaches between 5 friends.
   How many peaches will each friend get? ______________________________
   How many will be left over? ______________________________

3. Paul puts 16 pencils in three boxes.
   How many pencils will go in each box? ______________________________
   How many will be left over? ______________________________
Manuel is preparing snacks for 4 classes. He needs to divide 97 oranges into 4 groups. He will use long division and a model to solve the problem:

**Step 1:**

Manuel writes the number of groups he needs to make here. He writes the number of oranges here.

Manuel puts 2 tens blocks in each group. There are 9 tens blocks in the model. There are 7 ones.

1. Manuel has written a division statement to solve a problem. How many groups does he want to make? How many tens and how many ones would he need to model the problem?

   a) \[ 3 \overline{) 76} \]  
   b) \[ 4 \overline{) 95} \]  
   c) \[ 4 \overline{) 92} \]  
   d) \[ 5 \overline{) 86} \]  

   groups ______  
   tens blocks ______  
   ones ______  

   a) ______  
   b) ______  
   c) ______  
   d) ______  

   groups ______  
   tens blocks ______  
   ones ______  

2. How many tens blocks can be put in each group?

   a) \[ 3 \overline{) 4 5} \]  
   b) \[ 5 \overline{) 9 3} \]  
   c) \[ 4 \overline{) 6 2} \]  
   d) \[ 3 \overline{) 8 9} \]  
   e) \[ 4 \overline{) 8 2} \]  
   f) \[ 3 \overline{) 3 8} \]  
   g) \[ 5 \overline{) 9 7} \]  
   h) \[ 4 \overline{) 8 1} \]  
   i) \[ 6 \overline{) 8 5} \]  
   j) \[ 7 \overline{) 9 6} \]  

3. For each division statement, how many groups have been made? How many tens are in each group?

   a) \[ 3 \overline{) 8 5} \]  
   b) \[ 4 \overline{) 9 4} \]  
   c) \[ 5 \overline{) 7 5} \]  
   d) \[ 2 \overline{) 8 9} \]  

   groups ______  
   number of tens in each group ______  

   a) ______  
   b) ______  
   c) ______  
   d) ______  

   groups ______  
   number of tens in each group ______  

   a) ______  
   b) ______  
   c) ______  
   d) ______  

   groups ______  
   number of tens in each group ______  

   a) ______  
   b) ______  
   c) ______  
   d) ______
4. For each question, find how many tens have been placed by multiplying:

a) \[2 \div 4 = \begin{array}{c}
2 \\
\hline
9 \\
7 \\
\hline
\end{array}\]

How many groups? 
How many tens to be placed? 
How many tens in each group? 
How many tens placed altogether?

b) \[4 \div 9 = \begin{array}{c}
4 \\
\hline
9 \\
9 \\
\hline
\end{array}\]

How many groups? 
How many tens to be placed? 
How many tens in each group? 
How many tens placed altogether?

5. Use skip counting to find out how many tens can be placed in each group. Then use multiplication to find out how many tens have been placed:

a) \[3 \div 8 = \begin{array}{c}
3 \\
\hline
8 \\
3 \\
\hline
6 \\
\end{array}\]

b) \[2 \div 7 = \begin{array}{c}
2 \\
\hline
7 \\
2 \\
\hline
\end{array}\]

c) \[2 \div 9 = \begin{array}{c}
2 \\
\hline
9 \\
5 \\
\hline
\end{array}\]

d) \[5 \div 7 = \begin{array}{c}
5 \\
\hline
7 \\
8 \\
\hline
\end{array}\]

e) \[5 \div 9 = \begin{array}{c}
5 \\
\hline
9 \\
1 \\
\hline
\end{array}\]

f) \[5 \div 5 = \begin{array}{c}
5 \\
\hline
5 \\
3 \\
\hline
\end{array}\]

g) \[4 \div 9 = \begin{array}{c}
4 \\
\hline
9 \\
3 \\
\hline
\end{array}\]

h) \[3 \div 8 = \begin{array}{c}
3 \\
\hline
8 \\
4 \\
\hline
\end{array}\]

i) \[6 \div 9 = \begin{array}{c}
6 \\
\hline
9 \\
3 \\
\hline
\end{array}\]

j) \[7 \div 9 = \begin{array}{c}
7 \\
\hline
9 \\
5 \\
\hline
\end{array}\]

k) \[9 \div 9 = \begin{array}{c}
9 \\
\hline
9 \\
3 \\
\hline
\end{array}\]

l) \[8 \div 9 = \begin{array}{c}
8 \\
\hline
9 \\
1 \\
\hline
\end{array}\]

m) \[7 \div 8 = \begin{array}{c}
7 \\
\hline
8 \\
2 \\
\hline
\end{array}\]

n) \[3 \div 9 = \begin{array}{c}
3 \\
\hline
9 \\
0 \\
\hline
\end{array}\]

o) \[3 \div 8 = \begin{array}{c}
3 \\
\hline
8 \\
7 \\
\hline
\end{array}\]

p) \[4 \div 8 = \begin{array}{c}
4 \\
\hline
8 \\
5 \\
\hline
\end{array}\]

q) \[9 \div 9 = \begin{array}{c}
9 \\
\hline
9 \\
2 \\
\hline
\end{array}\]

r) \[7 \div 8 = \begin{array}{c}
7 \\
\hline
8 \\
5 \\
\hline
\end{array}\]

s) \[3 \div 8 = \begin{array}{c}
3 \\
\hline
8 \\
1 \\
\hline
\end{array}\]

t) \[2 \div 9 = \begin{array}{c}
2 \\
\hline
9 \\
4 \\
\hline
\end{array}\]
6. For each question, carry out the first 3 steps of the long division:

a) \[
\begin{array}{c}
8 \quad 95 \\
\hline
5 \\
\end{array}
\]

b) \[
\begin{array}{c}
2 \quad 75 \\
\hline
4 \\
\end{array}
\]

c) \[
\begin{array}{c}
4 \quad 61 \\
\hline
9 \\
\end{array}
\]

d) \[
\begin{array}{c}
3 \quad 83 \\
\hline
3 \\
\end{array}
\]

e) \[
\begin{array}{c}
3 \quad 45 \\
\hline
9 \\
\end{array}
\]

f) \[
\begin{array}{c}
5 \quad 89 \\
\hline
6 \\
\end{array}
\]

g) \[
\begin{array}{c}
6 \quad 93 \\
\hline
3 \\
\end{array}
\]

h) \[
\begin{array}{c}
3 \quad 87 \\
\hline
5 \\
\end{array}
\]

i) \[
\begin{array}{c}
5 \quad 71 \\
\hline
4 \\
\end{array}
\]

j) \[
\begin{array}{c}
4 \quad 82 \\
\hline
9 \\
\end{array}
\]

7. Carry out the first four steps of the division:

a) \[
\begin{array}{c}
5 \quad 75 \\
\hline
4 \\
\end{array}
\]

b) \[
\begin{array}{c}
3 \quad 57 \\
\hline
2 \\
\end{array}
\]

c) \[
\begin{array}{c}
4 \quad 93 \\
\hline
8 \\
\end{array}
\]

d) \[
\begin{array}{c}
2 \quad 73 \\
\hline
5 \\
\end{array}
\]

e) \[
\begin{array}{c}
5 \quad 96 \\
\hline
9 \\
\end{array}
\]

f) \[
\begin{array}{c}
9 \quad 93 \\
\hline
8 \\
\end{array}
\]

g) \[
\begin{array}{c}
4 \quad 76 \\
\hline
7 \\
\end{array}
\]

h) \[
\begin{array}{c}
8 \quad 98 \\
\hline
7 \\
\end{array}
\]

i) \[
\begin{array}{c}
7 \quad 91 \\
\hline
5 \\
\end{array}
\]

j) \[
\begin{array}{c}
8 \quad 96 \\
\hline
9 \\
\end{array}
\]
Step 5: Manuel finds the number of ones he can put in each group by dividing 17 by 4.

\[ 17 \div 4 = 4 \text{ R } = \_ \_ \_ \]

**In the model:**

How can you figure out how many ones are left over?

---

8. Carry out the first five steps of the division:

a)  
\[ 4 \left[ \begin{array}{c} 9 \ 6 \end{array} \right] \]

b)  
\[ 5 \left[ \begin{array}{c} 8 \ 5 \end{array} \right] \]

c)  
\[ 2 \left[ \begin{array}{c} 7 \ 5 \end{array} \right] \]

d)  
\[ 3 \left[ \begin{array}{c} 5 \ 1 \end{array} \right] \]

e)  
\[ 5 \left[ \begin{array}{c} 7 \ 2 \end{array} \right] \]

f)  
\[ 7 \left[ \begin{array}{c} 8 \ 5 \end{array} \right] \]

g)  
\[ 9 \left[ \begin{array}{c} 9 \ 5 \end{array} \right] \]

h)  
\[ 8 \left[ \begin{array}{c} 9 \ 6 \end{array} \right] \]

i)  
\[ 3 \left[ \begin{array}{c} 9 \ 2 \end{array} \right] \]

j)  
\[ 2 \left[ \begin{array}{c} 9 \ 3 \end{array} \right] \]

---

Step 6 and 7:

There are 4 ones in each group ... and there are 4 groups.

So there are 16 ones altogether in the groups (4 × 4 = 16).

There were 17 ones so there is 1 one left over (17 − 16 = 1).

**In the model:**

There are 16 ones in the groups so there is 1 one left: 17 − 16 = 1.

The division statement and the model both show that he can give each class 24 oranges with one left over.

---

9. Carry out all 7 steps of the division:

a)  
\[ 5 \left[ \begin{array}{c} 7 \ 4 \end{array} \right] \]

b)  
\[ 3 \left[ \begin{array}{c} 7 \ 7 \end{array} \right] \]

c)  
\[ 2 \left[ \begin{array}{c} 6 \ 7 \end{array} \right] \]

d)  
\[ 4 \left[ \begin{array}{c} 7 \ 0 \end{array} \right] \]

e)  
\[ 4 \left[ \begin{array}{c} 9 \ 0 \end{array} \right] \]
10. Avi put 98 flowers in bouquets of 8. How many flowers are left over?

11. How many weeks are in 93 days?

12. Michelle jogs for 3 km everyday. How many days will she take to run 45 km?

13. A six sided pool has perimeter 72 m. How long is each side?

14. Guerdy packs 85 books into boxes of 6, and Tyree packs 67 books into boxes of 4. Who uses more boxes?
1. Find 335 ÷ 2 by drawing a base ten model and by long division:

   **Step 1:** Draw a base ten model of 335.

   Draw your model here.

   **Step 2:** Divide the hundreds squares into 2 equal groups.

   - Number of hundreds in each group
   - Number of hundreds placed
   - Number of hundreds left over

   **Step 3:** Exchange the left over hundreds square for 10 tens.

   - Number of tens to be placed

   **Step 4:** Divide the tens blocks into 2 equal groups.

   - Number of tens in each group
   - Number of tens placed
   - Number of tens left over

   **Step 5:** Exchange the left over tens blocks for 10 ones.

   - Number of ones to be placed

   Exchange a ten for 10 ones

   Remaining tens and ones

   Remaining hundreds, tens and ones
Steps 6 and 7: Divide the ones into 2 equal groups.

2. Divide:

a) \[ \begin{array}{c|c|c|c}
    2 & 5 & 3 & 2 \\
    \hline
    - & - & - & - \\
\end{array} \]

b) \[ \begin{array}{c|c|c|c}
    5 & 6 & 4 & 8 \\
    \hline
    - & - & - & - \\
\end{array} \]

c) \[ \begin{array}{c|c|c|c}
    4 & 7 & 2 & 6 \\
    \hline
    - & - & - & - \\
\end{array} \]

d) \[ \begin{array}{c|c|c|c}
    3 & 7 & 4 & 2 \\
    \hline
    - & - & - & - \\
\end{array} \]

e) \[ \begin{array}{c|c|c|c}
    5 & 7 & 5 & 0 \\
    \hline
    - & - & - & - \\
\end{array} \]

f) \[ \begin{array}{c|c|c|c}
    3 & 6 & 3 & 7 \\
    \hline
    - & - & - & - \\
\end{array} \]

g) \[ \begin{array}{c|c|c|c}
    7 & 8 & 2 & 5 \\
    \hline
    - & - & - & - \\
\end{array} \]

h) \[ \begin{array}{c|c|c|c}
    8 & 9 & 2 & 3 \\
    \hline
    - & - & - & - \\
\end{array} \]

i) \[ \begin{array}{c|c|c|c}
    4 & 6 & 8 & 2 \\
    \hline
    - & - & - & - \\
\end{array} \]

j) \[ \begin{array}{c|c|c|c}
    6 & 8 & 2 & 5 \\
    \hline
    - & - & - & - \\
\end{array} \]

k) \[ \begin{array}{c|c|c|c}
    9 & 9 & 1 & 5 \\
    \hline
    - & - & - & - \\
\end{array} \]

l) \[ \begin{array}{c|c|c|c}
    8 & 8 & 3 & 2 \\
    \hline
    - & - & - & - \\
\end{array} \]
3. In each question below, there are fewer hundreds than the number of groups. Write a ’0’ in the hundreds position to show that no hundreds can be placed in equal groups. Then perform the division as if the hundreds had automatically been exchanged for tens.

Divide. The first one has been done for you:

a) 
\[
\begin{array}{c}
\phantom{0}1 \ 3 \ 9 \\
\phantom{0}1 \ 2 \\
- \\
\phantom{0}1 \ 8 \\
\phantom{0}1 \\
\end{array}
\]
\[\text{2 tens can be placed in each group}\]
\[\text{12 tens have been placed}\]
\[\text{1 ten is left over}\]

b) 
\[
\begin{array}{c}
\phantom{0}2 \ 9 \ 5 \\
\phantom{0}2 \\
- \\
\phantom{0}5 \\
\phantom{0}1 \\
\end{array}
\]

4. Divide.

a) 
\[
\begin{array}{c}
\phantom{0}1 \ 5 \ 2 \ 5 \\
\phantom{0}1 \ 5 \\
- \\
\phantom{0}1 \ 2 \\
\phantom{0}1 \\
\end{array}
\]

5. Ken swims 4 laps of a pool. Altogether he swims 144 metres. How long is the pool?

6. The perimeter of a hexagonal park is 852 km. How long is each side of the park?

7. Seven friends collect 2 744 books for charity. Each friend collects the same number of books. How many books did each friend collect?
Answer the following questions in your notebook.

1. A class paid $20 for a cake and $4 per child for a slice of pizza. They paid $140. How many children are in the class?

2. Make as many 3-digit numbers as you can using the digits 5, 1, and 0. (Use each digit once). Which of your numbers are divisible by...
   a) 2  b) 5  c) 10  d) 3

3. A number has...
   - remainder 2 when divided by 3
   - remainder 4 when divided by 5
   What is the number?

4. Raj wants to divide 24 apricots, 64 raisins, and 56 peanuts evenly into packets (with no food left over). What is the greatest number of packets he can make? Explain.

In questions below, you will have to interpret what the remainder means.

Example: Cindy wants to put 64 cookies onto trays. Each tray holds 5 cookies. How many trays will she need?

\[ 64 \div 5 = 12 \text{ remainder } 4 \]

She will need 13 trays (because she needs a tray for the four leftover cookies).

5. A car can hold 5 passengers. How many cars will 29 passengers need?

6. Manu colours 4 pictures in her picture book every day. How many days will she take to colour 50 pictures?

7. Jay shares 76 plums as evenly as possible among 9 friends. How many plums does each friend get?

8. Siru wants to place her stamps in an album. Each page holds 9 stamps. How many pages will she need for 95 stamps?