

The principal of carrying in division may be taught as follows: Take, say 8 bundles of tooth picks of 100 each, 5 bundles of 10 each, and 2 ones. Place these on the table and place the number 852 on the board. Divide the tooth picks equally among 3 pupils, beginning with the hundred bundles, and at the same time show them that the same thing may be done with the figures alone by a process which we call division. Place the question on the board thus  $3 \overline{)852}$

Q. How many hundred bundles are on the table?  
A. 8.

Q. How many pupils are to get them. A. 3.

Q. How many hundred bundles can each pupil take? A. 2.

Q. How many hundred bundles does that take?  
A. 6.

Q. How many hundred bundles are left? A. 2.

Q. Can each of the three pupils get another hundred bundle? A. No.

Q. How can the 2 hundred bundles be divided among the 3 pupils? A. By taking off the outside strings and thus making them into bundles of tens.

Q. How many bundles of tens will the 2 bundles of hundreds make? A. 20.

Q. How many bundles of tens are there besides the 20 bundles thus made? A. 5.

Q. How many bundles of tens are there altogether. A. 25

Q. How many bundles of tens can each of the 3 pupils take? A. 8.

Q. How many tens will that leave? A. 1.

Q. How can the one ten be divided among the three pupils? Take the string off and put the 10 ones thus obtained with the 2 ones, thus making 12 ones.

Q. How many ones can each pupil take? A. 4.

Q. How much will each pupil have? A. 2 hundreds, 8 tens and 4 ones. Write the number thus, 284. While this work is being done with the actual objects use the figures which represent the work thus  $3 \overline{)852}$

$\begin{array}{r} 284 \\ 3 \overline{)852} \\ \underline{284} \end{array}$

Leading the pupils to see that by placing the 2, which represents the hundreds which are left after each pupil has taken all the hundreds he can, to the left of the 5 tens he will have the number of tens which the 2 hundreds and the 5 tens make. Deal in the same way with the tens left over and the ones. In this way the pupil sees a reason for the method of carrying.

The following method of writing a division table and teaching its use in short division may be found convenient: There are

2	fours in	8
3	"	12
4	"	16
5	"	20
6	"	24
7	"	28
8	"	32
9	"	36

Point to the number in the left hand column and ask such questions as:

Q. How many fours are there in 24? A. 6.

Q. In 32? A. 8, &c.

Next point between the numbers in the left hand row and question:

Q. How many fours are there in 26? A. 6.

Q. In 19? A. 4, &c.

Next teach how to find the remainder thus: Place 27 pieces of chalk in a pile. Ask the pupils to take 4 away as many times as they can. They find they can take 4 away 6 times, that is they take altogether 24 out of 27, and find 3 left. Place these numbers on the board thus  $\begin{array}{r} 27 \\ -24 \\ \hline 3 \end{array}$  and lead them to see that by taking the 4 from the 7 they find the remainder.

Q. How many fours are there are in 31? Point to the space in the table between between 28 and 32, and lead the pupils to see that there are 7 fours in 31, and that 7 fours taken away means 28 taken out of the 31. By placing those numbers on the board thus  $\begin{array}{r} 31 \\ -28 \\ \hline 3 \end{array}$  they will see that 8 is taken from 11. As soon as possible require them to do the subtraction without placing the numbers on the board, but ask them to imagine they see the numbers.

Many pupils to find the remainder count or guess the remainder and prove by adding. Do a few questions, pointing to the tables, and thus show how to use them e. g.  $1584 \div 4 = 4 \overline{)1584}$

Point to the space between 12 and 16 in the table and ask: Q. How many fours are there in 15? A. 3.

Q. If 3 fours are taken from 15 how much will be taken from 15? A. 12.

Q. If 12 be taken from 15 how many will be left? A. 3. Place the 3 in the quotient and put the remainder 3 before the 8, and proceed in the same way till the question is done. Give questions using 4 for divisor, leaving the table on the board until the pupils are able to do the work without looking at the table. Erase the table and continue the work with the same divisor for a few days. Deal in the same way with the other tables. As soon as possible require the pupils to imagine they see the remainder in any case to the left of the next figure in the dividend.