# Learning Enhancement Team

University of East Anglia
STUDENT SUPPORT SERVICE

***Steps into Numeracy***

# Multiplying Small Numbers

***This guide introduces some simple techniques for the multiplication of small numbers, up to and including 10.***

## Should I learn my times tables?

At school great emphasis is given to the learning of times tables. This is usually achieved by repeating the lists of the times tables many times. If learnt by rote at a young age then people tend to remember their times tables. So do you need to re-learn all of them if you have forgotten them? The answer is no. It is likely that if you cannot remember them now it will be hard to learn them again by rote.

Learning by rote is an inefficient way of remembering information. In mathematics it is better to know how something works instead. This knowledge can then be applied to other problems. If asked to learn up to your 10 times table you need to memorise 100 pieces of information, which is quite a lot. It would be better to learn a few of your times tables thoroughly and these, in combination with a few key numbers, allow you to construct the other times tables quickly and easily using addition and subtraction. This technique has the benefit of giving practise to other skills (namely addition and subtraction) whilst learning how to multiply.

When you have familiarised yourself with the multiplication of small numbers you can learn an excellent method to multiply *any* two numbers together which uses this knowledge. The study guide: *Multiplying Numbers* gives a detailed description of this technique.

# Key numbers to learn

To start to learn your times tables it is useful to have some parts which come readily to mind. You can use these numbers to access other numbers quickly and easily. Try:

**(1)** **learning your 2 times table.** You can quickly work out your 2 times table by doubling your 1 times table using addition.

**(2)** **learning your 3 times table.** You can work out your 3 times table by trebling your 1 times table using addition.

**(3)** **learning your 5 times table.** Your 5 times table is best learnt by rote. Use your fingers to help you remember where you are.

**(4)** **learn your 10 times table.** Your 10 times table is produced by writing a zero after your 1 times table.

You should also learn some other key numbers such as the **square numbers**. A square number is a number multiplied by itself. The first ten square numbers are:

$1 \times 1 = 1$
$2 \times 2 = 4$
$3 \times 3 = 9$
$4 \times 4 = 16$
$5 \times 5 = 25$
$6 \times 6 = 36$
$7 \times 7 = 49$
$8 \times 8 = 64$
$9 \times 9 = 81$
$10 \times 10 = 100$

The numbers you should try and learn are highlighted in the number grid on the following page.

| × | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 2 | **2** | **4** | **6** | **8** | **10** | **12** | **14** | **16** | **18** | **20** |
| 3 | **3** | **6** | **9** | **12** | **15** | **18** | **21** | **24** | **27** | **30** |
| 4 | **4** | **8** | **12** | **16** | **20** | 24 | 28 | 32 | 36 | **40** |
| 5 | **5** | **10** | **15** | **20** | **25** | **30** | **35** | **40** | **45** | **50** |
| 6 | **6** | **12** | **18** | 24 | **30** | **36** | 42 | 48 | 54 | **60** |
| 7 | **7** | **14** | **21** | 28 | **35** | 42 | **49** | 56 | 63 | **70** |
| 8 | **8** | **16** | **24** | 32 | **40** | 48 | 56 | **64** | 72 | **80** |
| 9 | **9** | **18** | **27** | 36 | **45** | 54 | 63 | 72 | **81** | **90** |
| 10 | **10** | **20** | **30** | **40** | **50** | **60** | **70** | **80** | **90** | **100** |

Here is how to calculate the other times tables (less than 10):

**4 times table:** This is twice your 2 times table. So to multiply by four you double your number and then double it again. This can be achieved by addition.

*Example*: What is $4 \times 7$?

Two times $7$ is $14$ and two times $14$ is $28$ so $4 \times 7 = 28$.

**6 times table:** Add the original number to your 5 times table.

*Example*: What is $6 \times 9$?

As $5 \times 9 = 45$, adding $9$ gives $6 \times 9 = 45 + 9 = 54$.

**7 times table:** Add your 2 times table to your 5 times table.

*Example*: What is $7 \times 8$?

As $5 \times 8 = 40$ and $2 \times 8 = 16$ then $7 \times 8 = 40 + 16 = 56$.

**8 times table:** This is twice your 4 times table so double the number, double it again and then double it again.
Alternatively you can add your 3 times table to your 5 times table.

*Example*: What is $8 \times 6$?

Using the first method: $2 \times 6 = 12$, $2 \times 12 = 24$, $2 \times 24 = 48$ so $8 \times 6 = 48$.

*Example*: What is $8 \times 6$?

Using the second method: As $5 \times 6 = 30$ and $3 \times 6 = 18$ then $8 \times 6 = 30 + 18 = 48$.

**9 times table:** Use your 10 times table and subtract your original number.

*Example*: What is $9 \times 8$?

$10 \times 8 = 80$ and $80 - 8 = 72$ so $9 \times 8 = 72$.

## Want to know more?

If you have any further questions about this topic you can make an appointment to see a **Learning Enhancement Tutor** in the **Student Support Service**, as well as speaking to your lecturer or adviser.


✆ Call: 01603 592761
💻 Ask: ask.let@uea.ac.uk
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