

Class 11 Maths

Mental Arithmetic:

In order to help you with all of your maths learning, it is important that you are practising your times tables regularly. If you have good times tables knowledge, you will find the questions below much easier as you can apply your knowledge to more difficult questions.

Remember to go on to Times Tables Rockstars regularly:

<https://play.ttrockstars.com/auth>

Your login is the same as the one you use in school.

Numberbots also uses the same login as TTRockstars. See the link below:

<https://play.numberbots.com/#/account/search-school>

Multiplication:

This week you will need to work out multiplication questions using the methods from school.

I have given you an example of how to answer each style of question and then you can attempt the questions below:

$2 \times 4 \times 3 = 24$

$2 \times 4 = 8$
 $8 \times 3 = 24$

$3 \times 2 \times 4 = 24$
 $3 \times 2 = 6$
 $6 \times 4 = 24$

$2 \times 4 = 8$
 $8 \times 3 = 24$

$8 \times 3 \times 4 = 96$

$8 \times 3 = 24$
 $24 \times 4 = 96$

$20 \times 4 = 80$
 $4 \times 4 = 16$
 $80 + 16 = 96$

Factor pairs of 14

$1 \times 14 = 14$
 $2 \times 7 = 14$
 $3 \times _ = 14 \times _$
 $4 \times _ = 14 \times _$
 $5 \times _ = 14 \times _$
 $6 \times _ = 14 \times _$
 $7 \times 2 = 14$
 $8 \times _ = 14 \times _$
 $9 \times _ = 14 \times _$
 $10 \times _ = 14 \times _$

Multiplying three numbers

Factor pairs

$21 \times 8 = 168$

$2 \times 8 = 16$

$20 \times 8 = 160$

$1 \times 8 = 8$

$160 + 8 = 168$

$147 \times 5 =$								
<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 5px;">\times</td> <td style="padding: 5px;">100</td> <td style="padding: 5px;">40</td> <td style="padding: 5px;">7</td> </tr> <tr> <td style="padding: 5px;">5</td> <td style="padding: 5px;">500</td> <td style="padding: 5px;">200</td> <td style="padding: 5px;">35</td> </tr> </table>	\times	100	40	7	5	500	200	35
\times	100	40	7					
5	500	200	35					
$500 + 200 + 35 = 735$								

Written methods

20 x a number.

- You could either work out 2x the number then times the answer by 10 or work out 10x the number then times the answer by 2.

e.g. $20 \times 4 = 80$

$2 \times 4 = 8$
 $8 \times 10 = 80$

or

$10 \times 4 = 40$
 $20 \times 4 = 80$

9 x a number

- Multiply a number by 10 then subtract 1x that number.

e.g. $14 \times 9 =$

$10 \times 14 = 140$
 $140 - 14 = 126$

8x a number

- Double the number, double it again and then double it a third time.

e.g. $8 \times 16 = 128$

$16 \times 2 = 32$
 $32 \times 2 = 64$
 $64 \times 2 = 128$

Mental methods

15 x a number

- Work out 10x the number. Half the answer then add that to your answer.

e.g. $15 \times 2 = 30$

$10 \times 2 = 20$
 $5 \times 2 = 10$
 $20 + 10 = 30$

11 x a number.

- Multiply by 10 and then add the number.

e.g. $32 \times 11 = 352$

$32 \times 10 = 320$
 $320 + 32 = 352$

8x a number.

- This is the same as multiplying by 2 4 times and adding the answers together.

e.g. $8 \times 16 = 128$

$16 \times 2 = 32$
 $16 \times 2 = 32$
 $16 \times 2 = 32$
 $16 \times 2 = 32$
 128

Multiplication – Times tables	Multiplication- multiplying three numbers	Multiplication- factor pairs	Multiplication- Written methods	Multiplication- Mental methods
<p>Use your times tables knowledge to help you quickly recall the answers to the following questions:</p> <ol style="list-style-type: none"> 1) $2 \times 10 =$ 2) $3 \times 12 =$ 3) $12 \times 5 =$ 4) $7 \times 11 =$ 5) $4 \times 9 =$ 6) $8 \times 8 =$ 7) $7 \times 5 =$ 8) $6 \times 8 =$ 9) $3 \times 4 =$ 10) $1 \times 2 =$ 11) $7 \times 8 =$ 12) $11 \times 6 =$ <p><i>You might want to get someone at home to time you or to read the questions out to you.</i></p>	<p>Calculate the answers to the following and then tell me what you notice (try and use mathematical vocabulary if you can):</p> <p><i>e.g. $1 \times 2 \times 3 = 6$</i> $1 \times 2 = 2$ $2 \times 3 = 6$</p> <ol style="list-style-type: none"> 1) $5 \times 2 \times 6$ 2) $6 \times 5 \times 2$ 3) $8 \times 4 \times 5$ 4) $4 \times 5 \times 8$ 5) $2 \times 3 \times 6$ 6) $2 \times 6 \times 3$ 7) $1 \times 3 \times 8$ 8) $8 \times 1 \times 3$ <p><i>Remember to partition the numbers if you need to. This will help you to get your answer.</i></p>	<p>Factor pairs are a whole number that multiplies by another number to make a product.</p> <p><i>Can you find as many factor pairs as you can for the following numbers?</i></p> <ol style="list-style-type: none"> 1) 12 2) 36 3) 24 4) 18 5) 48 6) 56 7) 35 8) 28 <p><i>It can often be useful to start with $1 \times$ and then work upwards to see if you can find any others e.g. $2 \times$, $3 \times$, $4 \times$.</i></p>	<p>Choose the best written method above that works best for you to help you to calculate the answers to the following:</p> <ol style="list-style-type: none"> 1) 16×7 2) 34×6 3) 27×4 4) 36×3 5) 24×6 6) 45×4 7) 245×4 8) 203×3 9) 814×5 10) 234×36 <p><i>Hint: It may be easier to use the grid method for larger numbers.</i></p>	<p>Use the mental methods above to help you to calculate the answers to the following:</p> <ol style="list-style-type: none"> 1) $20 \times 4 =$ 2) $8 \times 15 =$ 3) $22 \times 8 =$ 4) $13 \times 9 =$ 5) $11 \times 21 =$ <p>Can you think of any other calculations and work out their answers?</p>

Extension:

If you complete all of these calculations, you can have a go at these word problems:

Hint: You may need to use some of the methods you have practised above to help you to answer the questions.

- 1) There are 16 fireworks in a box. Sam has 7 boxes, how many fireworks does he have altogether?
- 2) It takes Laura 18 minutes to walk to school each day. She walked to school and back every day for 5 days. How many minutes did Laura spend walking **to** and **from** school in one week?
- 3) Six children have completed their sticker card. Each card holds 24 stickers. How many stickers has the teacher given out?
- 4) 5 boys each travel 43 miles on their bikes. How many miles have they travelled altogether?
- 5) There are 932 calories in a chocolate bar. How many calories are in 4 chocolate bars? How many in 12 chocolate bars?