Multiplication Table Mastery
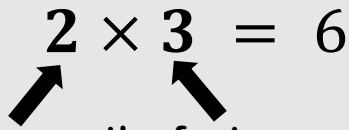
SUPERCHARGED MATH

by Leah Merjan

Supercharges Science & Math
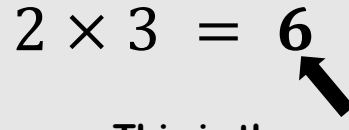
FACTOR

A <u>factor</u> is the number being multiplied

$$\mathbf{2} \times \mathbf{3} = 6$$

These are the <u>factors</u>.

PRODUCT

A <u>product</u> is the answer to a multiplication problem

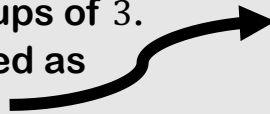$$2 \times 3 = \mathbf{6}$$

This is the <u>product</u>.

ARRAY

An <u>array</u> is an arrangement of objects in rows and columns

This <u>array</u> shows 3 groups of 4 or 4 groups of 3. It can be represented as 3×4 or 4×3.

★ ★ ★ ★
★ ★ ★ ★
★ ★ ★ ★

MULTIPLICATION FACT CHART

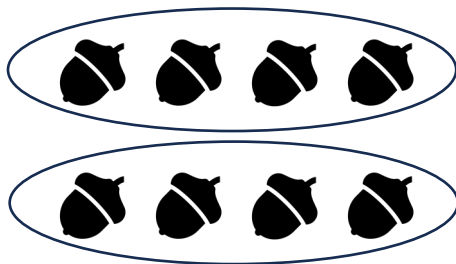**As you complete a section, come back to this page and shade in the row and column of the new mastered facts!**

x	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	29	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	36	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Is it true, you already know about **2?**
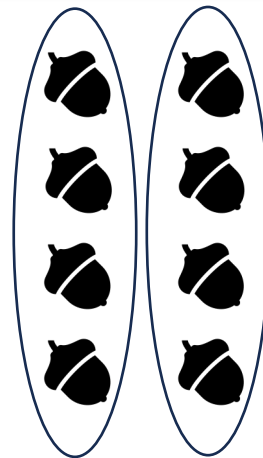
Let's start by practicing doubles addition facts.
(This will be helpful when multiplying by 2)

$2 + 2 = 2$ $3 + 3 = 6$ $4 + 4 = \underline{}$ $5 + 5 = \underline{}$

When multiplying a number by two, it can be thought of as **2 groups of the number.**
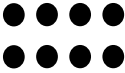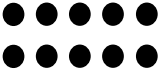For example, 2×4 can be thought of as
2 **group of** 4 or $4 + 4$.

This picture shows 2 **group of** 4.
It can be represented live this: 2×4

This picture also shows 2 **group of** 4.
It can be represented live this: 4×2

These pictures also show $4 + 4$.
So, 2×4 **and** 2×4 **are the same as** $4 + 4$!

Complete the table!

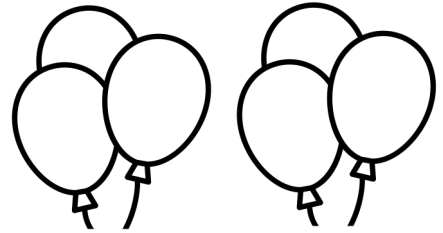| Multiply	Write in words	Draw an array	Show with addition
$2\times4 = 8$	2 **groups of** 4	●●●● ●●●●	$4 + 4 = 8$
$2\times5 =$ ___	2 **groups of** 5	●●●●● ●●●●●	$5 + 5 =$ ___
$2\times7 =$ ___	2 **groups of** ___		__ + __ = ___
$3\times2 =$ ___	2 **groups of** ___		__ + __ = ___
$2\times10 =$ ___	2 **groups of** ___		__ + __ = ___
$2\times8 =$ ___	2 **groups of** ___		__ + __ = ___
$6\times2 =$ ___	2 **groups of** ___		__ + __ = ___
$2\times9 =$ ___	2 **groups of** ___		__ + __ = ___

Explain the pattern in the products when multiplying by 2

Draw a Picture

This picture shows 2 groups of 3.

Show it with multiplication: $2 \times$ ___ = ____

Show it with addition: ___ + ___ = ____

Draw a picture shows 2 groups of 6.

Show it with multiplication: ___ $\times$ ___ = ____

Show it with addition: ___ + ___ = ____

Draw a picture shows 2 groups of 9.

Show it with multiplication: ___ $\times$ ___ = ____

Show it with addition: ___ + ___ = ____

Draw a picture shows 2 groups of 7.

Show it with multiplication: ___ $\times$ ___ = ____

Show it with addition: ___ + ___ = ____

Fact Hunt!

Find the multiplication sentences for x2 facts below. Shade the numbers and write the sentences in the box.

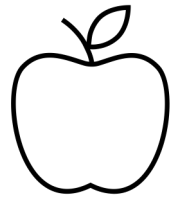|									
2	6	14	1	3	7	2	6	12	11
5	7	8	2	5	3	9	10	6	4
10	14	4	2	8	6	18	3	1	9
3	9	12	7	11	4	8	13	2	4
4	3	1	6	3	10	14	2	7	13
2	2	4	15	8	20	3	10	11	3
12	6	4	9	1	11	5	20	22	6
17	5	10	2	8	16	13	7	4	14

$2 \times 5 = 10$
$4 \times 2 = 8$

Storytime

Emily began her garden by planting 2 apple trees. Each tree produces 5 apples. How many total apples does she have?

Show it with multiplication:

Show it with addition:

The following season Emily plants 2 rows of carrots. Each row has 8 carrots. How many carrots does she plant?
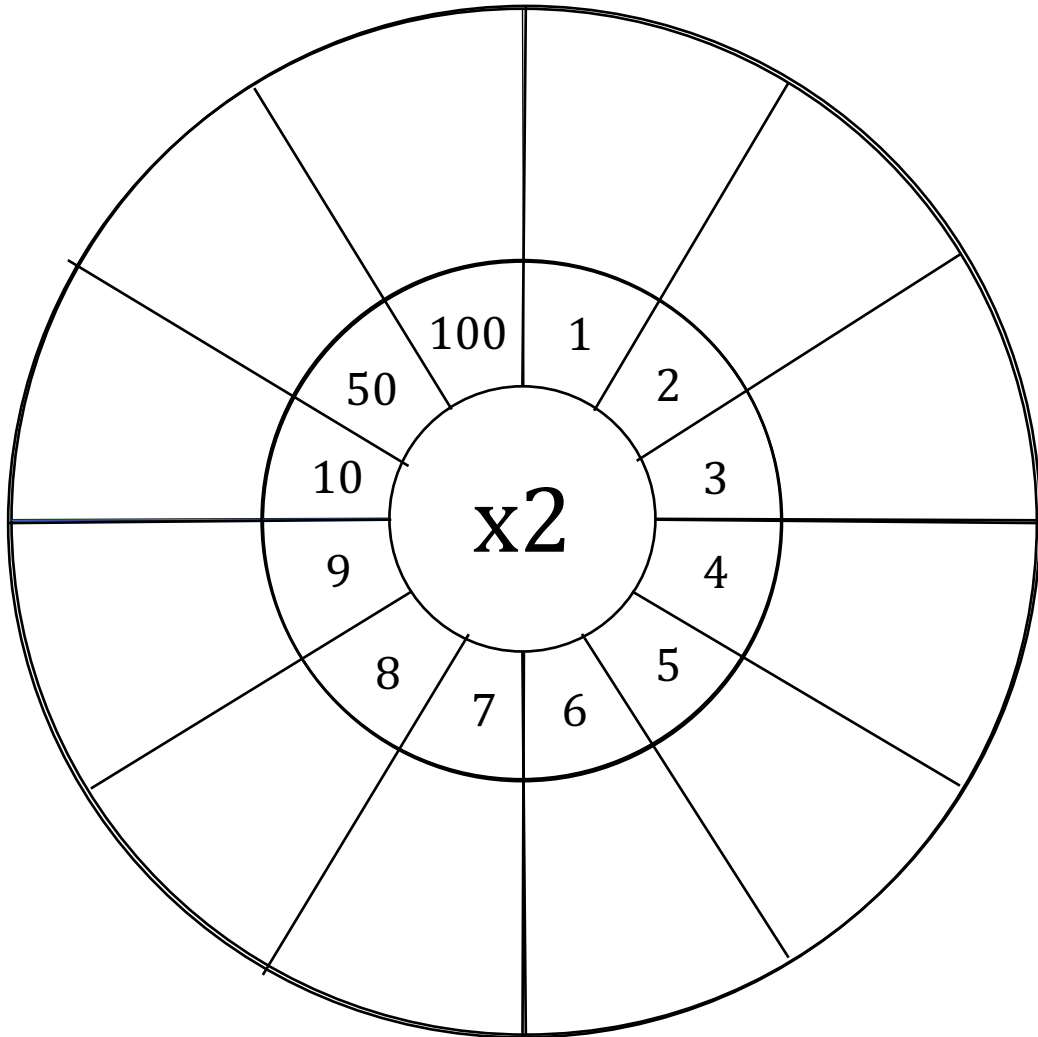
Show it with multiplication:

Show it with addition:

Emily decides to add 1 carrot to the end of each row. Now each row has 9 carrots. Now how many carrots are there?

Show it with multiplication:

Show it with addition:

Wheel of x2's

Complete the multiplication wheel:

Fill in the blanks:

$2 \times 11 \Rightarrow \underline{11} + \underline{11} \Rightarrow$ | 22 |

$14 \times 2 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

$22 \times 2 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

$2 \times 17 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

$15 \times 2 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

$20 \times 2 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

$2 \times 13 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

$21 \times 2 \Rightarrow \underline{} + \underline{} \Rightarrow$ | |

Multiplication Maze

Help the bee find the flowers by following the path of the correct answers through the maze. Determine the answer in each box and follow the answer to the next box.

The right answers will lead the bee to the flowers!

Start 2×5	10	2×8	12	2×15	25	2×3	5	2×12
20	15	16	20	10	24	16	18	24
2×6	6	2×4	8	2×9	16	2×14	22	2×2
26	17	12	10	18	30	14	18	4
2×11	9	2×7	2	2×1	1	2×10	20	2×13
31	5	14	7	4	12	10	15	26
2×8	14	2×3	8	2×6	13	2×9	10	2×12
6	10	6	13	22	14	22	24	12
2×14	22	2×2	4	2×11	28	2×15	10	2×10
26	1	11	9	10	17	13	30	22
2×5	10	2×9	20	2×6	10	2×7	12	

Back again and ready for **10!**

Let's look at 3 ways to show 10×4:

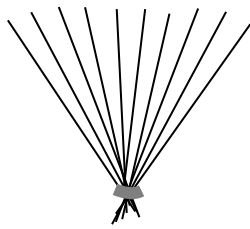When multiplying by 10, all digits move one place to the left and 0's are used as placeholders.
Look at the place value chart below:

Hundreds	Tens	Ones
		4

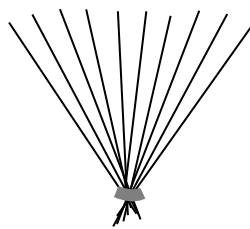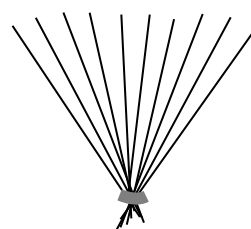$\times 10 =$

H	T	O
	4	0

You can also think of this problem as groups 4 of 10.

10,   20,   30,   40

This problem can also be shown with an array.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Complete the place value charts

As shown on the information page, when multiplying by 10, all digits move one place to the left and 0's are used as placeholders.

In this example, we multiplied 6×10**. The 6 moved from the ones place to the tens place. And a 0 was added to the ones place.**

Hundreds	Tens	Ones
		6

$\times 10 =$

H	T	O
	6	0

Now it's your turn!

$3\times10=$

H	T	O

$8\times10=$

H	T	O

$5\times10=$

H	T	O

$7\times10=$

H	T	O

$10\times10=$

H	T	O

$1\times10=$

H	T	O

$2\times10=$

H	T	O

$4\times10=$

H	T	O

$9\times10=$

H	T	O

Ready for a challenge!
Use the same strategy as above to solve these problems!

$22\times10=$

H	T	O

$30\times10=$

H	T	O

$17\times10=$

H	T	O

$54\times10=$

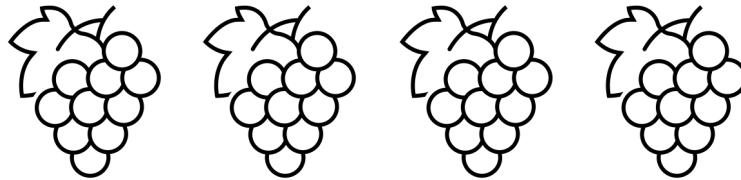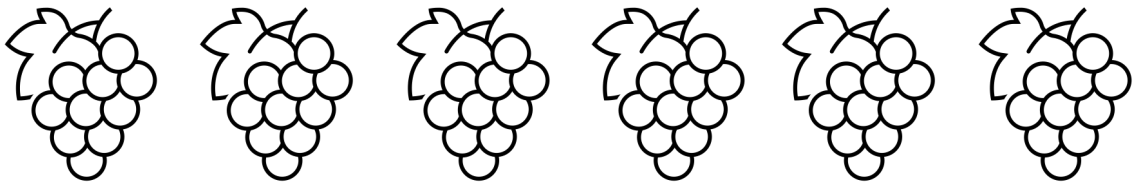| H	T	O

A bunch of grapes

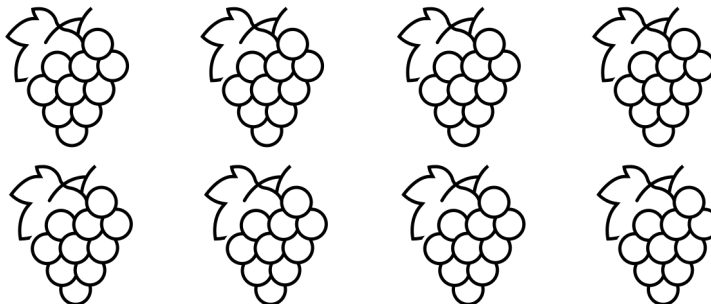**There are 10 grapes in each bunch. Use the pictures and multiplication to find the total number of grapes:**

How many bunches are there? _____

How many grapes are there? (Show it with multiplication) ___ $\times 10 =$ ___

How many grapes are there? ___ $\times 10 =$ ___

How many grapes are there? ___ $\times 10 =$ ___

Draw a picture and solve $3 \times 10 =$ ___

Skip counting by 10s

Use the chart to count by 10! Start at 10 and <u>shade</u> the numbers that you count:

Write the shaded numbers:

——, ——, ——,

——, ——, ——,

——, ——, ——, ——

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Describe the pattern: _____

_____

Solve these multiplication problems using the pattern described:

$2 \times 10 =$ _____ $6 \times 10 =$ _____ $10 \times 10 =$ _____ $10 \times 8 =$ _____

$10 \times 11 =$ _____ $10 \times 3 =$ _____ $5 \times 10 =$ _____ $9 \times 10 =$ _____

$10 \times 1 =$ _____ $4 \times 10 =$ _____ $12 \times 10 =$ _____ $7 \times 10 =$ _____

Storytime

Peter is building a fence. His plan is to build 2 row with 10 planks in each. How many total planks does he need?

Solve with multiplication:
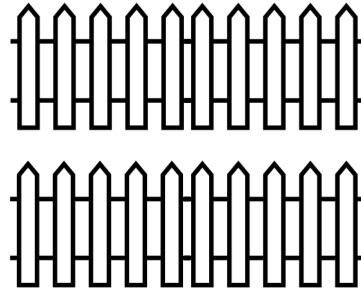
Peter decides to add a 3rd row of 10 planks. How many planks does Peter use in total?

Solve with multiplication:
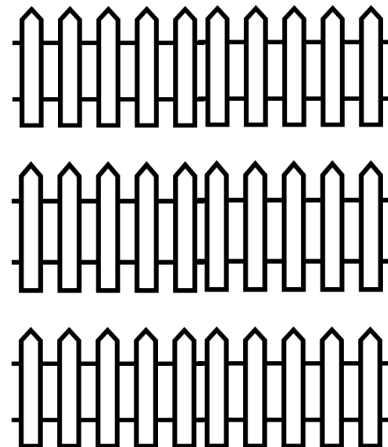
Peter decides to double the length of his fence. He wants a total of $2\times3 =$ ____ rows of 10. How many planks are needed?

Solve with multiplication:

Hint! Draw a picture!!

Spin-a-thon

Spin the spinner and write the number in the box. Then multiply:
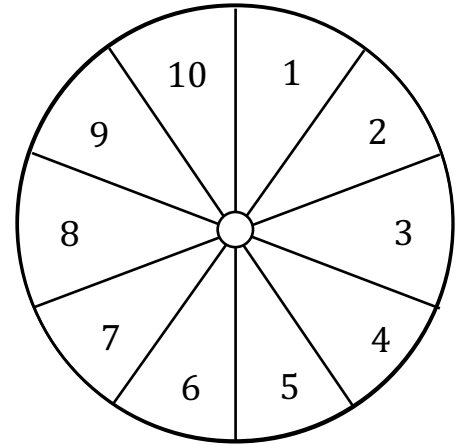
Use a pencil and a paperclip to make a spinner!

$10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$

$2 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$

$10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $2 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$

$10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $2 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$

$2 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $10 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$ $2 \times \boxed{\rule{1cm}{0pt}} = \rule{1cm}{0.4pt}$

Fill in the missing factors:

$10 \times \boxed{\rule{1cm}{0pt}} = 30$ $10 \times \boxed{\rule{1cm}{0pt}} = 100$ $2 \times \boxed{\rule{1cm}{0pt}} = 12$

$2 \times \boxed{\rule{1cm}{0pt}} = 8$ $2 \times \boxed{\rule{1cm}{0pt}} = 14$ $10 \times \boxed{\rule{1cm}{0pt}} = 50$

$10 \times \boxed{\rule{1cm}{0pt}} = 20$ $10 \times \boxed{\rule{1cm}{0pt}} = 130$ $10 \times \boxed{\rule{1cm}{0pt}} = 90$

Solve the riddles

Use the key and your x10 and x2 facts to solve the riddles below:

A=2	E=6	I=50	M=20	Q=3	U=70	Y=8
B=15	F=9	J=24	N=14	R=16	V=11	Z=26
C=21	G=4	K=80	O=60	S=40	W=100	
D=18	H=30	L=12	P=5	T=10	X=13	

Do you know what math mathematicians do after is snows?

___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___ ___
2×5 3×10 2×3 2×4   2×10 2×1 8×10 3×2   4×10 2×7 6×10 10×10

___ ___ ___ ___ ___ ___ .
1×2 7×2 2×2 6×2 3×2 10×4
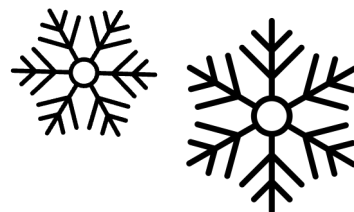
Who's in charge in a pencil case?

___ ___ ___   ___ ___ ___ ___ ___.
1×10 10×3 2×3   2×8 10×7 2×6 3×2 8×2
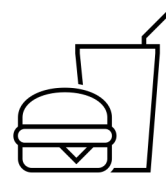
Why didn't two 4s go to the cafeteria for lunch?

___ ___ ___ ___   ___ ___ ___ ___ ___ ___ ___
5×2 10×3 3×2 4×2   2×1 2×6 8×2 3×2 1×2 2×9 4×2

___ ___ ___ ___ ___ .
3×2 5×10 2×2 3×10 1×10

Time to dive into 5!

We can use multiples of 10 to help us multiply by 5!

When multiplying by 10, the array looked like this:

★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★

When multiplying by 5, the array looks like this:

★ ★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆
★ ★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆
★ ★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆

5×3 **is equal to half of** 10×3

We know from the previous section that: $10\times3 = 30$

Therefore, 5×3 **would be half of 30, or 15!**

For multiples of 5, we can also draw pictures using tallies.

$\cancel{||||} = 5$

For 5×3**, or 3 groups of 5, we would draw:**

$\cancel{||||}\ \cancel{||||}\ \cancel{||||} = 15$

Skip counting by 5s

Use the chart to count by 5!
Start at 5 and <u>shade</u> the
numbers that you count:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Write the shaded numbers:

——, ——, ——, ——, ——,

——, ——, ——, ——, ——

——, ——, ——, ——, ——,

——, ——, ——, ——, ——

How does this pattern relate to skip counting by 10s?

_____

_____

Solve the multiplication problems using the pattern described:

$2\times5 =$ _____ $6\times5 =$ _____ $5\times10 =$ _____ $5\times8 =$ _____

$5\times11 =$ _____ $5\times3 =$ _____ $5\times5 =$ _____ $9\times5 =$ _____

$5\times1 =$ _____ $4\times5 =$ _____ $12\times5 =$ _____ $5\times20 =$ _____

Tally Time

Remember from the information page that we can use tallies to show multiples of 5. Let's practice using tallies:
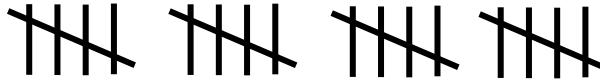
How many groups are there? _____

How many tallies are there? (Show it with multiplication) ____ × 5 = ____

How many groups are there? _____

How many tallies are there? (Show it with multiplication) ____ × 5 = ____

Now you draw the tallies to solve these problems:
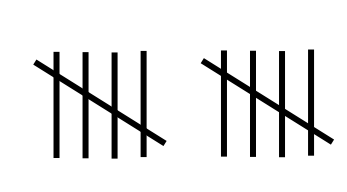
$5 \times 7 =$ ____	$5 \times 5 =$ ____	$5 \times 8 =$ ____
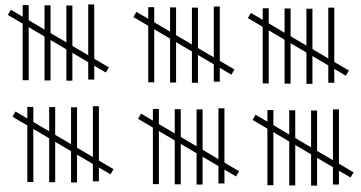
Write the multiplication sentence for each tally group:

___ × ___ = ___

___ × ___ = ___

___ × ___ = ___

Storytime

Trevor is baking 5 cakes for his HUGE birthday party! Unfortunately, the recipe he is using only give measurements for 1 cake. Let's help Trevor calculate how much of each ingredient he needs.

The recipe calls for 3 cups of flour. How many cups of flour will he need for 5 cakes?

Show it with multiplication:

The recipe calls for 1 tablespoon of vanilla extract. How many tablespoons will he need for 5 cakes?

Show it with multiplication:

The recipe calls for 4 large eggs. How many eggs will he need for 5 cakes?
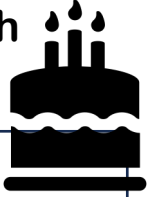
Show it with multiplication:

Fact Hunt!

Find the multiplication sentences for x5 facts below. Shade the numbers and write the sentences in the box.

2	6	14	25	3	5	1	5	12	11
5	7	8	5	2	3	9	10	6	4
10	14	4	5	20	6	18	50	1	9
3	9	12	7	11	4	8	13	2	5
4	3	1	6	3	10	15	2	7	45
2	5	8	40	8	20	3	10	11	3
12	6	4	9	1	11	5	55	22	6
17	30	10	2	8	16	13	7	4	14

$2 \times 5 = 10$
$4 \times 5 = 20$

Multiplication Maze

Help the bee find the flowers by following the path of the correct answers through the maze. Determine the answer in each box and follow the answer to the next box.
The right answers will lead the bee to the flowers!

Start 2×5	10	5×8	40	5×10	50	5×3	8	2×12
20	15	13	12	10	24	16	15	24
2×6	6	2×4	8	2×9	16	4×5	22	5×5
26	17	12	10	18	20	14	45	25
2×11	9	2×7	2	5×1	1	2×10	20	5×9
13	5	14	5	4	12	10	15	26
8×5	15	3×5	8	2×6	13	2×9	10	2×12
40	10	6	13	22	14	22	24	12
6×5	12	10×5	50	5×11	28	2×15	10	2×10
30	10	11	9	55	17	13	30	22
2×5	1	2×9	20	5×6	30	5×7	35	

Color the fish!

Let's add some color to this fish tank! Solve each fish's multiplication problem. Color the fish according to the answer:

If the answer is less than 25(< 25), color the fish green.
If the answer is between 25 and 50$(25 < x < 50)$, color the fish red.
If the answer is greater than 50(> 50), color the fish yellow.

$5 \times 3 =$ ___

$5 \times 11 =$ ___

$6 \times 5 =$ ___

$5 \times 8 =$ ___

$10 \times 1 =$ ___

$10 \times 7 =$ ___

$5 \times 2 =$ ___

$10 \times 4 =$ ___

$5 \times 9 =$ ___

$4 \times 5 =$ ___

$10 \times 8 =$ ___

$2 \times 2 =$ ___

$5 \times 12 =$ ___

$15 \times 2 =$ ___

$1 \times 5 =$ ___

$10 \times 3 =$ ___

$2 \times 6 =$ ___

$5 \times 7 =$ ___
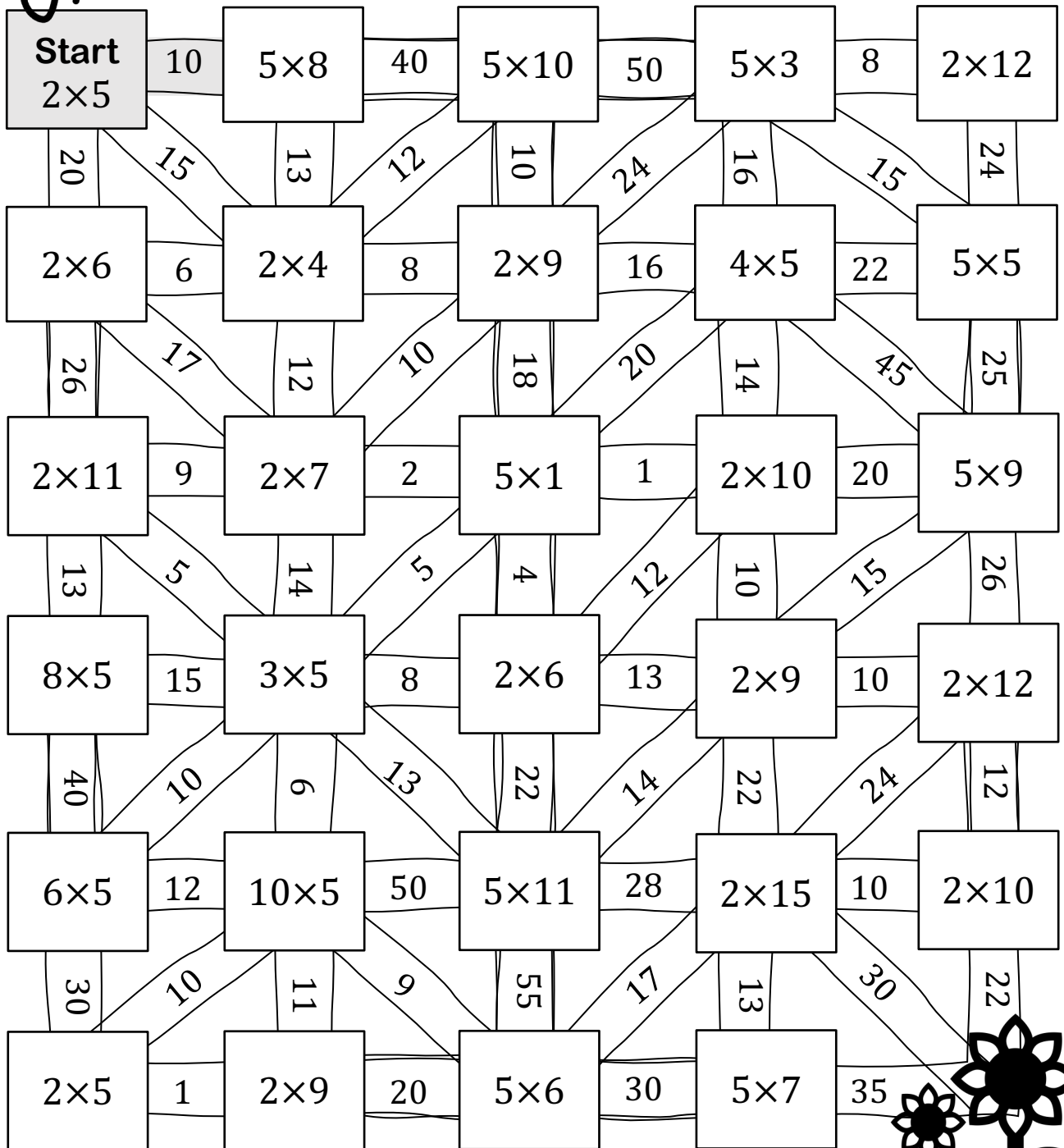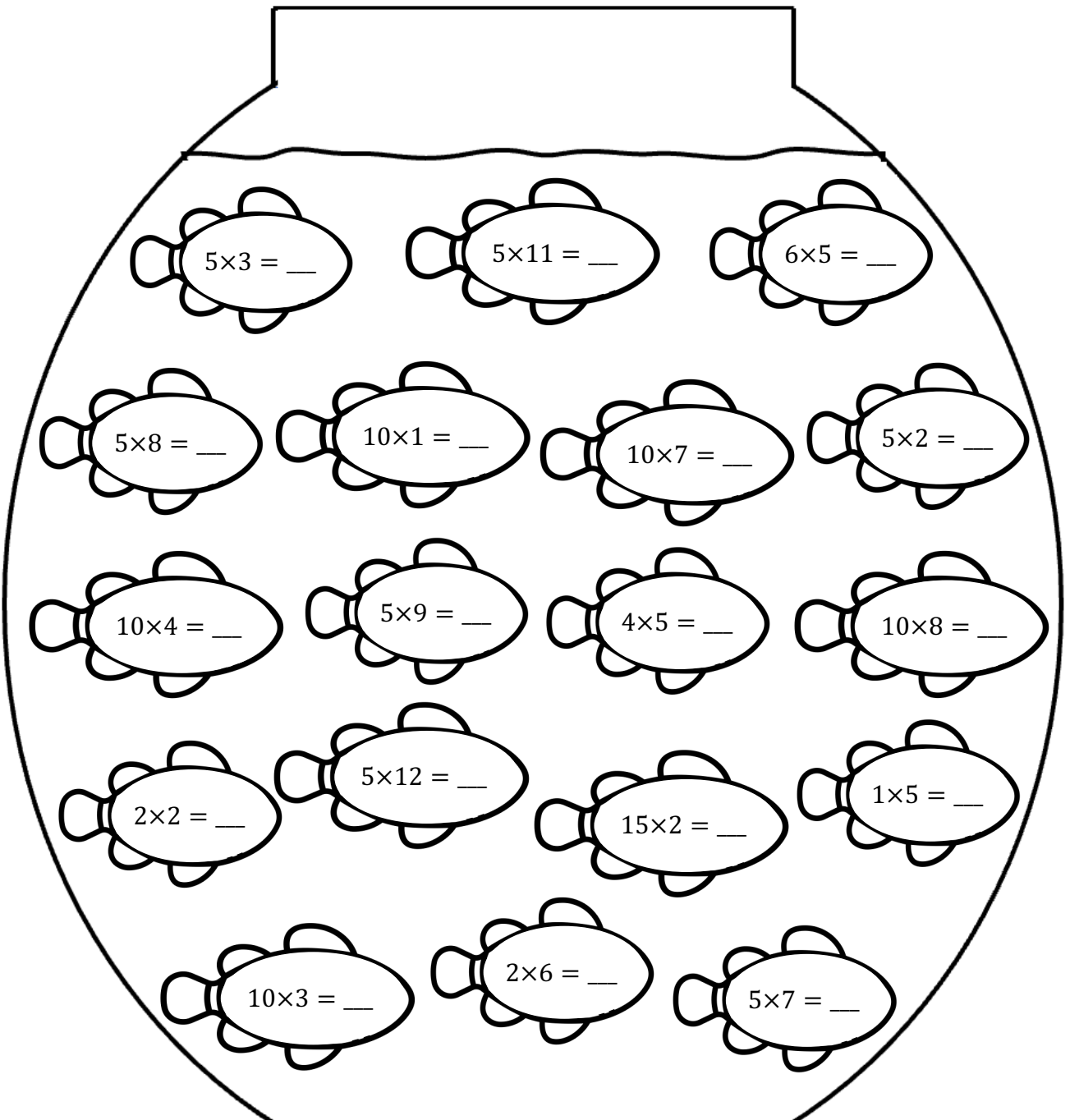
ANSWER KEY

Is it true, you already know about 2?

Let's start by practicing doubles addition facts.
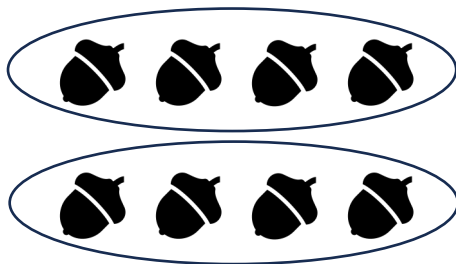**(This will be helpful when multiplying by 2)**

$2 + 2 = 2$ $3 + 3 = 6$ $4 + 4 = \underline{8}$ $5 + 5 = \underline{10}$

When multiplying a number by two, it can be thought of as 2 groups of the number. For example, 2×4 can be thought of as 2 group of 4 or $4 + 4$.
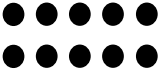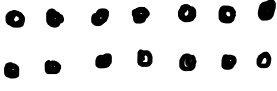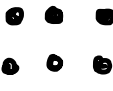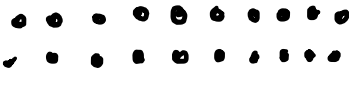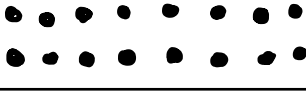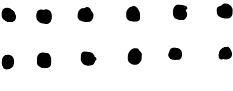
This picture shows 2 group of 4.
It can be represented live this: 2×4

This picture also shows 2 group of 4.
It can be represented live this: 4×2

**These pictures also show $4 + 4$.
So, 2×4 and 2×4 are the same as $4 + 4$!**

Complete the table!

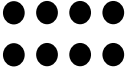| Multiply	Write in words	Draw an array	Show with addition
$2×4 = 8$	2 **groups of** 4		$4 + 4 = 8$
$2×5 = 10$	2 **groups of** 5		$5 + 5 = 10$
$2×7 = 14$	2 **groups of** 7		$7 + 7 = 14$
$3×2 = 6$	2 **groups of** 3		$3 + 3 = 6$
$2×10 = 20$	2 **groups of** 10		$10 + 10 = 20$
$2×8 = 16$	2 **groups of** 8		$8 + 8 = 16$
$6×2 = 12$	2 **groups of** 6		$6 + 6 = 12$
$2×9 = 18$	2 **groups of** 9		$9 + 9 = 18$

Explain the pattern in the products when multiplying by 2

The product of a number × 2 is that number plus itself.

Draw a Picture

This picture shows 2 groups of 3.

Show it with multiplication: $2 \times \underline{3} = \underline{6}$

Show it with addition: $\underline{3} + \underline{3} = \underline{6}$
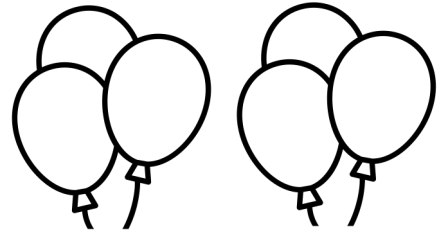
Draw a picture shows 2 groups of 6.

Show it with multiplication: $\underline{2} \times \underline{6} = \underline{12}$

Show it with addition: $\underline{6} + \underline{6} = \underline{12}$
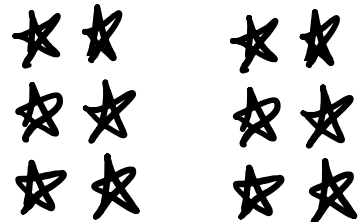
Draw a picture shows 2 groups of 9.

Show it with multiplication: $\underline{2} \times \underline{9} = \underline{18}$

Show it with addition: $\underline{9} + \underline{9} = \underline{18}$
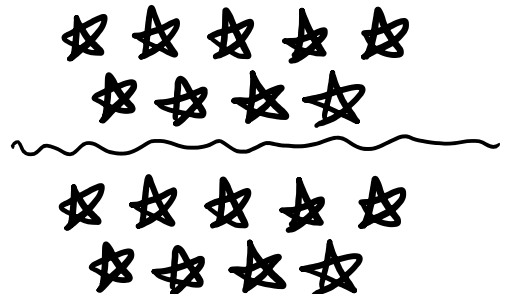
Draw a picture shows 2 groups of 7.

Show it with multiplication: $\underline{2} \times \underline{7} = \underline{14}$

Show it with addition: $\underline{7} + \underline{7} = \underline{14}$

Fact Hunt!

Find the multiplication sentences for x2 facts below. Shade the numbers and write the sentences in the box.

2	6	14	1	3	7	2	6	12	11
5	7	8	2	5	3	9	10	6	4
10	14	4	2	8	6	18	3	1	9
3	9	12	7	11	4	8	13	2	4
4	3	1	6	3	10	14	2	7	13
2	2	4	15	8	20	3	10	11	3
12	6	4	9	1	11	5	20	22	6
17	5	10	2	8	16	13	7	4	14

$2 \times 5 = 10$

$4 \times 2 = 8$

$1 \times 2 = 2$

$2 \times 6 = 12$

$2 \times 9 = 18$

$3 \times 2 = 6$

$2 \times 2 = 4$

$2 \times 8 = 16$

$2 \times 7 = 14$

$2 \times 10 = 20$

Storytime

Emily began her garden by planting 2 apple trees. Each tree produces 5 apples. How many total apples does she have?

Show it with multiplication: $2 \times 5 = 10$ apples

Show it with addition: $5 + 5 = 10$ apples
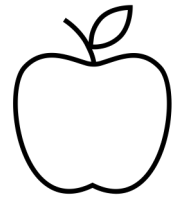
The following season Emily plants 2 rows of carrots. Each row has 8 carrots. How many carrots does she plant?

Show it with multiplication: $2 \times 8 = 16$ carrots

Show it with addition: $8 + 8 = 16$ carrots

Emily decides to add 1 carrot to the end of each row. Now each row has 9 carrots. Now how many carrots are there?

Show it with multiplication: $2 \times 9 = 18$ carrots

Show it with addition: $9 + 9 = 18$ carrots

Wheel of x2's

Complete the multiplication wheel:

inner	outer
100	200
1	2
2	4
3	6
4	8
5	10
6	12
7	14
8	16
9	18
10	20
50	100

Center: **x2**

Fill in the blanks:

$2 \times 11 \Rightarrow \underline{11} + \underline{11} \Rightarrow \boxed{22}$

$14 \times 2 \Rightarrow \underline{14} + \underline{14} \Rightarrow \boxed{28}$

$22 \times 2 \Rightarrow \underline{22} + \underline{22} \Rightarrow \boxed{44}$

$2 \times 17 \Rightarrow \underline{17} + \underline{17} \Rightarrow \boxed{34}$

$15 \times 2 \Rightarrow \underline{15} + \underline{15} \Rightarrow \boxed{30}$

$20 \times 2 \Rightarrow \underline{20} + \underline{20} \Rightarrow \boxed{40}$

$2 \times 13 \Rightarrow \underline{13} + \underline{13} \Rightarrow \boxed{26}$

$21 \times 2 \Rightarrow \underline{21} + \underline{21} \Rightarrow \boxed{42}$

Multiplication Maze

Help the bee find the flowers by following the path of the correct answers through the maze. Determine the answer in each box and follow the answer to the next box.

The right answers will lead the bee to the flowers!

Start 2×5	10	2×8	12	2×15	25	2×3	5	2×12
20	15	16	20	10	24	16	18	24
2×6	6	2×4	8	2×9	16	2×14	22	2×2
26	17	12	10	18	30	14	18	4
2×11	9	2×7	2	2×1	1	2×10	20	2×13
31	5	14	7	4	12	10	15	26
2×8	14	2×3	8	2×6	13	2×9	10	2×12
6	10	6	13	22	14	22	24	12
2×14	22	2×2	4	2×11	28	2×15	10	2×10
26	1	11	9	10	17	13	30	22
2×5	10	2×9	20	2×6	10	2×7	12	

Back again and ready for **10!**

Let's look at 3 ways to show 10×4:

When multiplying by 10, all digits move one place to the left and 0's are used as placeholders.
Look at the place value chart below:

Hundreds	Tens	Ones
		4

$\times 10 =$

H	T	O
	4	0

You can also think of this problem as groups 4 of 10.

10,   20,   30,   40

This problem can also be shown with an array.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Complete the place value charts

As shown on the information page, when multiplying by 10, all digits move one place to the left and 0's are used as placeholders.

In this example, we multiplied 6×10. The 6 moved from the ones place to the tens place. And a 0 was added to the ones place.

Hundreds	Tens	Ones
		6

$\times 10 =$

H	T	O
	6	0

Now it's your turn!

$3\times10=$

H	T	O
	3	0

$8\times10=$

H	T	O
	8	0

$5\times10=$

H	T	O
	5	0

$7\times10=$

H	T	O
	7	0

$10\times10=$

H	T	O
1	0	0

$1\times10=$

H	T	O
	1	0

$2\times10=$

H	T	O
	2	0

$4\times10=$

H	T	O
	4	0

$9\times10=$

H	T	O
	9	0

Ready for a challenge!
Use the same strategy as above to solve these problems!

$22\times10=$

H	T	O
2	2	0

$30\times10=$

H	T	O
3	0	0

$17\times10=$

H	T	O
1	7	0

$54\times10=$

H	T	O
5	4	0

A bunch of grapes

There are 10 grapes in each bunch. Use the pictures and multiplication to find the total number of grapes:
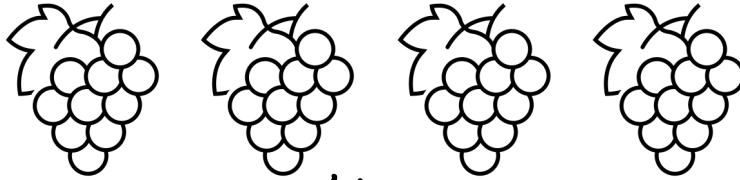
How many bunches are there? __4__

How many grapes are there? (Show it with multiplication) __4__ $\times 10 =$ __40__

How many grapes are there? __6__ $\times 10 =$ __60__
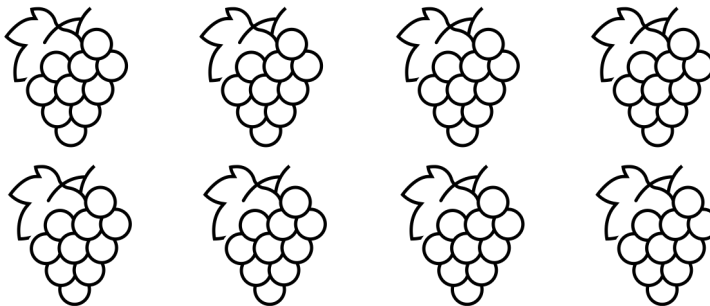
How many grapes are there? __8__ $\times 10 =$ __80__

Draw a picture and solve $3 \times 10 =$ __30__
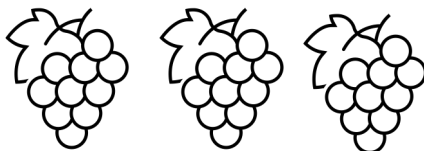
Skip counting by 10s

Use the chart to count by 10! Start at 10 and <u>shade</u> the numbers that you count:

Write the shaded numbers:

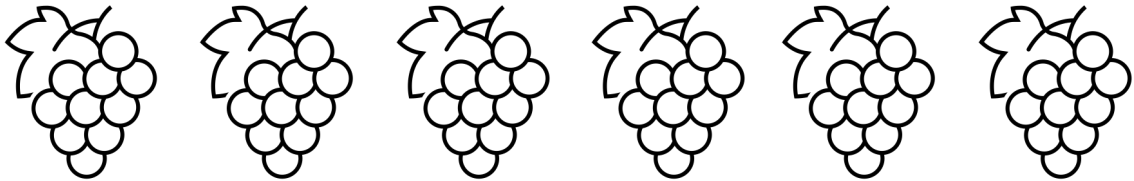<u>10</u>, <u>20</u>, <u>30</u>,
<u>40</u>, <u>50</u>, <u>60</u>,
<u>70</u>, <u>80</u>, <u>90</u>, <u>100</u>

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Describe the pattern: **Answers will vary**

Solve these multiplication problems using the pattern described:

$2 \times 10 = $ **20** $6 \times 10 = $ **60** $10 \times 10 = $ **100** $10 \times 8 = $ **80**

$10 \times 11 = $ **110** $10 \times 3 = $ **30** $5 \times 10 = $ **50** $9 \times 10 = $ **90**

$10 \times 1 = $ **10** $4 \times 10 = $ **40** $12 \times 10 = $ **120** $7 \times 10 = $ **70**

Storytime

Peter is building a fence. His plan is to build 2 row with 10 planks in each. How many total planks does he need?

Solve with multiplication:

$2 \times 10 = 20$ planks
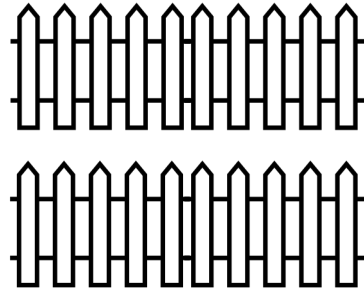
Peter decides to add a 3rd row of 10 planks. How many planks does Peter use in total?

Solve with multiplication:

$3 \times 10 = 30$ planks
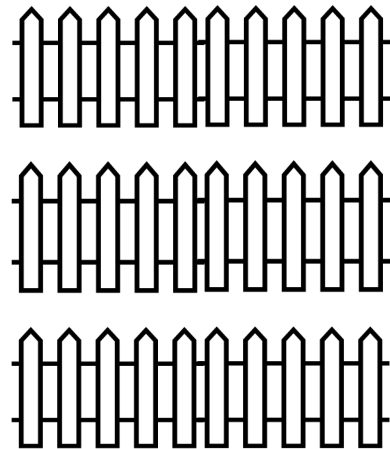
Peter decides to double the length of his fence. He wants a total of $2 \times 3 = \underline{6}$ rows of 10. How many planks are needed?
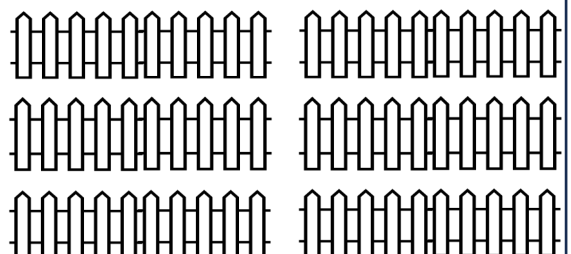
Solve with multiplication:

Hint! Draw a picture!!

$6 \times 10 = 60$

Spin-a-thon

Spin the spinner and write the number in the box. Then multiply:

Use a pencil and a paperclip to make a spinner!
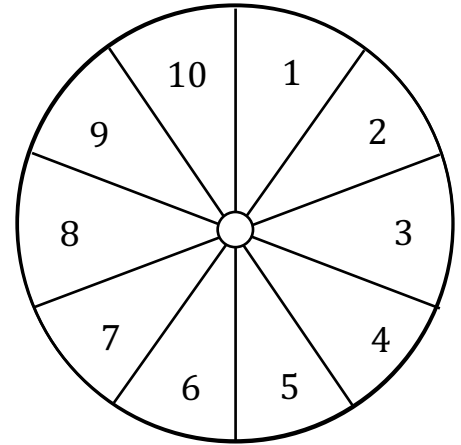
$10\times$ [_____] $=$ ___ $10\times$ [_____] $=$ ___

$2\times$ [_____] $=$ ___ $10\times$ [_____] $=$ ___

$10\times$ [_____] $=$ ___ $2\times$ [_____] $=$ ___

$10\times$ [_____] $=$ ___ $10\times$ [_____] $=$ ___ $2\times$ [_____] $=$ ___

$2\times$ [_____] $=$ ___ $10\times$ [_____] $=$ ___ $2\times$ [_____] $=$ ___

Answers will vary

Fill in the missing factors:

$10\times$ [**3**] $= 30$ $10\times$ [**10**] $= 100$ $2\times$ [**6**] $= 12$

$2\times$ [**4**] $= 8$ $2\times$ [**7**] $= 14$ $10\times$ [**5**] $= 50$

$10\times$ [**2**] $= 20$ $10\times$ [**13**] $= 130$ $10\times$ [**9**] $= 90$

Solve the riddles

Use the key and your x10 and x2 facts to solve the riddles below:

A=2	E=6	I=50	M=20	Q=3	U=70	Y=8
B=15	F=9	J=24	N=14	R=16	V=11	Z=26
C=21	G=4	K=80	O=60	S=40	W=100	
D=18	H=30	L=12	P=5	T=10	X=13	

Do you know what math mathematicians do after is snows?

T h e y   m a k e   S n o w

2×5 3×10 2×3 2×4   2×10 2×1 8×10 3×2   4×10 2×7 6×10 10×10

a n g l e s .

1×2 7×2 2×2 6×2 3×2 10×4
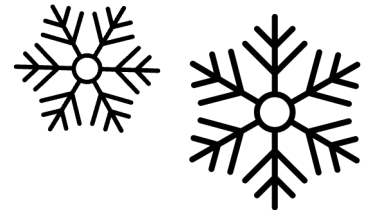
Who's in charge in a pencil case?

T h e   r u l e r .

1×10 10×3 2×3   2×8 10×7 2×6 3×2 8×2
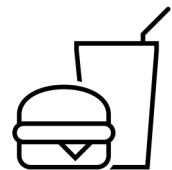
Why didn't two 4s go to the cafeteria for lunch?

T h e y   a l r e a d y

5×2 10×3 3×2 4×2   2×1 2×6 8×2 3×2 1×2 2×9 4×2

e i g h t .

3×2 5×10 2×2 3×10 1×10

Time to dive into 5!

We can use multiples of 10 to help us multiply by 5!

When multiplying by 10, the array looked like this:

★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★

When multiplying by 5, the array looks like this:

★ ★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆
★ ★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆
★ ★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆

5×3 **is equal to half of** 10×3

We know from the previous section that: $10\times3 = 30$

Therefore, 5×3 **would be half of 30, or 15!**

For multiples of 5, we can also draw pictures using tallies.

$\cancel{||||} = 5$

For 5×3**, or 3 groups of 5, we would draw:**

$\cancel{||||}\ \cancel{||||}\ \cancel{||||} = 15$

Skip counting by 5s

Use the chart to count by 5! Start at 5 and <u>shade</u> the numbers that you count:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Write the shaded numbers:

5, 10, 15, 20, 25,
30, 35, 40, 45, 50
55, 60, 65, 70, 75,
80, 85, 90, 95, 100

How does this pattern relate to skip counting by 10s?

Answers will vary

Solve the multiplication problems using the pattern described:

$2 \times 5 = $ 10 $6 \times 5 = $ 30 $5 \times 10 = $ 50 $5 \times 8 = $ 40

$5 \times 11 = $ 55 $5 \times 3 = $ 15 $5 \times 5 = $ 25 $9 \times 5 = $ 45

$5 \times 1 = $ 5 $4 \times 5 = $ 20 $12 \times 5 = $ 60 $5 \times 20 = $ 100

Tally Time

Remember from the information page that we can use tallies to show multiples of 5. Let's practice using tallies:

How many groups are there? _4_

How many tallies are there? (Show it with multiplication) _4_ $\times 5 =$ _20_

How many groups are there? _10_

How many tallies are there? (Show it with multiplication) _10_ $\times 5 =$ _50_

Now you draw the tallies to solve these problems:

$5 \times 7 =$ **35**

$5 \times 5 =$ **25**

$5 \times 8 =$ **40**

Write the multiplication sentence for each tally group:

_5_ $\times$ _6_ = _30_

_5_ $\times$ _2_ = _10_

_5_ $\times$ _9_ = _45_

Storytime

Trevor is baking 5 cakes for his HUGE birthday party! Unfortunately, the recipe he is using only give measurements for 1 cake. Let's help Trevor calculate how much of each ingredient he needs.
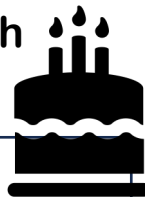
The recipe calls for 3 cups of flour. How many cups of flour will he need for 5 cakes?

Show it with multiplication:

$$3 \times 5 = 15 \text{ cups of flour}$$

The recipe calls for 1 tablespoon of vanilla extract. How many tablespoons will he need for 5 cakes?

Show it with multiplication:

$$1 \times 5 = 5 \text{ tablespoons}$$

The recipe calls for 4 large eggs. How many eggs will he need for 5 cakes?

Show it with multiplication:

$$4 \times 5 = 20 \text{ large eggs}$$

Fact Hunt!

Find the multiplication sentences for x5 facts below. Shade the numbers and write the sentences in the box.

2	6	14	25	3	5	1	5	12	11
5	7	8	5	2	3	9	10	6	4
10	14	4	5	20	6	18	50	1	9
3	9	12	7	11	4	8	13	2	5
4	3	1	6	3	10	15	2	7	45
2	5	8	40	8	20	3	10	11	3
12	6	4	9	1	11	5	55	22	6
17	30	10	2	8	16	13	7	4	14

$2 \times 5 = 10$
$4 \times 5 = 20$

$9 \times 5 = 45$

$5 \times 5 = 25$

$3 \times 5 = 15$

$5 \times 1 = 5$

$11 \times 5 = 55$

$5 \times 10 = 50$

$5 \times 8 = 40$

$5 \times 6 = 30$

Multiplication Maze

Help the bee find the flowers by following the path of the correct answers through the maze. Determine the answer in each box and follow the answer to the next box.

The right answers will lead the bee to the flowers!

Start 2×5 — 10 — 5×8 — 40 — 5×10 — 50 — 5×3 — 8 — 2×12			

Path values and boxes:

- Start 2×5 → 10 → 5×8 → 40 → 5×10 → 50 → 5×3 → 8 → 2×12
- Column connectors: 20, 15, 13, 12, 10, 24, 16, 15, 24
- 2×6 — 6 — 2×4 — 8 — 2×9 — 16 — 4×5 — 22 — 5×5
- Connectors: 26, 17, 12, 10, 18, 20, 14, 45, 25
- 2×11 — 9 — 2×7 — 2 — 5×1 — 1 — 2×10 — 20 — 5×9
- Connectors: 13, 5, 14, 5, 4, 12, 10, 15, 26
- 8×5 — 15 — 3×5 — 8 — 2×6 — 13 — 2×9 — 10 — 2×12
- Connectors: 40, 10, 6, 13, 22, 14, 22, 24, 12
- 6×5 — 12 — 10×5 — 50 — 5×11 — 28 — 2×15 — 10 — 2×10
- Connectors: 30, 10, 11, 9, 55, 17, 13, 30, 22
- 2×5 — 1 — 2×9 — 20 — 5×6 — 30 — 5×7 — 35

Color the fish!

Let's add some color to this fish tank! Solve each fish's multiplication problem. Color the fish according to the answer:

If the answer is less than 25(< 25), color the fish green.
If the answer is between 25 and 50$(25 < x < 50)$, color the fish red.
If the answer is greater than 50(> 50), color the fish yellow.

$5\times3 = 15$

$5\times11 = 55$

$6\times5 = 30$

$5\times8 = 40$

$10\times1 = 10$

$10\times7 = 70$

$5\times2 = 10$

$10\times4 = 40$

$5\times9 = 45$

$4\times5 = 20$

$10\times8 = 80$

$2\times2 = 4$

$5\times12 = 60$

$15\times2 = 30$

$1\times5 = 5$

$10\times3 = 30$

$2\times6 = 12$

$5\times7 = 35$

The Supercharged Math curriculum

is a complete math curriculum for Grades 4-8th
taught by real scientists and engineers.

Most math curriculums focus on learning math concepts and memorizing math skills, with little to no application in the real world. Kids rarely understand what the math skill is useful for OR why they should care.

==On the contrary, the Supercharged Math curriculum is built on engineering-based applications and scientific investigations. Every math concept includes hands-on labs, projects and activities.==

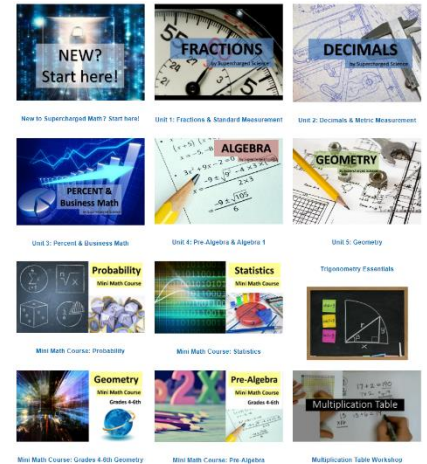**The Supercharged Math curriculum is a self-paced online program.**
We teach math in a practical and real-world way, inspiring students who have struggled or been bored with math before. We offer live and recorded math class lessons with workbooks and activities so students can work through this program at their own pace, on their own schedule. (Students watch the math lessons live or recorded.)

We also provide weekly live small-group tutoring sessions so students that need extra help feel fully supported. Students may work synchronously or asynchronously, and the program supports both a spiral and mastery approach.

At Supercharged Math, your kids' questions are answered by real science teachers.
We provide unlimited support, so students can ask as many questions as they'd like.

Overview of the Supercharged Math Online Curriculum for Grades 4-8th:

- **Complete 4-8th Hands-on math curriculum**
- Taught in a unique way that engages kids so they *want* to learn more.
- Over 2,400 video lessons, activities, experiments and projects
- Step-by-step video demonstrations of each math lesson and corresponding activity
- **A simple easy-to-use structure that kids can do on their own**
- Kids will engage in math lessons, engineering projects, science experiments and business applications that help them learn how to use math in a practical and meaningful way
- **Created by Aurora Lipper, formerly worked for NASA, taught mechanical engineering at Cal Poly University, now dedicated to K-12 STEM education.**
- Workbooks, study guides, quizzes and tests support learning important math concepts
- While the math program is not aligned with Common Core, the exceeds all skills required by Common Core standards for Grades 4-8th
- Hands-on labs and projects based in science and engineering fields
- **You'll get complete support with any and all questions. Questions are all answered by a real scientist or engineer!**

Supercharged Math Curriculum for Grades 4-8th

In addition, we provide outstanding learning opportunities throughout the year:

- Live math classes each week with a real teacher (includes all handouts and workbooks) followed by at-home math work using step-by-step video instructions for further studies

- Optional live private tutoring session each week in a small-group setting with a real math teacher

- This course is designed to develop the confidence in your child to go out and explore their world, and give them the tools they need to use math in every day real life. The purpose of the course is to provide students with clear, easy steps that demonstrate basic methods of mathematics and form a bridge between real life and the new math skills students develop.

Major Topics include:

- Fractions
- Decimals
- Percent
- Pre-Algebra
- Algebra 1
- Geometry (Middle & High School)
- Probability
- Statistics

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Quick Summary

- Complete math curriculum for Grades 4-8th
- Kids can do it on their own
- Over 2,400 math lessons and activities
- Unlimited support from real scientists
- Optional live classes and private tutoring
- Meets or exceeds Common Core standards
  100% money-back guarantee

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What are the Math Lessons like?

Our classes start off with a math concept, learning what it is and how to use it.
Then we discover how it's used in the real world by engineers, scientists and business people.

For example, we explore fundamental concepts in geometry while calculating distances to nearby stars, measuring the Earth's diameter by standing its surface, and calculating how much water is on the moon.

Students start their work in their workbooks, and once they've mastered the math skill, move right into applying it with the special activities and math labs we've prepared. Your student will learn how to use a microscopic scale, take data from an active volcano, triangulate the epicenter of earthquakes, help families get out of debt through strategic actions, track and map wildlife migration, calculate the size of a molecule by doing experiments with dish soap… and so much more!

Next Steps:

1. Go to **SuperchargedMath.com**
2. Select your Grade Level and get started today!

We always include a full 30-day 100% money-back guarantee with your enrollment.

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