Maths Spring 2 week 1: Inverse - Multiplication and Division ✕ ÷

We are starting the week by quickly recapping our multiplication and division skills, as we are going to put them to the test this week and find out about the inverse.

For each new teaching point in the weekly maths unit, we will upload an input video to watch. Due to the file size, these are located on our Year 2 channel on YouTube – you can only access the videos using the links provided.

Other links will take you clips, games and sites which will further support your learning.

Everybody should be able to complete the starter questions,
and have a go at the practise questions.

Then, when you are confident give the mastery questions a go.

Finally, for some steps, there are some challenge questions - Greater Depth questions; give these a go so you can really put your skills to the test!

If you are working at home or in school, we will all be doing the same work. Tackle a 'step' each day, and it's ok to go back and repeat things which you find challenging.

*Remember if you make an error when finding an answer, you need to go back and try again; just like we would do in school.

*Use the questions in this document to work through, but you don't need to print them out – you can view them on screen and then work on paper or in an exercise book.

*Remember, we'd love to see how you are getting on, so please send a photo of some of your work to your class email address. ☺

woodpeckers.class@glenfieldschool.co.uk

ducks.class@glenfieldschool.co.uk

owls.class@glenfieldschool.co.uk

*Please aim to send in at least one piece of work each week – you could pick the pieces you have worked hard on, and are proud of.

Step 1: Monday

*We are going to think back to before half term and simply practise solving a mix of multiplication and division questions.

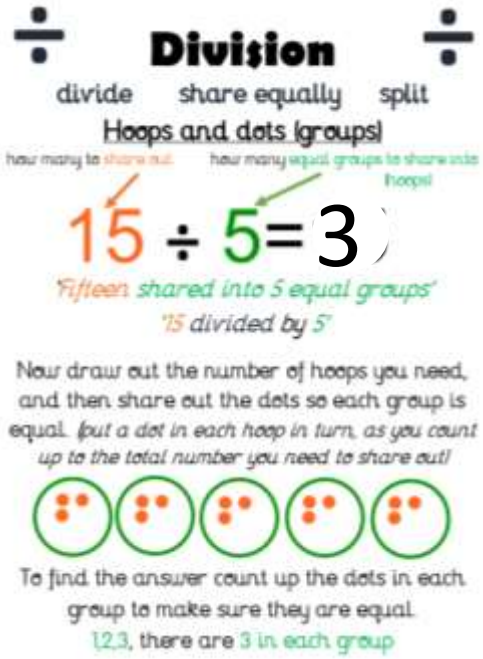
If you need to jog your memory about the methods you can use to help you solve, and check your answers to these, then use the links to the input videos from last half term, or use the memory joggers below:

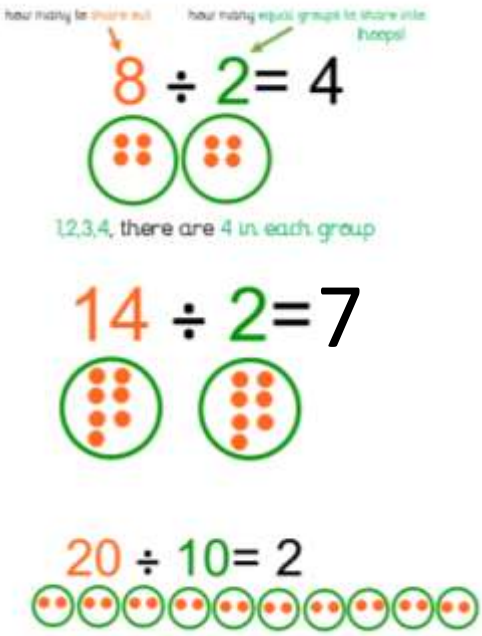
Division using hoops and dots https://youtu.be/XQdvhT_YhTA

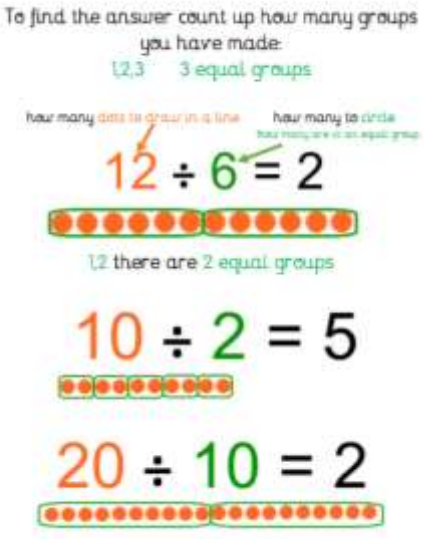
Division using linear groups https://youtu.be/6-qAR4Fs8AE

Multiplication using hoops and dots https://youtu.be/J2qKCKTWoDQ?list=PLsU-riFXqR5TR1OHc6y2nL7lQkyY2mnFg

Multiplication using arrays https://youtu.be/IP5kC_AxNNc?list=PLsU-riFXqR5TR1OHc6y2nL7lQkyY2mnFg







X Multiplication X

multiply times groups of sets of lots of
product array repeated addition

Hoops and dots (groups)

how many hoops (groups) how many are in each group

3 x 2=6

'Three groups of 2'
3 times 2

Now draw out the number of hoops you need, and then put in each hoop dots to show how many are in each group.

To find the answer count up all the dots:
1, 2, 3, 4, 5, 6

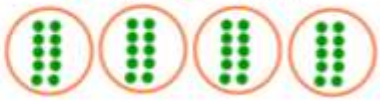
To be efficient you could count in multiples:
2, 4, 6

how many hoops (groups) how many are in each group

7 x 5=35

Seven groups of 5 7 times 5
5, 10, 15, 20, 25, 30, 35

4 x 10=40



four groups of ten 4 times 10
10, 20, 30, 40

When you multiply the answer is always larger than the number you started with!

You can multiply the numbers is any order, so 3x2 is the same as 2x3 because it is commutative.

X Multiplication X

multiply times groups of sets of lots of
product array repeated addition

Arrays

3 x 2=6

Look at the first number...this tells you how many are in each in each row. Then write out:
1 2 3

Look at the second number...that tells you how many dots to draw under each number...

1 2 3

Now count up all the dots to find the total.
1, 2, 3, 4, 5, 6

To be efficient you can count in multiples;
2, 4, 6

4 x 5=20

1 2 3 4

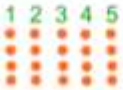
Count up all the dots to find the total.
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

To be efficient you can count in multiples;
5, 10, 15, 20

Because multiplication is commutative you could draw the arrays the other way around... the answer would still be the same, and you can create another number sentence as well!

4 x 5=20

1 2 3 4 5



5 x 4=20

Now give the tasks a go…remember to look carefully and check if the question needs you to multiply or divide.

5 x 2 =

4 x 10 =

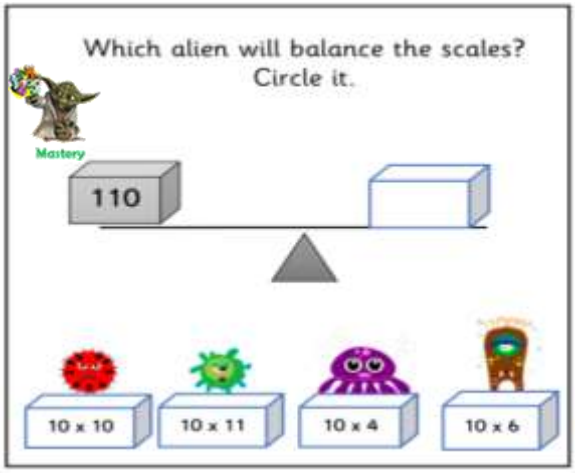
12 ÷ 2 =

15 ÷ 5 =

7 x 5 =

22 ÷ 2 =

Mrs Honan is putting plasters into the first aid box. They come in strips of 10 plasters. If she puts 6 strips into the box, how many plasters is that in total?	**Miss Roe has got 25 new packets of stickers. If she shares the packets between herself, Mr Little, Mrs Wood, Miss Douglas and Mrs Honan, how many packets of stickers will they each get?**
Hope has baked 24 cookies for Mrs Dorricott and Miss Carrie to share. How many will the each get?	**There are 5 activities to complete in Pe. There are 8 children working on each activity. How many children are in Pe altogether?**

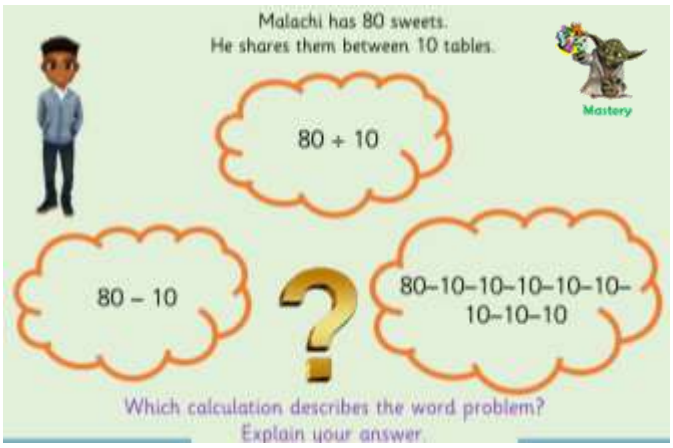


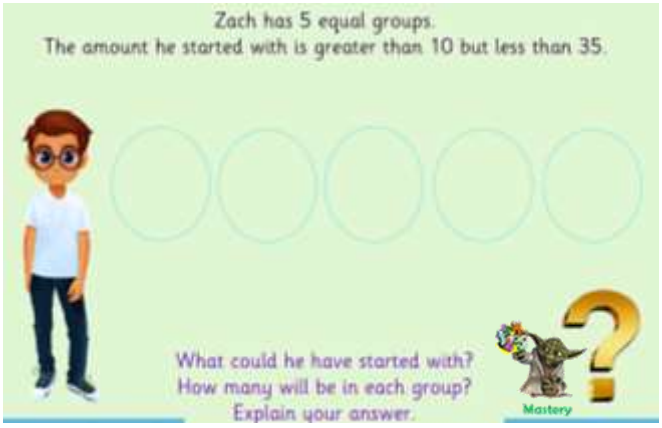
Leanna has worked out 7 x 5, even though she doesn't know her seven times tables. Explain how she has worked it out correctly.

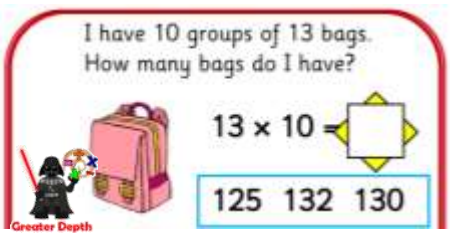
Mastery

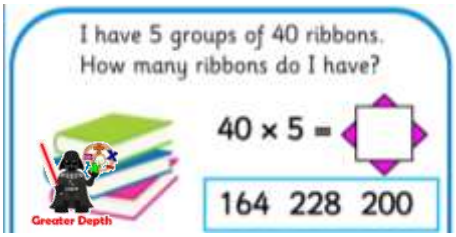
Ria has 5 boxes of 10 crayons. Jack has 10 boxes of 5 crayons. Who has more crayons? Prove it and explain your reasoning.

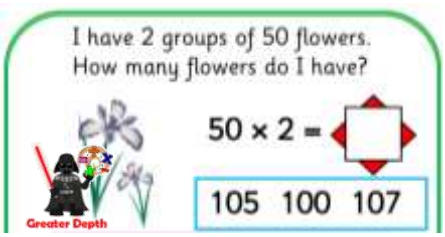
Mastery











Steps 2&3: Tuesday & Wednesday

*We are going to start linking our thinking about multiplication and division, and investigating how we can use the inverse to create fact families, check our calculations and find missing numbers.

*Take a look at the BBC class clips video, with Baz, Dave, Divider girl, Multiplication boy and a furry kitten problem. They solve their problem by using the link between multiplication and division: the inverse.

https://www.bbc.co.uk/teach/class-clips-video/maths-ks1--ks2-the-relationship-between-multiplication-and-division/zdqb47h

*Now take a look at today's **input video**:

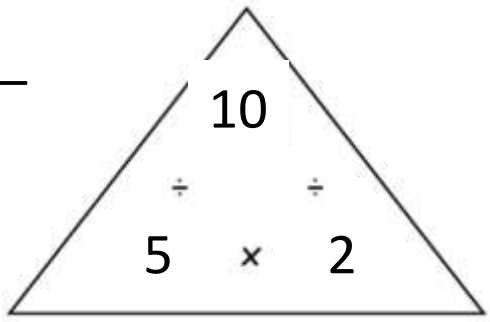
https://youtu.be/bFGaiAnNCzA

*Task time - You have 2 days to complete these questions, so take it slowly and carefully, so you really get to grips with using the invers and the fact family triangles.

Complete the first number sentence on each fact family. Then use what you have discovered to complete the fact family triangle. Finally use the fact family triangle to make 2 multiplication and 2 division number sentences.

Use the fact families to create two x and two ÷ number sentences

5 x 2 = _____

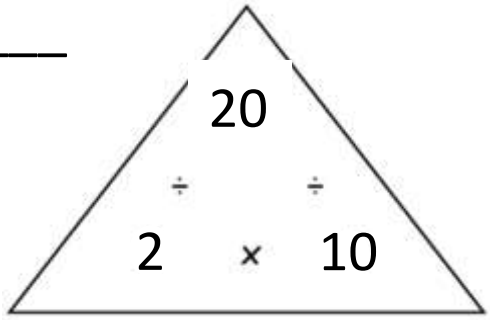


____ x ____ = _____

____ ÷ ____ = ____

____ ÷ ____ = ____

2 x 10 = _____

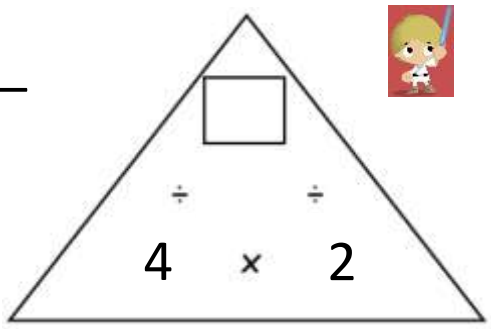


____ x ____ = _____

____ ÷ ____ = ____

____ ÷ ____ = ____

4 x 2 = _____

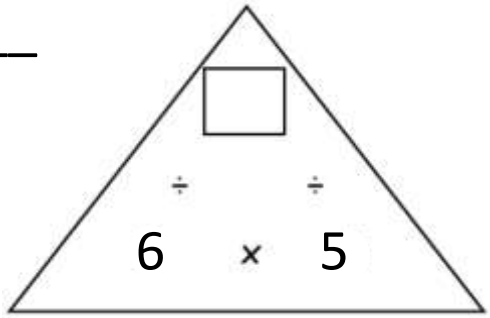


____ x ____ = _____

____ ÷ ____ = ____

____ ÷ ____ = ____

6 x 5 = _____

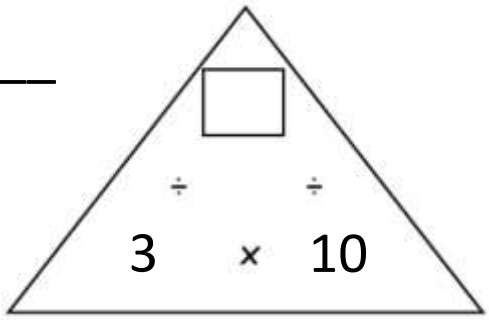


____ x ____ = _____

____ ÷ ____ = ____

____ ÷ ____ = ____

3 x 10 = _____

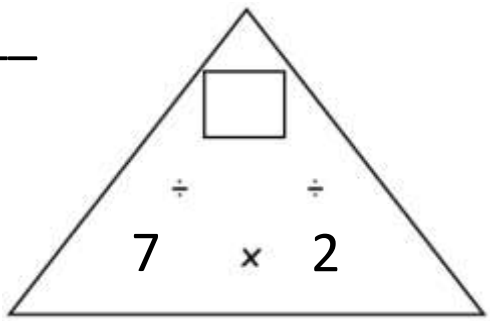


____ x ____ = _____

____ ÷ ____ = ____

____ ÷ ____ = ____

7 x 2 = _____

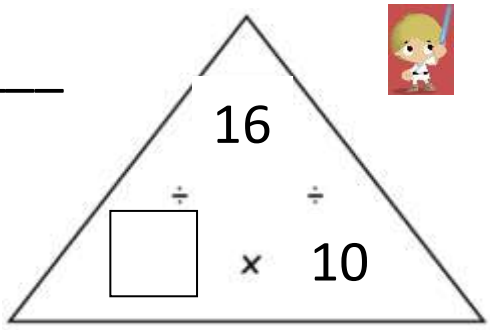


____ x ____ = _____

____ ÷ ____ = ____

____ ÷ ____ = ____

16 ÷ 2 = _____

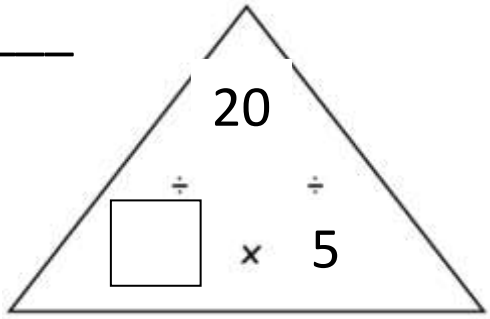


___ x ___ = _____

___ x ___ = ___

___ ÷ ___ = ___

20 ÷ 5 = _____



___ x ___ = _____

___ ÷ ___ = ___

___ ÷ ___ = ___

Use fact family triangles and your jottings, to help you match the related calculations. (blank fact family triangles are at the end of the job run)

3 x 2		25 ÷ 5
5 x 5		45 ÷ 5
5 x 10		18 ÷ 2
9 x 2		6 ÷ 2
7 x 5		50 ÷ 10

Mrs Glasspool is playing a game with Mrs Honan.

Mrs Glasspool puts her secret number into the calculator without showing Mrs Honan.

Mrs Glasspool then asks Mrs Honan,

"What do you want to multiply by?"

Mrs Honan says to Mrs Glasspool

"I want to multiply by 5."

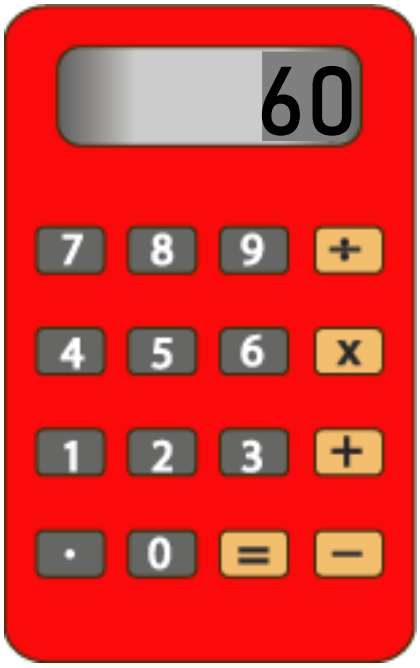
Mrs Glasspool presses the 'x' button,

then the 5 button. and finally the '=' button

and the calculator gives the answer '60'.

What was Mrs Glasspool's secret number?

How do you know?



Use the number cards to make multiplication and division sentences.

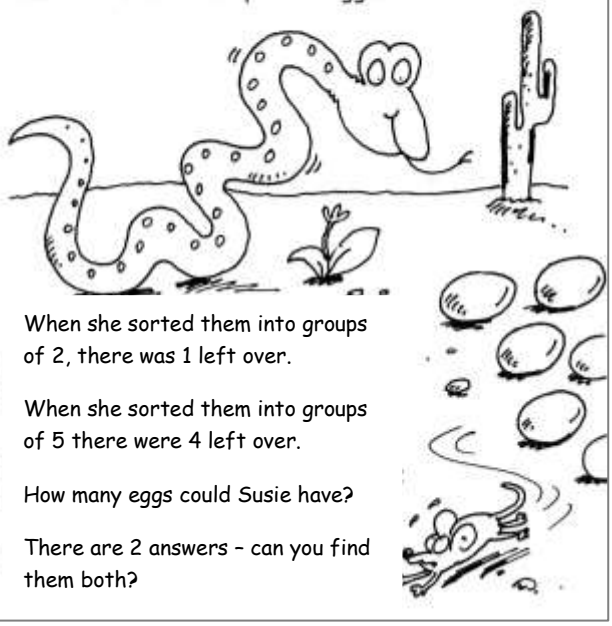
How many can you make?

2 20 5 10 4

Mastery

Susie the snake

Susie the snake has up to 20 eggs.



When she sorted them into groups of 2, there was 1 left over.

When she sorted them into groups of 5 there were 4 left over.

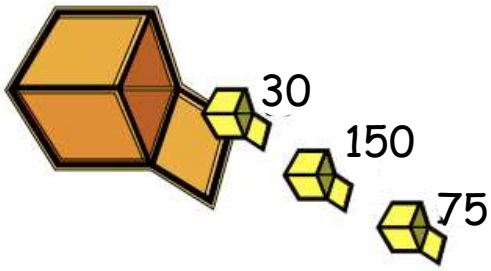
How many eggs could Susie have?

There are 2 answers – can you find them both?

Mastery

Numbers in little boxes are put into a special big box that does a multiplication, then four new numbers come out at the end:

Greater Depth



What multiplication might have gone on in the big box to get the answers in the end boxes?

Show your workings/thinking that you used to help you solve this.

Stamps

Greater Depth

Tilly's parcel cost 55p to post.

She stuck on eight stamps.
Each stamp was either 10p or 5p.

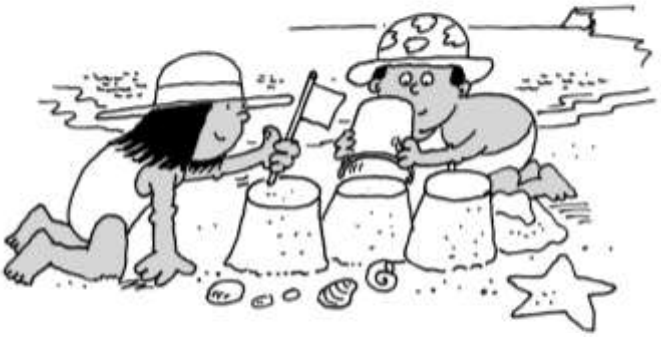
How many of each stamp did Tilly stick on her parcel?

How many different ways could Tilly have used her stamps?

Sandcastles

Greater Depth

Lisa went on holiday.



In 5 days she had built 75 sandcastles.

Each day she made 5 less sandcastles than the day before.

How many sandcastles did she build each day?

Step 4: Thursday

*We are going to apply our skills today, and use multiplication, division, the inverse and even possibly our addition and subtraction skills, to tackle three 'investigations'. These investigations will keep you thinking, and there are a number of steps that you will need to solve to get to the final answer.

You may need to use 'trial and error' to help you – give it a go, and if it doesn't get you the answer straight away then give yourself a thinking dot and try again.

Read each question carefully so you know exactly what it is asking you to do and then give it a go. These questions will also help to develop your resilience and perseverance.

Mr Little has been collecting apples. He has 12 apples. He wants to share them with his family and is going to send them in boxes.

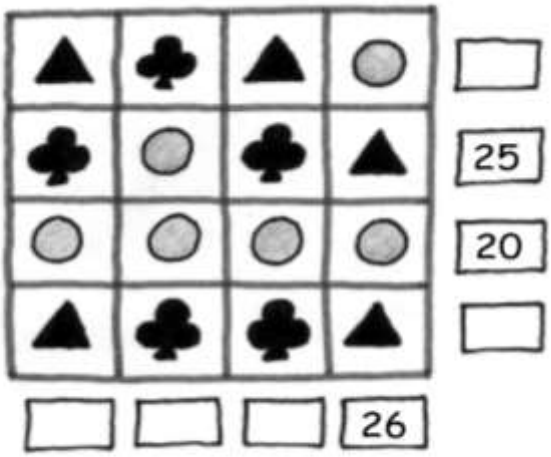
The post office has said that he has to put the same number of apples in each box and each box must contain at least 2 apples.

How many different ways could he box up the apples?

Shape puzzle

Each shape stands for a number.

The numbers shown are the totals of the line of four numbers in the row or column.



Find the remaining totals.

Solve the following problems. Remember to work systematically and show all of your workings out.

Fish cost
£6

Chips cost
£2

a. How many different combinations of fish and chips can I buy for £12?

Fish (£6)			
Chips (£2)			
Total £12	£12	£12	£12

b. How many different combinations of fish and chips can I buy for £18?

Fish (£6)				
Chips (£2)				
Total £12	£18	£18	£18	£12

c. How many different combinations of fish and chips can I buy for £24?

Fish (£6)					
Chips (£2)					
Total £12	£24	£24	£24	£24	£24

Step 5: Friday

*Use today to go back over anything you found challenging, as we are moving on from multiplication and division next week.

*Now, play these games to practise and secure you multiplication and division skills.

If you need an online dice, here you go: https://www.random.org/dice/?num=2

4 in a Row 2x Table Game

Instructions:

1. You and your partner begin with 10 counters each.
2. Take it in turns to roll two dice.
3. Add up your score and multiply it by 2. Place your counter on the answer.
4. The winner is the first player to get 4 counters in a row – horizontally, vertically or diagonally!

8	4	14	12	6	16	12
18	10	16	8	14	10	16
12	16	14	20	18	12	14
20	22	8	16	4	20	10
22	24	18	10	24	8	16
12	6	14	20	12	18	14

4 in a Row 5x Table Game

Instructions:

1. You and your partner begin with 10 counters each.
2. Take it in turns to roll two dice.
3. Add up your score and multiply it by 5. Place your counter on the answer.
4. The winner is the first player to get 4 counters in a row – horizontally, vertically or diagonally!

20	10	35	30	15	40	30
45	25	40	20	35	25	40
30	40	35	50	45	30	35
50	55	20	40	10	50	25
55	60	45	25	60	20	40
30	15	35	50	30	45	35

4 in a Row 10x Table Game

Instructions:

1. You and your partner begin with 10 counters each.
2. Take it in turns to roll two dice.
3. Add up your score and multiply it by 10. Place your counter on the answer.
4. The winner is the first player to get 4 counters in a row – horizontally, vertically or diagonally!

40	20	70	60	30	80	60
90	50	80	40	70	50	80
60	80	70	100	90	60	70
100	110	40	80	20	100	50
110	120	90	50	120	40	80
60	30	70	100	60	90	70

*Play hit the button – select from times tables or division facts

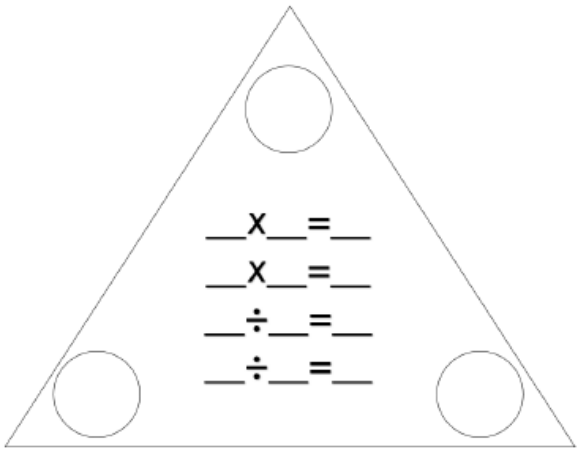
https://www.topmarks.co.uk/maths-games/hit-the-button

*Play 'Fact Families'

https://www.topmarks.co.uk/number-facts/number-fact-families

*Play Maths Train, choose from multiplication or division

https://www.topmarks.co.uk/maths-games/mental-maths-train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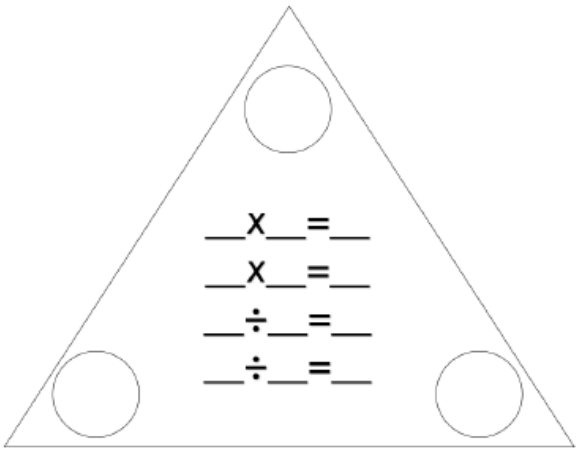
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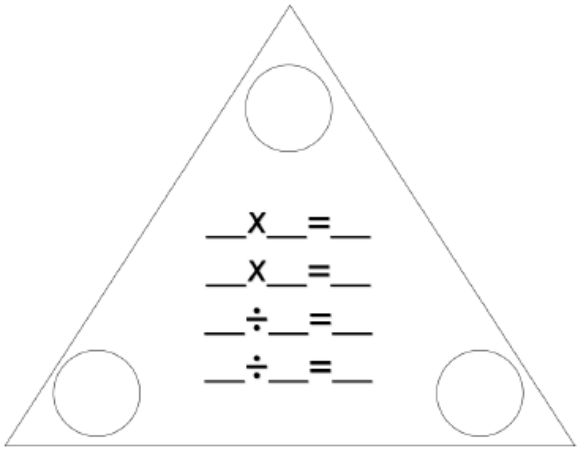
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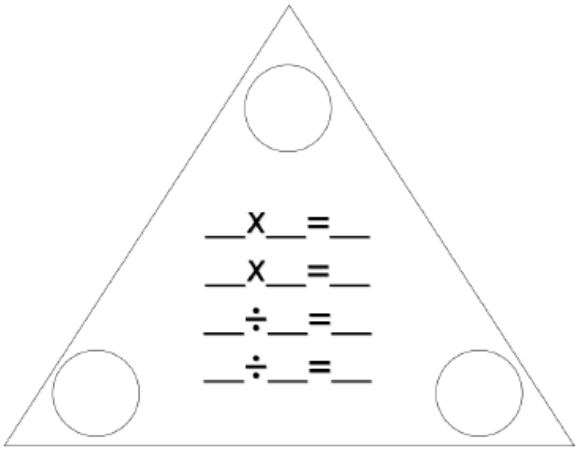
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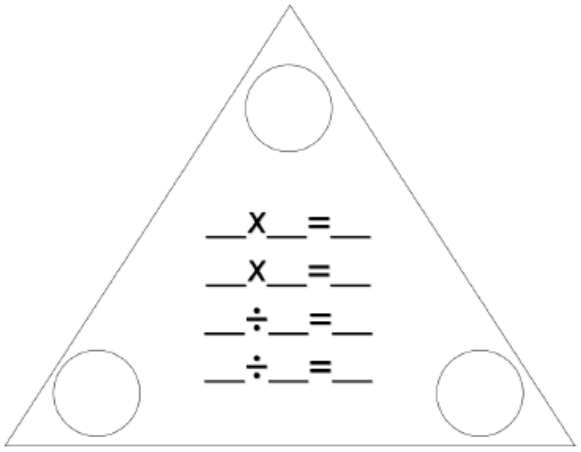
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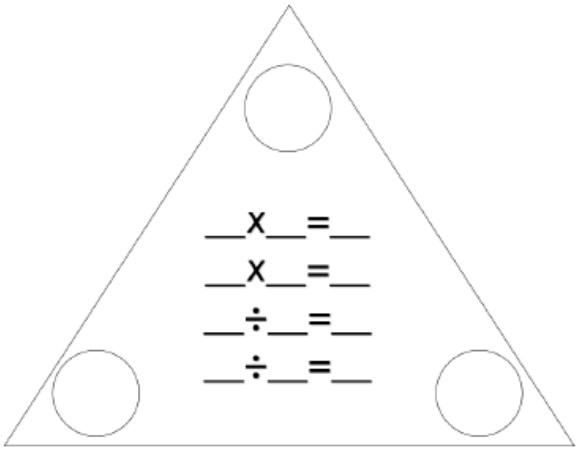
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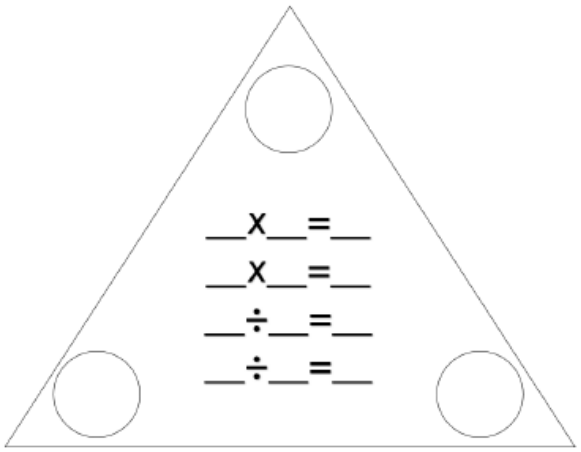
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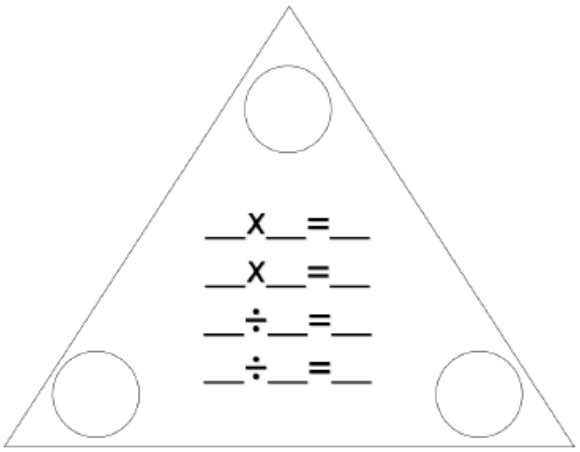
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