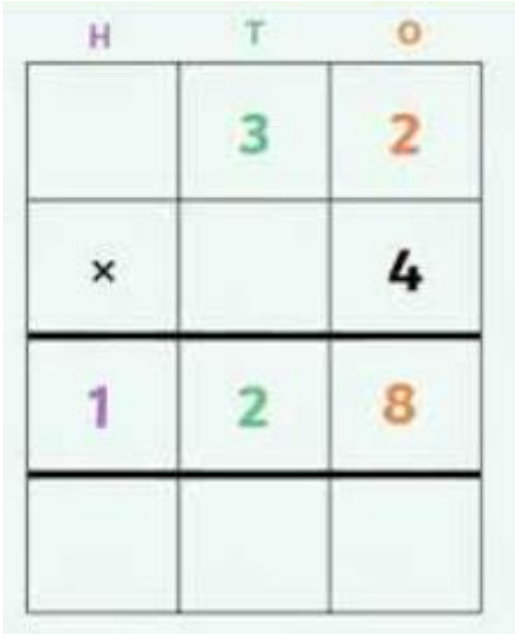
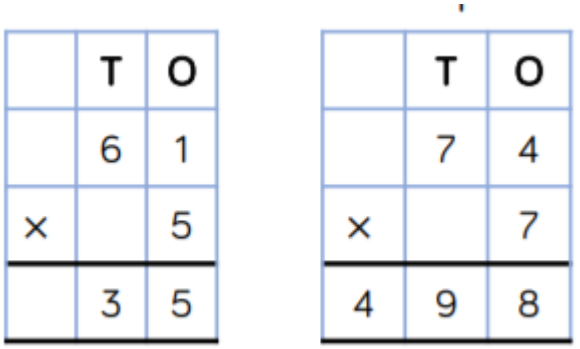
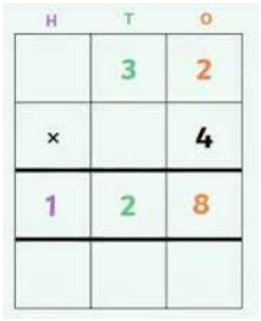
Curriculum Area: Maths	Year Group: 5	Term: Spring 1

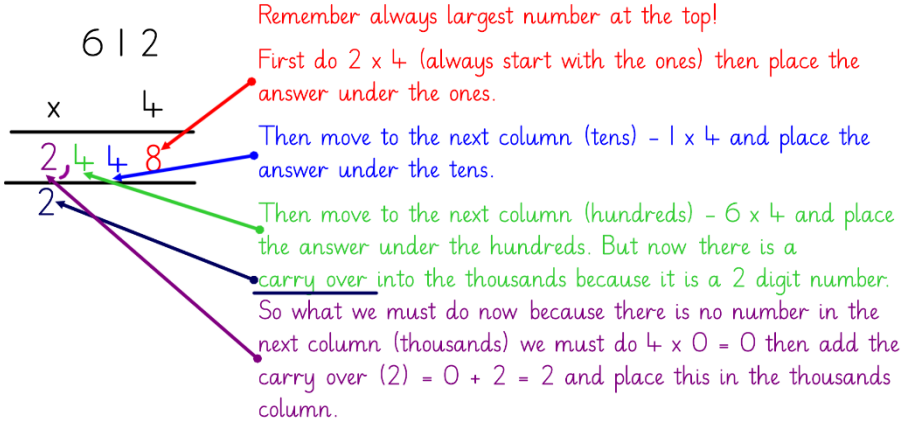
Key Areas of Learning:	Oak Academy Links	Around the home activities	Your Challenge
Multiplication **Key Questions** What is multiplication? What is short multiplication? What is long multiplication? What is short division?	https://classroom.thenational.academy/units/multiplication-and-division-70b8 https://classroom.thenational.academy/lessons/short-multiplication-c8v64c https://classroom.thenational.academy/lessons/long-multiplication-68u38t?activity=intro_quiz&step=1 https://classroom.thenational.academy/lessons/short-division-6gt64d https://classroom.thenational.academy/lessons/division-with-remainders-ccwk6r?activity=intro_quiz&step=1	- Play times table rockstars and practice all your times tables up to 12x12 - Create a short multiplication mat and explain clearly how to multiply using short multiplication – make sure it is detailed enough and give to a grown up to see if they can use it to complete one of your chosen sums. - Challenge your family members to some multiplication and division sums and you be the teacher by checking their answers using some of the written methods you have learnt.	**What is the number?** • The number has three digits. • The ones digit is 82 less than 91. • The hundreds digit is an odd number which is bigger than 1 but smaller than 4. • The tens digit is the same as 6 + 3.

Suggested Learning Activities	Resources	Desired Outcome
Each activity is based around multiplication and division and will have supporting videos to help. There will also be resources for you and games to help you to understand each concept. Each task will be followed by either a reasoning or problem-solving challenge.		
Activity 1: Recalling multiplication and division facts Begin by warming up with times table rockstars. Have 5 goes, at 1 minute, to warm your brain up and be ready for multiplication today! Even better, why not use one of the goes to challenge your teacher! Before starting today's lesson, have a go at this let's check below. Remember you know this and can do this because you have already done it in class! Hint: Factors are the numbers that are multiplied together to make this number. Let's Check! Find the factors of 24	Pen and paper	Pupils can recall multiplication facts. Pupils can recall division facts. Pupils will know what factors are. Pupils will know what cubed numbers are.

Today's lesson revolves around recalling multiplication and division facts. You are good at this and this has been shown in the classroom. We have previously looked at multiplication and division, factors, multiples and prime numbers so you are already good at this! Now off you go, complete this lesson: https://classroom.thenational.academy/units/multiplication-and-division-70b8 Finish today's lesson by completing this reasoning below. Before you do, look in the resources section to remind yourself of what reasoning means and why we do this. Remember to use on of the sentence stems to start your reasoning. Reasoning challenge: Tom says 18 is a cubed number because he knows that $3^3 = 3 \times 3 = 6 \times 3 = 18$. Do you agree? Explain your reasoning.	Remember, reasoning means being able to explain how or why you think an answer is correct or incorrect or being able to explain what you notice about something. Reasoning sentences starters which you could use are: • I have noticed that... • I already know that... so I know... • This is incorrect because... • It must be... because....	
Activity 2: Understanding short multiplication and how to use this method to multiply 2 digits by 1 digit. Start today's lesson by completing the game: https://www.topmarks.co.uk/maths-games/hit-the-button Click on Times Tables, then tables up to 12 and click mixed. Have a couple of goes to get your brain ready for today's lesson. Now that your brain is ready for today, have a go at today's let's check below. Hint: you may have just completed this when playing the game. **Let's Check!** Calculate: 6 x 6 = 4 x 7 = You are now warmed up and ready to begin so start todays lesson by watching the YouTube video in the resources section. This video clearly explains how to multiply using short multiplication. This will be needed for most of these lessons. Watch the video as many times as you need until you feel comfortable with beginning the lessons. Whilst watching the video and when you feel confident, pause the video and have a go at completing the answer, then press play and check your answer. This is to get you ready and to help you to start feeling confident with short multiplication. Remember to look in the resources section also to understand how to lay out your short multiplication, using your place value columns. Now that you have watched the video and are starting to feel more confident with short multiplication, have a go at today's lesson: https://classroom.thenational.academy/lessons/short-multiplication-c8v64c Once you have finished today's lesson and you are masters at starting to understand short multiplication, have a go at these two sums. Remember to use all the knowledge you have learnt in today's video and lesson. You may wish to create a short multiplication mat to help you.	Pen and Paper https://www.youtube.com/watch?v=eO8rJRBZzAQ  	Pupils will begin to understand short multiplication. Pupils will begin to use the short multiplication method to help them solve multiplication sums. Pupils will start to feel confident with multiplying 2 digit numbers by 1 digit numbers using short multiplication.

34 x 7 = 56 x 4 = Now that you are beginning to understand short multiplication, have a go at the problem solving below. Hint: There are mistakes in these short multiplication sums and someone might be unsure on how to carry over the numbers and add them on! Problem solving challenge From the clue above, find the mistakes and re-do the sums.  		
Activity 3: Multiplying 3 digits by 1 digit using short multiplication. To get your brain warmed up start with the game: https://mathsframe.co.uk/en/resources/resource/571/Multiplication-Miner This game involves you completing your times tables. First you need to click on the mixed tables and then it will say timed or untimed. The game is a bit tricky at first, so have a go with timed so you understand it and then have a go at timed afterwards to challenge yourself. The game will ask you a multiplication answer and you need to find what two numbers make that number and click the box where it meets in the multiplication grid. E.g 24 – I know that 6 x 4 = 24 so I find these two numbers and click the box in the middle where it meets. Have fun! Now that your brain is warmed up from the game, using the skills and knowledge you learnt yesterday, complete the let's check below. Remember to align your columns up correctly in your short multiplication grid just like the picture in the resources. Also remember to carry over any numbers that need to be carried over and don't forget to add them on! If you need a re-cap listen to the video again, that is in the resources section. Let's Check! Calculate: 46 x 8 =	Pen and paper https://www.youtube.com/watch?v=eO8rJRBZzAQ  	Pupils will feel more confident with the short multiplication method. Pupils will begin to understand multiplying 3 digits by 1 digit. Pupils will be able to multiply 3 digit by 1 digit using short multiplication.

Before you being today's activity, you can watch the video again from the resources section to help you understand short multiplication. Today we are going to do this again, however you are going to multiply 3 digits numbers by 1 digit so your columns will be 1 greater than yesterday. All you need to remember is to line up your place value columns correctly for example the doodle pad picture in the resources section. Each digit is lined correctly within the place value columns. For this calculation no numbers needed carrying over. However, some sums you may need to and you need to remember to add them on to the previous answer just like you would in column addition and as explained in the video. Also take a look at my example explanation of how to do this:

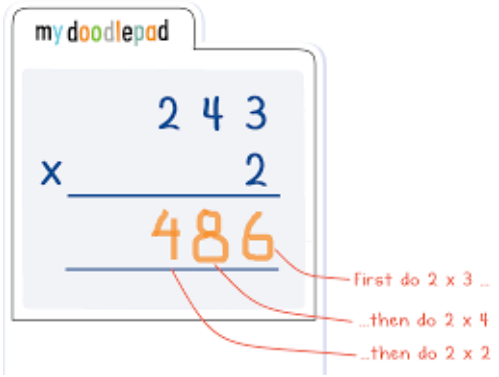


Now that you are aware of how to do this and have my example above, can you have a go at these questions below. Remember, when you complete them on your paper, to carefully write the numbers in the correct place value columns and draw the short multiplication method a little like a column addition. Remember to put your carry over number (re-grouping) underneath to add on to the next column as you would in a column addition.

182	418	247	702
x 5	x 4	x 6	x 7

Brilliant, well done! Now you've been fantastic and completed them, have a go at the reasoning below. Remember reasoning means you need to explain exactly and clearly how you got the answer. Also, don't forget to use a sentence stem from the resources section to help you start your answer.

Reasoning challenge:

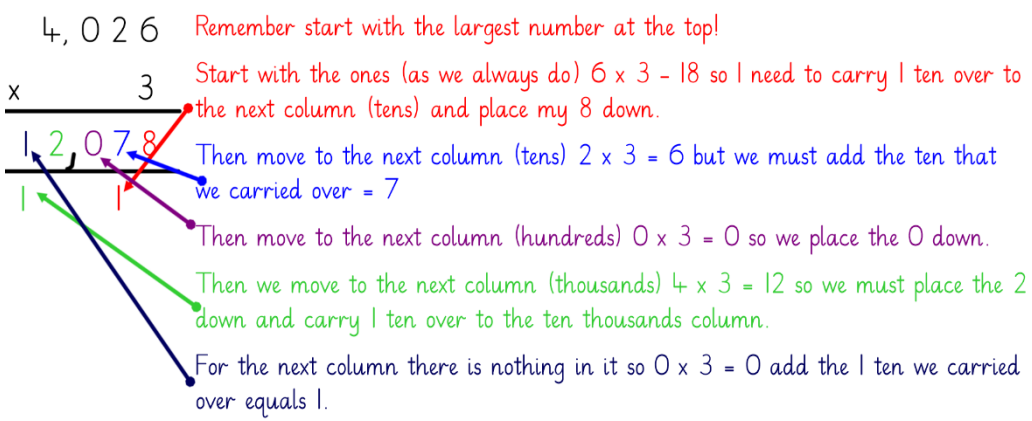


Reasoning sentences starters which you could use are:

- I know that...
- I already know that... so I know...
- ... is incorrect because...
- ... is correct because...
- I have noticed that...

Alex and Dexter have both completed the same multiplication.  Alex H T O 2 3 4 × 6 1 2 0 4 2 2  Dexter H T O 2 3 4 × 6 1 4 0 4 2 2	Who is correct? How do you know? Explain your reasoning.	
Activity 4: Multiplying 4 digits by 1 digit using short multiplication Start with the game below to get your brain warmed up and ready for today's lesson. https://www.splashlearn.com/math-skills/fourth-grade/multiplication/4-digit-x-1-digit-numbers-up-to-4-000 You have 4 digits multiplied by 1 digit and there is a digit missing. The missing digit is in a set of numbers for you to choose from after multiplying the numbers. This is just a practice ready for today's lesson so just have a go and give it your best shot! Remember all we can ask for is that you try your best! Now that your brain is warmed up from today's game, have a go at the let's check below. This let's check is to see what you have remembered from yesterday. Remember when regrouping (carrying over) you need to add it to the correct column after you have multiplied just like you would have to do with column addition. Use my example from yesterday to help you if you need to. Let's Check! Calculate: 206 x 8 =	Pen and paper	Pupils will be confident with using the short multiplication method. Pupils will be able to begin to multiply 4 digit by 1 digit using short multiplication.

For today's lesson, we are going to be multiplying 4-digit numbers by 1 digit. This is exactly the same as yesterday, which you were good at! All that is different is that the top number (the largest number) has 1 greater digit. We now have the thousands column included. I know you can do this and to help you look at my example below.

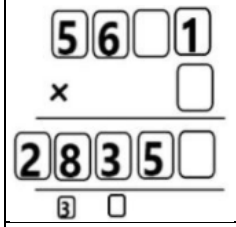


Now that you are aware of how to do this and have my example above, can you have a go at these questions below. Remember, when you complete them on your paper, to carefully write the numbers in the correct place value columns and draw the short multiplication method a little like a column addition. Remember to put your carry over number (re-grouping) underneath to add on to the next column as you would in a column addition.

7046	5648	1021	6745
x 5	x 3	x 8	x 4

Problem solving challenge:

Using the knowledge and skills you have learnt today, have a go at the problem-solving challenge below. You need to find the missing digits by multiplying the 4 digit number by 1 the 1 digit number.



Activity 5: Introduction to long multiplication and how to use this method to multiply 2 digits by 2 digits Start today's lesson by playing the game: https://mathsframe.co.uk/en/resources/resource/572/Multiplication-Tile-Crash For this game, you have a multiplication answer and you have to find the multiplication sum that equals that answer by hovering over the whole sum that are next to each other.	Pen and Paper	Pupils will begin to understand long multiplication. Pupils will be able to start using the written long multiplication method to complete multiplication sums. Pupils will be able to multiply 2 digits by 2 digits.

Now that you are warmed up with the multiplication sum game. Have a go at this let's check to see what you have remembered from yesterday. Remember my example is above if you need any help with it. Also remember to put the digits in the correct place value columns and remember to re-group if necessary.

Let's Check!

Calculate:
3,243 x 4 =

Now that you are warmed up and have remembered how to do short multiplication, well done you! You are now going to learn how to multiply using long multiplication. For today's lesson you will be multiplying 2 digits by 2 digits and learning how to do this. In order to do this, there is a video in the resources section for you to watch. Although the video shows how to multiply 3 digits by 2 digits, it is still the same for 2 digits multiplied by 2 digits. This video clearly explains how to do this and gives you a chance to have a go at yourself. If you need longer, pause the video and play when you are ready. Play the video a few times to help you understand the method clearly.

Once you are feeling confident after a few watches of the video and having a go yourself, have a go at today's lesson:
https://classroom.thenational.academy/lessons/long-multiplication-68u38t?activity=intro_quiz&step=1

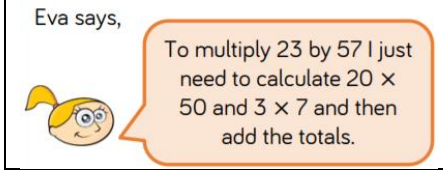
Once you have finished this lesson, use the skills and knowledge you have learnt from today to have a go at these questions below:

56 x 22 = 42 x 27 =

Remember on your second line, you need to start one place to the left because you are doing that column as the video says, you can also put the 0 in that place to remind you. Watch the video again if you need before completing the sums.

Now that you have had a go at the lesson and a couple of sums, use the skills and knowledge you have learnt today to answer the reasoning challenge below. Remember when answering reasoning questions, you need to clearly identify and explain how you got the answer. Also remember to use one of the sentence stems from the resources section to start your answer.

Reasoning challenge:



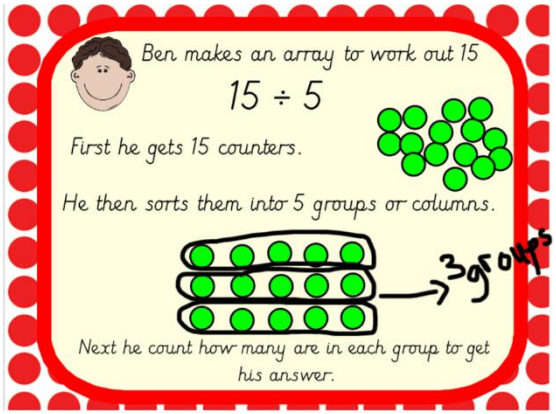
Do you agree?
Explain your reasoning.

https://www.youtube.com/watch?v=GldXklSQPAI

Reasoning sentences starters which you could use are:

- I know that. . .
- I already know that. . . so I know. . .
- This is incorrect because. . .
- This can't be true because. . .
- This is correct because. . .

Activity 6: Multiply 3 digits by 2 digits using long multiplication For today's starter to get your brain ready, teach an adult in your house how to do long multiplication or video call (if you can) one of your friends that will also be completing this. The aim of the game is noughts and crosses but you need to complete the answers to be able to get that square. Remember no cheating, one at a time and take turns! The noughts and crosses grid is in the resources section or you could create your own. Now that you are warmed up and ready to begin have a go at today's lets check below. Hint, you have already done this lesson in school and know what prime numbers are so let's see if you can remember! **Let's Check!** Write 5 prime numbers and explain why they are prime numbers. For today's lesson, you already had a little input yesterday. You will be multiplying 3 digit numbers by 2 digit numbers. This is explained in the YouTube video you watched yesterday. To refresh your memory, watch the video again as many times as you need to. You will find the video in the resources section. Once you are feeling confident and remember you know how to do this as you did it yesterday, have a go at the sums below. You can do this by just giving it your best shot and don't give up. Remember to use the video to help you if you need it! Also remember when multiplying the second line, as the video explains you need to move the digits one place to the left as you are on that column and remember to add a 0 in the place. In the resources section you will also see an example of this. 869 × 11 822 × 34 821 × 31 336 × 50 Now that you have completed today's lesson, well done! Have a go at this problem-solving challenge below. Remember to use the knowledge and skills you have learnt from today's lesson – the long multiplication method. Problem solving: Pencils come in boxes of 64 A school bought 270 boxes. Rulers come in packs of 46 A school bought 720 packs. How many more rulers were ordered than pencils?	Pen and paper 13 × 12 50 × 31 79 × 21 60 × 42 32 × 14 81 × 9 56 × 4 24 × 21 66 × 13 89 × 41 74 × 27 48 × 13 45 × 25 97 × 43 23 × 80 43 × 12 324 × 35 172 × 46 545 × 15 211 × 84 https://www.youtube.com/watch?v=GldXklSQPAI 124 × 26 becomes 1 2 1 2 4 × 2 6 7 4 4 2 4 8 0 3 2 2 4 1 1 Answer: 3224	Pupils will start to feel confident with the long multiplication method. Pupils will be able to calculate 3 digits x 2 digits by using the long multiplication method.
Activity 7: Introduction to short division and how to use this method to divide 2 digits by 1 digit	Pen and paper.	Pupils will begin to understand how to use the short division method.

Start today's lesson with the game below. You have played this game before but for multiplication, this time you need to select the division facts button. You then need to select mixed tables. It is up to you whether you would like to find the answer or the question. https://www.topmarks.co.uk/maths-games/hit-the-button Now that your brain is warmed up from today's game. Have a go at this let's check below. Hint: You should know these sums mentally because you are good at your times table facts! Remember division is the inverse of multiplication so you need to look at it the other way round! **Let's Check!** Calculate: 35 ÷ 5 = 21 ÷ 7 = Well done for completing both starters. Today you are going to have a go at short division. You will remember this from Year 4 as the bus stop method. I know a few of you have said how good you are at this! However, to get you refreshed, please watch the YouTube video (in the resources section), which explains how to do this method as today you will be looking at using short division to divide 2 digit numbers by 1 digit numbers. Remember to watch the video as many times as you need to help you feel confident for today's lesson. Now that you have watched the video and are feeling confident, have a go at today's lesson below: Lesson https://classroom.thenational.academy/lessons/short-division-6gt04d You are now feeling confident after completing today's lesson and starters, I can tell so why not have a go at these sums below. Remember from the video, the largest number goes inside the bus stop. Also remember to use arrays to help you if you need. See the resource section on how to draw arrays. 32 ÷ 8 = 63 ÷ 3 = Using the skills and knowledge you have learnt today, have a go at today's reasoning challenge below. Remember for reasoning, you need to consider exactly how you got the answer and explain this clearly. Don't forget to use a sentence stem to start your answer, from the list in the resources. Reasoning challenge: Dora is calculating 46 ÷ 2. She says there will be a remainder (some left over). Do you agree? Explain your reasoning.	https://www.youtube.com/watch?v=trjepeOy2rc  Reasoning sentences starters which you could use are: • I know that.... • I noticed that... • I already know that... so I know... • This is incorrect because... • This can't be true because... • This is true because...	Pupils will start to use the short division method to divide 2 digit numbers by 1 digit.
Activity 8: Using short division divide 3 digits by 1 digit To get warmed up today, have a go at this game below. This game involves playing who wants to be a millionaire and you have to answer the division questions correctly. See if you can get all 10 correct, that's your challenge! Remember division is the inverse to multiplication.	Pen and Paper	Pupils will start feeling confident with the short division method. Pupils will be able to use the short division method to divide 3 digit numbers by 1 digit numbers.

http://www.math-play.com/Division-Millionaire/division-millionaire-game_html5.html

Now that you are warmed up, have a go at today's let's check. The let's check involves you having a go at short division (bus stop method). This is what you learnt yesterday so remember to use your knowledge and skills to help you solve the question.

Let's check

$3\overline{)39}$

For today's lesson, you will need to use the knowledge and skills learnt yesterday to help you solve division sums for 3 digits by 1 digits. You will need to solve these divisions by using the short division method that you learnt yesterday. To refresh your memory, you can watch the video from yesterday as many times as you need to. You will find this in the resources section. You can also use arrays to help you if you need. An example is in the resources section.

Now that you are ready and understand how to use the short division method to solve division problems, have a go at these sums below. Remember to try your best and use the resources available if you need to. Don't forget the left over of the number will need to go in front of the next number, just like the example in the resources. There is also an example of when a group cannot be made e.g. 6 cannot go into 1 so 6 now needs to go into 18.

$7\overline{)816}$ $6\overline{)318}$ $4\overline{)532}$ $5\overline{)135}$

Well done for completing today's activities. Now that you are understanding how to use short division to work out division sums, complete the problem-solving challenge below. Remember the numbers left over are the extra numbers e.g the example in the resources section 3 goes into 7 – 2 remainder 1.

Problem solving challenge:

Whitney is thinking of a 2-digit number that is less than 50

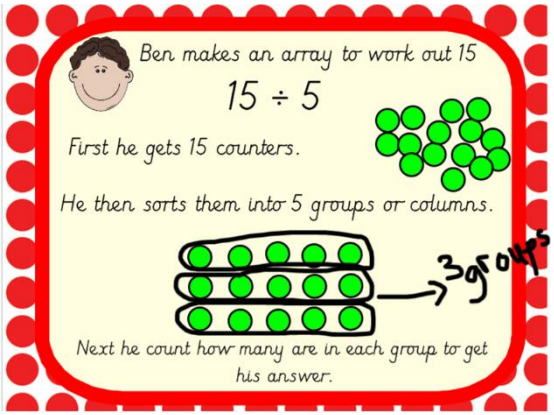
When it is divided by 2, there is no remainder.

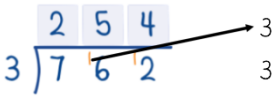
When it is divided by 3, there is a remainder of 1

When it is divided by 5, there is a remainder of 3

What number is Whitney thinking of?

https://www.youtube.com/watch?v=trjepeOy2rc

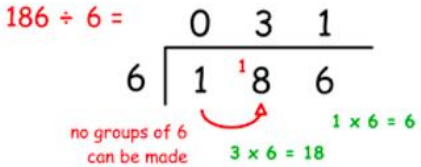




3 goes into 7 two times =

3 x 2 = 6

so 1 left over and this now goes in front of the 6 making 16.



Activity 9: Using short division divide 4 digits by 1 digit

Begin by playing the division game below. You need to use your division knowledge to shoot at the correct division sum.
https://www.arcademics.com/games/demolition

Now that you have played the division game and are feeling warmed up. Have a go at this let's check to see what you can remember about yesterday. Remember the skills and knowledge you learnt to help you complete the short division sum.

Let's check

$3\overline{)324}$

For today's lesson, you will need to use the knowledge and skills learnt yesterday to help you solve division sums for 4 digits by 1 digits. You will need to solve these divisions by using the short division method that you learnt yesterday. To refresh your memory, you can watch the video that explains how to divide using the short division as many times as you need to. However, I think you'll be great at this now! You will find this in the resources section. You can also use arrays to help you if you need. An example is in the resources section.

Now that you are ready and understand how to use the short division method to solve division problems, have a go at these sums below. Remember to try your best and use the resources available if you need to. Don't forget the left-over of the number will need to go in front of the next number, just like the example in the resources.

$6\overline{)1,128}$ $4\overline{)4,616}$ $7\overline{)2,562}$ $7\overline{)7,483}$

Well done for completing today's lessons. Now have a go at using the skills you've learnt to complete the reasoning challenge below. Remember for reasoning you need to answer clearly how you got the answer. You must also use a sentence stem starter from the list in the resources to help you explain.

Reasoning challenge:

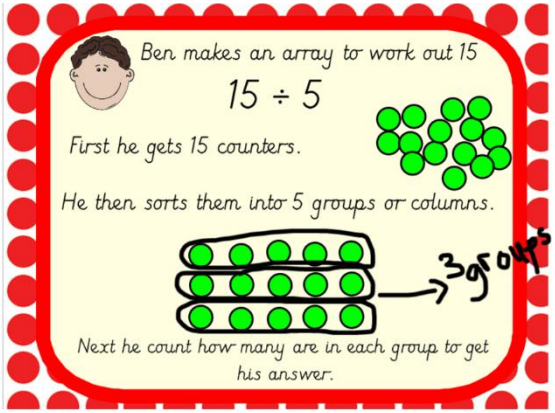
Jack is calculating 2,240 ÷ 7

He says you can't do it because 7 is larger than all of the digits in the number.

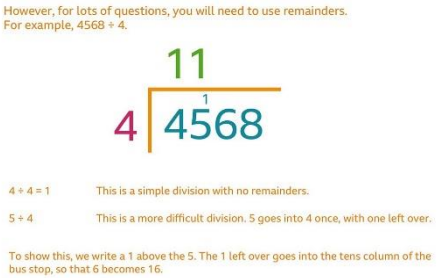
Do you agree with Jack?
Explain your answer.

Pen and paper

https://www.youtube.com/watch?v=trjepeOy2rc



Remember, reasoning means being able to explain how or why

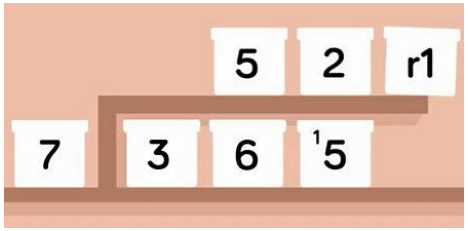


you think an answer is correct or incorrect or being able to explain what you notice about something.

Reasoning sentences starters which you could use are:

- I know that...
- This can't be true here because...
- This is incorrect because...
- It must be... because...

Pupils will confidently use the short division method for working out division sums.
Pupils will be able to use the short division method to divide 3 digit numbers by 1 digit numbers.

Activity 10: Introduction to dividing with remainders Start today's lesson with the division game below. Now have a go at today's lets check. This let's check is to see what you have remembered from yesterday. Remember when there may be some numbers carried over that have to go with the other number as you can see in the resources section. Let's check 2 ⟌ 4,322 Although you'll have already touched on some knowledge for this lesson (dividing with remainders) there is more to it than what you have already learned. To help you watch the YouTube video in the resources section. This video explains clearly how to divide with remainders and what they are. Remainders are the numbers that are carried over from the other number. Watch the video a few times to make sure you understand how to divide with remainders and what they are. Now that you are ready to divide with remainders and already have a lot of knowledge on this, this week. Have a go at today's lesson below. https://classroom.thenational.academy/lessons/division-with-remainders-ccwk6r?activity=intro_quiz&step=1 You've done really well these tasks, to prove it and put your knowledge and skills to the test, have a go at these sums below. Remember to put the sums into the short division method (bus stop). Before you begin, if you need any extra help there is a picture in the resources from BBC bitesize and the video to watch. 75 ÷ 8 = 553 ÷ 7 = 273 ÷ 5 = 456 ÷ 6 = Now that you know how to divide with remainders from this week's knowledge and skills you have gained, have a go at today's problem-solving challenge below. Hint: there may be more than one answer. Problem solving challenge:	Pen and Paper https://www.youtube.com/watch?v=FApcjdAhnrY However, for lots of questions, you will need to use remainders. For example, 4568 ÷ 4. 11 4 ⟌ 1 4568 4 ÷ 4 = 1 This is a simple division with no remainders. 5 ÷ 4 This is a more difficult division. 5 goes into 4 once, with one left over. To show this, we write a 1 above the 5. The 1 left over goes into the tens column of the bus stop, so that 6 becomes 16. https://www.bbc.co.uk/bitesize/topics/z36tyrd/articles/zgxdfcw  	Pupils will begin to understand how to divide with remainders. Pupils will start to divide with remainders.

I am thinking of a 3-digit number.

When it is divided by 9, the remainder is 3

When it is divided by 2, the remainder is 1

When it is divided by 5, the remainder is 4

What is my number?