Key Instant Recall Facts

KIRFs

To develop your child's fluency and mental maths skills, we are introducing KIRFs throughout school. **KIRFS are a way of helping your child to learn by heart, key facts and information which they need to have instant recall of.**

KIRFs are designed to support the development of mental maths skills that underpin much of the maths work in our school. They are particularly useful when calculating, adding, subtracting, multiplying or dividing. They contain number facts such as number bonds and times tables that need constant practise and rehearsal, so children can recall them quickly and accurately.

Instant recall of facts helps enormously with mental agility in maths lessons. When children move onto written calculations, knowing these key facts is very beneficial and if these facts can be recalled mentally, it frees up the working memory for them to unpick and solve more complex reasoning and problem solving questions. For your child to become more efficient in recalling facts easily, they need to be practised frequently and for short periods of time.

Each half term, children will focus on 1 or 2 Key Instant Recall Facts (KIRFs) to practise and learn at home for the half term. They will also be available on our school website under the maths section and will be sent to parents and carers alongside the curriculum newsletter each term. The KIRFs include links to online games, videos and resources that you may find useful when practising these KIRFs with your child at home. They are not designed to be a time-consuming task and can be practised anywhere – in the car, walking to school, etc. Regular practice - little and often – helps children to retain these facts and keep their skills sharp.

Throughout the half term, the KIRFs will also be practised in school and your child's teacher will assess whether they have been retained.

Maths is a journey not a destination

Know number bonds (complements) of 100.

By the end of this half term, children should be able to use a variety of mental strategies to calculate number bonds to 100.

E.g. 27 + 73 = 100   41 + 59 = 100   76 + 24 = 100   32 + 68 = 100

Method - Children should use the knowledge of number bonds to add onto the next multiple of 10 first. Then add on the remaining tens to total 100.

E.g 42 + _____ = 100

Step 1 ~ 42 + 8 = 50   50 = 50 = 100 so 42 + 58 = 100.

Misconception

Many children wrongly use bonds to 10 and then bonds to 100 using multiples of 10. For example thinking that 42 + 68 = 100 because they know that 40 + 60 = 100

Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You do not need to practise them all at once; perhaps you could have a fact of the day. Play 'ping pong'. You say a number, your child says the number back to you that is needed to add to 100.

Online games

- [Hit the Button - Quick fire maths practise for 6-11 year olds (topmarks.co.uk)](#) (number bonds)

- [Number Bonds to 100 - Whack-a-mole (wordwall.net)](#)

- [Bonds to 100 - any number - Quiz (wordwall.net)](#)

White Rose Maths—One Minute Maths App
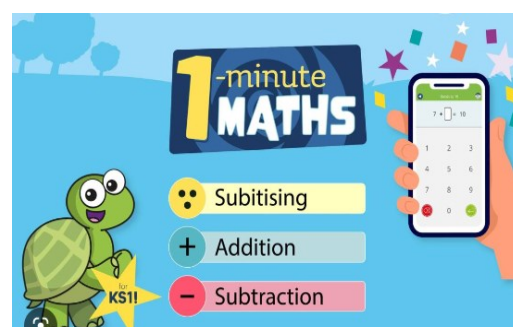
Mentally calculate near doubles.

By the end of this half term, children should be able to use their knowledge of doubles to mentally calculate near doubles.

E.g. if we know that double 9 is 18 then 9 + 8 = 17 as that is one less than the double.

Method - Children should use the knowledge of doubles and recognise that if adding a number that is only 1 or 2 away from the double then they can double the number and then subtract the 1 or 2. e.g. 8+6 is only 2 away from double 8 so the answer is 14 which is 2 less than the double.

Practical resources

Where possible use real life objects. Count out money, food items etc and ask near double questions. If I added 7 more to your 8 coins, how many coins?

Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You do not need to practise them all at once; perhaps you could have a fact of the day. Practise near double questions sporadically throughout the day.

Online games

- [Doubles and Near Doubles - Group sort (wordwall.net)](#)
- [doubles and near doubles - Matching pairs (wordwall.net)](#)
- [Near Doubles - Quiz (wordwall.net)](#)
- [Dinosaur Dentist - near doubles (ictgames.com)](#)

White Rose Maths—One Minute Maths App
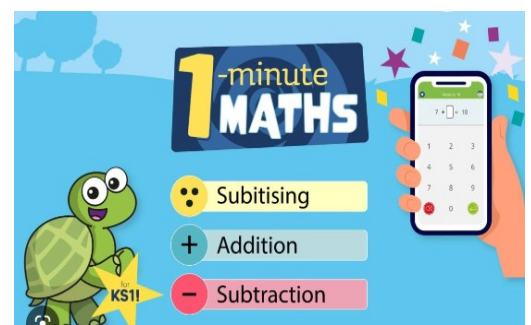
Know multiplication and division facts for the 7 x table

Know multiplication and division facts for the 12 x table

By the end of this half term, children should be able to use a variety of mental methods and strategies in order to mentally recall 7 times table and 12 x table facts up to 12 x 7 and 12 x 12 and use this knowledge to work out related division facts.

They should be able to answer these questions in any order, including missing number questions e.g. 7 x ___ = 56   or ___ ÷ 12 = 3

Possible Methods. - Songs and chants, there are many times table songs online. Such as
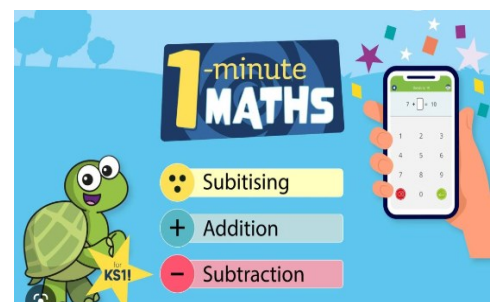
Times tables collection - BBC Teach

Children often find the 7 times table a tricky one to remember. If children find it difficult, encourage them to x by 5 then add a double on. OR start from 5 x the number then continue counting up in 7s rather than also having to revert back to 1 x 7 and counting up in order. Remember, by this point the children already know lots of times table facts so should u the table they know where possible. E.g. for 3 x 7, 4 x 7, 5 x 7 etc they should use their knowledge of 3, 4 and 5 times table rather than the 7 times table.

For the 12 x table encourage children to x by 10 and then add a double on.

Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You do not need to practise them all at once; perhaps you could have a fact of the day. Play 'ping pong'. You say a number, your child multiplies or divides it by 7 or 12 then says the answer back to you at speed.

- *Online games*

- *TT Rockstars—children have individual log ins.*

- Coconut Multiples - Reinforce Times Tables (topmarks.co.uk)

- Hit the Button - Quick fire maths practise for 6-11 year olds (topmarks.co.uk) KS1 Maths - England - BBC Bitesize

White Rose Maths—One Minute Maths App

Count in multiples of 1000 and 25.

By the end of this half term, children should be able to count in multiples of 1000 and 25. They should be able start at any multiple and continue the sequence e.g. 125, 150, 175 …...

Possible Methods. - Chants, put actions to the chant to help with memory.

Spot patterns – Look at the pattern with the numbers, with 25s once children have learnt the pattern of 25, 50, 75, 100 this never changes throughout every multiple of 100.

Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You do not need to practise them all at once; perhaps you could have a fact of the day. Play 'ping pong'. You say a multiple of 25 or 1000, your child says back to you the next multiple of 25 or 1000, then repeat, taking it turns to complete the sequence.

Use practical resources

- Count in multiples of 25 and 1000 when measuring for cooking, baking etc.

Key Instant Recall Facts

Year 4 Spring B

Mentally add and subtract 19, 29, 39 etc through adjusting.

Mentally add and subtract 11, 21, 31 etc through adjusting.

By the end of this half term, children should be able to use the mental strategy of adjusting to add and subtract 19, 29, 39, 49, 59, 69, 79, 89, and 99. They use the same method to mentally add and subtract 11, 21, 31, 41, 51, 61, 71, 81, and 91.

Method - When adding/subtracting a 2 digit number that has 9 ones. Add/subtract the next multiple of 10 then add or subtract one.

E.g 45 + 29 becomes 45 + 30 then subtract 1 to get answer of 74.

73—19 becomes 73— 20 then add 1 to get answer of 54.

When adding/subtracting a 2 digit number that is one more than a multiple of ten e.g. 11, 21, 31, 41 etc. Add/subtract the tens then add or subtract the one.

E.g 45 + 21 becomes 45 + 20 then add 1 to get answer of 66.

73—41 becomes 73— 40 then subtract 1 to get answer of 32.

This method of adjusting can be explained on these two websites

Subtraction Adjust One Number - YouTube

How can compensating make adding and subtracting easier? - BBC Bitesize

Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You do not need to practise them all at once; perhaps you could have a fact of the day. Play 'ping pong'. You say a number, your child says the number back to you that is needed to add/subtract 19, 29, 39 etc.

- *Online games useful for general addition and subtraction can be found on website below*

- Addition and Subtraction Games for Children (topmarks.co.uk)

Multiply and divide a single digit by 10 and 100 .

By the end of this half term, children should be able to mentally use their place value knowledge to multiply and divide a single digit by 10 and 100. e.g. 2 X 10 = 20, 2 X 100 = 200. 2 ÷ 10 = 0.2, 2 ÷ 100 = 0.02.

Method - Children should recognise that when multiplying by 10 the number gets 10 times bigger, thus moving one place up the place value chart. When dividing by 10 the number gets 10 times smaller, thus moving one place down the place value chart into the decimals. When multiplying by 100 the number gets 100 times bigger thus moving 2 places along the place value chart. When dividing by 100, the number gets 100 times smaller, thus moving 2 places down the place value chart. Encourage children to look at how many zeros in the number to know how many places to move up or down the place value chart. Click these links to view demonstrations of the method. How to Multiply and Divide by 10, 100 and 1000 - YouTube and Dividing by 10 and 100 - YouTube

Draw place value charts to help

At school, children will use place value charts to move digits when multiplying and dividing by 10 and 100. These can quickly be drawn out on paper when first learning the rule. Your child will soon not need this chart and be able to answer such questions mentally.

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths

Thousands	Hundreds	Tens	Ones

## Know the number of days in each month.

By the end of this half term, children should know the number of days in each month of the year.

January = 31   February = 28 (29 on a leap year)   March = 31   April = 30

May = 31   June = 30   July = 31   August = 31   September = 30

October = 31   November = 30   December = 31

Possible Methods. - There are a variety of tips and tricks that can be used to remember the number of days in each month. There is the well known song/rhyme:

Thirty days hath September, April, June and November. All the rest have thirty-one. Except February alone which has but 28 days clear and 29 in each leap year.

Try the knuckles method! - Count along the knuckles of both hands while saying the months of the year. Knuckles are counted as 31 days, depressions between the knuckles as 30 (28/29 February) days. How to Use Your Knuckles to Remember the Number of Days in Each Month - YouTube
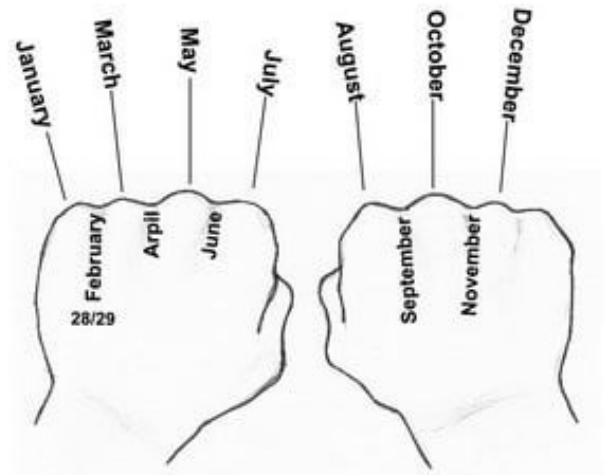
Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs and sing songs or say the chants while walking to school or during a car journey?

Recognise simple equivalent fractions.

By the end of this half term, children should be able to mentally recall simple equivalent fractions. Such as: any fraction that is equal to a half by recognising that if the numerator is half of the denominator then it must be equivalent to a half e.g. 1/2 = 2/4 = 3/6 = 4/8 = 5/10 etc

Children should also recognise any fractions where the denominator and numerator are double or half of each other then they will be equal e.g.3/4 and 6/8 are equal

Equivalent Fractions - YouTube this link shows the method.
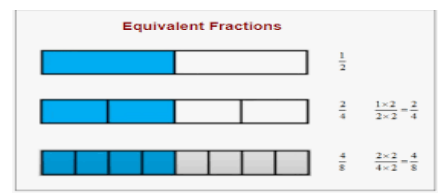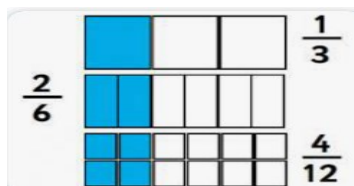
Possible Methods. - Make link with multiplication and division knowledge. If the denominator (bottom number) is multiplied by 2 then the numerator (top number) must also be multiplied by 2 to find an equivalent fraction—see method explained here Equivalent Fractions | Math with Mr. J - YouTube

Top Tips: The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You do not need to practise them all at once; perhaps you could have a fact of the day. Play 'ping pong'. You say a fraction, your child says a fraction back to you that is equivalent.

Use practical resources

- Folding paper is a good way to visualise equivalent fractions.

- Practise equivalent fractions with food, cutting pizzas or cakes into different number of parts.

- **Online games** Triplets | Equivalent Fractions | Math Playground

- Equivalent Fractions Splat - Math Game - Sheppard Software Educational Games for kids