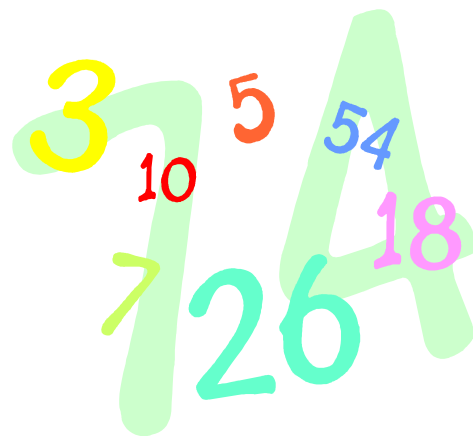


Numeracy Help Sheets



Kemnay Cluster

Numeracy Help Sheets

Representatives of each school in the Kemnay Cluster have put together the attached Numeracy Help sheets to ensure continuity of approach and progression, particularly in times of transition.

Teaching

- The methods of calculation shown in this booklet should be taught but pupils should also be encouraged to investigate alternative methods.
- Mental agility should remain a focus of active learning in numeracy.
- Help sheets can be enlarged and/or minimised to be used as an example when teaching a particular method.
- The booklet also provides the teacher with target outcomes for the relevant section of the Curriculum for Excellence. Teachers should familiarise themselves with the language and written format used.
- Pupils should be encouraged to first estimate the answer to each question and then use the outlined method to accurately calculate the answer required. Pupils should also use the estimate approach or inverse operation to check their final answer.

Home/ School Links

- Parents will be given access to the Numeracy Help Sheets and should be encouraged to use these when helping with homework.

Help Sheets for Addition and Subtraction

Outcomes

Early Stage:

- I can use practical materials and can 'count on and back' to help me to understand addition and subtraction, recording my ideas and solution in different ways.
MNU002C

1st Stage:

- I can use addition and subtraction when solving problems, making best use of the mental strategies and written skills I have developed.
MNU 103C

2nd Stage:

- Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others.
MNU 203C
- Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems.
MTH 205C

Guide to: Addition (Horizontal Layout)

For Example: John has 7 sweets and buys 2 more. How many sweets does John have altogether?

Step 1: Write the calculation as shown in the box

$$7 + 2 = 9$$

Step 2: 7 units add on 2 units equals 9

Record this answer

Addition Words:

add, find the sum, find the total, how many altogether, count on

Step 3: Check your answer by using the inverse operation: $9 - 2 = 7$

A Guide to: Addition (Horizontal Layout) with Carrying

For Example: There are 11 people on a bus, at the next stop 2 more people get on the bus. How many people are there on the bus now?

Step 1: Write the calculation as shown in the box

$$11 + 2 = 13$$

Step 2: 11 units add on 2 units equals 13 units

Record this answer

Addition Words:

add, find the sum, find the total, how many altogether, count on

Step 4: Check your answer by using the inverse operation: $13 - 2 = 11$

A Guide to: Addition (Horizontal Layout)

For Example: John has 23 sweets and buys 16 more. How many sweets does John have altogether?

Step 1: Write the calculation as shown in the box

$$23 + 16 = 39$$

Step 2: Start by adding the units column

3 units add on 6 units equals 9

Record this answer

Step 2: Add the tens column

2 tens add on 1 ten equals 3 tens

Record and say the answer

Addition Words:

add, find the sum, find the total, how many altogether, count on

Step 3: Check your answer by using the inverse operation. $39 - 16 = 23$

A Guide to: Addition (Horizontal Layout) with Carrying

For Example: There are 34 people on a bus, at the next stop 8 more people get on the bus. How many people are there on the bus now?

Step 1: Write the calculation as shown in the box

$$34 + 8 = 42$$

Step 2: Start by adding the units

4 units add 8 units equals 12 units

Record the 2 units and carry 1 ten

Step 3: Now add the tens column

3 tens add the carried 1 ten equals to 4 tens

Record the 4 tens and say the answer

Addition Words:

add, find the sum, find the total, how many altogether, count on

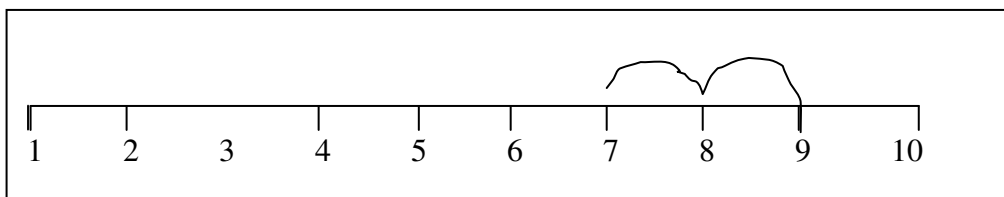
Step 4: Check your answer by using the inverse operation. $42 - 8 = 34$

Guide to: Addition (Counting On)

For Example: John has 7 sweets and buys 2 more. How many sweets does John have altogether?

Step 1: Write the calculation as shown in the box

$$7 + 2 = 9$$



Step 2: Start at 7 and count on 2
Record this answer

Addition Words:
add, find the sum, find the total, how many altogether, count on

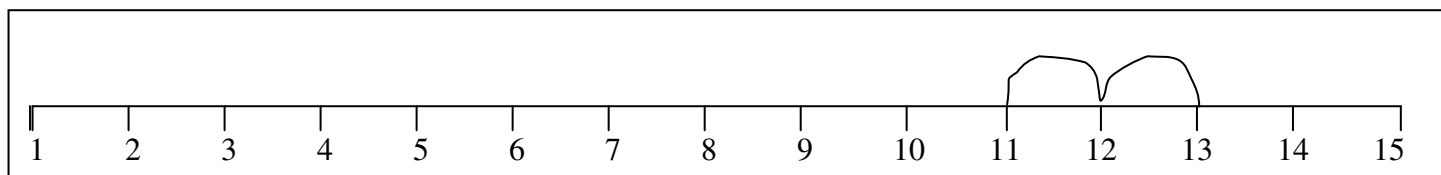
Step 3: Check your answer by using the inverse operation: $9 - 2 = 7$

A Guide to: Addition (Counting On)

For Example: There are 11 people on a bus, at the next stop 2 more people get on the bus. How many people are there on the bus now?

Step 1: Write the calculation as shown in the box

$$11 + 2 = 13$$



Step 2: Start at 11 and count on 2 units
Record this answer

Addition Words:
add, find the sum, find the total, how many altogether, count on

Step 4: Check your answer by using the inverse operation: $13 - 2 = 11$

A Guide to: Addition (Missing Number)

For Example: John and Bob have 5 sweets altogether. John has 3 sweets, how many does Bob have?

Step 1: Write the calculation as shown in the box

$$3 + \square = 5$$

Step 2: How many do we need to add on to 3 to make 5?

Step 2: 3 add on 2 equals 5

Record and say the answer.

Addition Words:

add, find the sum, find the total, how many altogether, count on

Step 3: Check your answer: $3 + 2 = 5$

A Guide to: Addition (Missing Number)

An Example: There are 9 cars in the car park altogether. There are 4 red cars, the rest are blue cars. How many blue cars are there?

Step 1: Write the calculation as shown in the box

$$\square + 4 = 9$$

Step 2: There are 9 altogether, and 4 of these are red. 9 take away 4 equals 5

Step 3: Check your answer: $5 + 4 = 9$

Addition Words:

add, find the sum, find the total, how many altogether, count on

A Guide to: Addition with Tens and Units without Carrying

For Example: John has 23 sweets and buys 16 more. How many sweets does John have altogether?

Step 1: Write the calculation as shown in the box

$$\begin{array}{r} 23 \\ +16 \\ \hline 39 \\ \hline \end{array}$$

Step 2: Start by adding the units column

3 units add on 6 units equals 9

Record this answer

Step 2: Add the tens column

2 tens add on 1 ten equals 3 tens

Record and say the answer

Addition Words:

add, find the sum, find the total, how many altogether, count on

Step 3: Check your answer by using the inverse operation

A Guide to: Addition with Tens and Units with Carrying

For Example: There are 34 people on a bus, at the next stop 8 more people get on the bus. How many people are there on the bus now?

Step 1: Write the calculation as shown in the box

Step 2: Start by adding the units column

4 units add 8 units equals 12 units

Record the 2 units and carry 1 ten

Record the 1 ten as shown

$$\begin{array}{r} 34 \\ + 8 \\ \hline 42 \\ \hline \end{array}$$

→ |

Step 3: Now add the tens column

3 tens add the carried 1 ten equals to 4 tens

Record the 4 tens and say the answer

Addition Words:

add, find the sum, find the total, how many altogether, count on

Step 4: Check your answer by using the inverse operation

A Guide to: Addition with Hundreds, Tens and Units - No Carrying

For Example: There are 123 children in Guides and 132 children in the Scouts. How many children are there altogether?

Step 1: Write out the calculation as shown in the box

$$\begin{array}{r} 123 \\ + 132 \\ \hline 255 \end{array}$$

Step 2: Start by adding the units column
3 units add on 2 units equals 5 units
Record this answer

Step 3: Add the tens column
2 tens add on 3 tens equals 5 tens
Record this answer

Step 4: Add the hundreds column
1 hundred add on 1 hundred equals 2 hundred
Record and say the answer

Step 5: Check your answer by using the inverse operation

Addition Words:
add, find the sum, find the total, how many altogether, count on

A Guide to: Addition with Hundreds, Tens and Units with Carrying

For Example: There are 349 people in the tennis club and there are 241 people in the hockey club. How many people altogether are in tennis and hockey clubs?

Step 1: Write the calculation as shown in the box

Step 2: Start by adding the units
9 units add 1 unit equals 10 units
Record the 0 units and carry 1 ten
Record the 1 ten as shown

$$\begin{array}{r} 349 \\ + 241 \\ \hline 590 \end{array}$$

Step 3: Now add the tens column
4 tens add 4 tens equals 8 and add the carried 1 ten equals to 9 tens
Record the 9 tens

Step 4: Now add the hundreds column
3 hundreds add 2 hundreds equal 5 hundreds
Record and say the answer

Addition Words:
add, find the sum, find the total, how many altogether, count on

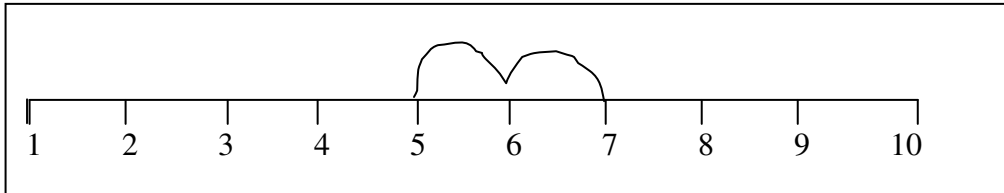
Step 5: Check your answer by using the inverse operation

Guide to: Subtraction (Number Line)

For Example: John has 7 sweets and eats 2 of them. How many sweets does John now?

Step 1: Write the calculation as shown in the box

$$7 - 2 = 5$$



Step 2: Start at 7 and then take 2 away
Record this answer

Addition Words:
add, find the sum, find the total, how many altogether, count on

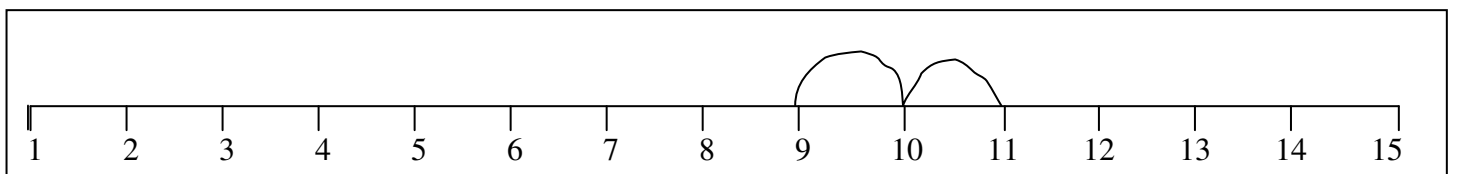
Step 3: Check your answer by using the inverse operation: $5 + 2 = 7$

A Guide to: Subtraction (Number Line)

For Example: There are 11 people on a bus, at the next stop 2 people get off the bus. How many people are there on the bus now?

Step 1: Write the calculation as shown in the box

$$11 - 2 = 9$$



Step 2: Start at 11 and take away 2
Record this answer

Addition Words:
add, find the sum, find the total, how many altogether, count on

Step 4: Check your answer by using the inverse operation: $11 - 2 = 9$

A Guide to: Subtraction with Tens and Units without Exchanging

For example: There are 16 cars in the cinema car park and 4 cars in the office car park. How many more cars are in the cinema car park?

Step 1: Write the calculation as shown in the box

Step 2: Start with the units column

6 units take away 4 units leaves 2 units

Record this answer

Step 3: Now calculate the tens column

1 ten take away 0 ten leaves 1 ten

Step 4: Record and say the answer

Step 5: Check your answer by using the inverse operation

$$\begin{array}{r} 16 \\ - 4 \\ \hline 12 \end{array}$$

Subtraction Language:

subtract, minus, difference between,
subtraction, count on/back, exchange, more
than and less than

A Guide to: Subtraction with Tens and Units with Exchanging

For example: There are 31 cars in a car park. How many cars are left after 8 have driven away?

Step 1: Write the calculation as shown in the box

Step 2: Start at the units column

You cannot take 8 units away from 1 unit

You now have to exchange 1 ten for 10 units

Record this as shown

Step 3: 11 units take away 8 units leaves 3 units

Record this

Step 4: 2 tens take away zero tens leaves 2 tens

Record this.

Step 5: Record and say the answer

Step 6: Check your answer by using the inverse operation

$$\begin{array}{r} 2 \quad | \quad 1 \\ \cancel{3} \quad | \quad 1 \\ - 8 \\ \hline 2 \quad 3 \end{array}$$

Subtraction Language:

subtract, minus, difference between,
subtraction, count on/back, exchange, more
than and less than

A Guide to: Subtraction with Hundreds, Tens and Units without Exchanging

For Example: There are 325 cars in a car park at 8 o'clock. At 10 o'clock there are 114 cars in the car park. How many cars left the car park?

Step 1: Write the calculation as shown in the box

$$\begin{array}{r} 325 \\ - 114 \\ \hline 211 \end{array}$$

Step 2: Start with the units column

5 units take away 4 units leaves 1 unit

Record this answer

Step 3: Now calculate the tens column

2 tens take away 1 ten equals 1 ten

Record this answer

Subtraction Language:

subtract, minus, difference between,

subtraction, count on/back, exchange, less

than

Step 4: Now move to the hundreds column

3 hundreds take away 1 hundred equals 2 hundreds

Record this answer

Step 5: Record and say the answer

Step 6: Check your answer by using the inverse operation

A Guide to: Subtraction with Tens and Units with Exchanging

For Example: There are 314 cars in a car park. How many are left after 183 cars have driven away?

Step 1: Write the calculation as shown in the box

Step 2: Start at the units column

4 units take away 3 units equals 1 unit

Record this

Step 3: Now calculate the tens column

You cannot take 8 tens away from 1 ten

You now have to exchange 1 hundred for 10 tens

11 tens take away 8 tens equals 3 tens

Record this

Step 4: 2 hundreds take away 1 hundred equals 1 hundred

Record this

Step 5: Record and say the answer

Step 6: Check your answer by using the inverse operation

$$\begin{array}{r} 2 \\ \cancel{3}14 \\ - 183 \\ \hline 131 \end{array}$$

Subtraction Language:

subtract, minus, difference between,
subtraction, count on/back, exchange, less
than

Help Sheets For Multiplication

Outcomes

Early Stage:

- I can use practical materials and can 'count on and back' to help me to understand addition and subtraction, recording my ideas and solution in different ways. MNU002C

1st Stage:

- I can use multiplication when solving problems, making best use of the mental strategies and written skills I have developed.
MNU 103C

2nd Stage:

- Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others.
- Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems.

A Guide To: Multiplying by 10

When a number is multiplied by 10 the digits move one place to the left and a zero is written in the empty column as a placeholder. Children can use this board to help.

Hundreds	Tens	Units

Example: There were 7 children in each group and there were 10 groups, how many children were there altogether?

$$7 \times 10 = 70$$

Hundreds	Tens	Units
		7
	7	0

7 times 10. Move the 7 one place to the left and write a 0 in the empty column as a placeholder. Record and say the answer - there are 70 children altogether.

Example: There were 10 sweets in each pack of sweets and there were 24 packs. How many sweets were there altogether?

$$24 \times 10 = 240$$

Hundreds	Tens	Units
	2	4
2	4	0

24 times 10. Move the 24 one place to the left and write a 0 in the empty column as a placeholder. Record and say the answer - there are 240 sweets altogether.

Example: There were 10 schools and each school had 350 pupils in them. How many pupils were there altogether?

$$350 \times 10 = 3500$$

Thousands	Hundreds	Tens	Units
	3	5	0
3	5	0	0

350 times 10. Move the 350 one place to the left and write a 0 in the empty column as a placeholder. Record and say the answer - there are 3500 pupils altogether.

A Guide to: Multiplying by 100

When a number is multiplied by 100 the digits move two places to the left and zeros are written in the empty columns as placeholders. Children can use this board to help.

Hundreds	Tens	Units

Example: There were 7 children in each group and there were 100 groups, how many children were there altogether?

$$7 \times 100 = 700$$

Hundreds	Tens	Units
		7
7	0	0

7 multiplied by 100. Move the 7 two places to the left and write 0's in the empty columns as placeholders. Record and say the answer.

Example: There were 100 sweets in each box and there were 24 boxes. How many sweets were there altogether?

$$24 \times 100 = 2400$$

Thousands	Hundreds	Tens	Units
		2	4
2	4	0	0

24 multiplied by 100. Move the 24 two places to the left and write 0's in the empty columns as placeholders. Record and say the answer.

Example: There were 100 schools, each school had 350 pupils in them. How many pupils were there altogether?

$$350 \times 100 = 35000$$

Tens of Thousands	Thousands	Hundreds	Tens	Units
		3	5	0
3	5	0	0	0

350 multiplied by 100. Move the 350 two places to the left and write 0's in the empty columns as placeholders. Record and say the answer.

A Guide to: Multiplying a two digit number to a one digit with no carrying

For example: There are 12 children in each group. There are 3 groups. How many children are there altogether?

Step 1: Set the calculation out as shown

Start with the units column

Multiply 3 by 2, this equals 6

Record this answer in the units column

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array}$$

Step 2: Now move to the tens column

Multiply 3 by 1, this equals 3

Record this in the tens column

Multiplication Language:
times, multiply, multiplied by, product
of, double, treble etc.

Step 3: Record and say the answer

A Guide to: Multiplying a two digit number to a one digit with carrying

For example: 17 rulers are packed in each box. There are 3 boxes. How many rulers are there altogether?

Step 1: Write the calculation as shown in the box

Step 2: Start at the units column

Multiply 3 by 7, this equals 21

Record the 1 unit and carry 2 tens

$$\begin{array}{r} 17 \\ \times 3 \\ \hline 51 \\ \rightarrow 2 \end{array}$$

Step 3: Move to the tens column

Multiply 3 by 1 this equals 3

Add the carried two tens, this equals 5 tens

Record the 5 tens

Multiplication Language:
times, multiply, multiplied by, product
of, double, treble etc.

Step 4: Record this answer and say it

A Guide to: Multiplying a three-digit number by a one-digit whole number, no carrying.

For example: There are 132 children in each group. There are 3 groups. How many children are there altogether?

Step 1: Set the calculation out as shown.

Step 2: Start with the units column

Multiply 3 by 2, this equals 6 units

Record this answer in the units column

$$\begin{array}{r} 132 \\ \times \quad 3 \\ \hline 396 \end{array}$$

Step 3: Now move to the tens column

Multiply 3 by 3, this equals 9

Record this in the tens column

Step 4: Now move to the hundreds column

Multiply 3 by 1, this equals 3

Record this in the hundreds column

Multiplication Language:
times, multiply, multiplied by, product
of, double, treble etc.

Step 4: Record and say the answer.

A Guide to: Multiplying a three-digit number by a one-digit whole number, with carrying.

For example: 127 rulers are packed in each box. There are 3 boxes. How many rulers are there altogether?

Step 1: Write the calculation as shown in the box.

Step 2: Start at the units column.

Multiply 3 by 7, this equals 21

Record the 1 unit in the unit column and carry 2 tens

$$\begin{array}{r} 127 \\ \times \quad 3 \\ \hline 381 \end{array}$$

2

Step 3: Now move to the tens column

Multiply 3 by 2, this equals 6

Add the carried 2 tens, this makes 8 tens

Record this in the tens column

Multiplication Language:
times, multiply, multiplied by, product
of, double, treble etc.

Step 4: Now calculate the hundreds column

Multiply 3 by 1, this equals 3
Record this in the hundreds column

Step 5: Record and say the answer

A Guide to: Long Multiplication

For example: There are 32 children in each class. There are 18 classes in the school. How many children are there in the school?

Step 1: Set the calculation out as shown.
Start with the units
Multiply 8 by 2 this equals 16
Record this answer by writing the 6
in the units column and carrying the 1

$$\begin{array}{r} 32 \\ \times 18 \\ \hline 256 \\ +320 \\ \hline 576 \end{array}$$

Step 2: Now multiply 8 by 3
This equals 24 tens and add the carried 1 makes 25 tens
Record this as shown

Step 3: Now multiply the tens column.
As you are multiplying by 10 you move the digits one place to the left and write a 0 in the units column as a place holder
Then multiply 1 by 2, this makes 2
Record this number
Then multiply 1 by 3, this makes 3
Record this number

Step 4: You now need to add the two numbers together. Start at the units column.

$$6 + 0 = 6 \quad \text{Record this.}$$

$$5 + 2 = 7 \quad \text{Record this.}$$

$$2 + 3 = 5 \quad \text{Record this.}$$

Step 5: Record and state the final answer.

Multiplication Language:
times, multiply, multiplied by, product
of, double, treble etc.

A Guide to: Long Multiplication (Grid Version)

For example: There are 76 children in each bus. There are 23 buses. How many children are there altogether?

Step 1: Set the calculation out as shown in the grid
Splitting up the numbers into tens and units

Step 2: $20 \times 70 = 1400$
Record this answer as shown

Step 3: $20 \times 6 = 120$
Record this answer as shown

Step 4: $3 \times 70 = 210$
Record this number

Step 5: $3 \times 6 = 18$
Record this number

Step 6: You now need to add the numbers together.
 $1400 + 120 + 210 + 18 = 1748$

Step 7: Record and state the final answer.

X	70	6
20	1400	120
3	210	18

Multiplication Language:
times, multiply, multiplied by, product
of, double, treble etc.

Help Sheets For Division

Outcomes

Early Stage:

I can share out a group of items by making smaller groups and can split a whole object into smaller parts. MNU003H/C

1st Stage:

I can use division when solving problems, making best use of the mental strategies and written skills I have developed. MNU 103C

Through exploring how groups of items can be shared equally, I can find a fraction of an amount by applying my knowledge of division. MNU105H

2nd Stage:

Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches and solutions with others. MNU203C

Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems. MTH 205C

A Guide to: Division without carrying

For example: 63 chestnuts are to be shared equally among 3 children, how many will each receive?

Step 1: Set out the calculation as shown

$$\begin{array}{r} 21 \\ 3 \overline{)63} \end{array}$$

Step 2: Start at the tens column

How many 3s are in 6 tens?

3 times equals 6 tens

Record 2 in the tens column

Step 3: Move to the units column.

How many 3s are in 3 units?

3 times equals 3

Record 1 in the units column

Division Language:

Share equally among, divide, divisor,
how many are in, divisible by,
remainder, left over

Step 4: Record and say the answer. Check your answer by using the inverse operation.

A Guide to: Division with Carrying

For example: 78 chestnuts are to be shared equally among 3 children. How many chestnuts will each child receive?

Step 1: Set the calculation out as shown

Start at the tens column

How many 3s are in 7 tens?

3 times equals 6. Record 2 in the tens column

There is 1 ten left over so you need to carry this into the units column.

$$\begin{array}{r} 26 \\ 3 \overline{)78} \end{array}$$

Step 3: Now calculate the units column.

How many 3s are in 18 units?

3 times equals 18. Record the 6

Step 4: Record and say the answer.

Division Language:

Share equally among, divide, divisor,
how many are in, divisible by,
remainder, left over

Check your answer by using the inverse operation.

A Guide to: Division with carrying and remainders

For Example: 67 sweets are to be shared equally among 5 children, how many sweets will each child receive?

Step 1: Set out the calculation as shown

$$\begin{array}{r} 13 \text{ r } 2 \\ 5 \overline{) 67} \end{array}$$

Step 2: Start at the tens column

How many 5s are in 6 tens?

5 times 1 ten equals 5 tens

Record 1 in the tens column, then carry 1 ten into the units column

Step 3: Move to the units column

How many 5s are there in 17 units?

5 times 3 units equals 15, but there is a remainder of 2 units

Record 3 in the units column and record the remainder, as shown

Step 4: Record and say the answer

Step 5: Check your answer by using the inverse operation.

Division Language:

share equally among, divide, divisor,
how many are in, divisible by,
remainder, left over

A Guide to: Division with H.T.U and carrying

For Example: 665 apples are to be shared equally among 5 boxes, how many apples will go in each box?

Step 1: Set out the calculation as shown

$$\begin{array}{r} 133 \\ 5 \overline{)665} \end{array}$$

Step 2: Start at the hundreds column

How many 5s are in 6 hundreds?

5 times 1 hundred equals 5 hundred

Record 1 in the hundreds column, then carry

1 hundred into the tens column

Step 3: Move to the tens column.

How many 5s are there in 16 tens?

5 times 3 tens equals 15 tens, but there is a remainder of 1 ten.

Record 3 in the tens column and carry the 1 ten

Step 4: Now calculate the units column

How many 5s are there in fifteen units

5 times 3 units equals 15

Record 3 above the units

Division Language:

Share equally among, divide, divisor,

how many are in, divisible by,

remainder, left over

Step 5: Record and say the answer

Step 6: Check your answer by using the inverse operation

A Guide to: Long Division

When completing long division sums we use the method of repeated subtraction.

For example: There are 470 children. Each bus takes 35 children. How many buses would be needed to transport all the children?

Step 1: Set out the calculation as shown.

Step 2: Each bus takes 35 children. How many lots of 35 can be divided into 470? 35 times 10 equals 350. Record that you have taken 10 lots away already – record this at the side of the sum. Then take away 350 from 470. This leaves 120.

$$\begin{array}{r|l} 35 & 470 \\ -350 & 10 \text{ (35x10)} \\ \hline & 120 \\ -105 & 3 \text{ (35x3)} \\ \hline & 15 \end{array}$$

13 r 15

Step 3: How many lots of 35 can be divided into 120? 35 times 3 equals 105 – Record the 105 and record the 3 lots. Now calculate how many are left by subtracting 105 from 120. There are 15 left over

Step 4: The answer to the sum is 13 remainder 15. Go back to the question and calculate how many buses are needed.

You need fourteen buses altogether in order to transport 470 children.

Step 5: Check your answer by using the inverse operation

Division Language:

Share equally among, divide, divisor,
how many are in, divisible by, remainder,
left over

Help Sheets For Decimals

Outcomes

Early Stage:

I can share out a group of items by making smaller groups and can split a whole object into smaller parts. MNU003H/C

1st Stage:

I can show my understanding of the notion and vocabulary associated with fractions. MNU104H

Through exploring how groups of items can be shared equally, I can find a fraction of an amount by applying my knowledge of division. MNU105H

2nd Stage:

I have explored the contents in which problems involving decimal fractions occur and can solve related problems using a variety of methods. MNU 204C

I have investigated the everyday contexts in which simple fractions, percentages or decimal fractions are used and can carry out the necessary calculations to solve related problems. MNU 208H

A Guide to: Adding Decimals without carrying

For Example: The first train is 47.3 meters long and the second train is 22.4 meters long. What is the total length of the two trains?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in each column

$$\begin{array}{r} 47.3 \text{ m} \\ + 22.4 \text{ m} \\ \hline 69.7 \text{ m} \end{array}$$

Step 2: Start at the tenths column
3 tenths add 4 tenths equals 7 tenths
Record this answer
Remember to bring the point directly down

Step 3: Move to the units column
7 units add 2 units equals 9 units
Record this answer

Addition with Decimals Language:
decimal point, decimal places, digits, place value, units, tenths, hundredths, add, total.

Step 4: Move to the tens column
4 tens add 2 tens equals 6 tens
Record this answer

Step 5: Record and say the answer

Step 6: Check your answer using the inverse operation

A Guide to: Adding Decimals with Carrying

For example: The first train is 47.3 meters long and the second train is 28.4 meters long. What is the total length of the two trains?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in each column

$$\begin{array}{r} 47.3 \text{ m} \\ + 28.4 \text{ m} \\ \hline 75.7 \text{ m} \\ \hline | \end{array}$$

Step 2: Start at the tenths column

3 add 4 equals 7

Record this answer

Remember to bring the point directly down

Step 3: Move to the units column

7 add 8 equals 15

Record the 5 and carry the 1 ten

Record as shown

Step 4: Move to the tens column.

4 add 2 equals 6 and add the carried 1

Record the 7 tens

Addition with Decimals Language:

decimal point, decimal places, digits, place value, units, tenths, hundredths, add, total.

Step 5: Record and say the answer

Step 6: Check your answer using the inverse operation

A Guide to: Subtraction Decimals without Exchanging

For example: The first train 47.4 meters long and the second train is 28.4 meters long. How much longer is the first train than the second train?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in the columns.

$$\begin{array}{r} 48.4 \\ - 26.3 \\ \hline 22.1 \\ \hline \end{array}$$

Step 2: Start at the tenths column
4 tenths take away 3 tenths equals 1 tenth
Record this answer
Remember to bring the point directly down

Step 3: Move to the units column
8 units take away 6 units equals 2 units
Record this answer

Step 4: Move to the tens column
4 tens take away 2 tens equals 2 tens
Record this answer

Addition with Decimals Language:

decimal point, decimal places, digits, place value, units, tenths, hundredths, add, total.

Step 5: Record and say the answer

Step 6: Check your answer using the inverse operation

A Guide to: Subtracting Decimals with Exchanging

For example: A ship is 48.4 meters long and the pipe is 29.3 meters long.
How much longer is the ship than the pipe?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in the columns.

$$\begin{array}{r} \cancel{3} \cancel{4} | 8 . 4 \text{ m} \\ - 29 . 3 \text{ m} \\ \hline 19 . 1 \text{ m} \end{array}$$

Step 2: Start at the tenths column
4 tenths take away 3 tenths equals 1 tenth
Record this answer in the tenths column
Remember to bring the point directly down

Step 3: Move to the units column
8 units take away 9 units, you cannot do
You then exchange one ten for ten units
Record as shown

Addition with Decimals
Language:
Decimal point, decimal places,
digits, place value, units, tenths,
hundredths, add, total.

Step 4: Now calculate 18 units take away 9 units
This equals 9 units
Record this answer in the units column

Step 4: Move to the tens column
3 tens take away 2 tens equals 1 tens
Record this answer in the tens column

Step 5: Record and say the answer

Step 6: Check your answer using the inverse operation

A Guide to: Multiplying by 10 with decimals

When a number is multiplied by 10 the digits move one place to the left and a 0 is written in the empty column as a place holder. Children can use this board to help.

tens	units	.	tenths	hundredths
		.		

Please note that the decimal point does not move – the numbers move.

Example: For one cake you need 0.2kg of flour. How many kilograms of flour will you need for ten cakes?

tens	units	.	tenths	hundredths
	0	.	2	
	2	.	0	

$$0.2 \times 10 = 2.0\text{kg}$$

Move the digits one place to the left and write a 0 in the empty column as a place holder.

Example: For 1 kg of concrete you need 0.32kg of sand. How much sand do you need for 10 kg?

tens	units	.	tenths	hundredths
	0	.	3	2
	3	.	2	0

$$0.32\text{kg} \times 10 = 3.20 \text{ kg}$$

Move the digits one place to the left and write a 0 in the empty column as a place holder.

A Guide to: Multiplying by 100 with decimals

When a number is multiplied by 100 the digits move two places to the left and two 0's are written in the units and tens places. Use the table to help.

Please not that the decimal point does not move – the numbers move.

tens	units	.	tenths	hundredths
		.		

Example: One box of pencils weighs 0.75g, how many will 100 boxes weigh?

tens	units	.	tenths	hundredths
	0	.	7	5
7	5	.	0	0

$0.75 \times 100 = 75.00\text{g}$ which can be written as 75g.

Move the digits two places to the left and write 0 in the empty columns.

Example: The length of a boat is 4.35m. What would the length of 100 boats be?

hundreds	tens	units	.	tenths	hundredths
		4	.	3	5
4	3	5	.	0	0

$4.35\text{m} \times 100 = 435.00\text{m}$, which can be written at 435m

Move the digits two places to the left and write 0 in the empty columns.

A Guide to: Multiplying with Decimals with carrying

Example: The length of a pencil is 13.3cm. What would be the length of 5 pencils?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in each column.

$$\begin{array}{r} 13.3 \\ \times 5 \\ \hline 66.5 \end{array}$$

Step 2: Start at the tenths column

Multiply 5 by 3 this equals 15

Record the five in the tenths column, then carry the 1 units

Step 3: Move to the units column

Multiply 5 by 3 this equals 15 and add the carried 1 unit, this makes 16

Record the 6 in the units column and carry the 1 ten

Step 4: Then move to the tens column, multiply 5 by 1, this equals 5

Add the carried 1

Record the 6 in the tens column

Step 5: Record and say the answer and check your answer

Multiplication Language:

Times, multiply, multiplied by, product of, double, treble etc.

Another Example: A boat weighs 3.16 tonnes. What do 2 boats weigh?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in each column.

$$\begin{array}{r} 3.16 \\ \times 2 \\ \hline 6.32 \end{array}$$

Step 2: Start with the hundredths column

Multiply 2 by 6, this equals 12

Record the 2 in the hundredths column

Carry the 1 tenth as shown

Step 3: Move to the tenths column

Multiply 2 by 1, this equals 2 and add the carried 1

Record the 3 in the tenths column

Step 4: Move to the units column.

Multiply 2 by 3, this equals 6

Record the 6 units in the units column

Step 5: Record and say the answer and check your answer

Multiplication Language:

Times, multiply, multiplied by, product of, double, treble etc.

A Guide to: Division with decimals

For example: 6.55g of sugar are in 5 cakes, how much sugar is in each cake?

Step 1: Lay out the calculation as shown, stressing the importance of lining up the decimal points and the digits in columns

$$\begin{array}{r} 1.31 \\ 5 \overline{) 6.55} \end{array}$$

Step 2: Start at the units column

How many 5s are in 6?

5 times equals 5

Record 1 in the tens column and carry 1 tenth into the tenths column

Remember to put the decimal point directly above the decimal point

Step 3: Move to the tenths column

How many 5s are there in 15?

5 times equals 15

Record 3 in the tenths column

Multiplication Language:

Times, multiply, multiplied by, product of, double, treble etc.

Step 4: Move to the hundredths column

How many 5s are in 5?

5 times equals 5

Record the 1 in the hundredths column

Step 5: Record and say the answer

Step 6: Check your answer using the inverse operation

Help Sheets for Fractions and Percentages

Outcomes

Early Stage:

I can share out a group of items by making smaller groups and can split a whole object into smaller parts. MNU003H/C

1st Stage:

Having explored fractions by taking part in practical activities, I can show my understanding of how a single item can be shared equally, the notation and vocabulary associated with fractions, where simple fractions lie on the number line MNU104H

Through exploring how groups of items can be shared equally, I can find a fraction of an amount by applying my knowledge of division. MNU105H

Through taking part in practical activities including use of pictorial representations, I can demonstrate my understanding of simple fractions which are equivalent. MTH106H

2nd Stage:

I have investigated the everyday contexts in which simple fractions, percentages or decimal fractions are used and can carry out the necessary calculations to solve related problems. MNU208H

I can show the equivalent forms of simple fractions decimals fractions and percentages and can choose my preferred form when solving a problem, explaining my choice of method. MNU209H

I have investigated how a set of equivalent fractions can be created, understanding the meaning of simplest form, and can apply my knowledge to compare and order the most commonly used fractions. MTH210H

A Guide to: Finding a Fraction

When finding a fraction of a number the general rule is that we divide by the denominator (bottom number) and times by the numerator (top number).

Example: Find $\frac{1}{2}$ of 6

A half is when we divide something by 2. 6 divided by 2 equals 3. We are finding 1 half so we then multiply 3 by 1, this equals 3.

$$\frac{1}{2} \text{ of } 6 = 3$$

Example: Find $\frac{1}{4}$ of 12

A quarter is when we divide something by 4. 12 divided by 4 equals 3. We are finding 1 quarter so we then multiply 3 by 1, this equals 3.

$$\frac{1}{4} \text{ of } 12 = 3$$

Example: Find $\frac{2}{3}$ of 21

A third is when we divide something by 3. 21 divided by 3 equals 7. We are finding two thirds so we then have to multiply 7 by 2, this equals 14.

$$\frac{2}{3} \text{ of } 21 = 14$$

Some words which might be helpful

Proper Fraction: i.e $\frac{3}{4}$

It has a top number (numerator) smaller than the bottom number (denominator).

Improper Fraction i.e $\frac{11}{4}$

It has a top number (numerator) greater than the bottom number (denominator).

Mixed Number i.e $2\frac{3}{4}$

It consists of a whole number and a fraction.

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

A Guide to: Fractions in their simplest forms

An Example: Write $\frac{2}{8}$ in its simplest form

$$\frac{2}{8} \xrightarrow{\div 2} \frac{1}{4}$$

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

When trying to write a fraction in its simplest form, you have to think what number can be divided into the numerator and the denominator. In this example we can divide the numerator and the denominator by 2.

Another Example: Write $\frac{10}{12}$ in its simplest form.

$$\frac{10}{12} \xrightarrow{\div 2} \frac{5}{6}$$

When trying to write a fraction in its simplest form, you have to think what number can be divided into the numerator and the denominator. In this example we can divide the numerator and the denominator by 2.

Another Example: Write $\frac{9}{12}$ in its simplest form.

$$\frac{9}{12} \xrightarrow{\div 3} \frac{3}{4}$$

When trying to write a fraction in its simplest form, you have to think what number can be divided into the numerator and the denominator. In this example we can divide the numerator and the denominator by 3.

A Guide to: Equivalent Fractions

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

An Example: Write an equivalent fraction to $\frac{1}{4}$

$$\frac{1}{4} \xrightarrow[\times 2]{\times 2} \frac{2}{8}$$

When trying to write an equivalent fraction, you have to multiply or divide the numerator and denominator (top and bottom number) by the same number. In this example we can multiply the numerator and the denominator by 2.

Another Example: Write an equivalent fraction of $\frac{1}{3}$

$$\frac{1}{3} \xrightarrow[\times 3]{\times 3} \frac{3}{9}$$

When trying to write an equivalent fraction you have to multiply or divide the numerator and denominator (top and bottom number) by the same number. In this example we have multiplied the numerator and the denominator by 3.

Another Example: Write $\frac{4}{8}$ in its simplest form

$$\frac{4}{8} \xrightarrow[\div 4]{\div 4} \frac{1}{2}$$

When trying to write an equivalent fraction you have to multiply or divide the numerator and denominator (top and bottom number) by the same number. In this example we have divided the numerator and the denominator by 4.

A Guide to: Adding and Subtracting Fractions with the Same Denominator

An Adding Example: Laura eats two-eighths of the pizza and Chloe eats three-eighths of the pizza. How much pizza has been eaten altogether?

Step 1: Write out sum as shown

$$\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

Step 2: 2 eights add 3 eights equals 5 eights

Step 3: Record and say the answer

A Subtraction Example: Joe has three-quarters of a pizza, he then eats a quarter of it how much has he left?

Step 1: Write out the sum as shown

$$\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2} \quad \text{in its simplest form}$$

Step 2: 3 quarters take away 1 quarter equals 2 quarters

Step 3: The answer is two quarters but this is not in its simplest form.

You can divide the numerator and denominator by 2, giving you a half

Step 4: Record and say the answer

Step 5: Check your answer

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

A Guide to: Adding and Subtracting Fractions with different denominators

An Adding Example: Joe eats $\frac{1}{4}$ of an apple and Sam eats $\frac{1}{2}$ of an apple. How much has been eaten?

Step 1: Write out sum as shown

$$\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

Step 2: The fractions do not have the same denominators and before adding we have to establish equivalent fractions in order that both fractions have the same denominators, see above

Step 3: When the two fractions have the same denominator we add them as shown

A Subtraction Example: Joe was given $\frac{1}{2}$ of a pizza to eat but only eats $\frac{1}{8}$ of it, how much has he left?

Step 1: Write out the sum as shown

$$\frac{1}{2} - \frac{1}{8} = \frac{4}{8} - \frac{1}{8} = \frac{3}{8}$$

Step 2: The fractions do not have the same denominators, so you will have to establish equivalent fractions in order that they have the same denominators, see above

Step 3: Once the fractions have the same denominator the fractions can be subtracted as shown above

Step 4: Record and say the answer

Step 5: Check your answer

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

A Guide to: Adding and Subtracting Fractions with Mixed Numbers

An Adding Example: Joe eats $1\frac{1}{4}$ apples and Sam eats $2\frac{1}{2}$ apples. How many apples do Joe and Sam eat?

Step 1: Write out sum as shown.

$$1\frac{1}{4} + 2\frac{1}{2} = 1 + 2 + \frac{1}{4} + \frac{1}{2} = 3\frac{1}{4} + \frac{2}{4} = 3\frac{3}{4}$$

Step 2: Add the whole numbers and then establish equivalent fractions in order that both fractions have the same denominators, see above

Step 3: When the two fractions have the same denominator we add them as shown

Step 4: Record and say the answer

Step 5: Check your answer

A Subtraction Example: Joe was given $3\frac{1}{2}$ bottles of juice. Over the week he drank $1\frac{1}{4}$ bottles. How many bottles did he have left?

Step 1: Write out the sum as shown

$$3\frac{1}{2} - 1\frac{1}{4} = 3 - 1 - \frac{1}{2} - \frac{1}{4} = 2\frac{2}{4} - \frac{1}{4} = 2\frac{1}{4}$$

Step 2: Subtract the whole numbers from each other. The fractions do not have the same denominators, so you will have to establish equivalent fractions in order that they have the same denominators, see above

Step 3: Once the fractions have the same denominator they can be subtracted as shown above

Step 4: Record and say the answer

Step 5: Record and check your answer

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

A Guide to: Linking fractions and percentages

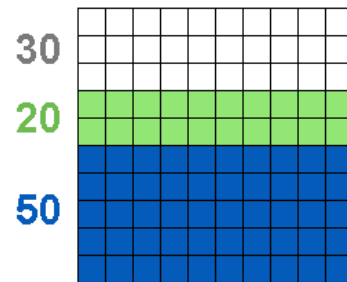
For example: There are 100 squares in this grid. What percentage is shaded blue, green and white?

Step 1: There are 50 squares coloured blue.

$$\text{Blue} = \frac{50}{100} \text{ or } \frac{1}{2} \text{ or } 50\%$$

$$\text{Green} = \frac{20}{100} \text{ or } \frac{1}{5} \text{ or } 20\%$$

$$\text{White} = \frac{30}{100} \text{ or } \frac{3}{10} \text{ or } 30\%$$



The following fractions should be learnt:

$$75\% = \frac{3}{4} = 0.75$$

$$50\% = \frac{1}{2} = 0.5$$

$$25\% = \frac{1}{4} = 0.25$$

$$20\% = \frac{1}{5} = 0.2$$

$$10\% = \frac{1}{10} = 0.1$$

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

A Guide to: Finding Percentages of Whole Numbers

For Example: There are 84 pupils in a school. 25% were absent. How many were absent?

Step 1: Write the sum as shown. Children should know that $\frac{1}{4} = 25\%$

25% of 84

$$25\% = \frac{1}{4}$$

$$\frac{1}{4} \text{ of } 84 =$$

The following fractions should be learnt.

$$75\% = \frac{3}{4} = 0.75$$

$$50\% = \frac{1}{2} = 0.5$$

$$25\% = \frac{1}{4} = 0.25$$

$$20\% = \frac{1}{5} = 0.2$$

$$10\% = \frac{1}{10} = 0.1$$

Step 2: To work out a $\frac{1}{4}$, you divide the amount by 4

$$4 \overline{) 84}$$

Step 3: Record, say and check the answer

Another Example: There were 25 children in the class. 20% of the class wear glasses. How many children wear glasses in the class?

Step 1: Write the sum as shown. Children should know that $20\% = \frac{1}{5}$

20% of 25 =

$$20\% = \frac{1}{5}$$

$$\frac{1}{5} \text{ of } 25 =$$

Step 2: To work out a $\frac{1}{5}$, you divide the amount by 5

25 divided by 5 equals 5

Step 3: Record, say and check the answer.

Fraction Language:

Fraction, proper, improper, equal parts, equal fractions, numerator, denominator, equivalent, simplify and simplest form.

Help Sheets For Time

Outcomes

Early Stage:

I am aware of how routines and events in my world link with times and seasons, and have explored ways to record and display these using clocks, calendars and other methods.

MNU005L

1st Stage:

I can tell the time using 12 and 24 hour clocks, explain how it impacts on my daily routine and ensure that I am organised and ready for events throughout my day. MNU 109L

I can use a calendar to plan and be organised for key events for myself and my class throughout the year. MNU 110L

I have begun to develop a sense of how long tasks take by measuring the time taken to complete a range of activities using a variety of timers. MNU111L

2nd Stage:

I can use and interpret electronic and paper-based timetables and schedules to plan events and activities and make time calculations as part of my planning. MNU214L

I can carry out practical tasks and investigations involving timed events and can explain which unit of time would be most appropriate to use. MNU215L

Using simple time periods, I can give a good estimate of how long a journey should take, based on my knowledge of the link between time, speed and distance. MNU216L

A Guide to: Telling the time on a analogue clock(hours)

Example: What time is it?



Step 1: Identify what the long hand is pointing to
The long (minute) hand is pointing to 12
This means that it is an 'o'clock time'

Step 2: Now identify what the short hand is pointing to
The short (hour) hand is pointing to 11
The time is 11 o'clock

Time Language:

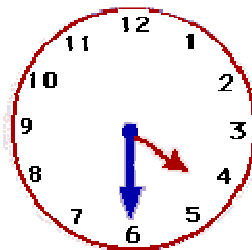
After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

Step 3: Record and say the answer

Step 4: Check your answer

A Guide to: Telling the time on an analogue clock (half-past)

Example: What time is it?



Step 1: Identify what the long (minute) hand is pointing to
The long (minute) hand is pointing to 6
This means that it is 'half past'

Step 2: Now identify what the short (hour) hand is pointing to
The short (hour) hand has past the 4
The time is half past 4

Step 3: Record and say the answer

Step 4: Check your answer

Time Language:

After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

A Guide to: Telling the time on a analogue clock (quarter to)

Example: What time is it?



Step 1: Identify what the long hand is pointing to
The long (minute) hand is pointing to 9
This means that it is 'quarter to' or 15 minutes to

Step 2: Now identify what the short hand is pointing to
The short (hour) hand has passed 7 and is just before 8
The time is quarter to 8 or 15 minutes to 8

Step 3: Record and say the answer

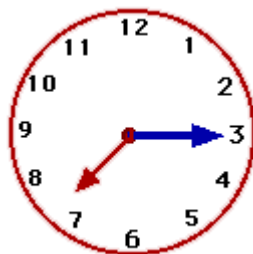
Step 4: Check your answer

Time Language:

After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

A Guide to: Telling the time on an analogue clock (quarter past)

Example: What time is it?



Step 1: Identify what the long hand is pointing to
The long (minute) hand is pointing to 3
This means that it is 'quarter past' or 15 minutes past
Remind children that the 15 comes from 'a quarter of 60 minutes' in one hour

Step 2: Now identify what the short hand is pointing to
The short (hour) hand has just past the 7
The time is quarter past 7 or 15 minutes past 7

Step 3: Record and say the time

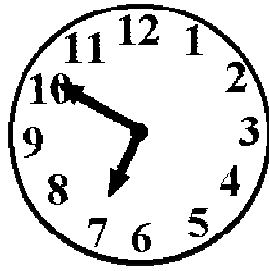
Step 4: Check your answer

Time Language:

After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

A Guide to: Telling the time on a analogue clock (minutes to)

Example: What time is it?



Step 1: Identify what the long (minute) hand is pointing to

If you count back from the o'clock position, it is 10 minutes to the hour

This time is 10 minutes to the hour

Step 2: Now identify what the short (hour) hand is pointing to

The short (hour) hand is pointing to 7

The time is 10 minutes to 7

Time Language:

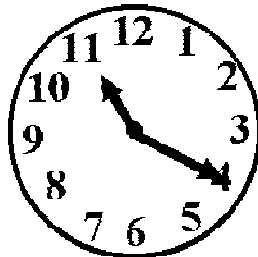
After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

Step 3: Record and say the answer

Step 4: Check your answer

A Guide to: Telling the time on an analogue clock (minutes past)

Example: What time is it?



Step 1: Identify what the long (minute) hand is pointing to

If you count on from the o'clock position, it is 20 minutes past

The time is 20 minutes past the hour

Step 2: Now identify what the short (hour) hand is pointing to

The short (hour) hand is pointing to 11

The time is 20 minutes past 11

Time Language:

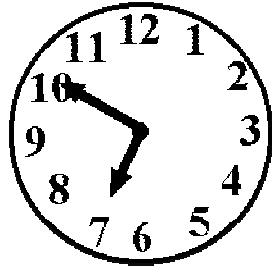
After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

Step 3: Record and say the time

Step 4: Check your answer

A Guide to: Writing digital times

Example: Write this time in digital time?



=

6 : 50

Step 1: Identify what the long (minute) hand is pointing to
The long (minute) hand is 10 minutes from the o'clock position
There are 60 minute in a hour. 60 take away 10 equals 50

Step 2: Now identify what the short (hour) hand is pointing to
The short (hour) hand is past 6 o'clock but not yet at 7 o'clock.
The time is 6 : 50

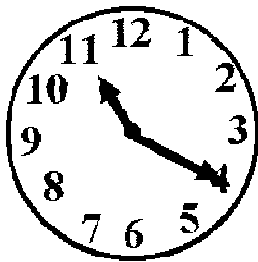
Step 3: Record, say and check the answer

Time Language:

After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

A Guide to: Writing digital times

Example: Write this time in digital time?



=

11 : 20

Step 1: Identify what the long (minute) hand is pointing to
If you count on from the o'clock position, it is 20 minutes past
The time is 20 minutes past the hour

Step 2: Now identify what the short (hour) hand is pointing to
The short (hour) hand has just past 11
The time is 11 : 20

Step 3: Record, say and check the time

Time Language:

After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

A Guide to: Calculating time durations

Example: A film starts at 4.30pm and finishes at 7.15pm. How long does the film last?

Step 1: 4.30pm until 5.00pm = 30 minutes

Step 2: 5.00pm until 7.00pm = 2 hours

Step 3: 7.00pm until 7.15pm = 15 minutes

Step 4: 2 hours + 30 minutes + 15 minutes = 2 hours 45 minutes

Step 5: Record and say the answer

Time Language:

After, before, o'clock, half past, quarter past, quarter to, hour, minute, digital clock, analogue clock, how long, minutes before, after

Another Example: The train left Aberdeen station at 3.20pm and the journey lasted one and half-hour. When did the train arrive at its destination?

Step 1: 3.20pm + 30 minutes = 3.50 pm

Step 2: 3.50pm + 1 hour = 4.50 pm

Step 3: Record, say and check the answer

Help Sheets For Estimating and Rounding

Outcomes

1st Stage: I can share ideas with others to develop ways of estimating the answer to a calculation or problem, work out the actual answer, then check my solution by comparing it with the estimate. MNU 101A

2nd Stage:

I can use my knowledge of rounding to routinely estimate the answer to a problem, then after calculating, decide if my answer is reasonable, sharing my solution with others.

A Guide to: Rounding

Example: Round 53 to the nearest 10

Step 1: 53 lies between 50 and 60

Step 2: 53 is nearer 50

Rules for Rounding

- If it is a 5,6,7,8,9 round up
- If it is a 0,1,2,3,4 leave alone

Example: Round 85 to the nearest 10

Step 1: 85 lies between 80 and 90

Step 2: 85 is exactly in the middle, the rule is to use the larger number

Step 3: 85 to the nearest 10 is 90

Example: Round 415 to the nearest 100

Step 1: 415 lies between 400 and 500

Step 2: It is closer to 400

Step 3: 415 to the nearest 100 is 400

Example: Round 325 to the nearest 100

Step 1: 325 lies between 300 and 400

Step 2: It is closer to 300

Step 3: 325 to the nearest 100 is 300

Help Sheets For Money

Outcomes

Early Stage:

- I am developing my awareness of how money is using and can be recognise and use a range of coins. MNU 004K

1st Stage:

- I can use money to pay for items and can work out how much change I should receive. MNU 107K
- I have investigated how different combinations of coins and notes can be used to pay for goods or be given in change. MNU108K

2nd Stage:

- I can manage money, compare costs from different retailers, and determine what I can afford to buy. MNU 211K
- I can understand the costs, benefits and risks of using bankcards to purchase goods or obtain cash and realise that budgeting is important. MNU212K
- I can use the terms profit and loss in buying and selling activities and can make simple calculations for this. MNU 213K

A Guide to: Adding money

Example: Joe goes into a shop and buys a jotter for 55p, a ruler for 75p and an apple for 35p. How much will his shopping add up to?

Step 1: Identify the prices you will need to add up

Step 2: Write the sum as shown in the box

Step 3: Start and the pence column

5 add 5 add 5 equals 15

Record the 5p and carry the 1 ten

Step 4: Now move to the tens column

5 add 7 add 3 and add the carried 1 equals 16

Step 5: 165p can also be recorded at £1.65

Step 6: Record and say the answer

Step 7: Check your answer

Jotter	55p
Ruler	75p
Apple	<u>35p</u>
	<u>165p = £1.65</u>

Money Language:

More/ less/ most/ least expensive,
cheaper, bought, total cost, change,
amount, value

A Guide to: Calculating Change

Example: Joes shopping totals £1.65. Joe hands the shopkeeper £5.00. How much change will he receive?

Step 1: Set out the sum as shown in the box

$$\begin{array}{r} 4 9 \\ \cancel{5} \cancel{0} \\ - 1.65 \\ \hline 3.35 \end{array}$$

Step 2: Start at the pence column

0 take away 5, you cannot do

Exchange 1 pound for 10 tens

Then exchange 1 ten for 10 pence

10 take away 5 equals 5

Record this

Step 3: Move to the tens column

9 take away 6 equals 3

Record this

Money Language:

More/ less/ most/ least expensive,
cheaper, bought, total cost, change,
amount, value

Step 4: Move to the pound column and move the point directly down

4 take away 1 equals 3

Step 3: Record and say the time

Step 4: Check your answer