

All in a word

L.I.S. PO
Workpack

Well-chosen words can influence people's impressions of a person, thing, place or topic.

- Choose words from the notepad to create an impression of the word on each shape.

Comforting

Dirty

Sinister

Exciting

Fresh

Notepad

charging
clogged
creep
dart
dazzle
duvet
electric
fluffy
gallop
glowering
greasy
grey
grime
hero
honey
lemon
lurk
ooze
pillow
puff
pure
purr
scuttles
shower
slime
slunk
smile
soft
zest
zing



- Use some of the words to write about a character.
- Change the words to create a different character.

Teachers' note Model the first example. Ask the children in which shape it should be written. Ask them to explain their answers: what image does the word conjure up?

Developing Literacy
Poetry Year 6
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Mental division strategies – rules of divisibility

Divisibility tests tell us if a number can be divided evenly by another, with no remainder.

These are handy rules to know:

- 2 A number can be divided by 2 if the ones digit is even.
- 4 A number can be divided by 4 if the last 2 digits form a number that can be divided by 4.
- 5 A number can be divided by 5 if the ones digit is 0 or 5.
- 10 A number can be divided by 10 if the number ends in a zero.
- 100 A number can be divided by 100 if the number ends in 2 zeros.
- 8 A number can be divided by 8 if the last 3 digits form a number that can be divided by 8.
- 3 A number can be divided by 3 if you add all the digits and the sum is divisible by 3.
- 9 A number can be divided by 9 if you add all the digits and the sum is divisible by 9.

1 Test these rules. Circle the numbers that match the stated rule.

a

| Divisible by 2 | |
|----------------|--|
| 432 | |
| 235 | |
| 628 | |
| 900 | |
| 12 562 | |

b

| Divisible by 5 | |
|----------------|--|
| 350 | |
| 75 | |
| 5 556 | |
| 34 512 | |
| 17 890 | |

c

| Divisible by 4 | |
|----------------|--|
| 3 432 | |
| 5 208 | |
| 359 | |
| 6 256 | |
| 32 547 | |

d

| Divisible by 10 | |
|-----------------|--|
| 4 560 | |
| 83 210 | |
| 8 436 | |
| 187 490 | |
| 11 609 | |

e

| Divisible by 3 | |
|----------------|--|
| 36 | |
| 932 | |
| 3 561 | |
| 22 468 | |
| 13 906 | |

f

| Divisible by 100 | |
|------------------|--|
| 4 | |
| 570 | |
| 26 730 | |
| 459 800 | |
| 934 600 | |

2 Each of the numbers below has one or more missing digits. Add the digit needed to make the statements true. For some of the numbers, more than one choice of digit would work.

a 54__ is divisible by 4.

b 2___5 is divisible by 9.

c 2 35__ is divisible by 3.

d 3 4__8 is divisible by 8.

e 45 67__ is divisible by 10.

f 678 9___ is divisible by 100.

g 156 84__ is divisible by 8.

h 5 4___ is divisible by 5.

Contracted multiplication is one way of solving multiplication problems.

We estimate first: $150 \times 3 = 450$. The answer will be around 450.

We start in the units column. 3×6 is 18 units.

We rename this as 1 ten and 8 units. We put the 8 in the units column and carry the ten to the tens column.

3×5 tens is 15 plus the carried ten is 16 tens.

We rename this as 1 hundred and 6 tens. We put the 6 in the tens column and carry the hundred.

3×1 hundred is 3 hundreds plus the carried one is 4 hundred.

| | H | T | U |
|---|----------------|----------------|---|
| | ¹ 1 | ¹ 5 | 6 |
| x | | | 3 |
| | 4 | 6 | 8 |

1 Solve these problems. Round and estimate first:

e:

a

| | Th | H | T | U |
|---|----|---|---|---|
| | | 7 | 2 | 1 |
| x | | | | 3 |
| | | | | |

e:

b

| | Th | H | T | U |
|---|----|---|---|---|
| | | 8 | 1 | 2 |
| x | | | | 7 |
| | | | | |

e:

c

| | Th | H | T | U |
|---|----|---|---|---|
| | | 4 | 5 | 2 |
| x | | | | 5 |
| | | | | |

2 Now multiply by two digits:

a

| | H | T | U |
|---|---|---|---|
| | 4 | 4 | |
| x | 1 | 2 | |
| | | | |
| + | | | |
| | | | |

| | Th | H | T | U |
|---|----|----------------|----------------|---|
| | | ¹ 1 | ¹ 5 | 6 |
| x | 2 | 2 | 4 | 3 |
| | | ¹ 4 | 6 | 8 |
| + | 6 | 2 | 4 | 0 |
| | 6 | 7 | 0 | 8 |

When we multiply by two digits, we multiply by the units first. Then we multiply by the tens, placing a zero in the units column to show there are no units.

We add the 2 lines together.

It's important not to confuse the carried units and the carried tens – keep them separate.

b

| | Th | H | T | U |
|---|----|---|---|---|
| | | | 5 | 5 |
| x | | | 3 | 3 |
| | | | | |
| + | | | | |
| | | | | |

c

| | Th | H | T | U |
|---|----|---|---|---|
| | | | 9 | 9 |
| x | | | 5 | 2 |
| | | | | |
| + | | | | |
| | | | | |

d

| | Th | H | T | U |
|---|----|---|---|---|
| | | | 3 | 6 |
| x | | | 4 | 3 |
| | | | | |
| + | | | | |
| | | | | |

When we multiply by 2 digits we have 2 options for setting the problem out – compact or full.

You can select the method that suits you best.

| | | | | |
|---|---|---|---|-----------|
| | | 2 | 6 | |
| × | | 2 | 3 | |
| | | 7 | 8 | (3 × 26) |
| + | 5 | 2 | 0 | (20 × 26) |
| | | 5 | 9 | 8 |

| | | | | |
|---|---|---|---|-----------|
| | | 2 | 6 | |
| × | | 2 | 3 | |
| | | 1 | 8 | (3 × 6) |
| | | 6 | 0 | (3 × 20) |
| | 1 | 2 | 0 | (20 × 6) |
| + | 4 | 0 | 0 | (20 × 20) |
| | | 5 | 9 | 8 |

3 Solve these problems using the method that suits you best:

a

| | | | |
|----|--|---|---|
| e: | | | |
| × | | 2 | 4 |
| | | 4 | 3 |
| | | | |
| + | | | |
| | | | |

b

| | | | |
|----|--|---|---|
| e: | | | |
| × | | 7 | 2 |
| | | 5 | 8 |
| | | | |
| + | | | |
| | | | |

c

| | | | |
|----|--|---|---|
| e: | | | |
| × | | 3 | 5 |
| | | 3 | 6 |
| | | | |
| + | | | |
| | | | |

d

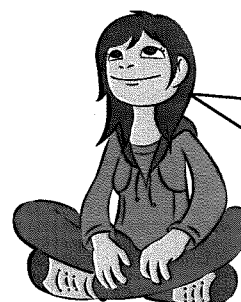
| | | | |
|----|--|---|---|
| e: | | | |
| × | | 7 | 4 |
| | | 5 | 1 |
| | | | |
| + | | | |
| | | | |

e

| | | | |
|----|--|---|---|
| e: | | | |
| × | | 2 | 3 |
| | | 9 | |
| × | | 2 | 3 |
| | | | |
| | | | |
| + | | | |
| | | | |

f

| | | | |
|----|--|---|---|
| e: | | | |
| × | | 3 | 2 |
| | | 7 | |
| × | | 1 | 4 |
| | | | |
| | | | |
| + | | | |
| | | | |



I am not 100% confident with my mental strategies. I'll use the full model.



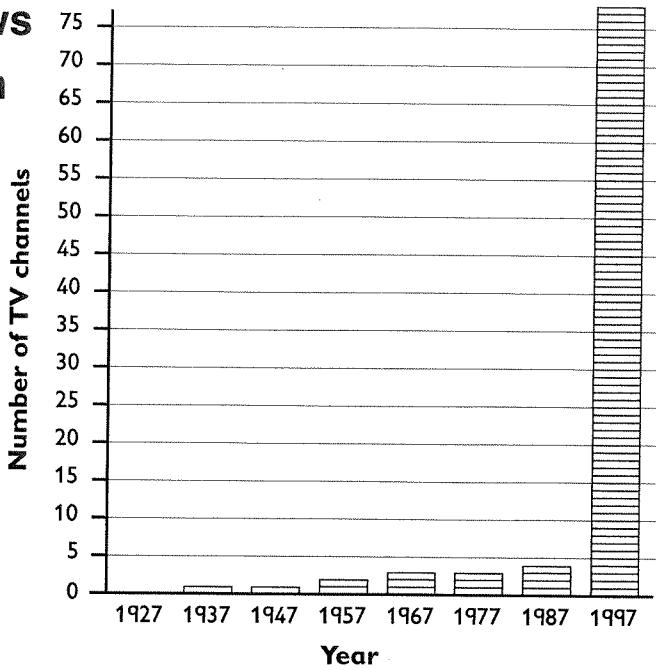
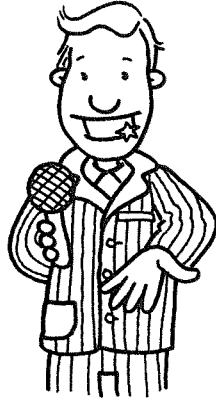
TV channels



- Look at the bar chart. It shows the number of TV channels in the UK from 1927 to 1997.

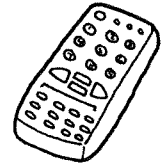
1. How many channels were there in:

- (a) 1947? _____
- (b) 1977? _____
- (c) 1987? _____
- (d) 1997? _____



2. What is the difference between the number of channels in:

- (a) 1947 and 1957? _____
- (b) 1967 and 1977? _____
- (c) 1977 and 1987? _____
- (d) 1987 and 1997? _____



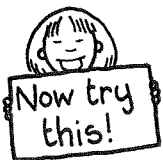
The first channel to broadcast was **BBC1**. The second was **ITV**, the third **BBC2** and the fourth **Channel 4**.

3. Between which years did the following channels first broadcast?

- (a) BBC2? _____
- (b) ITV? _____
- (c) Channel 4? _____
- (d) BBC1? _____

4. What do you think happened between 1987 and 1997?

5. Find the mode and the mean number(s) of channels for the years in the graph. Is this information useful? Why/why not? _____



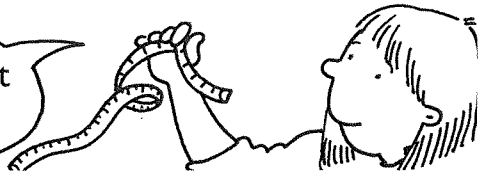
• How many TV channels do you think there will be in 2007? Explain your answer. _____

Teachers' note Invite the children to express their opinions of why the number of TV channels might have changed. Ensure the children realise that there can be more than one mode. This real data involves values with a large range thus the averages are less representative.

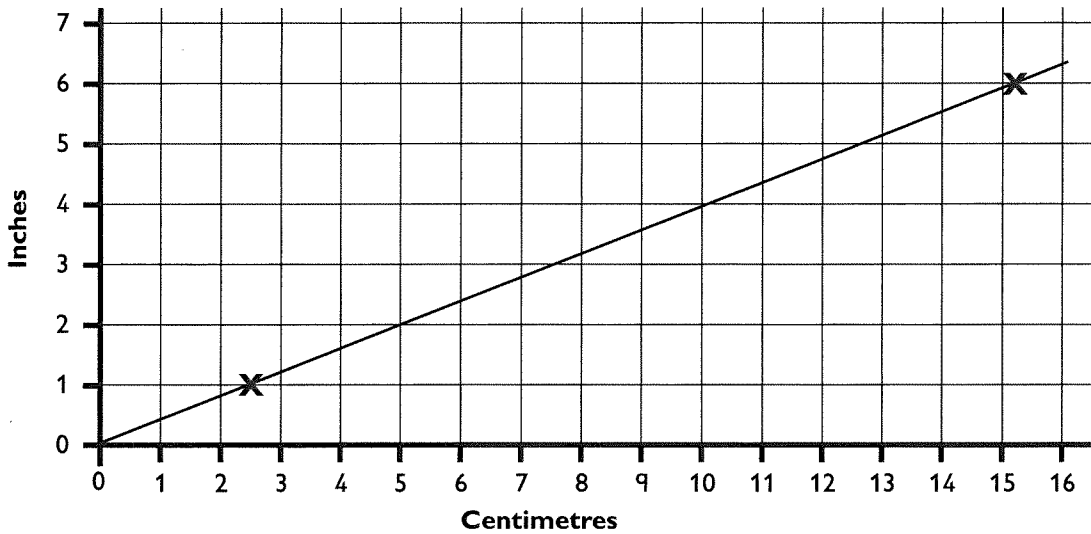
Clever conversions

L.I.S. Workbook

Conversion graphs help you to convert from one measure to another.



- Use this **conversion graph** to compare centimetres and inches.



1. About how many centimetres is:

- (a) 1 inch? _____
- (b) 2 inches? _____
- (c) $1\frac{1}{2}$ inches? _____
- (d) 5.5 inches? _____
- (e) $3\frac{1}{2}$ inches? _____
- (f) 4 inches? _____
- (g) 4.3 inches? _____

2. About how many inches is:

- (a) 4 cm? _____
- (b) 5 cm? _____
- (c) 14 cm? _____
- (d) 6.5 cm? _____
- (e) 11 cm? _____
- (f) 12 cm? _____
- (g) 7 cm? _____

Be as accurate as you can.



- Draw your own conversion graph for grams and ounces.



Label the vertical axis (ounces) in ones, and the horizontal axis (grams) in 25s.



Plot these points and join them with a line.

0 ounces = 0 grams
7 ounces \approx 200 grams
10.5 ounces \approx 300 grams



Your teacher will give you a recipe in **ounces**.

- Use your graph to convert it to **grams**.

Teachers' note Demonstrate how to convert measurements using a conversion graph, and revise metric and imperial units. Remind the children that these are approximate values only. For the extension activity, give the children a simple recipe in ounces. Once they have completed the activity, they could write pairs of approximately equivalent measurements, for example 2 ounces \approx 56 grams.

Developing Numeracy
Handling Data Year 6
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