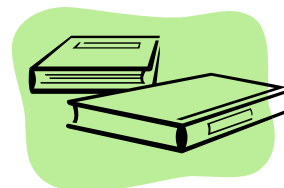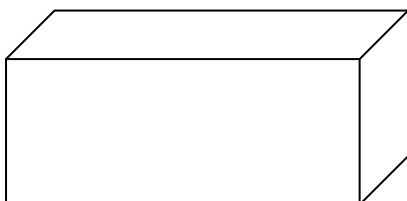# Clue 1 Turn up the volume

Find in the gaps in this table to find the message.

Length (cm)	Width (cm)	Height (cm)	Volume (cm³)	Letter
	2	1	26	
	4	3	108	
	2	2	76	
	3	2	84	
	5	1	75	
5	2	2		
7	5		35	
8	6		96	
	3	3	81	
	4	2	56	
	6	2	72	
13	3		39	
	2	2	56	
5	3	1		
	5	2	60	
	4	2	160	
	3	2	48	
3	2	3		
	3	2	54	
3	2	2		
	4	3	144	
	5	4	100	
	2	2	72	
	2	5	190	

Volumes 1 & 2

Clue 2 - Raising the bar
A

Have you ever wondered what librarians do when there is no one else around? In this library, they race - pushing a trolley of books. The circuit weaves a figure of eight around the children's books, delicately touches the Romance section, hastily scurries past the Horror section before finishing next to the thrillers. One second is added on for every book which falls off the trolley.

To crack this clue, plot a bar chart of the adjusted times of the different librarians.

Name	Time (secs)	Books dropped	Adjusted time
Kate	35	3	
Freda	22	4	
Mary	17	9	
Bill	15	13	
Horace	15	1	
Oliver	18	12	
Wendy	17	17	
Max	19	5	
Sally	13	1	

To solve this clue you must: A

A)   Arrange the names of the librarians in alphabetical order starting from the origin.

B)   Use a scale which makes best use of the space available.

C)   The word below the top of each bar is part of the clue.

D)   You will need to rearrange the 9 words to make a sentence.

E)   Although it won't help with the clue, label each axis and give the chart a heading!

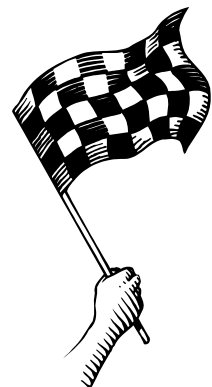| I	always	imagine	paradise	will	be	a	kind	of
library.	male	female	Killer	biscuit	crumb	tea	coffee	spill
You	may	sit	in	our	library	yet	be	in
all	quarters	of	the	earth.	Check	it	out!	divisible
What	in	the	world	would	we	do	without	libraries?
Books	don't	have	to	have	looks.	number	Dewey	decimal
has	Nothing	is	pleasanter	than	exploring	a	library.	fine
A	library	is	not	a	luxury	but	one	of
the	necessities	of	life.	Books	by	famous	authors.	fiction
My	two	favourite	things	in	life	are	libraries	and
bicycles.	They	both	move	you	forward	without	wasting	anything.
Spread	the	words.	Sssh	be	quiet.	When	I	got
my	library	card	that's	when	my	life	began.	snore
Take	your	dreams	off	the	shelf.	five	three	six
Don't	judge	a	book	by	its	cover.	one	two
Take	your	dreams	off	the	shelf.	Silence	Is	golden.
When	the	going	gets	tough,	the	tough	get	a
librarian.	Open	a	book,	open	your	mind.	quiet	please
Cutting	libraries	in	a	recession	is	like	cutting	hospitals
In	a	plague.	snack	open	closed	borrow	novel	overdue

Clue 2 - Raising the bar

Have you ever wondered what librarians do when there is no one else around? In this library, they race - pushing a trolley of books. The circuit weaves a figure of eight around the children's books, delicately touches the Romance section, hastily scurries past the Horror section before finishing next to the thrillers. One second is added on for every book which falls off the trolley.

First from these clues, find out how long each librarian took and how many books they dropped. After that you can work out the adjusted time.

1.   There are 9 librarians. The slowest was Kate who took 35 seconds.

2.   Max dropped 5 times as many books as Sally.

3.   Freda was 13 secs faster than Kate.

4.   Wendy and Mary both took 2 secs more than Bill.

5.   Kate and Freda dropped 7 books between them but Freda dropped 1 more than Kate.

6.   Mary dropped 8 more books than Sally but 8 fewer than Wendy.

7.   Oliver was 3 secs slower than Bill but 1 sec faster than Max.

8.   Sally was 6 secs faster than Max but only 2 secs faster than Horace.

9.   Bill's time was 20 secs less than Kate's.

10.   Oliver dropped 5 fewer books than Wendy but only 1 fewer than Bill.

11.   Sally and Horace both dropped 1 book.

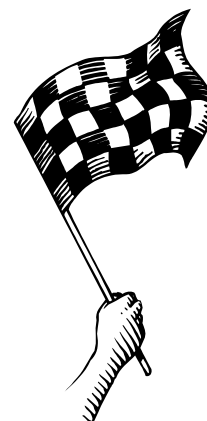| Name	Time (secs)	Books dropped	Adjusted time

To crack this clue, plot a bar chart of the **adjusted times** of the different librarians.

You must:

A)   Arrange the names of the librarians in alphabetical order starting from the origin.

B)   Use a scale which makes best use of the space available.

C)   The word below the top of each bar is part of the clue.

D)   You will need to rearrange the 9 words to make a sentence.

E)   Although it won't help with the clue, label each axis and give the chart a heading!

I	always	imagine	paradise	will	be	a	kind	of
library.	male	female	Killer	biscuit	crumb	tea	coffee	spill
You	may	sit	in	our	library	yet	be	in
all	quarters	of	the	earth.	Check	it	out!	divisible
What	in	the	world	would	we	do	without	libraries?
Books	don't	have	to	have	looks.	number	Dewey	decimal
has	Nothing	is	pleasanter	than	exploring	a	library.	fine
A	library	is	not	a	luxury	but	one	of
the	necessities	of	life.	Books	by	famous	authors.	fiction
My	two	favourite	things	in	life	are	libraries	and
bicycles.	They	both	move	you	forward	without	wasting	anything.
Spread	the	words.	Sssh	be	quiet.	When	I	got
my	library	card	that's	when	my	life	began.	snore
Take	your	dreams	off	the	shelf.	five	three	six
Don't	judge	a	book	by	its	cover.	one	two
Take	your	dreams	off	the	shelf.	Silence	Is	golden.
When	the	going	gets	tough,	the	tough	get	a
librarian.	Open	a	book,	open	your	mind.	quiet	please
Cutting	libraries	in	a	recession	is	like	cutting	hospitals
In	a	plague.	snack	open	closed	borrow	novel	overdue

Clue 3 Decimal System

Calculate the x or ÷. Add the digits in the tens, units and tenths positions.

Decode the number. eg 123.45 x 10 =12**34.5**   3+4+5=12=L

Calculation	Answer	Number	Letter
14450 ÷ 100			
4.620 x 100			
21.005 x 10			
8676.24 ÷ 10			
1.09324 x 1000			
102.124 x 10			
99454.2 ÷ 1000			
0.23019 x 100			
123.774 x 100			
0.18864 x 1000			
16.234 x 100			
55901 ÷ 1000			
6.4126 x 1000			
47679.3 ÷ 100			
0.5001 x 100			
354112 ÷ 10			
14.6862 x 100			
8.22410 x 100			
0.422174 x 1000			
0.005117 x 10000			
2304.17 ÷ 100			
554.21 ÷ 10			
0.848417 x 100			
1.88321 x 100			

Clue 4 Brackets

Work out where the brackets should go to make each number sentence correct. The numbers in the brackets give the code.

eg 5 x 3 + 2 = 25
5 x (3 + 2)=25
3 + 2 =5 = e

	Numbers within brackets	Letter
6 + 7 X 2=26		
3 X 30 − 7=69		
$\dfrac{2 \times 6 - 5}{4} = \dfrac{1}{2}$		
2 x 26-7 =38		
10 + 4 ÷2 =7		
$\dfrac{2+4}{2\times9+6}=\dfrac{1}{5}$		
3 + 7 + 10 x 2=40		
3 x4 − 2 =6		
40 ÷ 2 + 3 =8		
5 + 5 + 9 x 2 = 38		
2 x 9 + 7 = 32		
9 x 2 + 2 + 1 = 45		
7 x 2 + 1 = 21		
3 + 5 x 10 + 10 = 103		
2 x 9 − 8 x 3 = 6		
12 − 9 ÷ 2 = 1.5		
$\dfrac{3\times10+2}{18}=2$		
20 -15 x 12 =60		
9 x 2 +1 + 1 =36		

Clue 5 – Find the missing corner

To solve this clue, plot the co-ordinates given and then find the co-ordinates of the missing corner. Use this to find a word from the word table. Rearrange the 7 words you get to make a sentence. No shapes overlap. Draw the shapes in order. All co-ordinates are whole numbers.

Shape 1 - square (0,8) (2,10) (2,6)
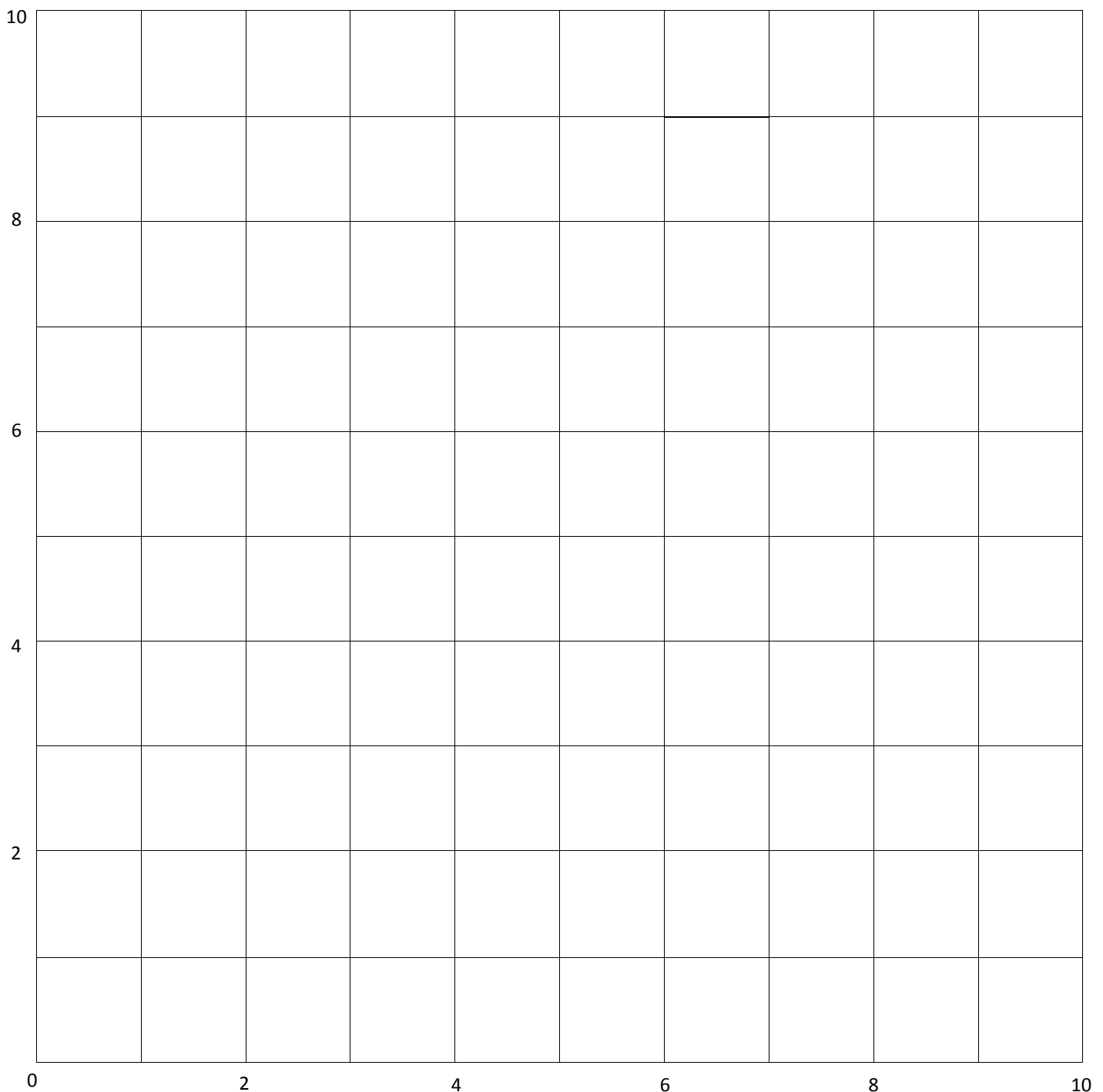Shape 2 - rectangle (0,4) (1,5) (3,3)
Shape 3 - kite (4,9) (6,10) (6,6)
Shape 4 - isosceles triangle (8,10) (9,7)
Shape 5 - rhombus (4,3) (3,5) (4,7)
Shape 6 - parallelogram (2,0) (4,2) (6,0)
Shape 7 - kite (6,3) (8,5) (8,7)

	1	2	3	4	5	6	7	8	9	10
10	book	library	man	woman	author	thriller	Coke	Pepsi	tea	drink
9	coffee	mug	glass	trolley	sometimes	fine	quiet	Killer's	book	card
8	overdue	race	open	usually	hot	cool	holiday	activity	poetry	reference
7	fiction	geography	biography	big	books	cook	breakfast	toilet	DVD	rent
6	crime	horror	romance	family	action	detective	cup	milk	smoothie	water
5	lemonade	beer	fizzy	wine	is	whisky	alcohol	sip	Ovaltine	Horlicks
4	Nesquik	Tang	tree	leek	plum	chicken	divide	one	six	eight
3	four	dead	alive	police	catch	criminal	prison	7 Up	sun	cold
2	not	favourite	like	help	staff	librarian	Tango	served	Sprite	sell
1	can	solve	crime	dial	999	finger	print	cell	locked	up