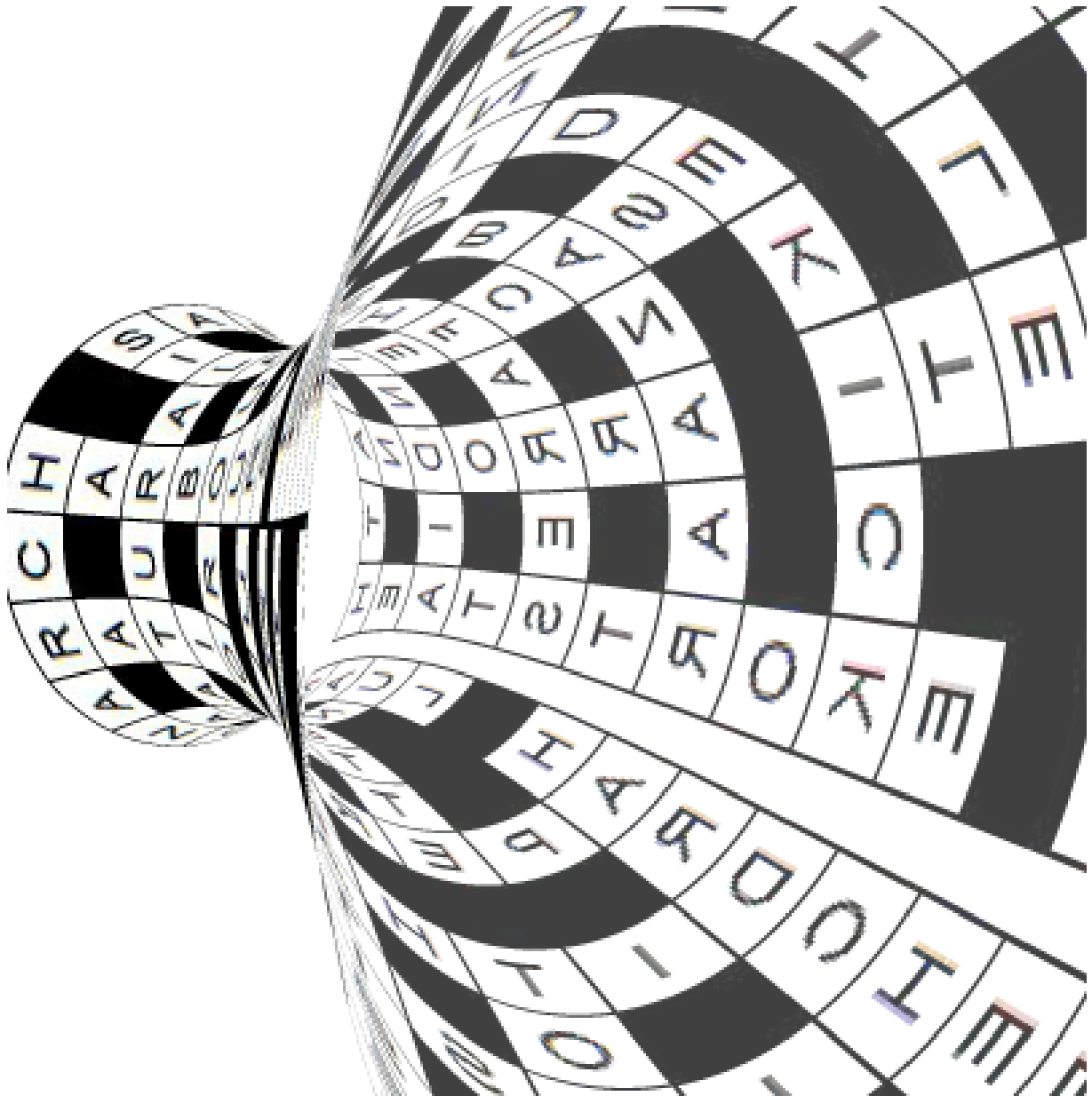# Cryptic Crosswords for Bright Sparks

A beginner's guide to cryptic crosswords for
Gifted & Talented children

Unit 1 - The Crossword Grid

Grid Design

Even if you have never attempted to solve a crossword puzzle, you will almost certainly have at some point seen a crossword grid. The black and white squares might remind you of a chess board, but you will notice that the pattern is more complicated than that. Take a look at this example of a typical grid:
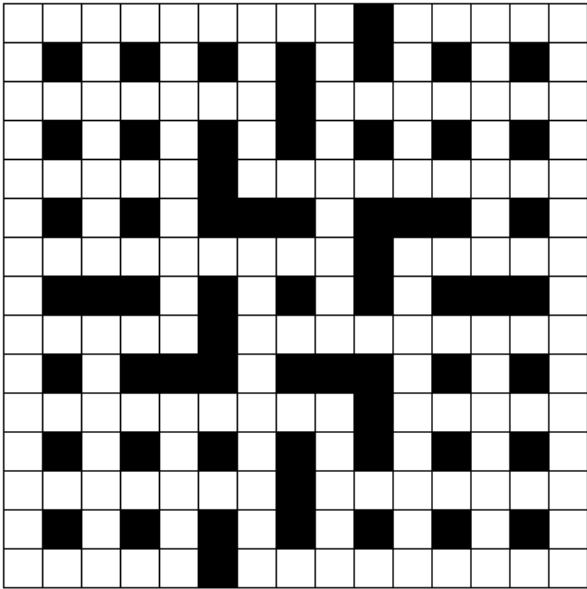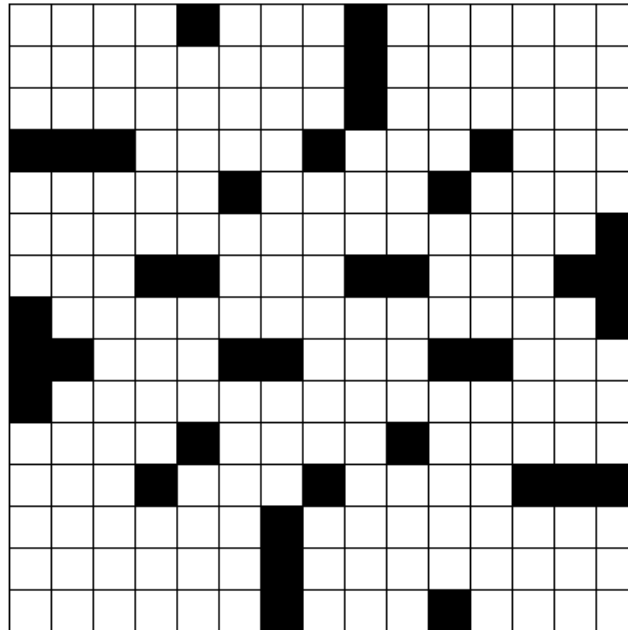

Exercise 1.1

a) Count the number of black squares in the grid. How many are there? ....

b) What is the total number of black and white squares in the grid? (Try to do it without counting them all!) ....

c) How many white squares are there? ....

d) What percentage of squares in this grid are black? ....

You have probably already worked this out, but the white squares represent the letters of the words that fit into the grid. Notice that they go both horizontally and vertically. The horizontal words are always indicated as 'Across' clues; the vertical words are always indicated as 'Down' clues. The 'Across' clues always run left to right, as we would normally read words in

English. The 'Down' clues always run from top to bottom, never upwards. The black squares simply show where words begin and end and they are never used by the solver.

This is the kind of grid that is used for crosswords in the UK. It is also used in other countries, such as Australia, India, South Africa. In the USA, however, you are more likely to come across a grid that looks like this:


Notice how the US grid has a lot fewer black squares, and therefore, a higher number of words in the puzzle. US puzzles are harder for the crossword setter to create and they also tend to have a higher number of unusual words that you would not come across in daily life. Can you work out why this might be?

Exercise 1.2

a) Count the number of black squares in the grid. How many are there? ....

b) What is the total number of black and white squares in the grid? (Try to do it without counting them all!) ....

c) How many white squares are there? ....

d) What percentage of squares in this grid are black? ....

There are other types of grid used, for example, in mainland Europe and Japan, but we will focus upon the UK-style grids, as these are the grids that are used for most cryptic crosswords.

Now take another look at that UK grid. This time, I have shaded the top left square in grey.
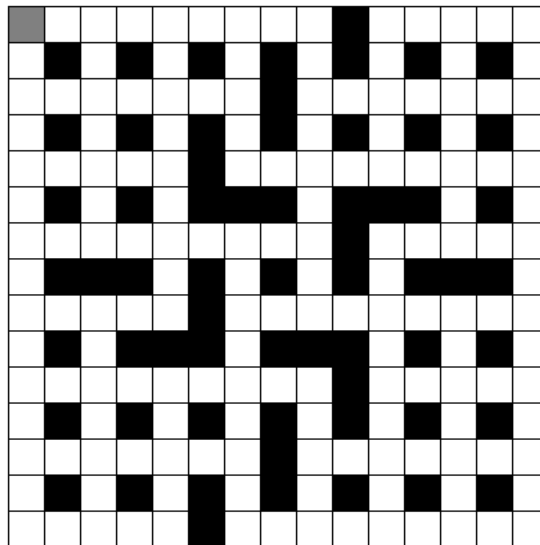
See what happens if I rotate the grid through 180 degrees:
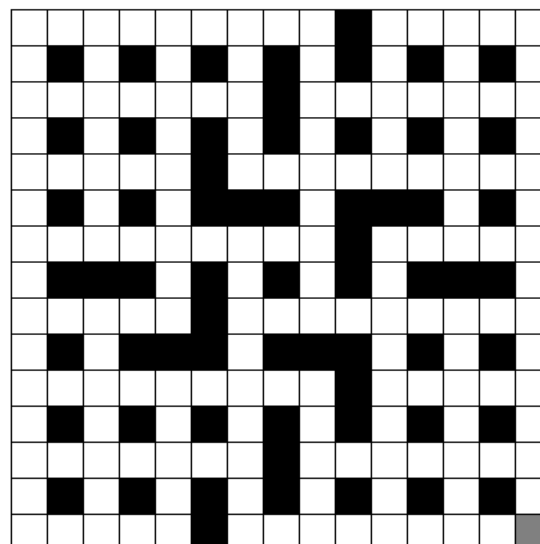
Obviously, the grey square has moved from the top left to the bottom right. But has anything else changed? I'm sure you can see that it hasn't. In other words, the grid has *180-degree rotational symmetry*. (This is just the technical way of saying that if you rotate it half a turn until it is upside down, it will look the same.) By tradition, all UK crossword grids have this kind of symmetry. Check this out for yourself by looking at grids when you find them in newspapers.

Exercise 1.3

Which letters of the alphabet, when written as capitals, have 180-degree rotational symmetry?

Write them here: ………………………………………………………………...

Exercise 1.4

Take a look at this 9x9 grid

Starting from the top left corner, the columns have been labelled A to I **in bold** across the top. The rows have been labelled 1 to 9 **in bold** down the left hand side.

Now look at the bottom right corner. The columns have been labelled A to I *in italics* across the bottom, reading from right to left. The rows have been labelled 1 to 9 *in italics* going up the right hand side.

Look at square **A1**. You will see that it is black.

a)   Now look at square *A1*. What colour is it? ………………....

b)   Complete this table to show the colours of the squares indicated in the grid.

SQUARE	COLOUR	SQUARE	COLOUR
B3	White	*B3*	
E8		*E8*	Black
F7		*F7*	
G1		*G1*	
C6		*C6*	
D4		*D4*	

c)   If square **A9** happened to be white, square *A9* would also be white.

True or false? ....

d)   The reason for this is because the grid has what special feature?

..

Exercise 1.5

a) Shade the squares that should be black in the bottom four rows of the grid below to make it have full 180-degree rotational symmetry. (Use the column/row labels to help you if you need them.)

*	A	B	C	D	E	F	G	H	I	*
1				■		■		■	■	9
2		■								8
3						■		■		7
4		■	■					■		6
5					■					5
6										4
7										3
8										2
9										1
*	I	H	G	F	E	D	C	B	A	*

b)   The grid below is an 11x11 grid. Shade the black squares in the five columns on the right of the grid to make it have full 180-degree rotational symmetry. (Label the rows and columns if you need to, or try to do it without using labels.)

HINT: Remember that crossword grids do not have mirror symmetry. In other words, the right hand side of this grid will not be a reflection of the left hand side. The grid will only look the same if you rotate it until it is upside down.
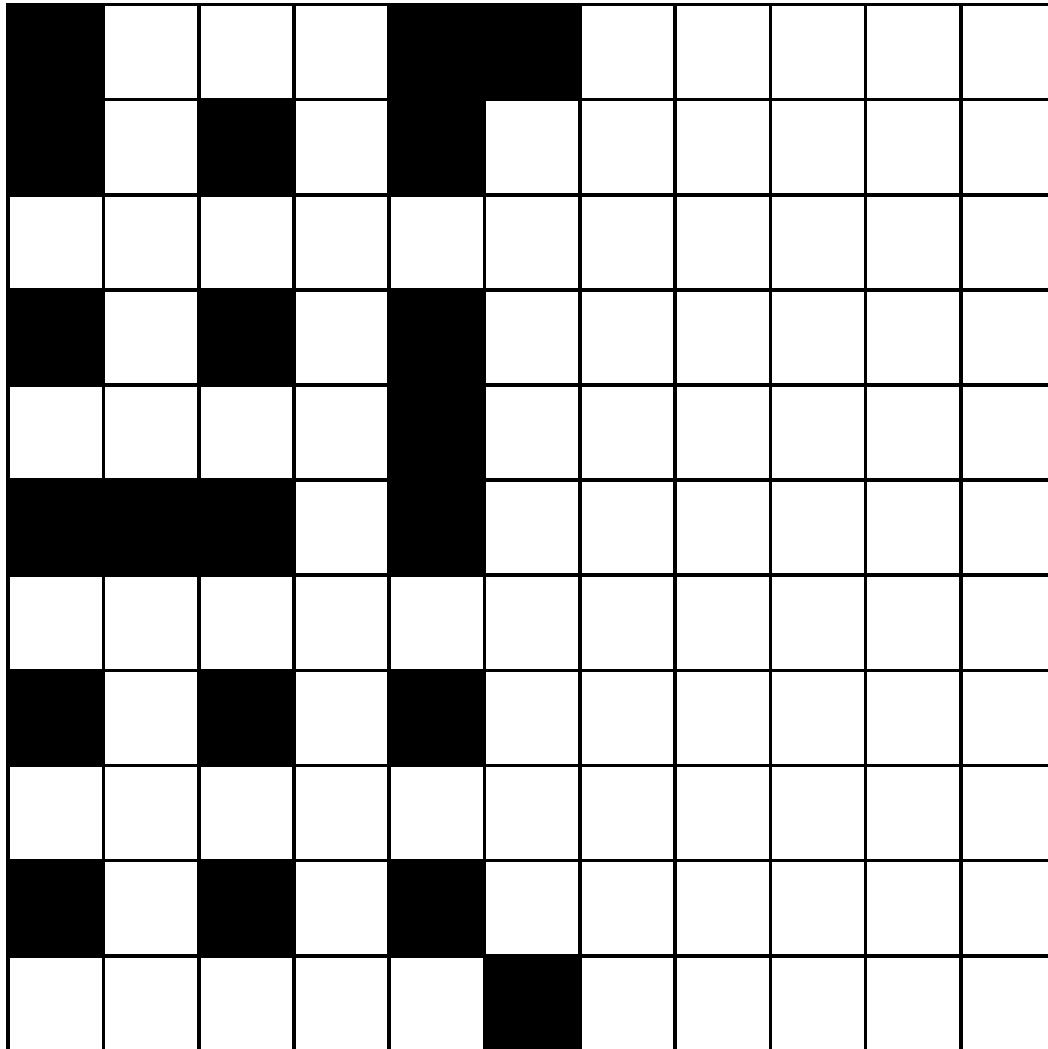
c)	Finally, here is a 15x15 grid, which is the type most commonly used for published cryptic crosswords. Shade the black squares in the top seven rows of the grid to make it have full 180-degree rotational symmetry. (This time, try to do it without labelling your rows and columns.)
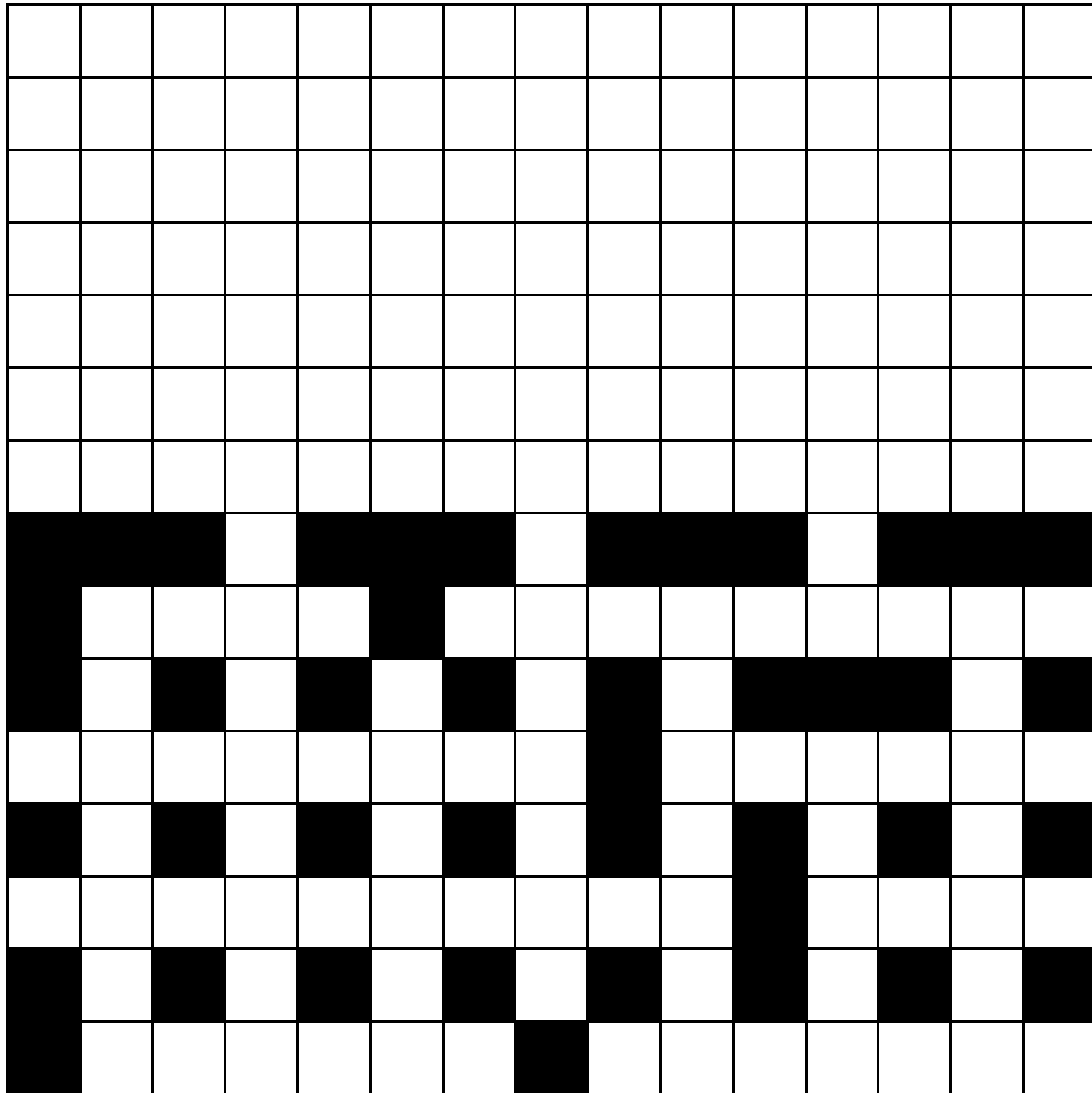
Numbering

Look back at the 15x15 grid that you have just filled in in Exercise 1.5c.

You will notice that it could now be filled with words of various different lengths. In the top row, for example, there is a space for a 7-letter word and a 6-letter word.
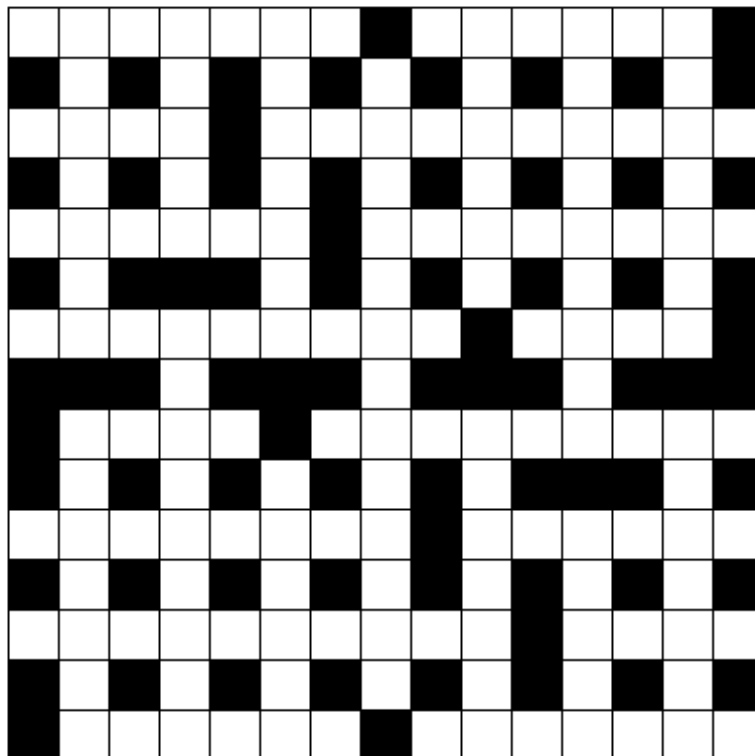
The 7-letter word would be numbered as *1 Across,* which is often shortened to *1A*.

The 6-letter word would be numbered as *5 Across*.

"Hang on a minute!" I hear you cry. "That doesn't make sense! Why isn't it *2 Across*?!"

Well, we'll get onto that shortly, but firstly, try this quick exercise...

Exercise 1.6

a)   How many horizontal ('Across') words are there in this grid? ....

b)   How many vertical ('Down') words are there? ....

c)   How many 13-letter words are there in the grid? ....

d)   How many 7-letter words are there in the grid? ....

So, in any typical grid, there are lots of words that need to be numbered. If there were no numbers to indicate which words in the grid go with which clues, it would be very difficult to get started. You would able to work out where to put your 13-letter word without any problem, but which of those eight 7-letter words would you put into which gaps? Not easy to work out with pure guesswork!

We therefore need a numbering system that has no ambiguity. Each clue must refer to only one place in the grid, otherwise it would all get horribly confusing.

The easiest way to understand the numbering system of crosswords is to compare it to how we read text in English. Certain languages which are written horizontally from right to left, for example, Arabic and Hebrew. Some less well known languages such as Batak are even written in characters going upwards from the bottom to the top of the page. In English, however, as with most writing systems, we write and read horizontally from left to right and go down the page, rather than up. The same rule applies to the way in which crosswords are numbered. The crossword setter simply starts at the top left corner and, at the start of every new word, whether it is going 'across' or 'down', the next number is used. Take a look at this section of the grid we have been studying:
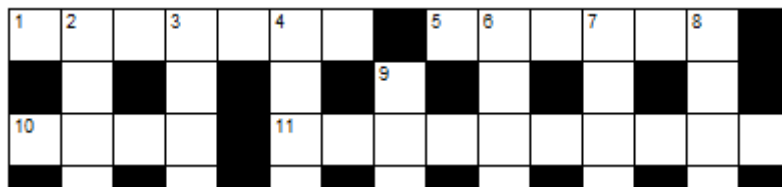

If we start at the top left corner, the first square is white. This must therefore be the start of a word, so the setter has put a '1' in that square. The word happens to be going across, so that first 7-letter word is numbered as *'1 Across'*.

There is no word coming down from that first square, so there is no *'1 Down'* in this grid. There is, however, a word coming down from the second square of the top row. This square will be numbered with a '2' and the clue will be labelled as *'2 Down'*.

Notice how there are two more 'down' words before we get to another 'across' word, so this is why the second 'across' word in the grid is called '*5 Across'*.

In summary, if you 'read' a blank numbered grid from left to right, top to bottom, all of the numbers will be in order and each one will only appear once.

Here is another section from the same grid:
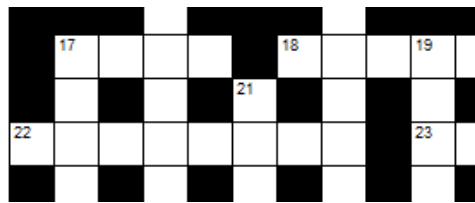
Look at the '17' square. Notice how it starts both a word that is going across and one that is going down. This puzzle, therefore, has both a *'17 Across'* and a *'17 Down'*. Therefore, the highest number in the puzzle does not necessarily equal the number of words in the puzzle. (In this grid, there are 29 words in total but the highest number is 28. This is because the 17 has been used for two different words.)

Exercise 1.7

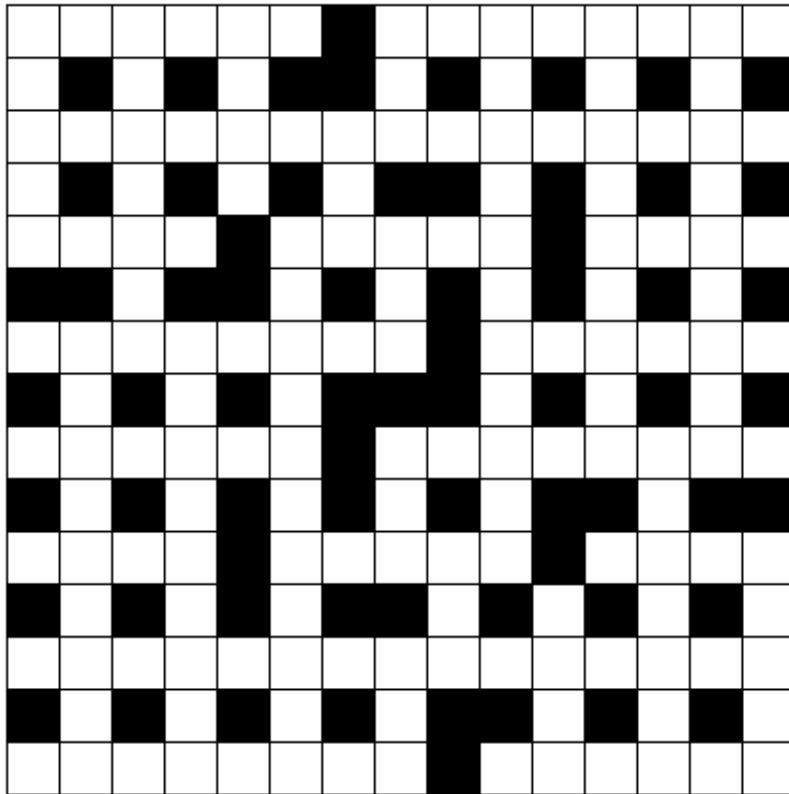a)   Here is the grid with all of the numbers inserted correctly.
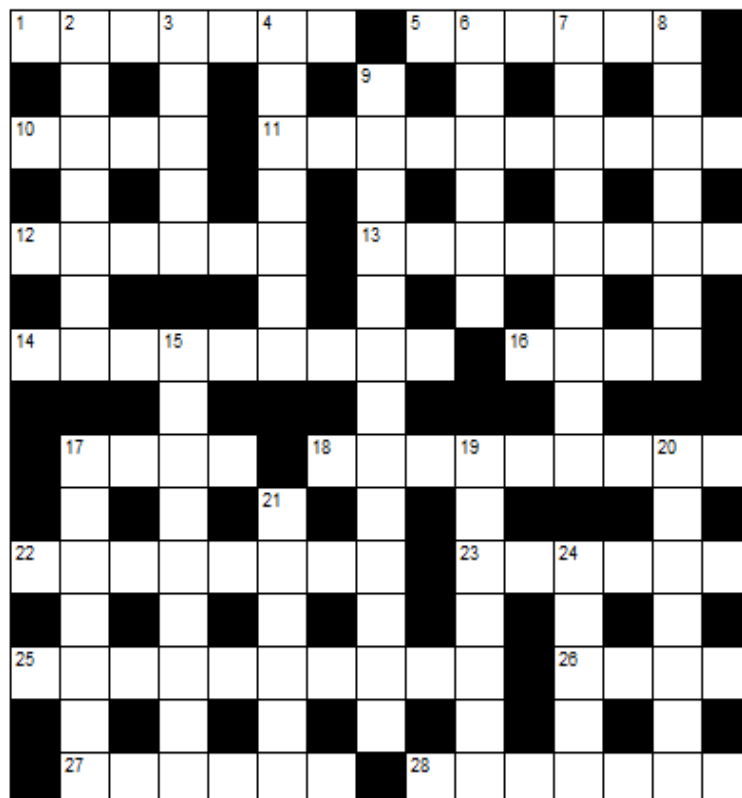
Referring to it carefully, list the numbers used for the Across and Down clues.

Across: ....., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ...

Down: ....., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ...

b) Now try putting the numbers into this grid, remembering the rules explained above.

c) Same again: put the numbers into the grid in the correct places.