Exercise 1

- (a) How many ways to arrange 3 bells? This is the number of 'changes' on 3 bells
- (b) Starting from 'rounds' (1 2 3), swap adjacent pairs of bells to obtain all possible changes on 3 bells and then finish with the bells in 'rounds'

1	2	3

- (c) Draw a line connecting the positions of bell 1 (the 'treble') in every row
- (d) Repeat (c) for any of the other bells
- (e) Can you find any other way of swapping the bells to achieve all changes?

1	2	3

Exercise 2: Plain bob minimus – all the changes on 4 bells

Complete the grid following the rules of the 'place notation' given in column 1.

- x means that pairs of adjacent bells swap
- numbers (e.g.'1' etc) mean that the bell in that position stays in the same position for the next change

	1	2	3	4
Х	2	1	4	3
1x4	2	4	1	3
Х	4	2	3	1
1x4	4	3	2	1
Х	3	4	1	2
1x4	3	1	4	2
х	1	3	2	4
12x	1	3	4	2
Х				
1x4				
х				
1x4				
Х				
1x4				
Х				
12x				

Х		
1x4		
Х		
1x4		
Х		
1x4		
Х		
12x		

How many times does the 'place notation' repeat?

Draw a line connecting the positions of the 'treble' (bell number 1)

Draw a line connecting the positions of bell 2

Chose another bell and draw a line connecting its positions

Exercise 3: Little Bob Minor – a method on 6 bells

Complete the grid using the place notation given in column 1.

Repeat until the bells are back in rounds

- How many changes to get the bells back in rounds?
- How many changes are possible on 6 bells?

	1	2	3	4	5	6
х	2	1	4	3	6	5
1x6						
х						
1x4						
х						
1x6						
х						
12x						

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Draw a line connecting the positions of the 'treble' (bell number 1)

Draw a line connecting the positions of bell 2

Chose another bell and draw a line connecting its positions

Exercise 4: Stedman Doubles

	1	2	3	4	5
x3x	2	1	3	5	4
1x					
x5					
x3x					
1x					
x3x					
1x					
x3x					
x5					
1x					
x3x					
1x					

How many changes to get the bells back into rounds?

Draw a line connecting the positions of the 'treble' (bell number 1)

Draw a line connecting the positions of bell 4

Find out more about ringing:

cccbr.org.uk

Liverpool Branch:





Chester Guild (includes Wirral):

