

### Portfolio Task 3.1

Look at this number square. Imagine you can extend it as far as you like both horizontally and vertically. You may want to sketch your own enlarged version in a notebook.

What patterns do you see in the number square? Jot down anything you notice.

1	3	5	7	...
2	6	10	14	...
4	12	20	28	...
8	24	40	56	...
...	...	...	...	...

### Portfolio task 3.2

Look at the number line below:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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Look at chunks of the number line which consist of two consecutive numbers, such as 1, 2 or 6, 7 or 13, 14. Add these pairs of numbers together. What do you notice? Do you think this result is true for any two consecutive numbers? Why do you think this happens?

Now try adding together three consecutive numbers, or four. What are you noticing? What do you think is the reason for these results?

You may feel a little insecure with the openness of this task. You may not be sure if you have 'answered the question'. This isn't unusual. There is in fact no 'question to answer' – the point is to 'plan and follow lines of enquiry', which is one of the Laurinda Brown's themes. Hopefully, by trying to answer the 'why' questions you are beginning to 'communicate your mathematical thinking'.

### Portfolio task 3.3

Try to prove the statement 'The sum of two consecutive numbers is always an odd number' through a drawing. I have used this problem with young children and they proved the result for me by building towers from cubes.

Here is a drawing that may get you started:


### Portfolio task 3.4

Take a sheet of A3 paper and fold it in half – use a ‘portrait’ orientation. On the left hand side of the paper revisit the consecutive numbers from chapter 3. Try to recreate in as much detail as you can the thinking process you went through when you explored the problem. Now on the right hand side of the paper use the method of rubric writing to annotate your thinking. When were you stuck? Why were you stuck? Jot down your ‘aha’ moments. What did you do immediately following these thoughts? At what stages did you check back over your calculations? What did you discover? Finally, take time to reflect. What did you learn from working at the problem? How might you approach a similar problem in the future? How might you explore this problem further?

If you can, try this problem with a class you are teaching, encourage them to tell you when they are stuck, or have ‘aha’ moments. Support them in checking back over their solutions and most importantly give them time to reflect on the process.