Year 2 | English for the Sciences | Lesson 1

Listening

1. Listen to Vicky Neal's speech on prime numbers (0'00"- 3'52") and answer the following questions:
   a. What is her research field? Number theor
   b. How does she define prime numbers? (transcribe) Prime number are all of the numbers that ar only divisible by 1 and themselves
   c. How does she explain the fact that 1 is not a prime number? Because it is a better definition of what a primal number is.
   d. What is special about the number 2? The only primal number.
   e. What does she want to demonstrate by showing her ten per ten grid? Check if there any patterns in the prime numbers.
   f. What example does she give first? Columns with no prime numbe
2. Find the following words in the speech and explain their meaning:
   a. Keen . . Very interested in/ has a share interest in
   b. whole number
   c. to come across Find somthing by chance
   d. factor Any whole number that is produced when you divide a larger number by another whole
   e. whether This or that
   f. pattern Something which repeats in interval
   g. stone tablets . . Tablets made of stone
   h. even number . . . . . Number that are multiples of 2
   i. shade . . Tone, tint
   j. pick out . . . . Choose
3. Fill in the blanks with the missing preposition. Then listen again to the talk and check your answers: *about / at/ by / for / in / of / to*
   a. I'm slightly anxious __About__ the technology.
   b. I'm going to talk __About__ prime numbers.
   c. I'm interested __In__ properties whole numbers.
   d. It's a good idea to start _____ being very clear _____ what a prime number is.
   e. Definitions are important _____ mathematics.
   f. Mathematicians are good _____ looking _____ patterns.
   g. If I take an even number that is bigger than 2, then it's divisible _____ 1, it's divisible _____ itself and it's divisible _____2, so it's not prime.

Reading and Writing

Read the interview with Daniel Tammet and write down the missing questions.

Daniel Tammet: 'Maths is as rich, inspiring and human as literature is.'

- Adam Feinstein, The Guardian, 11 Nov 2012

British writer Daniel Tammet is a mathematical savant with Asperger's syndrome and synaesthesia. His third book, *Thinking in Numbers: How Maths Illuminates Our Lives*, is a collection of 25 essays exploring mathematics as "the science of imagination". He is also a gifted linguist.

Question 1: As a child, did you realise you were different ?

Yes, I was very different and for a reason that seems invisible. Other children **sniff out** these differences, I was called names and **teased**. But I had no diagnosis at school. Asperger's syndrome only came in officially as a diagnosis in 1994. I had difficulties with understanding social interactions and problems with hygiene, but I managed to control my behaviours and I was under the radar for another few years. When I achieved the European record for reciting pi in 2004, this captured the imagination of Professor Simon Baron-Cohen in Cambridge and he finally diagnosed me with Asperger's that year.

Question 2: What did you feel when you were diagnosed ?

A huge relief, because I could stop feeling guilty. Guilty about not going to university. I didn't have many friends and I also **blamed** that on myself, for being lazy or cack-handed. But now, with the diagnosis, I knew that I had developed differently.

Question 3: Do you still have the same routine ?

Well, I now spoon out the cereal! I do still have a sense of control and routine but this is much less of an issue now. That book was written while I was wrestling with my childhood. I was incredibly lucky that my first book found a large and

loyal readership. It changed my life – from being a very withdrawn adult to living in Paris as a full-time writer. It has also given me enormous confidence.

Question 4: Do you like maths and languages because it is based on rules ?

Certainly. But the rules **can be bent** and played with. Like mathematics, languages are a great source of creativity. Maths is as rich, inspiring and human as literature is.

Question 5: Why did you decide to write this book ?

GK Chesterton was an early inspiration for *Thinking in Numbers* – especially his essays. I have surprised myself by moving into fiction. Fiction has taught me about maths - they are much more similar than people tend to believe. Both respond to fundamental questions about life. Both deal with meaning - in maths, it is about the nature of a point, a line or a square. I've tried to bring storytelling to mathematics. There are very few readable books about maths. I'm not a professional mathematician and I find abstractions very difficult, but I love the detail.

Question 6: What interests you most : aesthetics or logic ?

Aesthetics interests me most. Aesthetics - rather than reason - shapes our thought processes. First comes aesthetics, then logic. *Thinking in Numbers* is not about an attempt to impress the reader but to include the reader, draw the reader in, by explaining my experiences - the beauty I feel in a prime number, for example. Prime numbers can be poetic. I want to break down the barrier between fiction and non-fiction. I want **to bruise** the line by coming up against it.

Question 7: Do you have a favorite chapter ?

Yes. The chapter is called A Model Mother, which is a play on words. My mother is not a model. She is not perfect. That awareness is part of learning to love someone. Predicting the actions of someone is an act of love. We persist, even when we get it wrong. That's the beauty of love. But this was a big lesson for a child with autism - the fact that we all make mistakes.

Question 8: How did you discover your synesthesia ?

That's hard to say, because when I saw the number 9 as dark blue, I assumed everyone felt like that! In my case, numbers and language feed into each other. They are mutually nourishing. My synaesthesia is enormously enriching, as it was for Vladimir Nabokov. And my autism informs my writing, because of my experience as an outsider. Numbers were my friends - I didn't have any others. I now have friends and a partner, Jérôme. People with autism are just as capable of falling in love as anyone else.

Question 9: What do you want to write now ?

I hope to write a novel based on the 1972 Fischer-Spassky chess match in Reykjavik. I have lots of friends there and I am collecting anecdotes about the match right now.

Match the following definitions with words from the text

1. A _____ is someone who has a lot of knowledge.
2. _____ is a condition in which two or more of the five senses that most people experience separately are mixed so that, for example, a person may see colour when they hear a particular sound or read a particular word.
3. A _____ is a relaxed happy feeling that you get because something bad has not happened or a bad situation has ended.
4. _____ is the group or number of people who read a particular newspaper, book, or magazine.
5. Someone who is _____ is very quiet and preferring not to talk to other people.
6. _____ is knowledge or understanding of a subject, issue, or situation.

Find synonyms for the words in bold in the text.

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