

Welcome to the first, pilot issue of the NCETM Primary Magazine. In this issue, we explore the mathematics of Wimbledon. We will be back with more in September. While future issues are in the planning stages, it is a great time for you to [get in touch](#) and let us know what you think, and what you would like to see featured.



## From the editor – three things you must not miss

### Mind the gap

Headlines in the news in May reported the education watchdog's findings that a fifth of children leave primary school unable to read, write or add up properly. The Chief Inspector of Schools said many pupils who left primary school without a good basic grasp of maths and English later made up a large number of the 10 per cent of 16- to 18-year-olds who found themselves out of education, employment or training.

- Read more from [The Guardian](#) or from [The Daily Telegraph](#).

Do you agree? If so, why do you think this is? [We would love to hear your views and form a discussion in our forum](#).

### Concrete to visual to abstract

You may be interested in exploring a new item, the primary CPD module on the portal: [Key ideas about making connections in mathematics](#), which explores the importance of concrete to visual to abstract representations with research, ideas, planning and matters for personal professional development.

### Williams Mathematics Review

Have you heard about The Williams Mathematics Review? It was launched on 17th June and includes important recommendations on professional development for teachers of mathematics in the Early years and mathematics intervention provision.

- [Find out more](#) about the launch of the Williams report

The full report of the Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools can be viewed on [Teachernet](#).

Join the discussion about [Specialist Mathematics Teachers](#) or about [other aspects of the Williams Review](#) in the Primary Forum.

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## Starter of the month – digit cards

Children love seeing, speaking and playing around with 'big' numbers. So why not play around with 'digit cards' in your starter activity and make some. This provides many opportunities for rehearsing a variety of things from number recognition to showing answers to calculations, to place value.

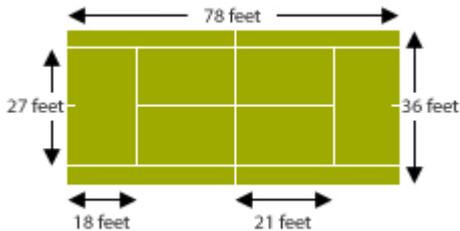
Many children have a similar concept of millions numbers to most adults. When discussing this with a Year 2 class I worked with recently they told me that you could find millions of grains of sand on the beach, blades of grass on the field, leaves on the trees, germs in the toilet! So why not capitalise on this knowledge?

Give each child a set of digit cards from 0 to 9. Adapt the following appropriately, remembering to have high expectations: ask them to show you different numbers and double them, add 9, take away 19, multiply by 10 etc. Next ask them to make 27, then 127, 1 274, 12 874, 128 974, 6 128 874. Most children can do this as essentially they are simply listening to you saying numbers in order and adjusting their numbers accordingly. To increase complexity, ask them to show you how many hundreds there are, then tens and thousands. Then swap digits and ask them to read the order of the digits and finally to read the number.

Why not create your own interactive starter for revising number work using the [Interactive Game Generator on the Teacher Resource Exchange](#).

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## Image of the month – tennis



You can download an A4 version of the tennis court in PDF format [here](#).

1.

How many rectangles can you see in the tennis court shown?  
 What other shapes can you make?  
 What is the perimeter and the area of this tennis court in feet?  
 What is that in metres?  
 Work these out for the size of a singles court.



2.a.

A tennis coach is buying tubes of tennis balls to use in a tennis match. Each tube contains three tennis balls. Which list below shows numbers of tennis balls the coach will have if he purchases complete tubes?

- a. 9, 12, 15
- b. 9, 13, 16
- c. 9, 11, 14
- d. 9, 10, 13

How do you know?

2.b.

Martina went through 28 balls in her matches. How many tubes did she need?  
 At the sports shop tubes were sold at £4.75 each. How much did she spend?  
 Her friend bought the same number of tubes in another shop at 10% less. How much did he spend?

### Extra challenge

Committees in two villages, A and B, have decided that they would like to start a tennis club. They would like to position the club such that the total distance travelled by all its members is a minimum.

- a. If there are 100 members in each village A and B, where should the club be placed?
- b. If there are 100 members in village A and 101 in village B, then where should the club be placed?

The solution is [here](#).

If you enjoyed that, try the [angle tennis challenge](#) on the NRICH site.

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## Topic of the month – Wimbledon: The Great British Tournament

### The Wimbledon fortnight

Did you know?

- There will be approximately 300 ball boys and girls running around the courts at this year's event.
- Every year about 27 000 kilos of strawberries are eaten during the Wimbledon Tennis Championships, together with 7 000 litres of cream.
- Visitors drink 12 500 bottles of champagne.
- The only event at the first Wimbledon Championships in 1877 was the men's singles; women weren't permitted to play until 1884.
- During the first year, the players wore hats and ties and had to wear shoes without heels. Serves were played underarm and the tennis balls were hand sewn.
- 15 000 balls are used over the course of the championship.
- On average, Wimbledon has a 'washout' – when rain stops play entirely – one day in every 50 (or once every four years).
- Martina Navratilova won the mixed doubles in 2003 at the age of 46 years and 261 days – the oldest that anyone has ever become a Wimbledon Champion.
- The longest Wimbledon final took place in 1982 between John McEnroe and Jimmy Connors (4 hours and 16 minutes). Connors won 3-6, 6-3, 6-7, 7-6, 6-4.
- In 2007, the total prize money fund for the championships was £11 282 710.

Why not use some of these facts to create interesting problem-solving questions for your class?

Try out these useful web links for personal or children's research:

- [Tennis Anyone? Wimbledon Fun Facts](#)
- [Kidz World - Wimbledon Tennis Championship](#)

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## Links to useful resources

### [Primary Framework Block E Securing number facts, relationships and calculating](#)

If you are following the PNS blocks and units, you are most likely to be working on Block E Unit 3 at the moment. Why not plan a series of lessons around the Wimbledon tennis tournament theme? It would provide a real life context to the children's work and give purpose and meaning to their tasks. You could adapt and build on the ideas and links on this page. If you do, it would be great to hear your ideas. Share them in the [Primary Forum](#).

### **Making mathematics real**

The article in May's Primary focus stresses the importance of making maths real to children; [join an existing discussion](#) on this issue.

You can find out more about Learning Maths Outside the Classroom [here](#).

Welcome to the pilot issue of the new monthly NCETM Primary Magazine. In this issue, we explore the mathematics of Wimbledon and begin a feature on mathematics from different cultures. In this issue the 'A little bit of history' article features Chinese numbers with some activities.



## A little bit of history – Chinese numbers

In 1899, thousands of bones and tortoise shells were found in a major discovery at an archaeological site in the An-yang district of Henan province, China. Questions had been inscribed on one side of a tortoise shell in ancient Chinese characters. The other side of the shell had been subjected to the heat of a fire, and the cracks that appeared were interpreted as the answers to the questions coming from ancient ancestors.

The importance of these finds, for learning about the ancient Chinese number system, was that many of the inscriptions contained numerical information about, for example:

- men lost in battle
- prisoners taken in battle
- number of sacrifices made
- number of animals killed on hunts,
- the number of days or months, etc.

These were some of the symbols that were found:

—	==	≡	≡≡	⌘
1	2	3	4	5
↑	†	∩	∫	∣
6	7	8	9	10
∪	∩	∩	⌘	↑
20	30	40	50	60
⊖	⊖	⊖	⊖	⊖
100	200	300	400	500
⊖	⊖	⊖	⊖	⊖
1000	2000	3000	4000	5000



You can download a great Chinese puzzle idea in PDF format to work on with the children [here](#).