North East Ambition

Winning with Numbers

North East Mayoral Strategic Authority | Kim McGuinness North East Mayor

## Year 1 Lesson Guide

# Think, Solve, Succeed: Maths and Careers in Action

## Context

This primary school resource aims to extend children's understanding of the job opportunities that await them in their local community and beyond. It particularly stresses the value of applying mathematics in real-life employment contexts, both to further their view of the relevance of mathematics and to increase the sense of fulfilment in undertaking meaningful employment. Positioned on this backdrop, the resource comes as one of a series of lessons that provide a school with an engaging and impactful dimension to their 'problem-solving' curriculum. Central to the experience children gain from the resource is the sense of visiting a local business or organisation; in this case, NHS Northumbria Healthcare, and we extend our thanks to them.

**This resource has been made in collaboration between North East Combined Authority, Winning With Numbers, Northumbria Healthcare NHS Foundation Trust, Bothal Primary School and Central Primary School.**

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### North East MSA Careers Team

Did you know that by the age of five and six, children begin to form career-limiting perceptions based on factors such as their gender and background? Career related learning in a primary setting is about exploring how we open up possibilities, broaden horizons and help children and their families see that anything is possible. Through its Primary Network, the North East MSA is supporting primary schools in our region to create meaningful careers-related learning that will raise aspirations, challenge stereotypes and help children connect the classroom to the world around them. This offer is entirely free to all schools in the North East.

By joining the Primary Network, your school will benefit from one-to-one support to undertake a careers education self-assessment audit and to develop a careers action plan.

In addition to individual support, schools also have access to:

- Regular network meetings (both local and regional) to help develop effective communities of practice
- CPD and training opportunities
- Access to the North East Ambition website, containing resources, case studies and links to careers-related learning providers.

**To join the Primary Network, email:**
goodcareers@northeast-ca.gov.uk

Winning with Numbers

### Winning With Numbers

Winning With Numbers is a number curriculum and learning platform that ensures all children are fluent and confident with number. Winning With Numbers is a 'Phonics for Maths' approach used by schools across the country. It provides a school with access to a structured and systematic programme, ensuring every child acquires basic and essential number fluency. This primary maths programme identifies 300 pieces of number knowledge and puts them in a straight-line sequence of learning. All 300 parts come with a comprehensive suite of digital teaching, learning and training resources.

**For more information visit:**
wwnumbers.com or email WWN@hardingeducation.com

NHS Northumbria Healthcare NHS Foundation Trust

### Northumbria Healthcare NHS Foundation Trust

Northumbria Healthcare NHS Foundation Trust provides comprehensive healthcare services to over 50,000 people in the North East across hospitals, community venues, and patients' homes. Their offerings include emergency and urgent care, planned and ongoing care, outpatient clinics, elective surgery, diagnostic services, maternity and children's services, end-of-life care, and various therapies such as physiotherapy, occupational therapy, and speech and language therapy. Additionally, they offer community services like district nursing and health promotion.

# Year 1

This resource centres on the use of a video that teachers can play in class. The video takes the children through the intentions described above and culminates in a virtual visit to Cramlington Hospital, where we meet an employee called Kai. The children are tasked with supporting Kai in his work. This necessitates some problem-solving and reasoning, as well as making 'real-life' considerations regarding the context. Teachers are urged to pause the video where suggested, allowing children space to think through each part of the scenario for themselves. The notes below can be used as a prompt for the teacher in 'being ready' to support children who need guidance to solve the problems. Naturally, teachers are encouraged to scaffold, adapt and extend the activities to suit their own children's needs, asking children to represent their thinking using a variety of images, symbols and words. Much of the expected thinking can be revisited, strengthening the learning, by altering the numbers or the employment scenarios; asking, 'What if...?'.

Profiles and information about the jobs mentioned in this resource can be found by searching the National Career Service Explore Careers website. This can be used to facilitate further discussion with pupils about jobs that they are interested in.

## Year 1 National Curriculum links

### Statutory

- Count, read and write numbers to 100 in numerals; count in multiples of tens
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9
- Compare, describe and solve practical problems for capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]

### Non-statutory

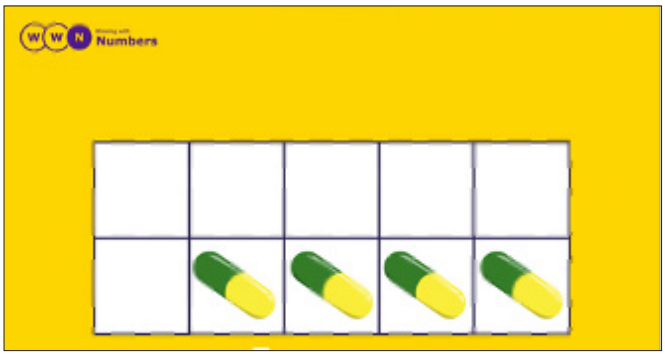
They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms: put together, add, altogether, total, take away, distance between, difference between, more than and less than, so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.

Pupils begin to understand doubling numbers and quantities.

# Discussion Opportunity

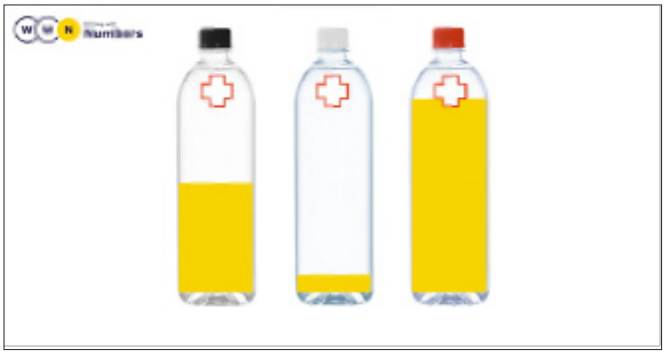
## Can you name any other jobs that people might do in the healthcare sector?

**Pause 1:** This first activity invites children to notice the 10-frame, subitise the 4 tablets, and use factual recall of 4 + 6 = 10 to create a number sentence that can be written, read and spoken about both in and out of the context of the tablet tray. Some children may still need to count, or even need support with their counting, in order to see the number relationship.

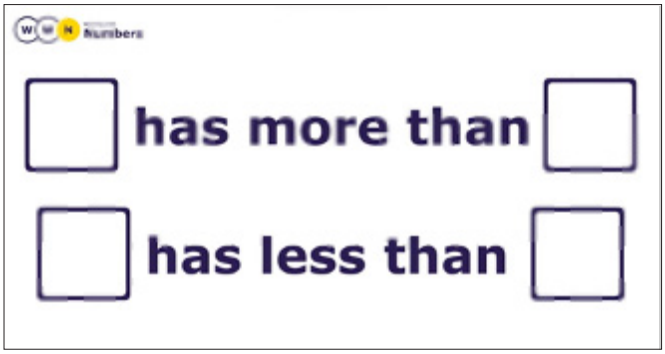



**Pause 2:** The previous activity is now extended, challenging children to write out related number sentences; 4+6 = 10, 6+4 = 10, 10-6 = 4, 10-4 = 6.

**Pause 3:** Children need to identify which bottle has the most, the least and which is half full.



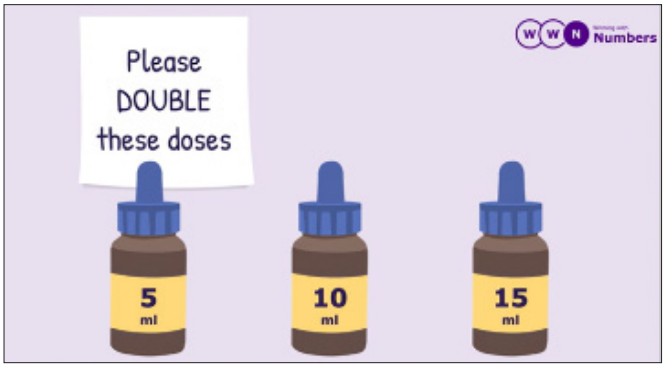

**Pause 4:** We can see that A has more than B, and C has more than B, and C has more than A. We can also position the same relationships as 'less than': B has less than A, and B has less than C, and A has less than C. This activity can be extended - for very able children - into carefully counting the totally amount of different ways the form can be filled in, i.e. the number of permutations that can be made completing the form correctly.



**Pause 5:** This is an image of - 9 = 4. The challenge comes in that the 4 remaining tablets appear first, then the 9 'taken away' tablets. We can also guide children to construct the number sentence as information appears chronologically; 4 + 9 = , needing a full understanding of the context to see the 9 taken away as '+9'. Notice too, the tray size doesn't match the missing number (total of tablets from the start of the day).

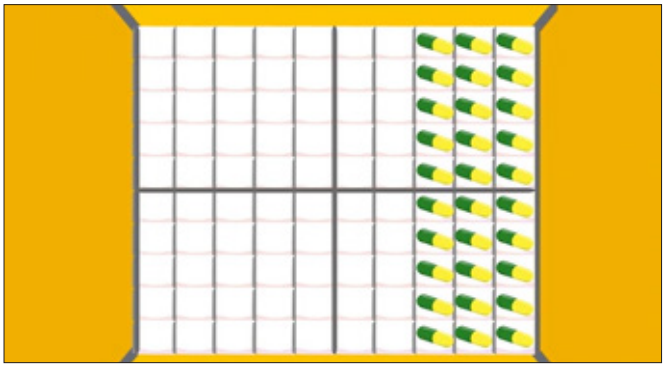



**Pause 6:** Children need to double the doses. Most learners will not be familiar with ml as a unit of measure, however this isn't expected. Indeed, the teaching point is that if we know double 5 is 10, then we know double 5 of any given unit is 10 of those units. Children will also need to know double 10 is 20, then combining those facts to double 15; with the teacher showing how 15 is made of 10 and 5, and that we can double each part separately and then recombine.




**Pause 7:** This medicine cabinet is set up to see 2-digit number amounts through a place value lens. Establish with children that we have 10 columns, with 10 in each column. Count through each column as a unit of 10 ("1 ten, 2 tens, 3 tens..."). Then transfer the counting of tens into reciting the normal sequence of numbers ("ten, twenty, thirty...") and use that counting to see how many tablets there are without counting any of them.

**Pause 8:** Pause 8: As above, but highlight the section of 5 empty columns, noting it as half of the 10. Use that knowledge to see the 7 tens, and so 70. Finally, connect this back to the 3 tens, 30, as a complement of 100; writing out with the children, and reading, '30 + 70 = 100', along with other related sentences.



## Discussion Opportunity

- Did you enjoy helping Kai with his work today as a Ward Medical Assistant?
- What did you like about this job?
- Would you be interested in working as a Ward Medical Assistant when you grow up? Why?