NCCA

Primary Mathematics Toolkit – Support material

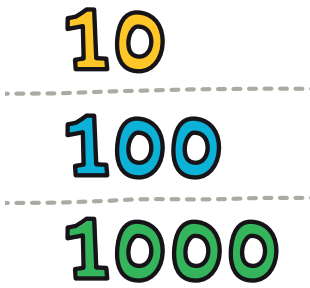
Number: Place value and base ten – Suggestions for learning at home

Why learning about place value and base ten is important

Through engagement with learning in this area, children have opportunities to develop a sense of ten as the foundation for place value and counting. Understanding that digits have different values, depending on their place or position in a number, is an important mathematical concept which children can utilise and apply across other maths topics. Children use numbers flexibly and efficiently, when they are provided with opportunities to practice their estimating skills, to quickly determine number values and number calculations. As children develop their understanding of place value and base ten concepts they can engage with investigations of how decimals, percentages and fractions can be compared, ordered and expressed in related terms, to ensure they can use these skills in a practical sense in their everyday lives.

IDEAS TO SUPPORT LEARNING

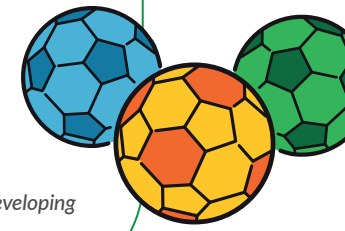
- Encourage your child to use subitising (the ability to accurately recognise small quantities without the need to count) in daily life, e.g., *how many places did I set for dinner? What number did you get when you rolled the dice?*
- Encourage your child to use estimating and rounding (the ability to guess an approximate amount in a larger set) in daily life, e.g., *How many daffodils do you think are in the bunch? Can you check? How much do you think the restaurant bill will come to? How did you come up with that estimate?*
- Involve your child in laying the table for dinner, e.g., *discuss the total number of knives/forks/spoons needed – How many forks are needed? How many more spoons than forks if Grandad is only having soup?*
- Involve your child when shopping for groceries. Challenge your child to check for decimal points on the price tags of items and to use their rounding skills when estimating the total cost of all items.
- Challenge your child to compare the prices of different brands of food, diesel/petrol prices, etc. and discuss the importance of this in looking for value for money.
- Involve your child with preparing ingredients for baking/cooking, e.g., *how much flour do we need and how can we measure it? Which is the largest quantity 750g of caster sugar or 0.5 kg of butter?*
- Take a walk around your local area. Look for one-, two-, three-, four-digit numbers and your child read them aloud. Discuss each number and ask how many ones, tens, hundreds or thousands are in the number. Ask, what is the largest number you can find? What is the smallest number you can find?
- Look at numbers in newspapers, magazines or around the environment and find the largest number/ number closest to 1000/number closest to 91.5, etc.

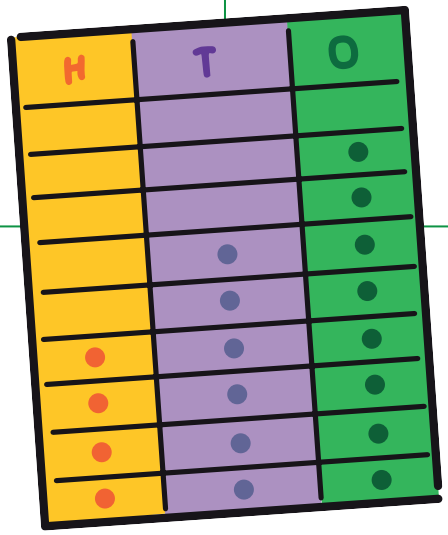


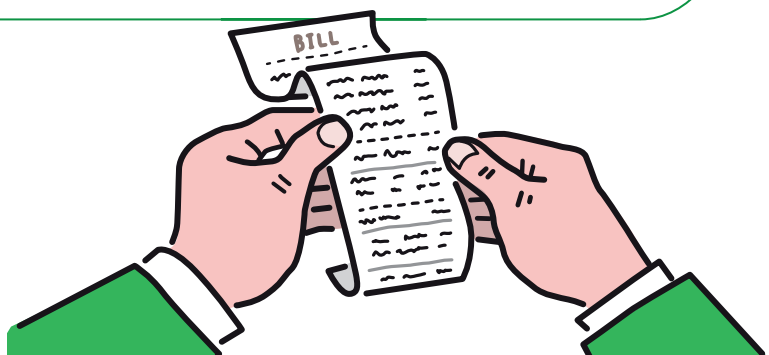
BOOKS

- *One is a Snail, Ten is a Crab: A Counting by Feet Book*, April Pulley Sayre and Jeff Sayre, 4+ years
- *All the Little Ones and a Half!*, Mary Murphy, 5+ years
- *How Big is a Million*, Anna Milbourne, 6+ years
- *The Grizzly Gazette*, Stuart J. Murphy, 7+ years
- *Sir Circumference gets Decima's Point*, Cindy Neuschwander, 7+ years
- *Sir Cumference and All the King's Tens*, Cindy Neuschwander, 7+ years
- *Pythagoras and the Ratios*, Julie Ellis, 9+ years

**Your local library provides a wide range of free books and resources which support in developing children's mathematical learning*







GAMES / ACTIVITIES

- Playing card games, e.g., *ask your child to make as many numbers as possible, numbers higher than/lower than 100, etc. and help your child to compare and order the numbers.*
- Codebreaker game – Choose mystery number (e.g., *from 1 to 100, 1 to 1000*). Ask your child to write down a guess. Colour code their response (e.g., *red indicates incorrect digit, green indicates correct digit in correct position, yellow indicates correct digit but incorrect position*). Encourage your child to continue to make guesses based on the new information they learn each time.
- Incorporate place value and base ten skills into familiar games, e.g., *when playing Snap, group cards in tens to efficiently keep track of who is winning/losing, when playing Monopoly, discuss exchanging ten €10 notes for a €100 note.*

LEARNING ONLINE

- Help My Kid Learn www.helpmykidlearn.ie
- Scoilnet www.scoilnet.ie/primary/theme-pages/mathematics/
- Maths Week Ireland Parents' Zone www.mathsweek.ie
- Maths Eyes https://haveyougotmathseyes.com/

Useful terms to search online: *place value, base ten, number, learning, primary, maths, digits, estimation, rounding, integers, decimals, percentages, converting, games, activities*

ARTS AND CRAFTS

- Nature Art through the lens of place value and base ten - explore art in the outdoor environment. Hunt for natural materials and make connections with numbers to create art, e.g., *assign a place value to different items from nature (use sticks to partition) and use these to create puzzles for children to solve, or challenge your child to create puzzles themselves; gather twigs and applying paint to them to create number prints on canvas or cloth that represent base ten concepts (such as 10 groups of 10 twigs).*
- Create a number dinosaur using different materials and give it a unique name, e.g., *"elevenosaurus" with 11 tails and 11 spikes on its back!*
- Design and create jewellery using patters that connect with place value, e.g., *use 24 beads, and create a pattern of 10 red, 2, blue, 10 red, 2 blue.*
- Search for printable templates of hundred squares, strips of tens, and ones squares and create artwork using these, e.g., *create an image of a house using 1 hundred, 8 tens and 1 one.*

YOUR OWN IDEAS