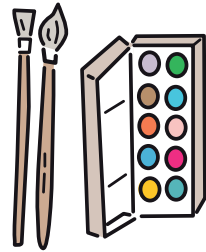


## Algebra: Expressions and equations – Suggestions for learning at home

### Why learning about expressions and equations is important

Expressions (mathematical phrases with no equals, such as  $5 + 3$ ,  $x + 4$ ) and equations (statements that show relationships between two sides of an equations such as  $6 + 4 = 10$ ,  $4x + 2 = 22$ ) are relevant to all areas of maths. The use of symbols for operations  $+$  (add/plus),  $-$  (take away/subtract), as well as  $<$  (less than),  $>$  (greater than),  $=$  (equals) is also central to learning in this area. We regularly use and interpret symbols in the world around us, e.g., *symbols on maps, traffic symbols, washing instructions, technology, music, grammar symbols, etc.* It is important that children develop awareness of the relationship between numbers and the rules relating to operations (addition, subtraction, multiplication, division). This allows them to be flexible and efficient when problems-solving and working with numbers. Being able to make general statements about rules that apply to all numbers, big and small, is a useful skill that children learn about in this area. For example, they can find the area of a rectangle more easily if they know about the relationship between area, width and length ( $\text{area} = \text{length} \times \text{width}$ ). Through learning in this area, children develop an understanding of how to interpret, represent and solve problems involving expressions and equations, providing a solid foundation for their learning in algebra.



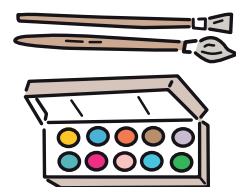
### IDEAS TO SUPPORT LEARNING

- Highlight and discuss the use of symbols/pictures/letter-symbols in the home/in the local area, and what they represent, e.g., *washing instructions, on the weather forecast, road signs.*
- When planning for meals or making your shopping list involve your child in helping you calculate quantities and related costs, e.g., *do we need one or two loaves of bread for the week? How much will this cost? What about if we bought one loaf of bread and one pack of wraps? Will we buy 2 large tins of beans, or a multipack of small tins?*
- Play 'Magic Tricks' with your child that involve applying operations ( $+$ ,  $-$ ,  $\times$ ,  $\div$ ) to a mystery number, e.g., *think of a number between one and ten, double it, double again, take away the original number, divide it by 3, add 2, take away the original number again. Is the answer 2?* Challenge your child to come up with their own tricks.
- Ask your child to make up problems based on what they see around them. Give them your answer and then swap roles so that you make up some word stories for them to solve, e.g., *I have 5 notes in my purse and 6 coins. How much money might I have?*
- Share with your child times when you might need to use expressions and equations to work things out in everyday life, e.g., *when working out how much it might cost to organise an event like a birthday party for x number of guests, for working out how much paint to buy if painting a room or how many packs of tiles to buy if re-tiling the floor.*
- Discuss practical uses of functions that children may encounter, e.g., *when paying for a taxi, the fare is usually calculated by adding an initial charge plus a certain amount per kilometre or minute.*

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100  
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### BOOKS

- *Dinosaur Deals*, Stuart J. Murphy, 8+ years
  - *Ready, Set, Hop!*, Stuart J. Murphy, 8+ years
  - *Safari Park*, Stuart J. Murphy, 8+ years
  - *The Sneetches and other stories*, Dr. Seuss, 8+ years
- \*Your local library provides a wide range of free books and resources which support in developing children's mathematical learning*



### GAMES / ACTIVITIES

- Puzzles and activities involving playful use of numbers and symbols, e.g., *Sudoku (numbers and symbols), Dingbats, 'Break the Code' activities.*
- Dominoes games, e.g., *player one selects 3 or 4 dominoes and writes an expression using the numbers on the dominoes. Player two then has to find suitable dominoes that will allow them to write another expression that will be equal to that of player one.*
- Card games, e.g., *Higher or Lower, 25.*
- Board games, e.g., *Monopoly (players are required to consider to combinations of notes to pay for property, rent, etc.), Equate (similar to Scrabble).*
- Countdown games (online or board game).

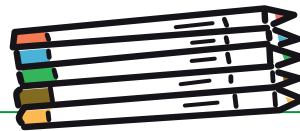
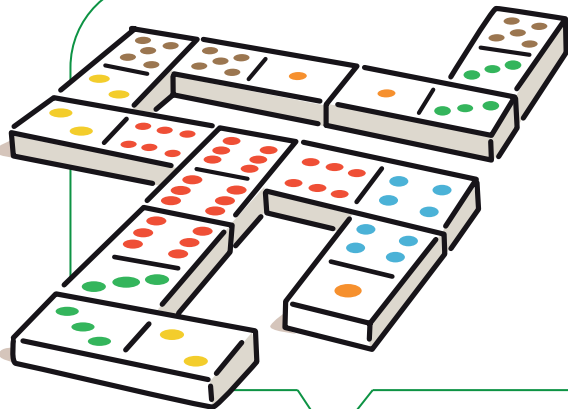
## LEARNING ONLINE

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

**Useful terms to search online:** expressions, equations, algebra, learning, primary, maths, symbols, letter-symbols, number sentences, inequalities, variables, functions, games, activities

## ARTS AND CRAFTS

- Encourage children to use drawings to represent what they visualise when solving problems.
- Design code-breakers, dingbats, etc. using symbols.
- Explore and discuss the use of symbolism in art and create visual biographies of themselves or others, e.g., *a book represents love of reading, jersey for a love of sport, etc.*
- Explore the symbolic meanings behind their family crest, national emblems such as the Irish harp or the American eagle, etc.
- Ask children to create puzzle and conundrums for other family members using symbols and missing values.



## YOUR OWN IDEAS

A large, empty rectangular box with rounded corners and a light blue tab on the right side, intended for students to write their own ideas.