

# Year 9 · 9.3 Number, Games and Language of Mathematics — Learning objectives

What students should be able to do by the end of this unit.

---

## Indices

---

1. I can evaluate expressions involving indices.
2. I can apply index laws (excluding fractional indices).
3. I can use scientific notation/standard form to represent numbers and perform multiplication and division.

## Sets and Venn Diagrams

---

4. I can understand the definition of a set, including finite, infinite, and universe sets, as well as interval notation.
5. I can perform set operations, including complement, union, intersection, and identifying subsets.
6. I can identify and represent special number sets ( $\mathbb{N}$ ,  $\mathbb{Z}$ ,  $\mathbb{Q}$ ,  $\mathbb{Q}'$ ,  $\mathbb{R}$ ) using Venn diagrams.
7. I can use Venn diagrams to represent relationships between two sets.

## Fundamentals of Probability

---

8. I can define randomness and probability, including both experimental and theoretical probability.
9. I can understand chance processes, experiments, and simulations.
10. I can measure likelihood using numerical and descriptive measures.
11. I can represent probability in different forms, including fractions, decimals, and percentages.

## Applications of Probability

---

12. I can determine sample spaces using Venn diagrams, lists, tables, 2D grids, and tree diagrams.
  13. I can understand and calculate probabilities for compound events involving "and" and "or".
  14. I can calculate expected values for multi-event experiments.
  15. I can determine if games are fair based on probability.
-