2A4

Sports stats

How are fractions used to compare results and track performance in sport?

Fractions are used throughout sport to compare performances, measure improvement and set realistic goals. Athletes and coaches use fractions to analyse scores, times and statistics to identify strengths and areas for development. In this challenge, you will explore how fractions are used to compare sporting performance, investigate how fractional calculations support improvement, and apply your understanding to analyse and present sports data.

What you'll do

This challenge helps you understand how fractions are used to compare sports performance and measure improvement.

You will:

- investigate how fractions are used to compare scores, times and performance statistics
- calculate fraction-based improvements or gaps between results
- explain how fractions help athletes and coaches measure progress and set targets
- compare the performance of athletes or teams using fraction-based data
- create a visual to compare team or athlete performance using fraction-based data

✓ Skills I used:

- Learning ☐
- Decision-making ☐
- Communicating ☐
- Team working ☐
- Thinking ☐
- Self-awareness ☐

How I might show the skills

Skills	Examples
Learning	Identifies how fractions are used in sports scores, timings and performance statistics. Applies fractional calculations to compare results and measure improvement.
Decision-making	Selects appropriate fraction calculations to compare scores, times and performance data. Justifies conclusions using numerical evidence.
Communicating	Explains sports performance using fractional calculations and appropriate mathematical language. Presents comparisons clearly using tables, charts or sports reports.
Team working	Works with peers to collect, compare and interpret sports performance data using fractions.
Thinking	Analyses sports data using fractions to identify patterns and improvements. Evaluates how fractional comparisons support performance analysis and goal

	setting.
Self-awareness	Reflects on how understanding fractional improvements supports personal goal setting and confidence in analysing performance.

6A6

Coding and graphics - ratios in screen layouts and animations

How do developers use ratios to keep graphics and animations looking right on different screens?

You'll explore User Interface (UI) or animation code that uses ratios (eg aspect ratios, relative positioning). Ratios are fundamental to digital design, helping developers create screen layouts, graphics and animations that display consistently across different devices. Understanding how ratios control size, spacing and proportions supports responsive design and improves the user experience. In this challenge, you will explore how ratios are used in coding and digital graphics, investigate how ratio changes affect layouts and animations, and evaluate how proportional design improves visual consistency.

What you'll do

This challenge helps you understand how ratios are used to create responsive layouts and consistent digital designs.

You will:

- analyse code or design files to identify key ratio settings
- modify ratio parameters and test on different screen sizes
- record how changes affect layout or animation
- explain how ratio thinking ensures responsive design and visual harmony

✓ Skills I used:

- Learning ☐
- Decision-making ☐
- Communicating ☐
- Team working ☐
- Thinking ☐
- Self-awareness ☐

How I might show the skills

Skills	Examples
Learning	Identifies and explains how ratio settings control element sizing, spacing and aspect ratios in digital layouts and animations.
Decision-making	Selects and applies appropriate ratio adjustments to improve responsiveness and justifies design decisions using evidence.
Communicating	Explains how ratio adjustments affect layouts and animations using appropriate mathematical and technical terminology.
Team working	Collaborates with peers to test digital designs across devices, compare ratio adjustments and evaluate improvements.
Thinking	Analyses how ratio settings influence responsiveness, visual consistency and user experience, evaluating the effectiveness of different design choices.

Self-awareness	Reflects on how understanding ratios improves confidence when solving coding and digital design challenges.

10B2

Interactive dashboard

How can you build a dashboard that shows several datasets at once?

Dashboards combine multiple graphs to present data clearly and support informed decision-making. They are widely used in business, healthcare, sport and many other industries to identify patterns and monitor performance whether it's comparing game scores and play time, tracking the weather vs. mood, or spotting patterns in snack sales and shopping centre footfall. In this challenge, you will select related datasets, create appropriate graphs, combine them into a dashboard and interpret the information to communicate key findings.

What you'll do

This challenge helps you understand how multiple graphs can be combined to communicate data clearly and support decision-making.

You will:

- select and clean multiple datasets (or simulate your own)
- plot each dataset using a graph style that is most useful and visually appealing
- arrange graphs into a single dashboard (on paper or on screen)
- review how dashboards help us spot trends and make fast, smart choices

✓ Skills I used:

- Learning ☐
- Decision-making ☐
- Communicating ☐
- Team working ☐
- Thinking ☐
- Self-awareness ☐

How I might show the skills

Skills	Examples
Learning	Selects and combines different datasets with clarity and accuracy
Decision-making	Interprets trends from the dashboard and suggests thoughtful next steps
Communicating	Designs and labels graphs so that the data tells a clear, connected story.
Team working	Shares roles and ideas to gather data and build the dashboard together. Short video showing how coordinate logic powers game mechanics.
Thinking	Analyses relationships across multiple datasets to identify patterns and draw meaningful conclusions.
Self-awareness	Reflects on how presenting data clearly supports confident communication and informed decision-making.