

\$3,000,000

A 16-year-old known as Bugha won three million dollars in a single afternoon at the 2019 Fortnite World Cup solo finals. Every other finalist who made it there was guaranteed at least \$50,000 just for qualifying.

1%

In a normal 100-player Battle Royale match, exactly 1 player in 100 wins. That is a 1% win rate — and “1 per 100” is literally what *per cent* means.

17%

Fortnite has about 650 million registered accounts — a number so big it's almost useless on its own. Only about 17% of those accounts play in a given month (≈110 million): the percentage beats the raw count because it's a *share of the whole*.

Every number that matters in Fortnite — prize shares, win rates, ranks — is a percentage, and a percentage tells you what a raw number can't: how big it is *out of the whole*. Read percentages and you read the game. This kit shows you how.

CURATED CAMBRIDGE CONTENT

Personalised kit, mapped to your curriculum

Percentages — Reading the Game

Read the Game — every meaningful number in Fortnite is a percentage

Syllabus	Cambridge Lower Secondary Mathematics 0862 (Curriculum Framework 2020)	Chapter	Percentages — Reading the Game
Objectives	7Nf.01, 7Nf.05 (Stage 8 preview only: 8Nf.05)	Scenario	Read the Game
Made for	Ron	Level	Lower Secondary — no Core/Extended tier (n/a)

Name: _____

Class: _____

Date: _____

By the end, you should be able to:

- See that a fraction, a decimal and a percentage can be three skins for the same number, and swap between them (7Nf.01)
- Spot when one of those forms is the odd one out (7Nf.01)
- Work out a percentage of an amount — your share of a prize pot, your rank's slice of the player base (7Nf.05)
- Express one number as a percentage of another — turn “12 wins out of 16” into a win rate (7Nf.05)
- Read a percentage off a shape or a chart, and always check “a percentage of WHAT whole?” (7Nf.05)
- Estimate first and sense-check, so a careless slip never gets clipped (7Nf.05)

Answers to check yourself start on page 16. The Key terms toolkit is a tear-out — see Section 3.

1 Per cent = per hundred the wide shot



Start wide. “Per cent” means *per hundred* — out of 100. A 1% win rate isn’t jargon: it’s the 1-in-100 lobby made into a number. 50% = 50 out of 100 = half. 25% = 25 out of 100 = a quarter. Every percentage is secretly a fraction out of 100, which is why you can also write it as a decimal. That’s the whole idea — the rest of this kit is just using it on real numbers.

KEY IDEA — Per cent = per hundred

A percentage is a count *out of 100*. So $x\%$ means $x/100$, which you can also write as a decimal (divide by 100). $1\% = 1/100 = 0.01$. $30\% = 30/100 = 0.3$. The “%” sign is just shorthand for “/100”.

QUICK CHECK

- 1 A pro’s win rate is reported as 30%. Write that as (a) a fraction out of 100 and (b) a decimal. [2 marks]

🔄 Flip to check — (a) $30/100 (= 3/10)$ (b) 0.3

The whole game talks in per-hundreds: a 6.3% rank share, a 1% baseline win rate, an 80%-off sale. Once you see “%” as “out of 100”, you can read all of them.

2 Why a percentage beats a raw count the relevance engine



“650 million accounts” sounds massive. But massive *compared to what?* You can’t tell from the raw number alone whether the game is alive or dying. Now hear it as a share: only about 17% of those accounts are active in a month. *That* tells you something — roughly one in six. A raw number answers “how many”; a percentage answers “how big / how likely / how good, compared to the whole.” That second question is usually the one you actually care about — which is exactly why this topic is worth your time.

KEY IDEA – A percentage is always a share OF a stated whole

A percentage only means something once you know “percentage of WHAT?” 17% of *registered accounts* is a different whole from 17% of *daily players*. Before you trust a percentage, find the whole it’s measured against. This one habit catches more mistakes than any other.

Watch this trap. Fortnite’s *platform preference* split is reported as: Console 78%, PC 31%, Mobile 23%. Add them: $78 + 31 + 23 = 132\%$. That’s not a mistake — it’s because of cross-play: lots of players use more than one platform, so the “whole” isn’t a clean cut-the-pie-once whole. The lesson: a percentage is always *of a stated whole*, and you must check what that whole is before the number means anything. (Because these don’t add to one whole, you’d never draw them as a single pie.) — Source: platform split via techjury.net Fortnite usage statistics; shares approximate.

QUICK CHECK

- 1 Console preference is 78%, PC is 31%, Mobile is 23%. Together they add to 132%, not 100%. In one sentence, say why that is still correct. [1 mark]

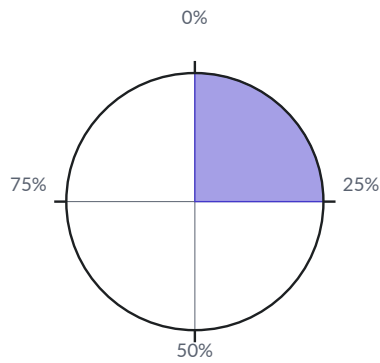
Flip to check — Cross-play — many players use more than one platform, so they’re counted twice; these aren’t slices of one single whole.

3

The same number in three skins — equivalence 7Nf.01



A win rate quoted as “0.25”, “25%”, or “1 in 4” is the *same number* wearing three skins. Equivalence is the skill of seeing through the skin. A **pie** shows it as part of a whole, so you can *feel* the size. See it once — then go abstract fast.



A 25% win rate = $\frac{1}{4}$ of the pie shaded = 0.25 as a decimal. Same number, three skins.

KEY IDEA – Swap between fraction, decimal and percentage

To go % $\rightarrow$ **decimal**, divide by 100 ($30\% \rightarrow 0.3$). **Decimal $\rightarrow$ %**, multiply by 100 ($0.3 \rightarrow 30\%$). **Fraction $\rightarrow$ %**, make it out of 100 ($\frac{1}{4} \rightarrow \frac{25}{100} \rightarrow 25\%$). They are the same value, so a question may hand you any one and want another.

WORKED EXAMPLE 1 – One stat, three skins

Problem: A streamer's win rate is the fraction $\frac{3}{10}$. Write it as a decimal and a percentage.

Solution:

Step 1: $\frac{3}{10}$ as a decimal = $3 \div 10 = 0.3$.

Step 2: 0.3 as a percentage = $0.3 \times 100 = 30\%$.

Think: why does $\times 100$ work? Because “%” means “out of 100”, so turning a decimal into a percentage is just counting how many hundredths it is.

 QUICK CHECK

- 1 The pie above is one-quarter shaded. Write that shaded amount as a percentage AND as a decimal. [2 marks]

- 2 Which one is the odd one out – the one that is NOT the same number? $\frac{1}{4}$, 0.25, 25%, 2.5% [1 mark]

- ☐ A $\frac{1}{4}$
☐ B 0.25
☐ C 25%
☐ D 2.5%

🔄 Flip to check – Q1: 25% and 0.25. Q2: D (2.5%) is the odd one out – the other three all equal 0.25.

 TOOLKIT – KEY TERMS

- **Per cent (%)** – out of 100. $x\% = x/100$.
- **Percentage of an amount** – multiply: $x\% \text{ of } N = (x \div 100) \times N$. (Quick: 10% of $N = N \div 10$; 1% of $N = N \div 100$; 50% = half; 25% = a quarter.)
- **Express as a percentage** – “A out of B as a %” = $(A \div B) \times 100$. (12 out of 16 = $12 \div 16 \times 100 = 75\%$.)
- **Equivalence** – fraction, decimal and percentage forms of the *same* value. % $\rightarrow$ decimal: $\div 100$. Decimal $\rightarrow$ %: $\times 100$. Fraction $\rightarrow$ %: make it out of 100.
- **The whole** – the amount a percentage is measured *out of*. Always ask “percentage of WHAT?”
- **Estimate / sense-check** – guess the rough size first; a percentage under 100% gives an answer *smaller* than the whole.

■ Wide shot done – you’ve got the big idea. Good place to stop. Next we zoom in and put it to work.

 your progress so far

4 Zoom in – your share of the pot 7Nf.05



Now the telescope zooms to one case. To find a percentage of an amount: turn the % into a decimal, then multiply. Before you commit, *estimate* – a pro checks before they clip the stat.

The prize pot we use (so the maths is well-posed): for this kit, “the pot” = the **top-10 solo-finals payouts added up = \$9,975,000**. That is *not* the full event pool – it’s the defined whole for our questions, so every “% of the pot” is checkable. – Source: en.wikipedia.org/wiki/Fortnite_World_Cup (2019 Solo Finals), corroborated by CNN Business & NBC News, Jul 2019.

Place	Payout	Place	Payout
1st	\$3,000,000	6th	\$600,000
2nd	\$1,800,000	7th	\$525,000
3rd	\$1,200,000	8th	\$375,000
4th	\$1,050,000	9th	\$300,000
5th	\$900,000	10th	\$225,000

Top-10 solo-finals payouts (USD) — these add to the \$9,975,000 pot.

WORKED EXAMPLE 2 — A sponsor bonus

Problem: A sponsor pays you 5% of the \$3,000,000 top prize. How much is that?

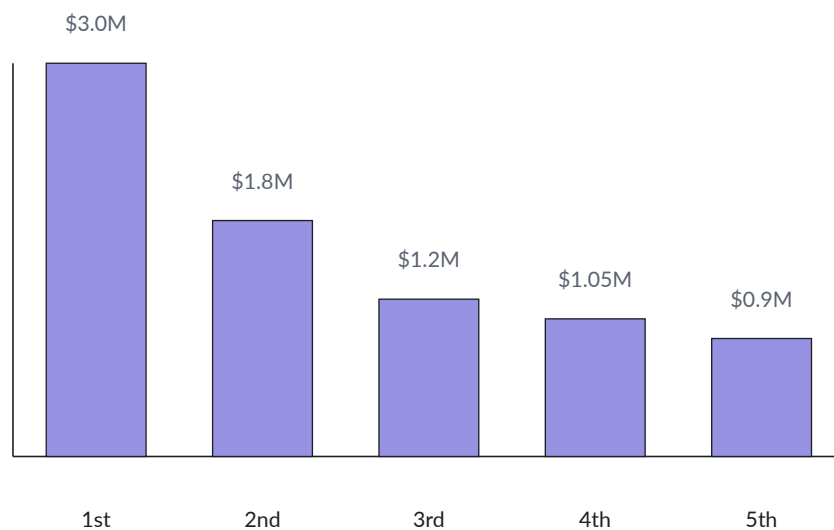
Solution:

Step 1: Estimate — 5% is a twentieth, so a bit over a hundred grand. Lock that in.

Step 2: 5% = 0.05. $0.05 \times 3,000,000 = 150,000$.

Step 3: Sense-check — \$150,000 is smaller than \$3,000,000 and near the estimate.

Answer: **\$150,000.**



Fortnite World Cup 2019 solo finals — top 5 payouts (USD).

POT MISSIONS

- 1 Bugha won \$3,000,000 of the \$9,975,000 defined pot. What percentage of the pot did he win? Estimate first, then work it out to the nearest whole per cent. [2 marks]

- 2 A caster says 2nd place (\$1,800,000) is “60% of first place.” First place is \$3,000,000. Is the caster right? Show working. [2 marks]

- 3 6.3% of 4,000,000 ranked players reach Diamond. How many players is that? [2 marks]

- 4 You win 12 of your 16 ranked games this week. Express that as a percentage win rate. [2 marks]

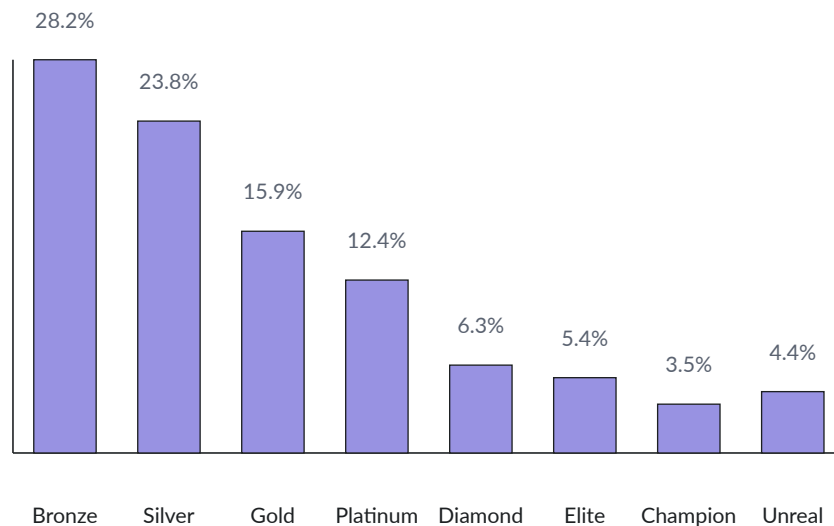
- 5 Work out 45% of \$300 (a smaller sponsor cheque). [1 mark]

5

Read the picture — percent of a shape/chart 7Nf.05



Casters flash stats on screen as shaded shapes and charts. Reading one is a real skill — and the picture won’t be the one you were taught on, so you have to actually *read* it, not match it.



Fortnite ranked distribution, Chapter 7 Season 2 (May 2026), $n > 4\text{M}$ players. Percentages ($\approx 100\%$ with rounding). — Source: esportstales.com.

CHART READS

- 1 From the rank bar chart, which single rank holds the biggest share of players, and what percentage is it? [2 marks]

- 2 Bronze is about 28%. Which is that closest to — $\frac{1}{4}$ or $\frac{1}{2}$ of all players? In one phrase, justify it. [2 marks]

- 3 The eight rank percentages are meant to cover all ranked players. Roughly what should they add up to, and why? [1 mark]

6

Mixed missions — which kind is it? interleaved



Before you start, here are the three kinds (decide which each question is — that choice IS the skill):

- **CONVERT** — swap a number between %, fraction and decimal (no “of”). (7Nf.01)

- **FIND A PART** — work out a percentage of an amount (has an “of”). (7Nf.05)
- **EXPRESS-AS-%** — turn “A out of B” into a percentage. (7Nf.05)

Speed without reading the question is how you pick the wrong kind. Tag the kind first, then solve.

MIXED MISSIONS

- 1 Which kind? Then solve: Write 0.08 as a percentage. [2 marks]

- 2 Which kind? Then solve: 12% of 50,000 viewers watched to the end. How many? [2 marks]

- 3 Which kind? Then solve: You land 9 wins out of 20 drops. What's your win rate as a %? [2 marks]

- 4 Which kind? Then solve: Three of these are the same win rate; ring the impostor: $\frac{1}{5}$, 0.2, 20%, 2%. [2 marks]

- 5 Which kind? Then solve: 0.5% of 30,000,000 daily players are pro-level. How many? [2 marks]

Reflection. How sure are you, mission by mission? Tick: *Nailed it* / *Shaky* / *Not yet*. Ticked **Not yet** on a “which kind?” question? Go back to Section 6's INFO box, re-read the three kinds, and re-do that one

question. Ticked **Shaky** on a “% of an amount”? Redo Section 4 Q5 and check against the answer page.

■ You can now read and convert any stat. Good place to stop. Next: the boss-rush — raw stats, no help.

■ ■ ■ ■ ■ ■ ■ ■ ■ ■ your progress so far

7

Boss-rush — analyst mode zoom back out

■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Telescope zooms out. You're the analyst now: raw stats land on your desk, and you decode them. Each boss is harder than the last — beating one unlocks the next. Bet you can't clear all three without a slip.

BOSS-RUSH

- 1** (BOSS 1) Out of 4,000,000 ranked players, Unreal is 4.4% and Champion is 3.5%. How many MORE players are in Unreal than Champion? [3 marks]

- 2** (BOSS 2) A clip claims “Diamond+ is over a quarter of all players.” Diamond 6.3%, Elite 5.4%, Champion 3.5%, Unreal 4.4%. Is the clip right? Show working and decide. [3 marks]

- 3** (BOSS 3) You earn \$300,000 (9th place). The pot is \$9,975,000. Bugha's \$3,000,000 is what percentage of the pot, and your \$300,000 is what percentage — so how many times bigger is his share than yours? [3 marks]



All done? — analyst self-check tick what you can now do



Tick each “I can...” only if you could do it cold, with no help. Any blank?
The section to revisit is named beside it. (Each item points back:
equivalence → Section 3; % of an amount → Section 4; express-as-% →
Section 4; read a chart/shape → Section 5; “% of what whole?” →
Section 2; estimate/sense-check → Section 4.)

- ☐ I can swap a number between fraction, decimal and percentage form (7Nf.01)
- ☐ I can find the odd one out when one form doesn't match the others (7Nf.01)
- ☐ I can work out a percentage of an amount (7Nf.05)
- ☐ I can express one number as a percentage of another (7Nf.05)
- ☐ I can read a percentage off a shape or chart, and ask “percentage of what whole?” (7Nf.05)
- ☐ I can estimate first and sense-check my answer before I lock it in (7Nf.05)

9

Where this leads — exam-style Cambridge progression-test style



(Cambridge progression-test style: command words + marks; show your working.)

EXAM-STYLE

- Q1** Put a ring around the value that is **not** equivalent to the others:
 $\frac{3}{4}$, 0.75, 75%, 7.5%. [1 mark]
- Q2** Write $\frac{3}{8}$ as a decimal. [1 mark]
- Q3** Work out 35% of \$200. [1 mark]
- Q4** Paul wins 12 out of 16 matches; Stefan wins 18 out of 25. Does Stefan win a higher percentage than Paul? Tick a box and **explain** your answer. [2 marks]

☐ Yes ☐ No

10 NEXT LEVEL — Stage 8 preview optional boss — out of Stage 7 scope

This is **Stage 8 (8Nf.05)**, not **Stage 7**. It does not count toward this kit's percentages. It's here because you said bring it on — the next level unlocked: percentage *increase*. New move modelled first.

WORKED EXAMPLE 3 — Percentage increase (Stage 8 preview)

Problem: A prize pool of \$2,000,000 grows by 50% the next year. What's the new figure?

Solution:

Step 1: Find the increase: 50% of 2,000,000 = $0.5 \times 2,000,000 = 1,000,000$.

Step 2: Add it on: $2,000,000 + 1,000,000 = \$3,000,000$.

Think: increase means find the part, then ADD it to the original.

STAGE 8 BOSS

- 1** (STAGE 8 BOSS) A player count of 30,000,000 daily grows by 20%. What's the new count? [2 marks]
-
-

Extension — Go and read a real stat. Off the page: next time you load Fortnite (or any game), find ONE real percentage on screen — a battle-pass progress %, a stat-tracker win rate, a sale “% off”. Write it three ways (% , decimal, fraction) and say what *whole* it's a percentage of. Bring back the trickiest “% of what whole?” you find.

EXTENSION — YOUR THREE SKINS

1 Real percentage I found: _____ As a %:
_____ As a decimal: _____ As a fraction:

2 A percentage of WHAT whole?

Check your answers

Try first. Check after. For mixed missions, the KIND is given too.

Section 1

- QC1: (a) 30/100 (or 3/10) (b) 0.3

Section 2

- QC2: They add to over 100% because of cross-play — the same player is counted on more than one platform, so they aren't slices of one single whole.

Section 3

- QC3a: 25% and 0.25
- QC3b: 2.5% is the odd one out.

Section 4 (Pot missions)

- Q1: $\approx 30\%$ ($3,000,000 \div 9,975,000 \times 100 = 30.07\dots$)
- Q2: Yes — $1,800,000 \div 3,000,000 \times 100 = 60\%$.
- Q3: 252,000 players ($0.063 \times 4,000,000$)
- Q4: 75% ($12 \div 16 \times 100$)
- Q5: \$135 (0.45×300)

Section 5 (Chart reads)

- Q1: Bronze, 28.2%
- Q2: Closest to $1/4$ — 28% is just over 25%, and $25\% = 1/4$.
- Q3: About 100% — the ranks together are the whole player base (small gap is rounding).

Section 6 (Mixed missions)

- Q1: CONVERT — 8%
- Q2: FIND A PART — 6,000
- Q3: EXPRESS-AS-% — 45%
- Q4: CONVERT — impostor is 2%
- Q5: FIND A PART — 150,000 ($0.5\% = 0.005$)

Section 7 (Boss-rush)

- Q1: 36,000 more ($176,000 - 140,000$)
- Q2: Wrong — Diamond+ = 19.6%, which is under a quarter (25%).
- Q3: Bugha $\approx 30\%$, you $\approx 3\%$, so his share is $\approx 10\times$ bigger.

Section 9 (Exam-style)

- Q1: 7.5%
- Q2: 0.375
- Q3: \$70
- Q4: No — Paul 75% beats Stefan 72%.

Section 10 (Stage 8 boss)

- Q1: 36,000,000 (30,000,000 + 6,000,000)

Mark scheme

Percentages — Reading the Game · Mathematics · Made for Ron

Section 1

QC1

7Nf.01 · 2 marks

30/100 (or 3/10); 0.3

$30\% = 30/100; \div 100 \rightarrow 0.3$

1 per correct form; reject "0.30%".

Section 2

QC2

7Nf.05 · 1 mark

Cross-play double-counting

$78+31+23=132$; overlap

Reward "counted on > 1 platform / wholes overlap"; not "data wrong".

Section 3

QC3A

7Nf.01 · 2 marks

25%; 0.25

reads $1/4$ pie

Must read the pie, not restate 30%.

QC3B

7Nf.01 · 1 mark

2.5%

$1/4=0.25=25\%$; $2.5\% \neq$

No mark if > 1 ringed.

Section 4

4 Q1

7Nf.05 · 2 marks

$\approx 30\%$

$3,000,000 \div 9,975,000 \times 100 = 30.07$

1 method, 1 answer (accept 30 / 30.1).

4 Q2

7Nf.05 · 2 marks

Yes, 60%

$$1,800,000 \div 3,000,000 \times 100$$

Whole is first place, not pot.

4 Q3

7Nf.05 · 2 marks

252,000

$$0.063 \times 4,000,000$$

Watch place value (not 25,200).

4 Q4

7Nf.05 · 2 marks

75%

$$12 \div 16 \times 100$$

Mirrors P4 Q15a.

4 Q5

7Nf.05 · 1 mark

\$135

$$0.45 \times 300$$

Answer-only; mirrors P4 Q7.

Section 5

5 Q1

7Nf.05 · 2 marks

Bronze, 28.2%

read chart

1 rank, 1 value.

5 Q2

7Nf.01 · 2 marks

1/4

$$28\% \text{ just over } 25\% = 1/4$$

Equivalence on a read value.

5 Q3

7Nf.05 · 1 mark

≈100%

ranks = whole base

Partition whole (vs 132% overlap).

Section 6

6 Q1

7Nf.01 · 2 marks

CONVERT; 8%

$$0.08 \times 100$$

1 kind, 1 answer; trap 80%.

6 Q2

7Nf.05 · 2 marks

FIND A PART; 6,000

$$0.12 \times 50,000$$

1 kind, 1 answer.

6 Q3

7Nf.05 · 2 marks

EXPRESS-AS-%; 45%

$$9 \div 20 \times 100$$

No "of an amount" → not FIND A PART.

6 Q4

7Nf.01 · 2 marks

CONVERT; 2%

$$1/5 = 0.2 = 20\%$$

No mark if >1 ringed.

6 Q5

7Nf.05 · 2 marks

FIND A PART; 150,000

$$0.005 \times 30,000,000$$

0.5% = 0.005 (planted slip).

Section 7

7 Q1

7Nf.05 · 3 marks

36,000

$$176,000 - 140,000 \text{ (or } 0.9\% \text{ of } 4\text{M)}$$

Either route full marks.

7 Q2

7Nf.05 · 3 marks

Wrong (19.6% < 25%)

$$\text{sum } 6.3 + 5.4 + 3.5 + 4.4$$

1 sum, 1 compare to 1/4, 1 verdict.

7 Q3

7Nf.05 · 3 marks

$\approx 30\%$, $\approx 3\%$, $10\times$

shares of 9,975,000

Accept $3,000,000 \div 300,000 = 10$.

Section 9

9 Q1

7Nf.01 · 1 mark

7.5%

$3/4 = 0.75 = 75\%$

No mark if >1 ringed.

9 Q2

7Nf.01 · 1 mark

0.375

$3 \div 8$

Mirrors P2 Q25a.

9 Q3

7Nf.05 · 1 mark

\$70

0.35×200

Answer-only; mirrors P2 Q4.

9 Q4

7Nf.05 · 2 marks

No (75% vs 72%)

$12 \div 16 \times 100$; $18 \div 25 \times 100$

Explain mark = the comparison, not the tick; mirrors P4 Q15b.

Section 10 (Stage 8 preview — NOT counted toward Stage 7 coverage)

10 Q1

8Nf.05 · 2 marks

36,000,000

$0.2 \times 30M = 6M$; $+30M$

Stage 8 preview only; flagged, optional.

QA note

- **Framework:** Cambridge Lower Secondary Mathematics 0862, Curriculum Framework (2020), Stage 7 “Number — Fractions, decimals, percentages...”, PDF p.15. Objectives **7Nf.01** and **7Nf.05** verified; **8Nf.05**

is Stage 8 and appears only as a labelled, optional preview (not counted as Stage 7 coverage).

- **Tier:** Lower Secondary has no Core/Extended split (n/a).
- **Personalisation rationale:** Dials lean/confident/gamified (intake K10–K14, P9, P16–P20). Telescope through-line (K9). Careless-slips weakness (T3) handled inside the game frame via estimate-first “pro check” XP moves and planted place-value traps (Section 4 Q3, Section 6 Q5), not by raising scaffolding.
- **Data provenance & flags:** Prize data — Wikipedia “Fortnite World Cup” / CNN Business / NBC News (Jul 2019). Rank distribution — esportsales.com (May 2026). Player counts (650M registered, 110M monthly active, 30M daily) — Demandsage / Business of Apps, 2025–26; **the 17% active share is computed and flagged approximate.** Platform split (78/31/23%) — techjury.net; **sums to 132% by cross-play and is used only to teach “% of what whole?”, never drawn as a pie.** Pro/streamer win-rate figures (10%, 30%) are reported/approximate, not exact. “The pot” is explicitly defined as the top-10 solo-finals total = \$9,975,000, so all “% of pot” items are well-posed and self-checkable; it is not implied to be the full event pool.
- **Originality:** All questions are original; mapped to the *structure* of the 2011 & 2014/15 UCLES Stage 7 progression tests (no examiner reports exist for these), no textbook content reproduced.