

OXBRIDGE MATH TUTORS

PARENT EDITION

VOLUME 2 · THE DEEP-DIVE COMPANION

AP Statistics

The deep-dive companion for parents:
exam at a glance, worked answers,
practice routines and scripts.

Facts last checked: October 2026

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If You Read Only One Page

AP Statistics changed for the 2026-27 school year. If your child is studying it now, they sit the **new** exam in May 2027. Most guides, YouTube videos and past-paper sites still describe the old one.

The five things worth knowing

- **The format is new:** 42 multiple-choice questions and 4 free-response questions worth 10 points each, taken fully on a computer. The old six-question paper and the separate Investigative Task are gone.
- **Half the score is writing.** The free-response section is 50% of the exam, and it is marked on explanation, not just on the number.
- **Inference is where grades dip.** Confidence intervals and significance tests are where strong students first struggle.
- **Older past papers can mislead.** They follow the previous format and may include topics no longer in the course.
- **University credit is decided by each university.** Use the College Board's search tool, not a list from a website.

Five questions to ask your child's school

- Which version of the course is being taught this year, and can we see the unit plan?
- How many full free-response practices will my child do before May, and are they typed on screen?
- How is free-response work marked in class? Against the College Board's style of scoring, or school marking?
- Where and how does my child register for the AP exam, and by what date?
- Does the AP exam result affect my child's school report or predicted grade?

One thing to do this week

Ask your child to explain, out loud, the last statistics answer they wrote, as if talking to a friend who missed the lesson. If they can say what the number means in plain words, they are in good shape. If they can only repeat the calculation, that is the gap to work on.

SECTION 1

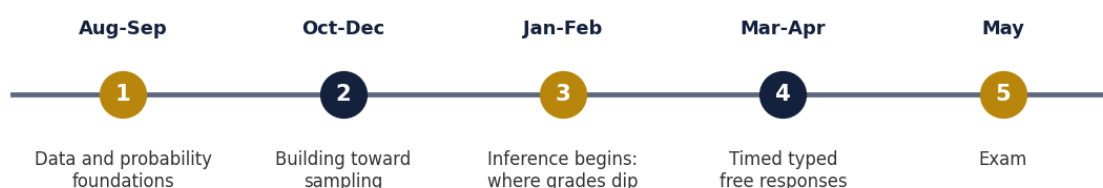
The Exam at a Glance

How the score is built

May 2027 exam	Multiple choice 42 questions, 90 min 50%	Free response 4 questions, 90 min 50%
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	Old exam (through 2026)	New exam (May 2027)
Multiple choice	40 questions, five answer choices	42 questions, four answer choices
Free response	6 questions, the last one an Investigative Task	4 questions, 10 points each
Delivery	Hybrid: free responses handwritten	Fully digital in the Bluebook app
Free-response timing and weight	Questions 1-5: 65 minutes, 37.5% of the exam. Question 6, the Investigative Task: 25 minutes, 12.5% of the exam	4 questions share 90 minutes and 50% of the exam: about 22 minutes each if split evenly

A typical exam-year rhythm (your school's pacing may differ)



What the AP scores mean. The College Board describes the five scores like this:

Score	College Board's description
5	Extremely well qualified
4	Well qualified
3	Qualified
2	Possibly qualified
1	No recommendation

SECTION 2

Is This the Right Course, and the Right Year?

AP Statistics is not a softer version of calculus. It asks for a different skill: reasoning about uncertainty and explaining it in clear sentences. Students who love tidy formulas can find it uncomfortable. Students who like arguing a case from evidence often thrive.

It tends to suit a student who

- Is secure in algebra, so that rearranging and substituting is routine.
- Is happy to write full sentences in a maths lesson, not only numbers.
- Is curious about data in the real world: surveys, experiments, health results, sport.

Be careful if the student

- Treats maths as getting the right number quickly and is irritated by explanations.
- Has a shaky algebra base. Statistics hides algebra inside formulas, and gaps show up late.

A 20-minute readiness check

Give your child these three questions with no notes. Do not coach. The goal is to see how they reason.

- A data set is skewed to the right. Which is bigger, the mean or the median? Why?
- A researcher randomly assigns patients to treatments. How does this support a causal conclusion, and why can chance still produce a difference?
- You take a sample of 50 people and then a sample of 200. Which sample mean is likely to vary less from sample to sample? Why?

Answer key

1. The mean is bigger. A long right tail pulls the mean up, while the median resists extreme values.
2. Random assignment helps balance other factors. A statistically convincing difference in a well-run experiment can support causation; assignment alone does not prove any observed difference was caused by the treatment.
3. The sample of 200, for independent samples from the same population and sampling method. Its sample means have about half the standard deviation of those from samples of 50.

A conversation to have at home

Ask your child to explain the population, parameter and conclusion in a recent practice question without reading their calculation aloud. Discuss why the conditions matter. Practise with a separate learning example, not by rewriting work due for assessment.

SECTION 3

Worked Practice Answers

The examples below use **made-up numbers for teaching**. They are not real survey results. The point is the shape of the answer.

Example 1: Interpreting a confidence interval

Situation. A student surveys a random sample of 30 students at a school and finds the mean daily travel time to school is 42 minutes, with a standard deviation of 9 minutes.

Step 1. Check conditions. Assume a school with more than 300 students and a random sample without replacement. The sample is under 10% of the population. With $n = 30$, inspect the data for strong skew or outliers before using a t interval.

Step 2. Calculate. Standard error = $9 / \text{square root of } 30 = \text{about } 1.64$. For 95% confidence with 29 degrees of freedom, $t^* = 2.045$. Margin of error = $2.045 \times 1.64 = \text{about } 3.36$. Interval: 42 plus or minus 3.36, which is (38.6, 45.4) minutes.

Step 3. Interpret. We are 95% confident that the mean daily travel time to school for all students at this school is between 38.6 and 45.4 minutes.

What the student writes	Why it loses marks
"95% of students travel between 38.6 and 45.4 minutes."	Confuses the interval for the mean with the spread of individual students.
"There is a 95% chance the mean is in this interval."	The true mean is fixed. The 95% describes the method, not the probability for this one interval.
"The mean is between 38.6 and 45.4."	No confidence level, no population, no context. It reads as a certainty.
"We are 95% confident that the mean daily travel time for all students at this school is between 38.6 and 45.4 minutes."	Full marks. Names the level, the parameter, the population and the units.

Example 2: A significance test, in four steps

Situation. A café claims that 40% of its customers choose the new menu. In a random sample of 200 customers, 92 chose it (a sample proportion of 0.46). Is there convincing evidence the true proportion differs from 40%?

State. $H_0: p = 0.40$. $H_a: p$ is not equal to 0.40. Use a significance level of 0.05. p is the true proportion of all the café's customers who choose the new menu.

Plan. One-sample z -test for a proportion. Assume more than 2,000 distinct customers and random sampling without replacement. Then 200 is under 10%; $np_0 = 80$ and $n(1 - p_0) = 120$, both at least 10.

Do. Standard error = square root of $(0.40 \times 0.60 / 200) = 0.0346$. $z = (0.46 - 0.40) / 0.0346 = 1.73$. Two-sided P -value is about 0.083.

Conclude. The P -value of 0.083 is larger than 0.05, so we fail to reject H_0 . We do not have convincing evidence that the true proportion of customers choosing the new menu differs from 40%.

Three wording traps in significance tests

"Accept H_0 ". A test never proves the null hypothesis. The correct phrase is fail to reject.

Dropping the context. The conclusion must say what the result means for the cafe's customers, not just compare numbers.

Mixing up the P-value. It is the probability, assuming H_0 is true, of a result at least as extreme as observed; it is not the probability that H_0 is true.

SECTION 4

A Practice Routine That Actually Works

This is a suggested routine, not a College Board rule. Adapt it to the student's needs, school plan and available time.

Session	What to do	Time
1. Concept	One topic. Explain it aloud without notes, then do four short questions on it.	30 min
2. Write	One free-response question, typed on screen, with a timer set for 20 to 22 minutes. Mark it against the official scoring guideline.	40 min
3. Repair	Rewrite the answer from Session 2 so it earns full marks. Add the mistakes to the error log.	25 min

The error log

Fill one row for every mark lost. After four weeks, look for the pattern in the last column.

Date	Question	What I wrote	What was missing	Type of error

Type of error: concept, communication, reading the question, or careless slip. Most students find one type dominates.

SECTION 5

What to Say, and What to Do When It Goes Wrong

When your child says	Try this	Avoid
"I'm stuck."	"What is the question asking you to find? Say it in your own words."	Solving it for them, or saying "it's easy".
"I get it when the teacher explains it."	"Teach me the last topic as if I missed the lesson." Listen for where the explanation breaks.	Telling them to re-read the notes.
"I got the right answer but lost marks."	"Read me what you wrote. If a stranger read it, would they know what the number means?"	Agreeing the marking is unfair.
"I did badly on the test."	"Which three marks cost you the most? Which kind of error was it?"	Comparing with other students.
"I hate statistics."	"Which part? Is it the writing, the choosing of tests, or the pace?"	Dismissing it as a phase.

When to get extra help, and what kind

What you see	Possible explanation	What helps
Homework fine, timed tests poor	Timing or communication, not knowledge	Timed, typed free-response practice
Avoids free response, fine on multiple choice	Writing confidence	Short written explanations, then full questions
Grade slipping since inference started	No single framework for choosing a test	A one-page decision map, built by the student
Old gaps keep reappearing	Early probability or distributions are shaky	Go back to the topic; do not push forward

SECTION 6

Glossary: Plain-English Definitions

Term	In plain English
Population	Everyone or everything you want to learn about.
Sample	The part of the population you actually measure.
Parameter / statistic	A number describing a population (parameter) or a sample (statistic).
Sampling distribution	How a statistic, such as the sample mean, would vary if you took many samples.
Confidence interval	A range of plausible values for a parameter, built by a method that works a stated percentage of the time.
Confidence level	How often the method captures the true value over many samples. Not a probability for one interval.
Null / alternative hypothesis	The claim being tested (null) and the competing claim (alternative).
P-value	How surprising the sample result would be if the null hypothesis were true.
Significance level	The cut-off for how surprising a result must be before we doubt the null.
Random assignment	Using chance to put subjects into treatment groups, which allows cause-and-effect conclusions.
Bias	A built-in tendency for a method to miss the truth in one direction.
Residual	The gap between an actual value and the value a model predicted.
Correlation	The strength and direction of a linear relationship. It does not show cause.

Check before you rely on this volume

Confirm the current exam format on the College Board's AP Statistics pages. The course was redesigned this year.

Confirm credit and placement for each university on its own page, or with the College Board search tool.

Ask the school which version of the course description it follows.

Official Sources and Use Notes

Reviewed on 5 October 2026. This Volume 2 companion supplements the shorter parent guide. Confirm the student's exam session and specification with the school.

Worked examples and suggested mark allocations are teaching illustrations, not official scoring rubrics, promises of marks or material for assessed submissions. Readiness scores are informal discussion prompts, not validated course-placement tests.

AP Statistics: May 2027 exam format

AP Statistics: course and exam revisions

Current Course and Exam Description

Make an enquiry through the website

The diagnostic is 45 minutes: 30 minutes live plus 15 minutes independent. Launch price: AED 150. Written report within 24 hours; the full fee is credited if a programme starts within seven days.

Parent discussion tables offer possible explanations, not established causes. Work samples, observation and school context are needed before attributing a difficulty to a cause. Informal readiness bands do not validate a diagnosis or predict a grade.