# The Sign Test: A Comprehensive Guide for AQA A-Level Psychology

This guide provides a detailed explanation of the Sign Test, a non-parametric statistical test commonly used in A-Level Psychology. Designed specifically for AQA A-Level Psychology students, this document walks through the purpose, assumptions, calculations, and interpretations of the Sign Test with step-by-step instructions and practical examples. Whether you're preparing for exams or conducting psychological research, this comprehensive resource will help you master this essential statistical technique.
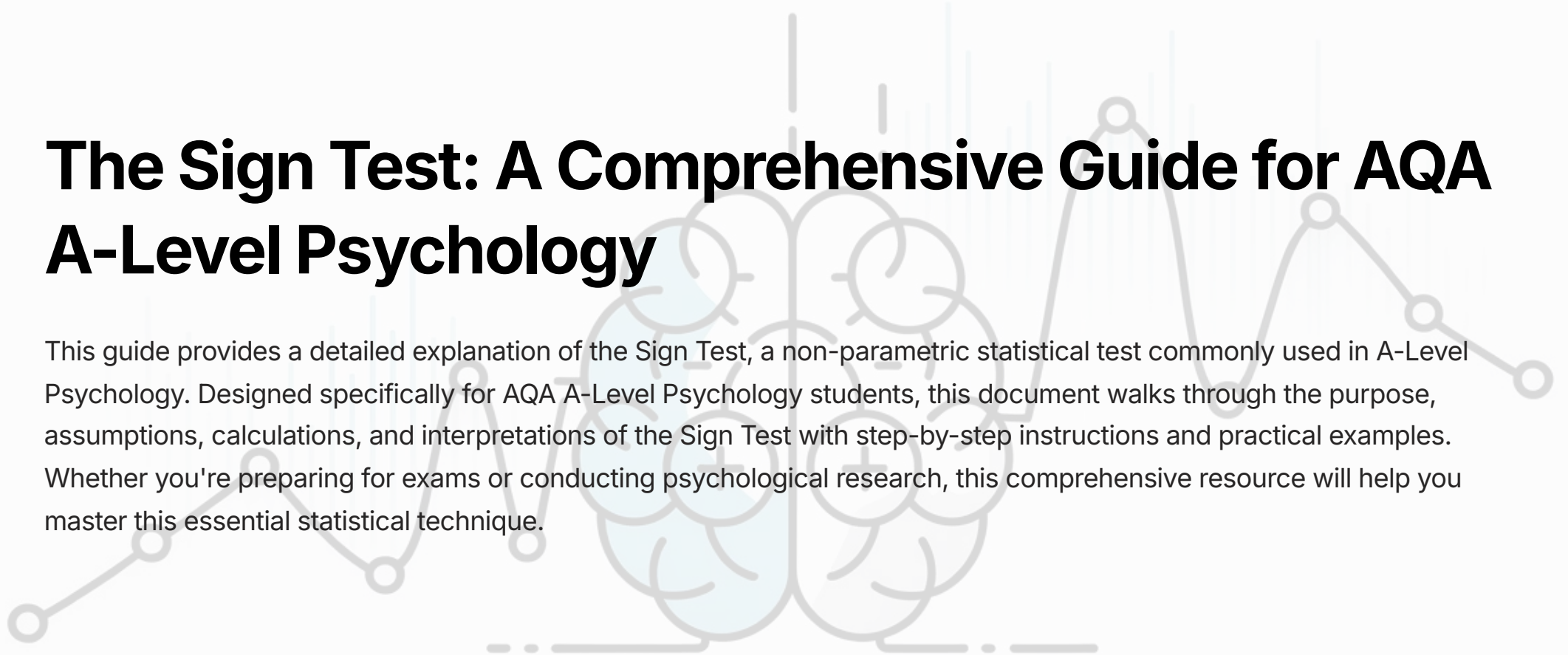
Understanding the Sign Test: Purpose and Applications

The Sign Test is a non-parametric statistical test used to analyse the differences between paired observations. It's particularly useful in psychology when you need to determine whether there is a significant difference between two related conditions or measurements.

When to Use the Sign Test

The Sign Test is appropriate when:

- You have matched pairs or repeated measures design
- The data is at least ordinal (can be ranked)
- You cannot assume a normal distribution
- Sample sizes are relatively small

Common Applications in Psychology

- Before-and-after treatment comparisons
- Comparing two different conditions with the same participants
- Testing the effectiveness of interventions
- Memory studies comparing recall under different conditions

The Sign Test examines the direction of differences between pairs rather than the magnitude of those differences. It simply looks at whether one score is higher than the other (a plus sign), lower (a minus sign), or the same (a tie). This simplicity makes it accessible but also less powerful than some other statistical tests that consider the magnitude of differences.

In the AQA A-Level Psychology specification, the Sign Test is included as one of the required statistical tests that students should understand and be able to calculate. It's particularly relevant for research methods and data analysis sections of the course, where you'll need to demonstrate your ability to select and apply appropriate statistical tests to psychological data.

Assumptions and Requirements of the Sign Test

Before applying the Sign Test to your data, it's essential to understand its assumptions and requirements to ensure valid results. Unlike parametric tests, the Sign Test has relatively few assumptions, making it versatile for various psychological research scenarios.

Key Assumptions

- Paired observations: Data must consist of matched pairs from the same participants or matched subjects

- Independence: Each pair of observations must be independent of other pairs

- Ordinal measurement: Data must be at least ordinal (can be ranked as higher or lower)

- Continuous variable: The variable being measured should be continuous rather than discrete

What the Sign Test Does NOT Require

- Normal distribution: Unlike t-tests, the Sign Test doesn't assume normally distributed data

- Equal variances: No assumption about equal variances between groups

- Interval or ratio data: Works with ordinal data (though can be used with interval/ratio data too)

- Large sample sizes: Appropriate for smaller samples where normality cannot be assumed

The Sign Test is particularly valuable in psychological research because human behaviour and psychological constructs often don't meet the strict assumptions required by parametric tests. For example, measures of mood, anxiety, or subjective experiences may not follow a normal distribution, making the Sign Test an appropriate choice.

However, it's important to note that the Sign Test only considers the direction of differences, not their magnitude. This means it has less statistical power than tests like the Wilcoxon signed-rank test, which considers both direction and magnitude. In your AQA A-Level Psychology exams, you may be asked to evaluate the appropriateness of different statistical tests for given scenarios, so understanding these limitations is crucial.

Setting Up Hypotheses for the Sign Test

Before calculating the Sign Test, you must establish clear hypotheses. In the AQA A-Level Psychology specification, you'll need to demonstrate your ability to formulate both directional (one-tailed) and non-directional (two-tailed) hypotheses appropriately.

Null Hypothesis (H$_o$)

The null hypothesis for the Sign Test states that there is no significant difference between the paired observations. In formal terms:

H$_o$: There is no difference between condition A and condition B (or pre-test and post-test scores).

H$_o$: The median difference between the pairs equals zero.

H$_o$: The number of plus signs equals the number of minus signs.

Alternative Hypothesis (H$_1$)

Two-tailed (non-directional):

H$_1$: There is a difference between condition A and condition B.

One-tailed (directional):

H$_1$: Condition A scores are higher than condition B scores.

OR

H$_1$: Condition A scores are lower than condition B scores.

When deciding between a one-tailed and two-tailed test, consider whether your psychological theory predicts a specific direction of effect. For example, if you're testing whether a therapy reduces anxiety, you might use a one-tailed test because you specifically predict a reduction. If you're simply investigating whether two different teaching methods affect learning differently (without predicting which is better), a two-tailed test would be appropriate.

> Remember: In the AQA exam, you may be asked to identify or write appropriate hypotheses for given scenarios. Always ensure your hypotheses are:
>
> - Clear and specific about the variables being measured
> - Testable through the Sign Test procedure
> - Appropriate to the research question (directional or non-directional)
> - Written in formal, scientific language

The choice between one-tailed and two-tailed tests affects the critical values you'll use to determine significance, so it's an important decision that should be made before data collection, based on your research question and theoretical predictions.

Step-by-Step Calculation of the Sign Test

Calculating the Sign Test is straightforward once you understand the procedure. Follow these steps to perform the calculation correctly for your AQA A-Level Psychology assessment.

Organise Your Data

Arrange your data in pairs (e.g., before and after, or condition A and condition B for each participant). Create a table with columns for participant ID, condition A score, condition B score, difference, and sign.

Calculate Differences

For each pair, subtract the second score from the first score (A - B). The order must be consistent across all pairs.

Assign Signs

Assign a plus sign (+) if the difference is positive, a minus sign (-) if the difference is negative, or zero (0) if there is no difference.

Count Signs and Determine N

Count the number of plus signs and minus signs. Ignore any pairs with zero difference. N equals the total number of pairs with non-zero differences.

Identify the Test Statistic

The test statistic (S) is the smaller of the number of plus signs or minus signs.

Once you have calculated your test statistic S, you need to determine whether it is statistically significant. For small samples (N ≤ 25), you compare S to the critical value in a Sign Test table. For larger samples, you can use a normal approximation formula.

Example Calculation:

Imagine we have 10 participants who completed a memory task under two different conditions (quiet and noisy). We want to test if there's a difference in performance.

After calculating differences and assigning signs, we find 8 plus signs and 2 minus signs.

N = 10 (all pairs had non-zero differences)

S = 2 (the smaller of 8 and 2)

In the next section, we'll look at how to interpret this result using critical values and make a decision about our hypothesis.

Working with Critical Values and Significance Levels

After calculating your test statistic (S) for the Sign Test, you need to determine whether the result is statistically significant. This involves comparing your calculated S value with the critical value from a Sign Test table at your chosen significance level.

Understanding Significance Levels

The significance level (α) represents the probability of rejecting the null hypothesis when it is actually true (Type I error). Common significance levels in psychological research are:

1

0.05 (5%)

The standard significance level in most psychological research. This means there's a 5% chance of making a Type I error.

2

0.01 (1%)

A more stringent significance level, used when more certainty is required. This means there's only a 1% chance of making a Type I error.

3

0.001 (0.1%)

A very stringent significance level, typically used in medical or high-stakes research. This means there's only a 0.1% chance of making a Type I error.

For the AQA A-Level Psychology exam, you'll typically use the 0.05 significance level unless otherwise specified.

Using the Critical Value Table

The critical value depends on:

- Your sample size (N) - the number of pairs with non-zero differences
- Whether you're conducting a one-tailed or two-tailed test
- Your chosen significance level (usually 0.05)

Simplified Critical Values Table for Sign Test ($\alpha = 0.05$)

N	One-tailed	Two-tailed
5	0	0
6	0	0
7	0	0
8	1	0
9	1	1
10	1	1
11	2	1
12	2	2
13	3	2
14	3	2
15	3	3

To determine significance, compare your calculated S value with the critical value from the table:

- If S is less than or equal to the critical value, reject the null hypothesis
- If S is greater than the critical value, retain the null hypothesis

For example, if N = 10 and we're conducting a two-tailed test at $\alpha = 0.05$, the critical value is 1. If our calculated S = 2, since 2 > 1, we would retain the null hypothesis and conclude there is no significant difference between conditions.

Worked Example: Memory Study

Let's work through a complete example of the Sign Test calculation based on a hypothetical memory study that might appear in your AQA A-Level Psychology exam.

Research Scenario

A psychologist is investigating whether background music affects memory recall. Ten participants memorise a list of words in silence and then a different list while listening to classical music. The number of words correctly recalled in each condition is recorded.

Hypotheses

H_0: There is no difference in the number of words recalled between the silent condition and the music condition.

H_1: There is a difference in the number of words recalled between the silent condition and the music condition. (Two-tailed)

Participant	Silent Condition	Music Condition	Difference (Silent - Music)	Sign
1	12	15	-3	-
2	14	16	-2	-
3	10	8	2	+
4	15	14	1	+
5	11	13	-2	-
6	9	12	-3	-
7	13	11	2	+
8	16	18	-2	-
9	10	10	0	0
10	12	15	-3	-

Calculation Steps

1. Count the signs: 3 plus signs, 6 minus signs, 1 zero (which we ignore)
2. N = 9 (total number of non-zero differences)
3. S = 3 (the smaller of 3 plus signs and 6 minus signs)
4. For N = 9, two-tailed test at $\alpha = 0.05$, the critical value is 1

Decision

Since S (3) is greater than the critical value (1), we retain the null hypothesis. There is not sufficient evidence to conclude that background music significantly affects memory recall in this study.

This example demonstrates the complete process of applying the Sign Test to psychological data, from setting up hypotheses to making a final decision about significance—exactly what you'll need to do in your AQA A-Level Psychology exam.

Handling Ties and Zero Differences

When calculating the Sign Test, you may encounter situations where some pairs have identical scores in both conditions, resulting in zero differences or "ties." Handling these correctly is crucial for accurate results.

What Constitutes a Tie?

A tie occurs when a participant scores exactly the same in both conditions, resulting in a difference of zero. For example, if a participant recalls 12 words in both the silent and music conditions, the difference is 0.

Proper Procedure for Ties

The standard procedure for the Sign Test is to **exclude ties from the analysis**. This means:

- Do not count pairs with zero differences when determining N
- N equals only the number of pairs with non-zero differences
- Only plus and minus signs are counted for the test statistic

Impact on Sample Size

Excluding ties reduces your effective sample size. If you start with 15 pairs but 3 are ties, your N for the Sign Test would be 12. This affects the critical value you'll use to determine significance.

When Ties Are Problematic

If you have a large number of ties (more than 20% of your pairs), the Sign Test may not be the most appropriate test. In such cases, consider using another statistical test or consulting with your instructor about the best approach.

Example with Ties

Consider a study where 12 participants complete a task under two different conditions:

- 8 participants perform better in condition A (8 plus signs)
- 2 participants perform better in condition B (2 minus signs)
- 2 participants perform equally in both conditions (2 ties)

For the Sign Test calculation:

- Exclude the 2 ties
- N = 10 (not 12)
- S = 2 (the smaller of 8 plus signs and 2 minus signs)

In the AQA A-Level Psychology exam, you may be given data that includes ties and asked to calculate the Sign Test. Remember to handle ties correctly by excluding them from your analysis to demonstrate your understanding of the proper procedure.

Interpreting and Reporting Sign Test Results

Once you've calculated the Sign Test and determined whether your result is significant, you need to interpret and report your findings correctly. This is a crucial skill for the AQA A-Level Psychology exam and for conducting psychological research.

When Results Are Significant

If S is less than or equal to the critical value, you reject the null hypothesis. This means:

- There is a statistically significant difference between the two conditions
- The result is unlikely to have occurred by chance alone
- You can accept your alternative hypothesis (with the caveat that statistical significance doesn't prove causation)

Example statement: "The Sign Test revealed a significant difference in anxiety levels before and after the mindfulness intervention (S = 2, N = 15, p < 0.05, two-tailed). Participants reported lower anxiety levels after the intervention."

When Results Are Not Significant

If S is greater than the critical value, you retain the null hypothesis. This means:

- There is not sufficient evidence of a difference between the two conditions
- Any observed differences could reasonably be attributed to chance
- You cannot accept your alternative hypothesis

Example statement: "The Sign Test did not reveal a significant difference in memory recall between the silent and music conditions (S = 4, N = 12, p > 0.05, two-tailed). This suggests that background music did not significantly affect participants' memory performance in this study."

Formal Reporting Format

In formal psychological reports, Sign Test results should be reported in the following format:

> S = [test statistic], N = [sample size], p [< or >] [significance level], [one-tailed or two-tailed]

For example: "S = 3, N = 20, p < 0.05, one-tailed"

Contextualising Your Findings

Beyond the statistical result, you should also:

- Relate your findings back to your research question and hypotheses
- Discuss the practical or theoretical significance of your results
- Consider alternative explanations for your findings
- Acknowledge limitations of the Sign Test (e.g., it doesn't consider magnitude of differences)
- Suggest implications for future research or applications

In the AQA A-Level Psychology exam, you may be asked to interpret given Sign Test results or to write a brief conclusion based on your own calculations. Demonstrating your ability to move beyond the numbers to meaningful psychological interpretation is key to achieving high marks.

Advantages and Limitations of the Sign Test

Understanding the strengths and weaknesses of the Sign Test is essential for the AQA A-Level Psychology specification. This knowledge helps you evaluate when the Sign Test is appropriate and when other statistical tests might be preferable.

Advantages of the Sign Test

- **Simplicity:** Easy to calculate and understand, requiring minimal mathematical knowledge
- **Few assumptions:** Does not require normally distributed data, making it suitable for many psychological measures
- **Robustness:** Not affected by outliers or extreme values as much as parametric tests
- **Versatility:** Can be used with ordinal data, not just interval or ratio data
- **Small samples:** Appropriate for small sample sizes where normality cannot be assumed

Limitations of the Sign Test

- **Lower power:** Less statistical power than parametric alternatives like the t-test, requiring larger effects to detect significance
- **Ignores magnitude:** Only considers direction of differences, not how large they are
- **Information loss:** Reduces interval/ratio data to simple plus/minus signs, losing precision
- **Ties:** Cannot handle large numbers of ties effectively
- **Limited scope:** Only suitable for paired designs, not independent groups

Comparison with Other Tests

When evaluating the Sign Test against alternatives, consider:

Test	When to Choose Over Sign Test
Wilcoxon Signed-Rank Test	When you want to consider both direction and magnitude of differences; has greater power
Paired t-test	When data is normally distributed and measured at interval/ratio level; has greatest power
Mann-Whitney U Test	When comparing independent groups rather than paired observations
Chi-Square Test	When analysing frequency data across categories rather than paired measurements

In your AQA A-Level Psychology exam, you might be asked to evaluate the appropriateness of different statistical tests for given research scenarios. Being able to justify your choice of the Sign Test (or explain why another test would be more appropriate) demonstrates critical thinking about statistical methods in psychological research.

Remember that while the Sign Test has limitations, its simplicity and few assumptions make it a valuable tool in the psychological researcher's toolkit, particularly for preliminary analyses or when parametric assumptions cannot be met.

Common Mistakes and How to Avoid Them

When calculating and interpreting the Sign Test, students often make several common errors that can lead to incorrect conclusions. Being aware of these pitfalls will help you avoid them in your AQA A-Level Psychology assessments.

1 Incorrect Handling of Ties

One of the most common mistakes is including ties (zero differences) in your count of N. Remember:

- Ties should be excluded completely from the analysis
- N should only include pairs with non-zero differences
- If you include ties, your N will be inflated and your critical value incorrect

2 Inconsistent Subtraction

When calculating differences between pairs, be consistent in your subtraction order:

- Always subtract in the same direction (e.g., Condition A - Condition B)
- Switching the order for some pairs will reverse the signs and invalidate your results
- Document your subtraction method clearly

3 Using the Wrong Critical Value

Critical value errors can lead to incorrect conclusions:

- Ensure you're using the correct N (after removing ties)
- Check whether you need one-tailed or two-tailed critical values
- Verify you're using the right significance level (usually 0.05)
- Double-check the critical value table

4 Misidentifying the Test Statistic

Remember that S is the smaller count:

- S is the smaller of the number of plus signs or minus signs
- If you have 12 plus signs and 3 minus signs, S = 3 (not 12)
- Using the larger count will lead to incorrect conclusions

5 Misinterpreting Significance

The decision rule for the Sign Test can be confusing:

- Reject H_o if S is less than or equal to the critical value
- Retain H_o if S is greater than the critical value
- This is the opposite of many other tests where larger values indicate significance

Exam-Specific Advice

In the AQA A-Level Psychology exam, pay particular attention to:

- Showing all your working clearly, including how you determined N and S
- Stating your hypotheses precisely at the beginning
- Explicitly stating which critical value you're using and why
- Writing a clear conclusion that directly addresses your hypotheses
- Using correct psychological terminology throughout

By being mindful of these common pitfalls and following a systematic approach to the Sign Test calculation, you'll be well-prepared to demonstrate your statistical competence in the AQA A-Level Psychology exam.

Practice Questions with Solutions

The best way to master the Sign Test calculation is through practice. Below are several practice questions similar to those you might encounter in your AQA A-Level Psychology exam, along with step-by-step solutions.

1

Basic Calculation

Question: A researcher investigates whether a mindfulness intervention reduces stress levels. Ten participants complete a stress questionnaire before and after the intervention, with higher scores indicating higher stress. Calculate the Sign Test and determine if there is a significant difference at p = 0.05 (two-tailed).

Participant	Before	After
1	25	18
2	30	25
3	22	20
4	28	22
5	19	21
6	31	24
7	27	26
8	24	18
9	29	23
10	26	26

Solution:

1. Calculate differences (Before - After): 7, 5, 2, 6, -2, 7, 1, 6, 6, 0
2. Assign signs: +, +, +, +, -, +, +, +, +, 0
3. Count: 8 plus signs, 1 minus sign, 1 tie (ignore)
4. N = 9 (excluding the tie)
5. S = 1 (smaller of 8 and 1)
6. Critical value for N = 9, two-tailed, p = 0.05 is 1
7. Since S = 1 equals the critical value, reject H_o
8. Conclusion: There is a significant reduction in stress levels after the mindfulness intervention (S = 1, N = 9, p = 0.05, two-tailed).

2

Handling Multiple Ties

Question: A psychologist tests whether background noise affects concentration. Twelve participants complete a concentration task in quiet and noisy conditions. Calculate the Sign Test and determine if there is a significant difference at p = 0.05 (one-tailed, predicting better concentration in quiet conditions).

Results: 7 participants performed better in quiet conditions, 2 performed better in noisy conditions, and 3 performed equally well in both conditions.

Solution:

1. Count: 7 plus signs (assuming quiet minus noisy), 2 minus signs, 3 ties (ignore)
2. N = 9 (excluding the 3 ties)
3. S = 2 (smaller of 7 and 2)
4. Critical value for N = 9, one-tailed, p = 0.05 is 1
5. Since S = 2 is greater than the critical value of 1, retain H_o
6. Conclusion: There is not sufficient evidence to conclude that participants concentrate better in quiet conditions (S = 2, N = 9, p > 0.05, one-tailed).

3

Interpreting Given Results

Question: A study on the effect of caffeine on reaction times found S = 2, N = 15, using a two-tailed test at p = 0.05. The researchers predicted that caffeine would affect reaction times but didn't specify a direction. Interpret these results.
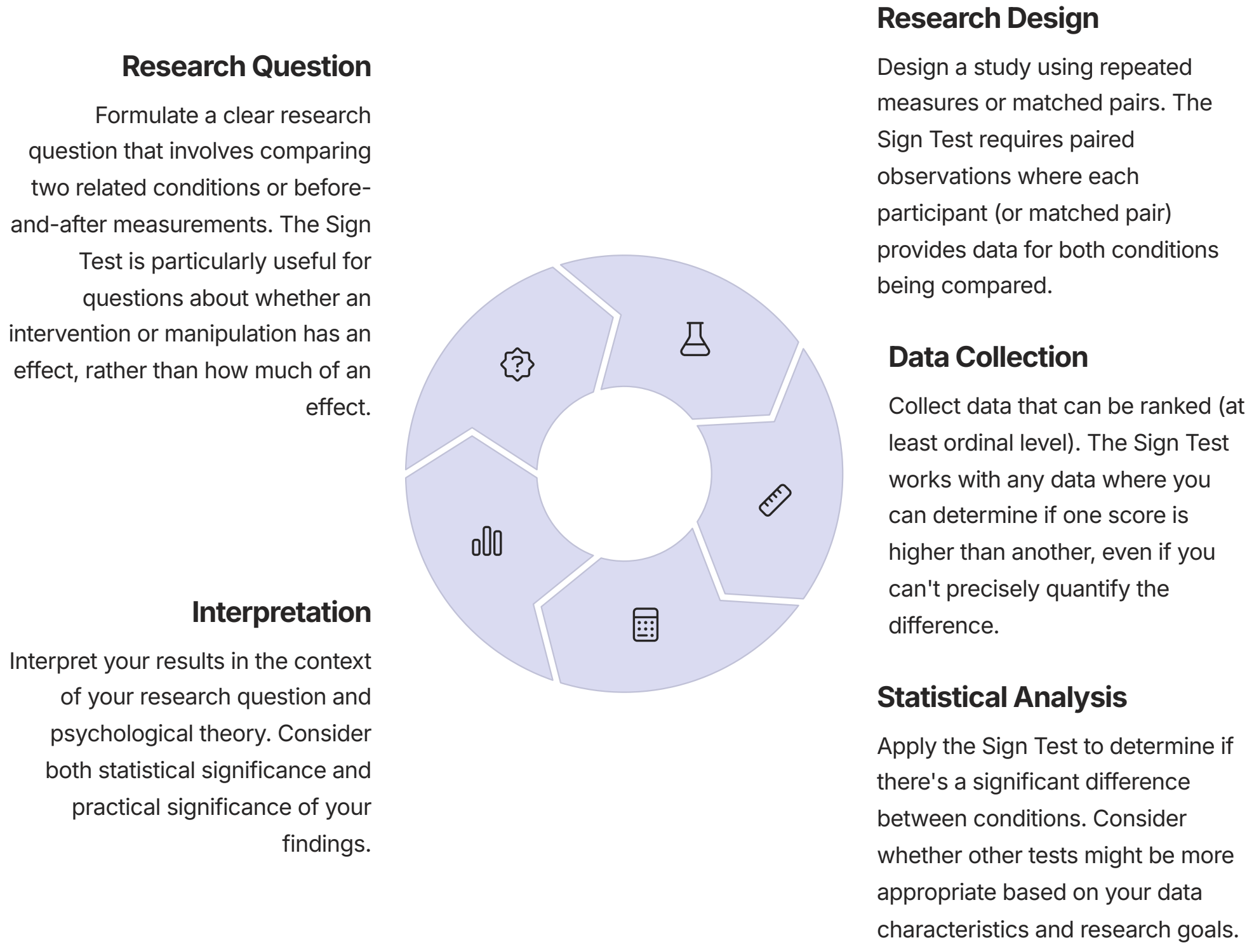
Solution:

1. Critical value for N = 15, two-tailed, p = 0.05 is 3
2. Since S = 2 is less than the critical value of 3, reject H_o
3. Conclusion: There is a significant difference in reaction times between the caffeine and no-caffeine conditions (S = 2, N = 15, p < 0.05, two-tailed). This supports the hypothesis that caffeine affects reaction times.

Working through these practice questions will help you develop confidence in applying the Sign Test to various psychological research scenarios. Remember to show all your working in the exam, as marks are often awarded for the process as well as the final answer.

Try creating your own practice questions by inventing research scenarios and data sets, then calculating the Sign Test. This active practice is one of the most effective ways to prepare for your AQA A-Level Psychology exam.

The Sign Test in the Context of Research Methods

Understanding how the Sign Test fits into the broader context of psychological research methods is essential for the AQA A-Level Psychology specification. This section explores when and why you might choose the Sign Test as part of your research design.

Research Question

Formulate a clear research question that involves comparing two related conditions or before-and-after measurements. The Sign Test is particularly useful for questions about whether an intervention or manipulation has an effect, rather than how much of an effect.

Research Design

Design a study using repeated measures or matched pairs. The Sign Test requires paired observations where each participant (or matched pair) provides data for both conditions being compared.

Data Collection

Collect data that can be ranked (at least ordinal level). The Sign Test works with any data where you can determine if one score is higher than another, even if you can't precisely quantify the difference.

Interpretation

Interpret your results in the context of your research question and psychological theory. Consider both statistical significance and practical significance of your findings.

Statistical Analysis

Apply the Sign Test to determine if there's a significant difference between conditions. Consider whether other tests might be more appropriate based on your data characteristics and research goals.

Research Design Considerations

When planning research that will use the Sign Test:

- **Sample size:** The Sign Test has less statistical power than parametric alternatives, so you may need a larger sample to detect effects
- **Measurement precision:** Since the Sign Test only uses the direction of differences, consider whether more precise measurements would benefit from a different statistical test
- **Control procedures:** Carefully control extraneous variables to ensure any differences are due to your manipulation
- **Counterbalancing:** For repeated measures designs, counterbalance the order of conditions to control for order effects

Ethical Considerations

The choice of statistical test also has ethical implications:

- Using an appropriate test ensures you don't waste participants' time with research that can't answer your question
- The Sign Test's simplicity makes it easier to explain to participants, enhancing informed consent
- Using a test with lower power (like the Sign Test) when a more powerful test is appropriate could lead to false negatives, potentially missing important effects

In the AQA A-Level Psychology exam, you may be asked to evaluate a research design that uses the Sign Test or to suggest an appropriate statistical test for a given research scenario. Understanding the Sign Test in this broader methodological context will help you demonstrate critical thinking about psychological research.

Exam Technique and Tips for Success

Mastering the Sign Test calculation is only part of what you need for success in your AQA A-Level Psychology exam. This section provides specific advice on exam technique and strategies to maximise your marks when answering questions about the Sign Test.

Before the Exam

- **Memorise the procedure:** Know the steps for calculating the Sign Test without needing to look them up
- **Learn critical values:** Memorise common critical values for N = 5-15 at p = 0.05 for both one-tailed and two-tailed tests
- **Practice with past papers:** Complete as many past paper questions on the Sign Test as possible
- **Create flashcards:** Make cards for key terms, steps, and common pitfalls
- **Teach someone else:** Explaining the Sign Test to another person solidifies your understanding

During the Exam

- **Read carefully:** Pay close attention to whether the question asks for one-tailed or two-tailed tests
- **Show all working:** Write out each step clearly, as marks are often awarded for process
- **Use tables:** Organise your data in clear tables with labelled columns
- **State hypotheses:** Always begin with clear null and alternative hypotheses
- **Check your arithmetic:** Simple calculation errors can cost marks
- **Write clear conclusions:** Explicitly state whether you reject or retain the null hypothesis

Common Exam Questions

Be prepared for these typical question formats:

Calculation Questions

"Calculate the Sign Test for the following data and determine whether there is a significant difference at p = 0.05."

Approach: Show all steps clearly, including differences, signs, counts, N, S, critical value, and conclusion.

Application Questions

"A psychologist is investigating the effect of background music on concentration. Design a study to test this and explain how you would analyse the results using the Sign Test."

Approach: Outline a repeated measures design, explain how you would collect data, and detail how the Sign Test would be applied.

Evaluation Questions

"Evaluate the use of the Sign Test in psychological research."

Approach: Discuss advantages and limitations, compare with alternative tests, and consider when it is most appropriate.

Interpretation Questions

"A researcher found S = 3, N = 20, p < 0.05 when investigating the effect of therapy on anxiety. Interpret these results."

Approach: Explain what these values mean, state whether the result is significant, and discuss the implications for the research question.

> **Examiner's Tip:** "Students often lose marks by not showing their working or by misinterpreting the significance of their results. Remember that in the Sign Test, a smaller S value indicates a stronger effect. Always relate your statistical conclusion back to the psychological context of the question."

By combining solid knowledge of the Sign Test with effective exam technique, you'll be well-prepared to tackle any question on this topic in your AQA A-Level Psychology exam. Remember that practice is key—the more questions you work through, the more confident you'll become.

Summary and Key Points to Remember

This comprehensive guide has covered all aspects of the Sign Test as required by the AQA A-Level Psychology specification. Let's conclude with a summary of the key points to remember for your exam.

Purpose and Applications

- The Sign Test is a non-parametric test for comparing paired observations
- It examines the direction of differences, not their magnitude
- Appropriate for repeated measures or matched pairs designs
- Useful when data doesn't meet parametric assumptions

Calculation Procedure

- Calculate differences between paired observations
- Assign plus, minus, or zero signs to differences
- Exclude ties (zero differences) from analysis
- Count plus and minus signs
- S = the smaller of the two counts
- Compare S to critical value

Interpretation Rules

- Reject H_0 if S ≤ critical value
- Retain H_0 if S > critical value
- Report results as: S = x, N = y, p < or > α, one/two-tailed
- Always relate statistical results back to research context

Advantages and Limitations

- Simple to calculate and understand
- Few assumptions about data distribution
- Less powerful than parametric alternatives
- Ignores magnitude of differences
- Cannot handle large numbers of ties effectively

Final Exam Preparation Checklist

- Can you explain when and why to use the Sign Test?
- Do you know the step-by-step procedure for calculation?
- Can you handle ties correctly?
- Do you understand how to use critical value tables?
- Can you interpret and report results properly?
- Are you familiar with common mistakes and how to avoid them?
- Can you evaluate the Sign Test's strengths and limitations?
- Have you practiced with a variety of question types?

Remember that statistical tests in psychology are tools to help answer research questions about human behaviour and mental processes. The Sign Test is valuable not just as an exam topic but as a practical research tool that you might use in your own psychological investigations.

By mastering the Sign Test, you demonstrate not only your statistical competence but also your understanding of how psychological research is conducted and analysed. This knowledge forms an essential foundation for further study in psychology and related fields.

Good luck with your AQA A-Level Psychology exam!