APPLIED SPORT SCIENCE

EVIDENCE • PERFORMANCE • PRACTICE

PRACTICE LAB USER GUIDE

Learn to read, build and discuss football GPS reports

For coaches, sport scientists, students and practitioners

Scan to open the Practice Lab

https://lab.appliedsportscience.co.uk/

A safe learning environment using a fictional U19 squad and synthetic GPS data.

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01 | START HERE

Welcome to the Practice Lab

A practical learning space for understanding how football GPS data can support training decisions.

The Applied Sport Science Practice Lab gives you a fictional football dataset and guided activities to practise reading, filtering and communicating GPS information. Sport Science Mode teaches report building. Coach Mode provides a finished dashboard and focuses on what a coach can notice, understand and discuss.

> **Core principle**
> GPS data should support a conversation, not automatically make the decision.

Who the Lab is for

- Football coaches who want to read a GPS report with more confidence.
- Sport scientists and performance staff who want to practise explaining data clearly.
- Students and practitioners learning about training exposure, metrics and context.

What you can practise

Read accurately Identify the player, metric, value and filter context that a report shows.

Build simply Create charts, cards and tables that answer a specific football question.

Check context Consider duration, participation, role, session aim and missing data.

Communicate clearly Separate the observed result from what it does and does not establish.

> **Synthetic data notice**
> The Practice Lab uses a completely fictional U19 squad and synthetic GPS records for education. The values do not describe real players or sessions and must not be used for athlete decisions.

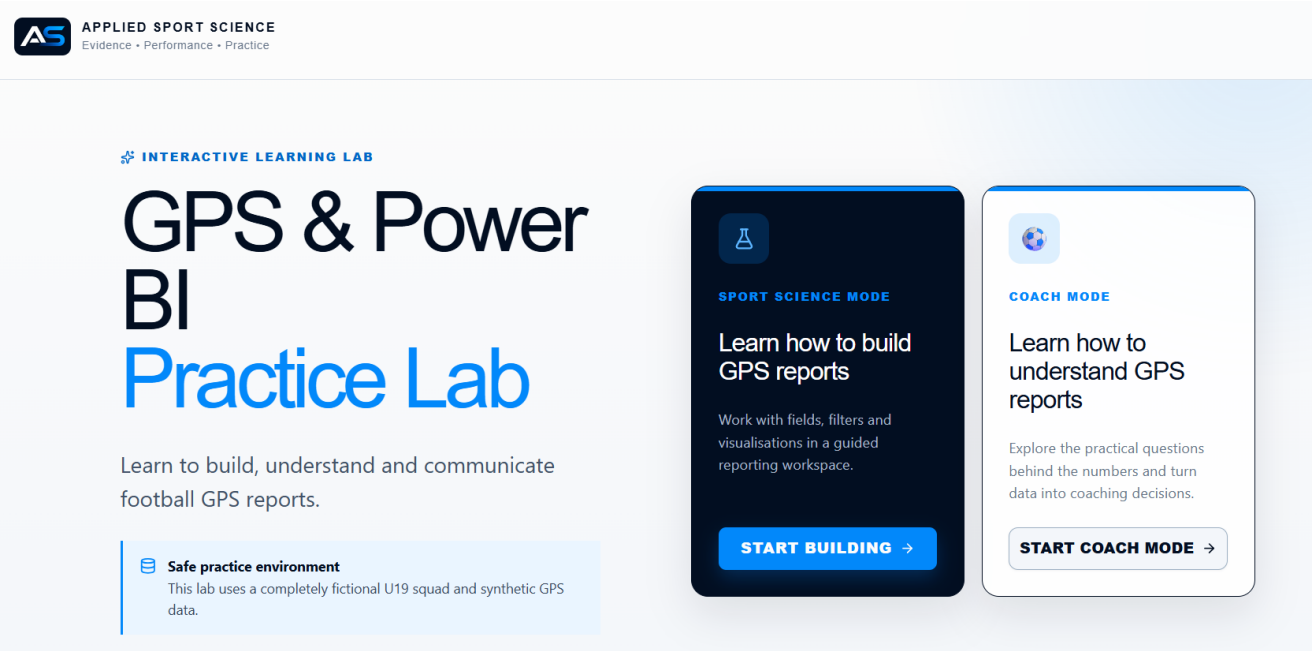
Learning outcomes

By the end of the pathway, you should be able to build a simple GPS visual, select a useful filter, distinguish volume from peak metrics, spot a missing record, check participation and present a cautious, coach-friendly observation.

02 | ACCESS AND NAVIGATION

Choose a learning pathway

Open the live Lab at lab.appliedsportscience.co.uk. The landing page presents two routes into the same educational dataset.



Interface map 1. The two pathway cards and safe-practice notice.

1	Sport Science Mode begins with a guided report-building pathway.
2	Coach Mode opens a finished dashboard, guided questions and a Coach Sandbox.

How to move through the Lab

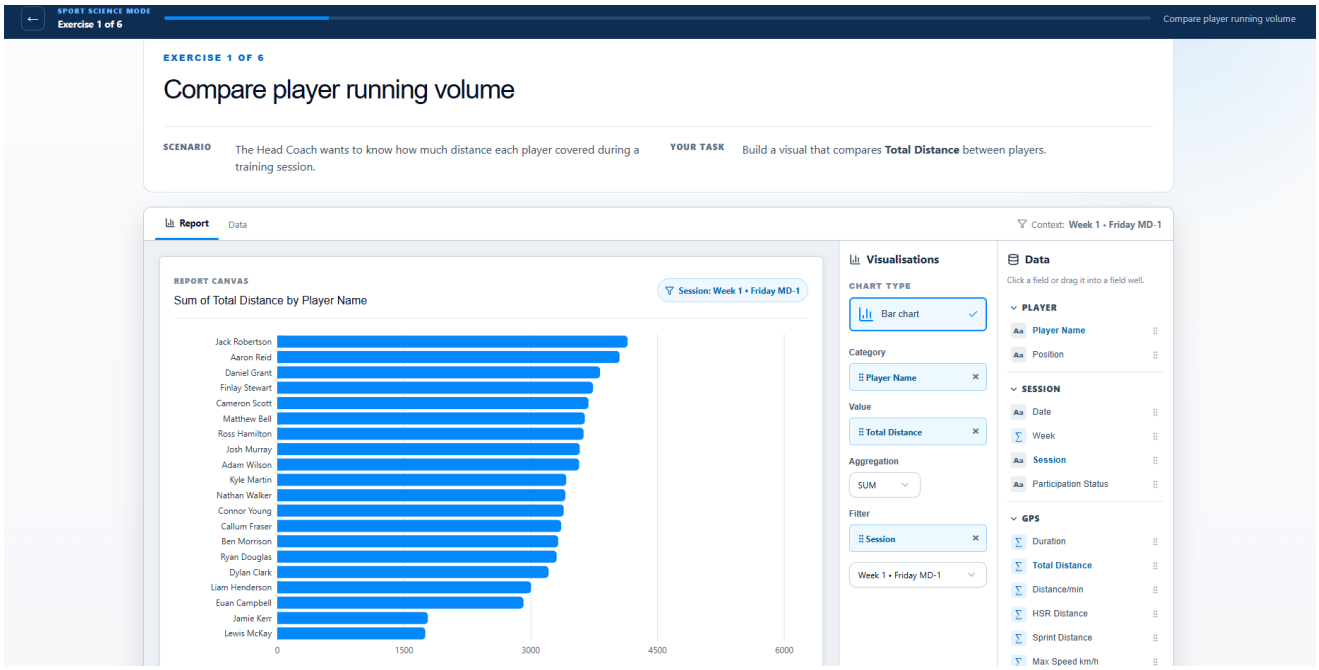
- Use the back control in the page header to return to the previous pathway or exercise.
- Follow the on-screen task prompt, then use Give me a hint or Show Me when available.
- The current live interface includes six guided exercises in each mode and separate Sandbox areas. The Coach pathway also shows six stages and a Coach Sandbox with two levels.

> **Keep the question in view**
> Before selecting a chart or interpreting a value, restate the question. A useful report shows only the information needed to answer it.

Build the report and understand the reason

This route is for learners who want to practise building GPS visuals in a simplified reporting workspace.

The introduction presents four skills: build, filter, interpret and communicate. Each exercise begins with a football question and a task. Work through the task in the workspace, check your progress and read the explanation of why the visual or calculation fits.



Interface map 2. Report canvas, visualisation controls and data fields. The bars are illustrative and are not presented as live values.

1	Read the exercise scenario and the requested metric before building.
2	The report canvas shows the current visual and its title.
3	Set the visual type, category, value and aggregation.
4	Choose fields from Player, Session and GPS data groups.

The six guided exercises

Exercise	Main task
1. Compare player running volume	Build Total Distance by Player Name and set a clear session context.
2. Add a Session slicer	Add Session and Week filters, then investigate Cameron Scott's lower distance.
3. Build a Max Speed card	Use a peak calculation and distinguish speed from running volume.
4. High-Speed Running	Compare HSR by player, inspect a player and compare two sessions.
5. Follow a Player Over Time	Build a line chart and check missing records across weeks.
6. Coach Report Challenge	Combine volume, HSR, peak speed and player detail for a coach-facing summary.

Use visuals and filters with purpose

The builder is interactive. Select a visual, assign fields and use filters to define the records included in the calculation.

A simple build sequence

1. Choose the visual A Bar Chart compares categories, a Line Chart shows a sequence, a Card highlights a summary value and a Table shows player-level details.

2. Add the category For a player comparison, use Player Name. For a trend, use Date or Week on the horizontal axis.

3. Add the metric Choose Total Distance, Distance/min, HSR Distance, Sprint Distance or Max Speed to match the question.

4. Select aggregation SUM suits accumulated volume, AVERAGE compares typical recorded exposure and MAXIMUM identifies a peak.

5. Set context Filter Week, Session, Player, Date, Position or Participation where appropriate. The selected context should match the question.

What the interface does

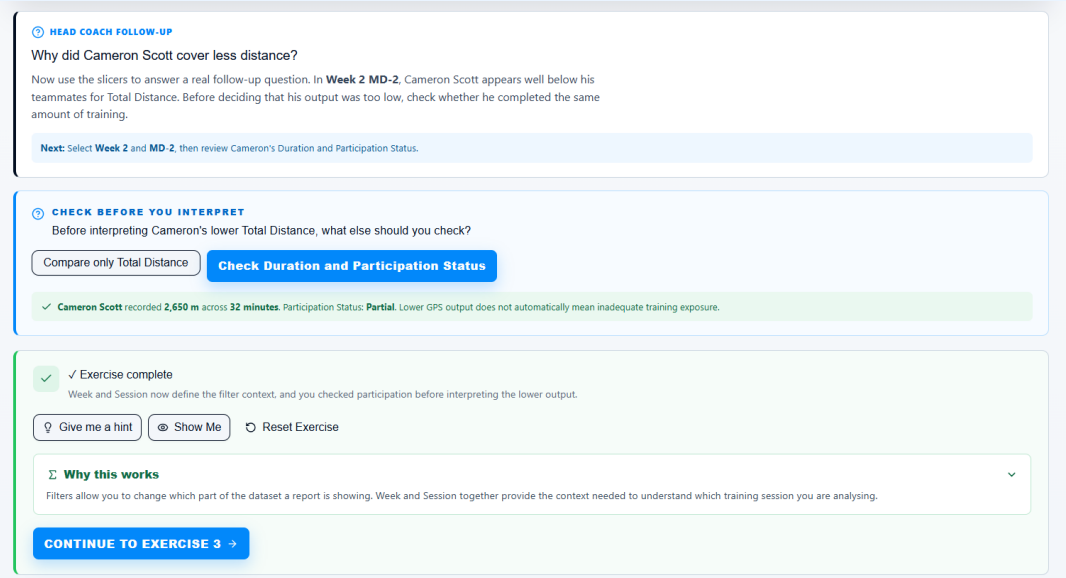
- The canvas responds when you add fields, visuals and filters.
- A report context label shows which records are being analysed.
- Exercise guidance gives an error-specific hint, a demonstration or a completion explanation.
- Exercise 2 asks you to open the Player Table and inspect Cameron's Duration and Participation Status before interpreting his distance.

> **Common filter check**
>
> If a chart seems to show the wrong session or player, inspect every active filter first. A valid chart can still answer the wrong question if its context is too narrow or too broad.

Exercise 2 example

For Week 2 MD-2, Cameron Scott recorded 2,650 m across 32 minutes and is marked Partial. The report supports a lower recorded distance and shorter exposure. It does not establish that Cameron worked too little or trained poorly.

> **Suggested interpretation**
>
> "Cameron recorded 2,650 m in 32 minutes and is marked Partial. I would check why participation was partial and what his planned exposure was before judging the lower total."

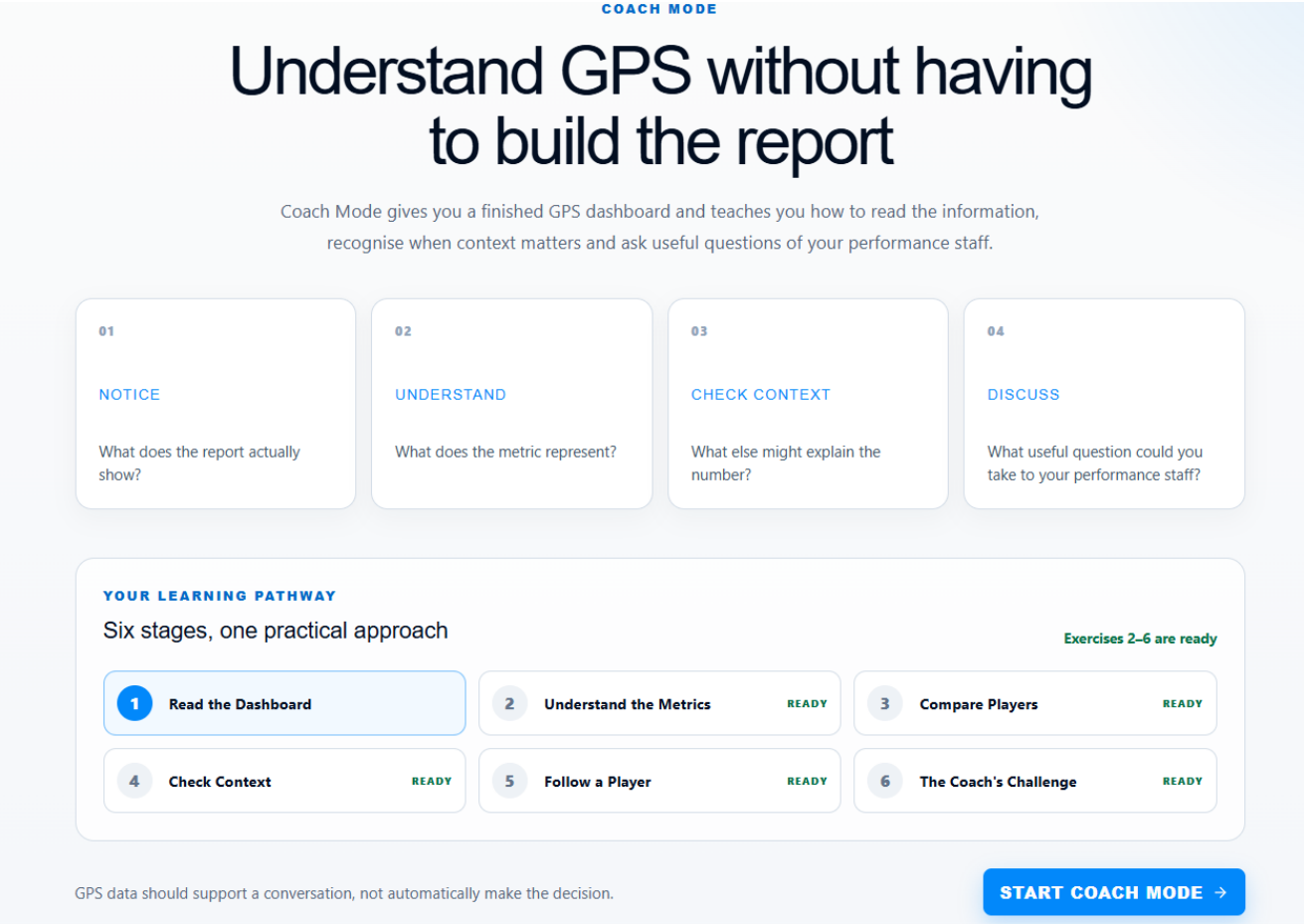


Understand GPS without building a report

Coach Mode is designed around NOTICE, UNDERSTAND, CHECK CONTEXT and DISCUSS.

The Coach Welcome screen explains that the coach receives a finished dashboard. The learning pathway encourages a coach to start with what the report shows, learn what each metric represents, check for relevant context and ask useful questions of performance staff.

NOTICE what the report shows **UNDERSTAND** what the metric represents **CHECK CONTEXT** what else may explain the number **DISCUSS** what to ask performance staff



Interface map 3. The verified Coach Dashboard layout, represented schematically. Values shown match the observed Week 2 MD-2 view.

The six pathway stages

Stage	What the learner practises
1. Read the Dashboard	Locate the session context, cards, comparison, metric selector and player detail.
2. Understand the Metrics	Connect a practical question to the metric that answers it.
3. Compare Players	Compare players using the same session and metric.
4. Check Context	Ask whether duration, role and participation change the interpretation.
5. Follow a Player	Read a player's record over time and notice gaps.
6. The Coach's Challenge	Use the report to frame a useful coaching conversation.

Current live labels

The live pathway labels the sixth stage "The Coach's Challenge". The Coach Sandbox is shown separately, with Level 1 "Read the Report" and Level 2 "Interpret the Context".

Read the report context before the values

The dashboard is pre-built. The coach does not need to add visuals or choose calculations.

Filters and summary cards

The Report context controls include Week, Session, Player, Position and Participation. Changing the context updates the summary cards, player comparison and player detail. The observed default was Week 2 MD-2 with 20 players and 20 records.

Dashboard element	What it helps you check
Average Total Distance	Typical accumulated distance in the selected context.
Average HSR Distance	Typical distance above the Lab HSR threshold.
Highest Max Speed	The largest recorded speed in the context.
Players / records represented	How many players and GPS records appear after filtering.
Player Comparison	Compare the selected metric across players.
Player Detail	Inspect position, duration, metrics and participation for one player.

Observed Week 2 MD-2 example

Measure	Observed value
Average Total Distance	4,847 m
Average HSR Distance	391 m
Highest Max Speed	33.60 km/h
Players and records	20 players / 20 records
Total Distance leader	Aaron Reid, 5,716 m
HSR leader	Liam Henderson, 654 m

Use the metric selector

A player who leads Total Distance may not lead HSR or Max Speed. Change the comparison metric to answer the next question, then compare within the same filter context.

07 | COACH EXERCISE 1

Read the Dashboard

The exercise is a progressive tour of the finished dashboard. It establishes observation before interpretation.

Scenario shown in the live Lab: “You’ve received the GPS report after training. Before drawing conclusions, get familiar with what the dashboard is showing you.” The page guides the learner through the context, cards, player comparison, metric selector and player detail.

Task	What to do	Verified answer in Week 2 MD-2
1. Find the Total Distance leader	Use the comparison bars and name the player with the highest value.	Aaron Reid, 5,716 m
2. Inspect Max Speed	Select Aaron Reid and read both speed units in Player Detail.	32.07 km/h and 8.91 m/s
3. Compare HSR	Switch the comparison metric to HSR Distance and compare the leader.	No. Liam Henderson leads HSR at 654 m; Aaron leads Total Distance.
4. Check participation	Select Cameron Scott and inspect duration and status.	32 min, Partial. Total Distance is 2,650 m.

How feedback works

- A concise correct player or value is accepted when it matches the selected context.
- If one component is correct and another needs checking, the feedback identifies the part that is right and the part to revisit.
- Exercise 1 focuses on factual observation. It does not demand a full interpretation essay before that question is asked.

> **Completion teaching point**
> Start with the observation. Interpretation comes after you understand the metric and the context. A GPS number describes part of physical exposure, not whether a player trained well or poorly.

Coach Sandbox after the guided pathway

Level	What happens
1. Read the Report	Five curated challenges, with no points or scores. The first asks which metric answers “Who covered the most ground?” Choose Total Distance, inspect the player table, then select the leader.
2. Interpret the Context	Five curated challenges, with no points or scores. The first separates the observation that Liam had the highest HSR from whether that exposure was appropriate. The next prompt asks what planned or individualised context is still needed.

> **Exercise 1 completion**
> The live Coach Exercise 1 completion state reinforces the observation-first principle and reminds the learner that a GPS number alone does not show whether training was good or poor.

What each measure can tell you

Use the definition that matches the report and unit. The Practice Lab thresholds are educational values, not universal football standards.

Metric	Plain-language meaning	Useful question
Total Distance	How much ground the player covered.	Who covered most ground in this context?
Distance/min	Distance relative to the player's recorded duration.	Who covered distance at the highest rate?
HSR Distance	Distance above 19.8 km/h, or 5.5 m/s, in this Lab.	How much higher-speed running was recorded?
Sprint Distance	Distance above 25.2 km/h, or 7.0 m/s, in this Lab.	How much sprinting distance was recorded?
Max Speed	The highest speed recorded.	Who reached the highest peak speed?
Duration	Recorded time represented in the session record.	Did the player complete the same exposure window?
Participation Status	Whether the record is marked Full, Partial or another Lab status.	Was participation complete or modified?

Thresholds used in the Practice Lab

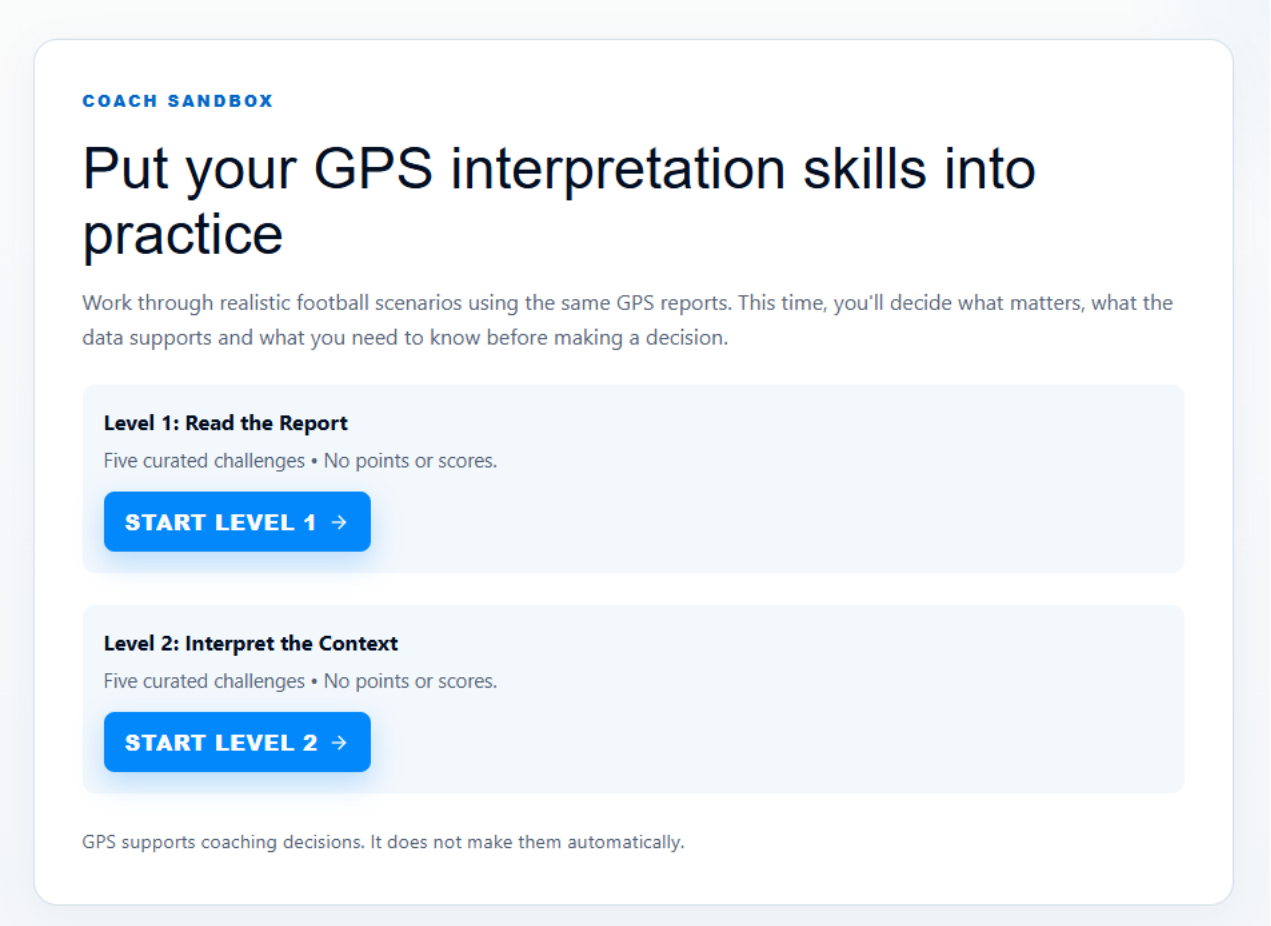
HSR: >19.8 km/h | >5.5 m/s. Sprint: >25.2 km/h | >7.0 m/s. Thresholds vary between GPS providers and football organisations.

Choose the calculation that fits

- SUM adds accumulated distance over the selected records.
- AVERAGE compares the typical recorded value across selected records.
- MAXIMUM answers a peak question such as highest Max Speed. Do not sum player maximum speeds to describe the squad's fastest player.
- Sprint Distance sits inside the broader HSR threshold range in this Lab, so sprint distance should not exceed HSR distance for the same record.

Build a simple report and answer the question

The Sport Science Sandbox combines a question list, shared filters, a report canvas, visual controls and a written response area.



Interface map 4. Sandbox panels and the four-step workspace flow. This is a schematic view, not a screenshot.

1	Choose a challenge from the right-hand question panel.
2	Set shared filters such as Week, Session, Player, Date, Position or Participation.
3	Add a Bar Chart, Line Chart, Card or Table.
4	Write the factual answer, then add interpretation when the prompt asks for it.

Current first challenge

“Who accumulated the greatest HSR during Week 2 MD-2?” Set Week 2 and MD-2, then compare the HSR Distance values. Liam Henderson recorded 654 m. A useful chart can make the comparison quicker, but the Table also contains the facts needed to answer.

> **Feedback is component-based**
> For “Liam Henderson, 654 m”, the live evaluator confirms the correct observation and value, then invites the learner to interpret what the result does and does not establish. It does not treat missing interpretation as an incorrect factual answer.

Observe first, then interpret with context

Use a simple sequence: identify what the report shows, check the surrounding records, then decide what is reasonable to discuss.

Example 1 | A lower Total Distance

Week 2 MD-2: Cameron Scott recorded 2,650 m over 32 minutes and has Partial participation. Observation: his reported distance is lower than most teammates. Context: the record represents a shorter, partial session. Interpretation: do not conclude that he worked too little. Check why he had partial participation, the planned exposure and his role.

Example 2 | The highest HSR

Week 2 MD-2: Liam Henderson recorded 654 m HSR, the highest value in that context. Observation: Liam accumulated the most distance above the Lab threshold. Interpretation: this does not prove the session was hardest or that Liam achieved the intended stimulus. Check duration, position, participation, session aim and planned individual exposure.

Example 3 | Josh Murray's MD-4 trend

Week	Total Distance	Record status
Week 1	6,890 m	Recorded
Week 2	6,942 m	Recorded
Week 3	No valid record	Missing
Week 4	7,184 m	Recorded

Across the recorded weeks, the value increased. Week 3 is a missing-data gap, not a zero and not evidence of a drop. Do not interpolate or copy another week unless you have a documented reason and a suitable method.

> **Questions to take to performance staff**
> What was planned for the session? Did the player complete the intended exposure? Does participation explain the output? Is there a valid record for every week? What would help confirm the interpretation?

Common mistakes, troubleshooting and contact

A few checks resolve many confusing results.

If you see this	Check this next
A chart looks much larger than expected	Check whether more than one session is included and whether values are summed across sessions.
A player appears to have a very low total	Open Player Detail or Player Table. Check Duration and Participation Status.
A trend has a gap	Treat the missing record as missing. Do not use zero or carry a previous value forward.
The highest speed seems wrong	Confirm the selected Week and Session, then use MAXIMUM logic for Max Speed.
A feedback panel does not appear	Confirm that the response was entered in the answer box, submit with Check My Response and scroll to the feedback below the answer.
A player is not in the comparison	Review all filters and the number of records represented.

Further learning

Use the Practice Lab to practise reading a report. For an applied setting, discuss thresholds, data quality, session aims and player-specific targets with qualified sport science and performance staff.

> **Contact**
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