

Volume 21, Number 3, April 2026

Answers

Exam-style questions

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Check your answers to the questions in this issue.

Sports science in Premier League academy football (pp. 12–15)

- 1 a Speed is the rate at which an athlete is able to move all or part of their body.

Speed = distance/time

= 10 m/1.8 s

= 5.56 m/s

b Validity refers to whether the test measures what it intends to measure (e.g. speed rather than acceleration).

While this test measures the footballer's average speed over 10m (speed = distance/time), the test is carried out from a standing start (0 m/s) and this means that it tests acceleration rather than maximal speed.

To improve the validity of the test, the footballer could have a run up before passing through the light gate. This flying start enables the athlete to reach maximal speed before the test starts and reduces the element of acceleration.

c Reliability refers to the consistency of results – whether similar results are produced when the test is repeated.

To improve reliability, you could use laser/light gates to start and stop the clock used to time the athlete. This would remove human error that might affect reliability if using a handheld stopwatch. You could also use more than one stopwatch and take an average speed.

Learned helplessness (pp. 28–30)

- 1 General learned helplessness is the lack of belief that affects an individual in a range of general situations, like water-based sports. Specific learned helplessness applies to specific situations, like performing a specific skill such as diving in swimming.
- 2 The coach could modify the training by making the drills easier and gradually progress the difficulty of the session to help the performers experience success. For example, they could start with a passing drill with the performers close to each other and standing still, then gradually increase the distance of the pass and add movement.

- 3 The coach should ensure that the team does not attribute their loss to internal-stable factors or ability. Instead, they could attribute the loss to a lack of effort (internal-unstable), the difficulty level of the task (external-stable) or luck (external-unstable). This is called attribution retraining and is an important part of maintaining a team's confidence and avoiding self-serving bias.

Extension to this answer: If performers are able to attribute the loss to external factors (task difficulty or luck), they will maintain morale, confidence and motivation. If they then attribute wins to internal-stable factors (ability), this is known as self-serving bias.

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