ASSESSMENT AND DEVELOPMENT OF MOTOR COMPETENCE IN PRIMARY PE

THE ATHLETE TRACKER

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INTRODUCTION

Physical education (PE) holds a unique position within the primary curriculum as it is the only subject explicitly grounded in the physical domain (Pickup & Randall, 2022). It provides a critical foundation for the development of physical literacy, encompassing motivation, confidence, physical competence, knowledge and understanding necessary for lifelong engagement in physical activity (Durden-Myers *et al.*, 2018). Early experiences in movement are central to this process, with motor competence widely recognised as a key precursor to physical activity participation (Logan *et al.*, 2015). Research has consistently shown that children who develop fundamental movement skills (FMS) in their early years are more likely to be active, confident and willing to engage in physical pursuits as they grow older (Barnett *et al.*, 2016).

Despite more than a decade of targeted investment through the Primary PE and Sport Premium in England, trends in children's motor competence and physical activity levels remain stagnant or in decline (Ofsted, 2022; Sport England, 2024). A major limitation in evaluating the impact of this investment lies in the reliance on self-reported data and teacher perceptions, with little objective evidence available to determine what children can do within the physical domain (Lindsey *et al.*, 2020).

This challenge is further compounded by the widespread reality that many primary teachers feel ill-equipped to deliver and assess PE effectively, often due to limited subject-specific training and a lack of confidence in teaching PE (Caldwell *et al.*, 2021). As a result, assessment practices often depend on subjective observation, which tends to overlook children performing at the lower end of the ability spectrum, ironically, the very pupils who require the most targeted support (Bryant *et al.*, 2020).

While the assessment of pupils' attitudes, understanding and cognitive engagement has value, the physical domain must remain the primary focus in PE assessment. Without access to reliable, objective data on motor competence, it becomes difficult for educators to plan effectively, tailor provision or monitor progress over time. The Athlete Tracker aims to address this gap by offering a practical, evidence-informed framework for assessing and supporting the development of motor competence in primary-aged children.

MOTOR COMPETENCE AND FUNDAMENTAL MOVEMENT SKILLS

FMS are the foundational movements that underpin the development of more complex and specialised skills required for participation in physical activity and sport. Typically grouped into three categories – locomotor (e.g., running, jumping), object control (also called manipulative) (e.g., throwing, catching) and stability (e.g., balancing, twisting) – these skills form the building blocks of physical competence (Engel *et al.*, 2018). Ideally, FMS are developed during the early and primary school years, when children are most receptive to acquiring new movement patterns. Proficiency in these fundamental skills is essential, not only for sporting success but also for enabling children to engage confidently and competently in a broad range of physical activities across the lifespan (Logan *et al.*, 2015).

The importance of FMS development in primary-aged children extends beyond physical performance. Research consistently shows strong associations between motor competence and positive health behaviours, including increased physical activity levels, better physical fitness and improved psychosocial outcomes, such as confidence and motivation to be active (Barnett *et al.*, 2016). Conversely, children who do not master FMS are more likely to disengage from physical activity, creating a cycle of inactivity and reduced physical literacy (Robinson *et al.*, 2015). This highlights the urgent need for early, structured and developmentally appropriate opportunities to assess and support the acquisition of these skills. As such, FMS should be a central focus of primary PE, both in practice and in assessment, to ensure that all children are given the foundation to lead active, healthy lives.

THE ATHLETE TRACKER

To address the gap in FMS and motor competence assessment in primary schools, we have developed the Athlete Tracker – named because we want all children to see themselves as athletes. The Athlete Tracker involves six simple motor competence assessments that pupils undertake at regular intervals; in some schools, this is done annually, while, in others, it is done every six months. Table 1 provides a summary of these assessments.

Table 1: Assessments in Athlete Tracker.

Assessment	Assessing	Description
2-minute 10m shuttle run	**Cardiovascular endurance**	The 2-minute 10-metre shuttle run is a measure of endurance. It is a continuous shuttle run for 2 minutes between 2 spots placed 10 metres apart in a straight line. We record the total number of shuttles completed within the time.
Counter-movement jump	**Power**	A vertical jump where the jumper first performs a rapid downward movement (countermovement) before jumping upwards. It is a common exercise used to assess and develop lower-body explosive power. We use a jump mat for accuracy of data, which measures the height achieved.
10m sprint	**Speed**	The 10-metre sprint is for a measure of speed. Pupils start 1 metre behind a pair of timing gates and sprint as fast as they can over 10 metres, finishing through a second pair of speed gates. 10 metre speed is considered more important in many sports than longer distances and is also a practical distance in most primary school settings.
5 x 5m shuttle	**Agility**	This test involves running 5 x 5m shuttles with a 180-degree turn at the end of each shuttle. This focuses on the ability to change direction, involving both acceleration and deceleration skills.
Throw and catch	**Hand-eye coordination**	Pupils stand with their arms outstretched a metre away from a wall. They use a mini orange tennis ball (an age-appropriate ball) to throw and catch against the wall. Pupils are judged on how many times they can throw and catch the ball against a wall in a minute.
Speed dribble	**Foot-eye coordination**	A 10m straight line is set out with cones placed every 2 metres up to 10 metres (5 cones in total). The pupils dribble in and out of the cones, there and back, until they pass through the timing gate on the start line, where their time is measured.

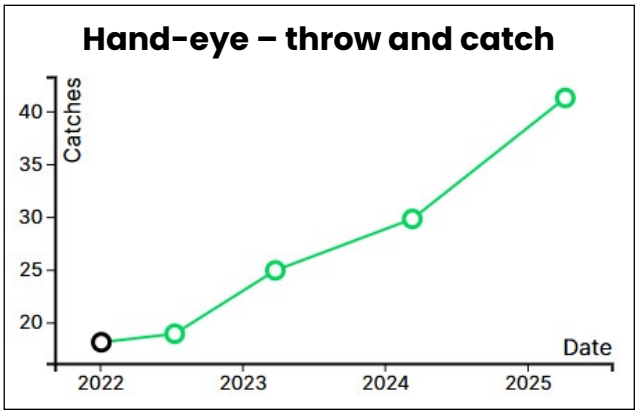
A video overview of the tests is available at **www.athletetracker.co.uk**

Analysing the achievement of specific pupil groups, such as boys and girls, pupils with special educational needs and disabilities (SEND) or those eligible for the Pupil Premium, enables teachers to identify patterns in engagement and attainment that may otherwise go unnoticed.

The assessments have been designed in conjunction with sports scientists, specialists in youth athletic development and primary teachers. This provides us with a robust and valid system that works effectively in primary school settings and can be completed in a short period. The equipment needed for the tests is relatively inexpensive, with many items likely already housed in many schools. The use of timing gates and jump mats does add some expense, but these can be purchased for a few hundred pounds, making them a sound investment of the Primary PE and Sport Premium funding and valuable in other subject areas (e.g., maths and science).

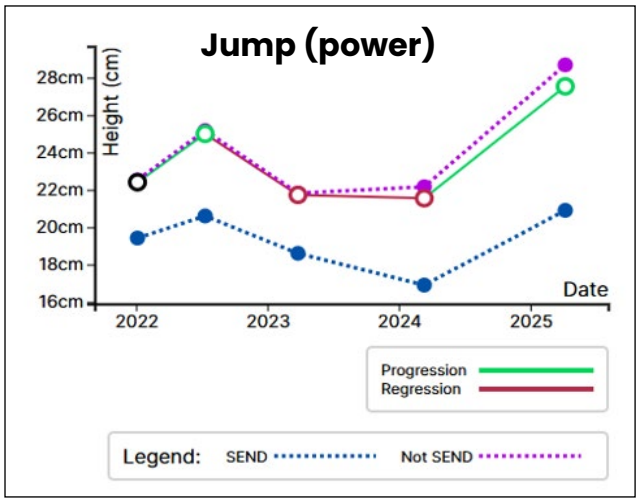
The real power of Athlete Tracker lies in the analysis of the data to inform decisions about classes, pupil groups and individual pupils using our specifically designed platform and app. On a class level, the ability to monitor progress over time through tools such as Athlete Tracker provides a robust, data-informed approach to PE. For example, tracking class averages in hand-eye coordination across multiple years enables educators to evaluate developmental trends and adapt provision accordingly (see Figure 1). This aligns closely with the Key Stage 2 National Curriculum for PE, which advocates for pupils to "compare their performances with previous ones and demonstrate improvement". Longitudinal data supports these goals by offering quantifiable evidence of skill acquisition and progression, thereby enhancing curriculum planning, informing targeted intervention and supporting accountability in relation to the Primary PE and Sport Premium impact and whole-school outcomes.

Figure 1: Class overview data for a single test.



Analysing the achievement of specific pupil groups, such as boys and girls, pupils with special educational needs and disabilities (SEND) or those eligible for the Pupil Premium, enables teachers to identify patterns in engagement and attainment that may otherwise go unnoticed. Athlete Tracker's filtering tools support this by highlighting whether particular groups are progressing in line with their peers or if targeted support is needed. For example, in Figure 2 a clear gap in achievement for the power assessment is evident between those with and without SEND, which may enable us to implement targeted interventions for this group in a similar manner to those seen in academic subjects. This approach directly supports inclusive teaching, helps to close attainment gaps and provides clear evidence of how the Primary PE and Sport Premium could be directed to impact on key cohorts within the school community.

Figure 2: Pupil group analysis (SEND).



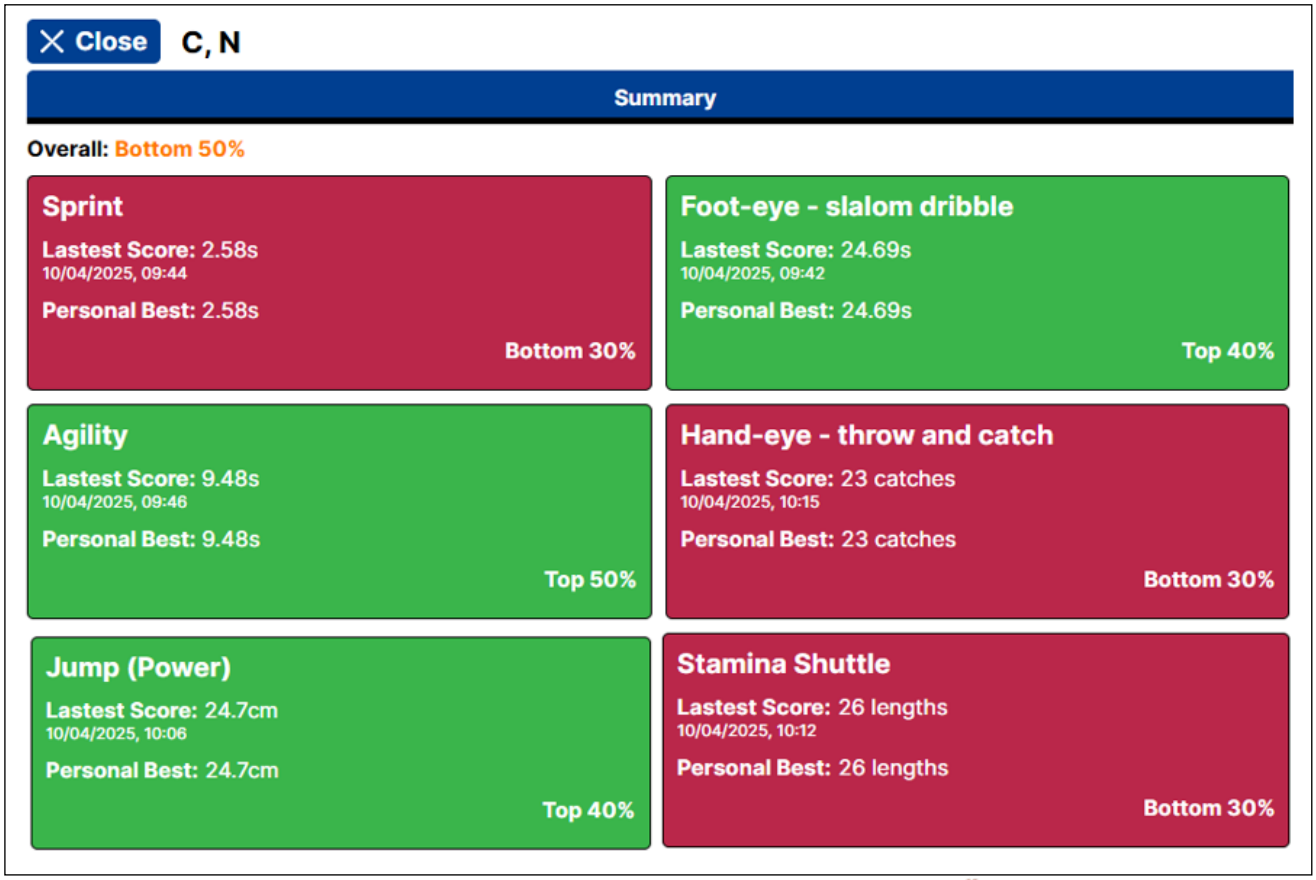
Athlete Tracker enables detailed individual profiling through six core movement assessments, offering a holistic view of each pupil's physical development (see Figure 3). Rather than relying on fixed normative benchmarks, the platform ranks pupils within the broader dataset of same-age peers who have completed the same assessments. This dynamic, percentile-based ranking system – red (bottom 40 per cent), amber (41-49 per cent), green (top 50 per cent) – facilitates both the identification of emerging talent and the early detection of pupils who may require tailored support. By integrating a new communication feature that allows performance reports to be shared directly with parents, the platform strengthens school-home engagement. Pupils can track their personal bests and see how their engagement with physical activity and sport, both in and outside of school, helps to develop their overall motor competence.

VIEWS FROM A SCHOOL

Having implemented Athlete Tracker in 12 schools with approximately 3000 pupils, collecting in excess of 25,000 individual assessment points, we can be confident in the practicality and usefulness of the data. Liam, Head Teacher at a Gloucestershire primary school, states:

> *"Our previous assessment in PE relied heavily on teacher observation and did not consider objective data. For teachers with limited experience in PE, this can be challenging. Athlete Tracker has enabled us to*

Figure 3: Individual pupil overview.



embed meaningful assessment within our lessons and demonstrate the impact of our curriculum development and the PE and Sport Premium spending. It has been easy to use and, combined with support from Keiran and colleagues, made a great addition to our overall PE offer."

Pupil feedback has also been constructive in seeing the motivating nature of the assessments and the data they produce.

"It's just so much fun to have a go at all the different assessments and try and do my best. I always like to try and beat my last score, and I know the more I do in and out of school, it helps me improve." (Phoebe, Year 5 pupil)

A WORD ON FITNESS TESTING

It is important to distinguish between our motor competence assessments and traditional fitness testing, which can sometimes attract negative perceptions. These assessments are designed to be developmentally appropriate, low-stakes and supportive. They are carried out discreetly in small groups, with an emphasis on encouragement rather than competition. Pupils are not made aware of each other's scores and the environment is intentionally positive and inclusive. Unlike high-pressure fitness tests, which can risk embarrassment or disengagement, these tasks focus on fundamental movement skills and are framed as opportunities for growth. As with other curriculum areas, regular assessment in PE allows for meaningful tracking of progress over time, helping teachers to plan effectively, identify both strengths and needs, and reinforce the value of PE as a core subject.

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SUMMARY

At a time when the importance of physical activity and wellbeing in schools has never been clearer, we believe Athlete Tracker provides a timely, practical and impactful solution. By combining meaningful assessment with inclusive practice, schools can track progress, celebrate success and identify where additional support may be needed, all in a supportive and developmentally appropriate manner. This approach helps to shift the narrative around assessment in PE, highlighting its role not as a source of pressure but as a valuable tool for growth, planning and personalised support. Ultimately, Athlete Tracker supports schools in delivering high-quality, purposeful PE that benefits every child and builds strong foundations for a lifelong love of movement. For more information, please visit **www.athletetracker.co.uk**.

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