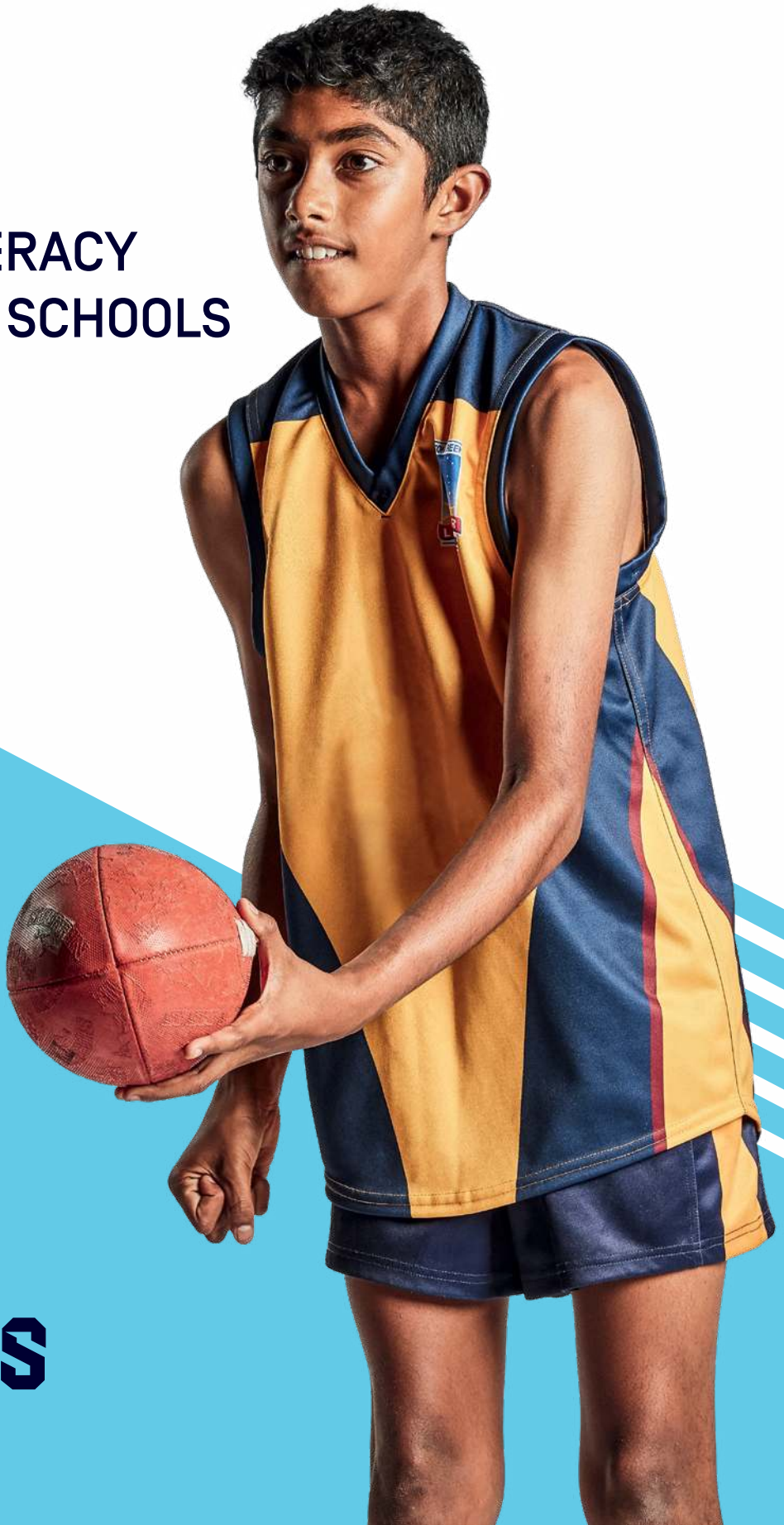
PHYSICAL LITERACY BENEFITS FOR SCHOOLS



SPORTAUS

CONTENTS

PHYSICAL LITERACY: BENEFITS FOR SCHOOLS

School leaders, educators, coaches and families all play a crucial role in promoting and developing physical literacy in children. The development of physical literacy can be achieved through a whole school approach, embracing daily play, sport and physical activity. The evidence, policy alignment and messaging in this document will help you build the case to develop physical literacy in your school.

Evidence shows that developing physical literacy improves students':


Academic performance


Mental health and wellbeing


Memory and attention span


Life skills, confidence and behaviour


Level of physical activity


Relationships and friendships

Use the information in this resource to help the school leadership and broader school community better understand:

- what physical literacy is
- why it is important for schools
- how to embed it in your school.

"Physically literate children and young people are happier, more resilient and more trusting of other children and young people."

Sport England, 2019

WHAT IS PHYSICAL LITERACY?

Physical literacy is about developing the skills, knowledge and behaviours that give children the confidence and motivation to lead active and healthy lifestyles. Establishing active habits in children sets them on the path to happier and healthier lives.

Physical literacy gives children:

- physical skills and fitness
- the attitudes and emotions that motivate them to be active
- the social skills to be active with others
- the knowledge and understanding of how, why and when they move.

Learn more about physical literacy.

AUSTRALIAN PHYSICAL LITERACY FRAMEWORK

The **Australian Physical Literacy Framework** (the Framework) provides clarity and national consistency on defining physical literacy. It provides a shared language and understanding for the sport, education and health sectors.

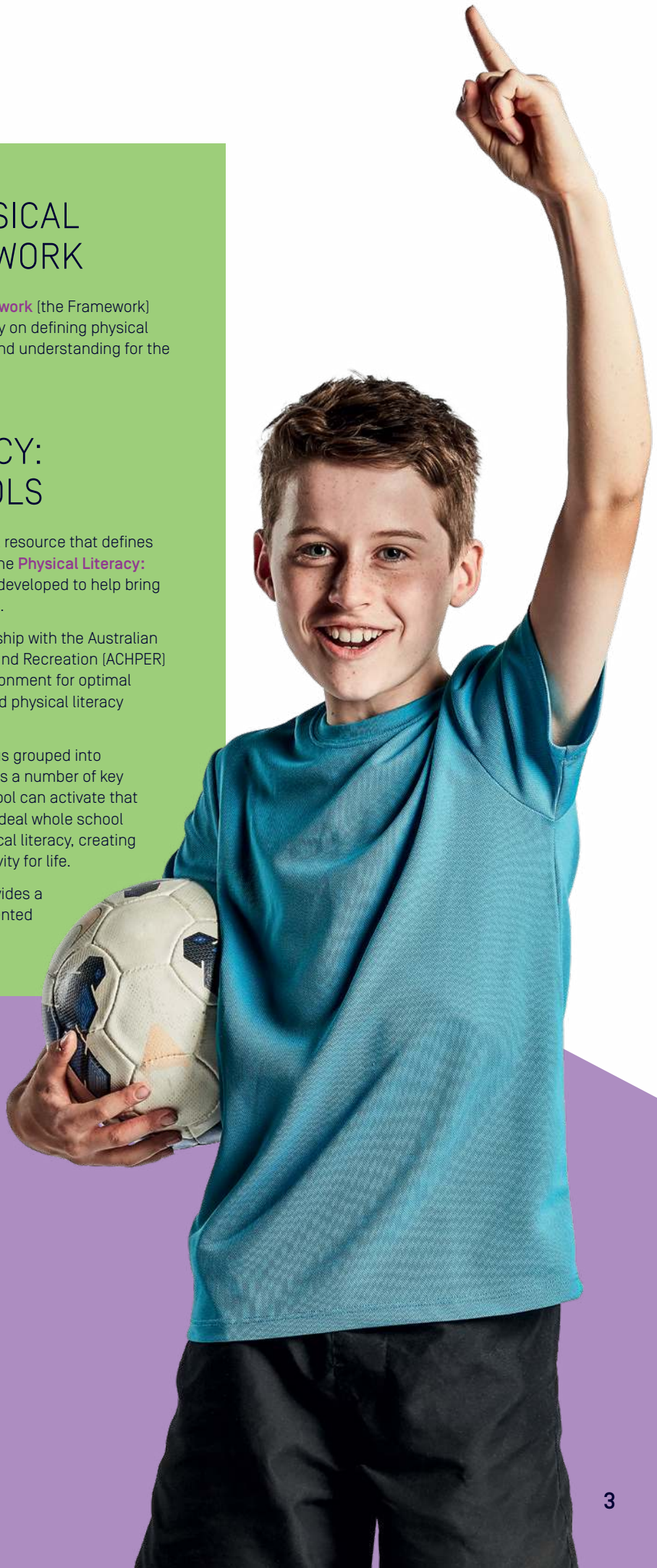
PHYSICAL LITERACY: GUIDE FOR SCHOOLS

While the Framework is the foundational resource that defines physical literacy for people of all ages, the **Physical Literacy: Guide for Schools** (the Guide) has been developed to help bring the Framework to life in a school setting.

Developed by Sport Australia, in partnership with the Australian Council for Health, Physical Education, and Recreation (ACHPER) Victoria, it defines the ideal school environment for optimal impact on children's physical activity and physical literacy development.

The Guide has eight components of focus grouped into three school areas. Each component has a number of key characteristics that describe how a school can activate that area of focus. Together they create the ideal whole school approach to developing children's physical literacy, creating a positive attitude towards physical activity for life.

Change can take time, so the Guide provides a range of strategies that can be implemented to deliver incremental improvement.



WHY IS PHYSICAL LITERACY IMPORTANT FOR SCHOOLS?

According to the United Nations Educational, Scientific and Cultural Organisation (2015) schools are the only place that many children participate in regular physical activity, especially those from lower socio-economic backgrounds. This is not surprising considering most children spend a large portion of their time in school. As a result, schools play an important role in providing an environment for children to develop their physical literacy and in turn, improve their motivation to be physically active.

The development of physical literacy increases the physical activity levels of children, which can produce many of the benefits outlined below:

Who	Benefits for schools

 **Principals Leaders Teachers**	Physical literacy:
	• helps develop students' general capabilities outlined in the Australian Curriculum, including:
	  - critical and creative thinking
	  - personal and social capability
	  - ethical understanding
	  - intercultural understanding
	• aligns with national health and physical education propositions
	• improves student mental health and wellbeing
	• addresses national and international policy and guidelines
	• improves student performance on standardised tests
	• improves student attendance
	• helps students to explore values
	• helps students become responsible local and global citizens.

 **Students**	Physical literacy: • improves mental health and wellbeing • improves awareness of one's self and capabilities • improves self-esteem and self-confidence • develops resilience • improves academic performance, including improved memory and concentration • improves social skills, including leadership, collaboration, cooperation, sharing and negotiation • helps build friendships • helps children learn new skills that can be applied to other aspects of student life • develops behaviours for lifelong participation in movement and physical activity.
 **Parents**	Physical literacy: • improves their child's health and wellbeing • improves their child's resilience • promotes whole of child development across the physical, psychological, social and cognitive domains • develops their child's confidence which can be applied in other aspects of their lives • develops their child's relationship skills which helps with socialising • helps develop their child's sense of social responsibility.

"Primary schools with fitter children achieve better numeracy and literacy results."

Telford, 2012

NATIONAL AND INTERNATIONAL POLICY ALIGNMENT

Embedding physical literacy can help your school align with national and international policies and guidelines.

	Document	How a physical literacy approach can help your school align to policy and guidelines
Australia	**Education Council** Alice Springs (Mparntwe) Education Declaration (2019)	A physical literacy approach prioritises the development of a student's cognitive, social and emotional skills, which is highlighted as a priority in the Alice Springs (Mparntwe) Education Declaration (2019).
	Education Services Australia Australian Student Wellbeing Framework	The Guide and the Student Wellbeing Framework align in that both: • value school leadership • consider inclusion as a key priority • value student voice • encourage community partnerships • promote a positive strengths based proposition.
International	**United Nations Educational, Scientific and Cultural Organisation (UNESCO)** Quality Physical Education Guidelines for Policy Makers	UNESCO state that: • physical literacy is one of three core aspects of inclusive quality physical education. • physical education is the most effective means of developing student attitudes, values, knowledge and understanding for lifelong engagement in society. This highlights the importance of physical literacy in health physical education programs and the Guide provides suggestions on how this can be achieved.
	Organisation for Economic Co-operation and Development (OECD) The Future of Education and Skills	Both the OECD and the Guide outline how schools can nurture whole of child development, including social, emotional, physical and mental wellbeing.

"Regular participation in quality physical education and other forms of physical activity can improve a child's attention span, enhance their cognitive control and speed up their cognitive processing."

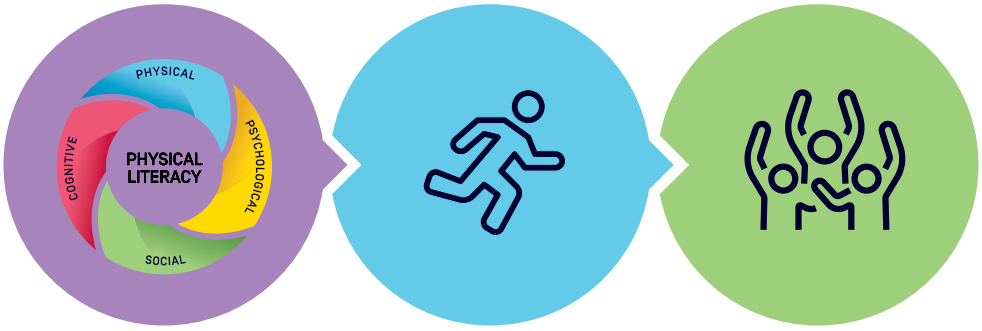
UNESCO, Quality Physical Education: Guidelines for Policy-Makers, 2015

HOW TO BUILD A STRONG PHYSICAL LITERACY CULTURE IN YOUR SCHOOL

- **Educate** – use this resource to help school leaders and teachers understand the benefits of physical literacy for students, teachers and the school.
- **Engage** – include teachers in the review, design and implementation of physical literacy initiatives.
- **Embed** – use the Physical Literacy Implementation Plan to develop an action plan to guide development of a whole of school approach to physical literacy.

EVIDENCE

Evidence shows that physical literacy drives increases in physical activity, which delivers many physical, psychological, social and cognitive benefits throughout children's lives.



Building physical literacy increases physical activity which delivers many benefits for students.

PHYSICAL LITERACY INCREASES CHILDREN'S PHYSICAL ACTIVITY

- A holistic physical literacy approach is a gateway to physical activity (Brown et al, 2020).
- Physical activity behaviours are manifestations of physical literacy (Cairney et al, 2019).
- Physically literate children do twice as much physical activity (Sport England, 2019).
- Physically literate people are more likely to have an improved capacity and commitment to a physical active lifestyle (Holler et al, 2019).
- Important associations between physical literacy and guideline adherence for physical activity and sedentary behaviour (Belanger et al, 2018).
- The most effective physical activity interventions on cognitive development are curriculum physical education programs and those which combine physical effort with emotional and social challenge (physical literacy) (Alvarez-Bueno et al, 2017).
- Physical literacy influences physical activity and sport participation behaviours (Edwards et al, 2017).
- Physical literacy should be viewed as an umbrella concept that captures the knowledge, skills, understandings, and values related to taking responsibility for purposeful physical activity and human movement across the life course (Dudley, 2015).

PHYSICAL LITERACY IS AN IMPORTANT DRIVER OF CHILDREN'S OVERALL WELLBEING

- Physical literacy is important in helping us lead healthy and fulfilling lives (Keegan et al, 2019).
- Physical literacy development can increase motivation to be physically active (Telford et al, 2019).
- Children who have all five elements of physically literacy report higher levels of happiness, are more trusting of other children, and report higher levels of resilience (Sport England, 2019).
- Children's physical literacy impacts not only the amount of activity they do, but also how much they benefit from this activity (Sport England, 2019).

INCREASED PHYSICAL ACTIVITY HAS A POSITIVE IMPACT ON ACADEMIC PERFORMANCE

- Australia, Chile, China, Japan, Portugal and Switzerland indicated that improved overall academic performance was an outcome of PE/HE (OECD, 2019).
- Active students were the group who perceived their academic attainment to be the highest (UK Active, 2019).
- Appropriately implemented physical activity interventions can improve academic achievement (Alvarez et al, 2017).
- Participation in formal sporting activities is associated with higher grades in higher education (Munoz-Bullon et al, 2017).
- Physically active academic lessons significantly improved mathematics and spelling performance of elementary school children (Mullender-Wijnsma et al, 2015).
- The amount of moderate to vigorous physical activity pupils engaged in at age 11 had an effect on academic performance across English, maths and science at age 11, 13 and final GCSE exam results (Booth et al, 2014).
- Elementary schools with fitter children achieved better literacy and numeracy results (Telford et al, 2012).
- A positive association exists between academic attainment and physical activity levels of pupils (Public Health England, 2014, Singh et al, 2012).
- Students that received physically active lessons did 6 percent better than their peers who had received the same lessons in a seated, inactive manner (Donnelly & Lambourne, 2010).
- When a substantial proportion of curricular time (up to an extra hour per day) is allocated to physical education, physical activity or sport, learning seems to proceed more rapidly per unit of classroom time (Institute of Youth Sport, 2010).
- International research suggests that academic achievement is maintained or enhanced by increased physical education, physical activity or sport (Institute of Youth Sport, 2010).
- Female students who both enrolled in physical education and participated in vigorous physical activity lessons had significantly higher grades than students who were not engaged in any physical education lessons (Coe et al, 2006).

PHYSICAL ACTIVITY IMPROVES STUDENT MENTAL WELLBEING

- There is a positive association between engagement in sport and physical activity and levels of mental wellbeing for young people (Sport England, 2019).
- Active students report higher mental and personal wellbeing, reduced perceptions of loneliness, and stronger perceptions of inclusion, employability, and attainment compared to inactive or fairly active students (UK Active, 2019).
- Physical activity improves concentration, improves self-confidence and reduces feelings of sadness (Department of Health, 2019).
- Regular leisure-time exercise of any intensity provides protection against future depression. Relatively modest changes in population levels of exercise may have important public mental health benefits and prevent a substantial number of new cases of depression (Harvey et al, 2018).
- Physical activity is positively related to academic performance due to its impact on self-esteem and reduction of depression (Kayani et al, 2018).
- Both physical activity and fitness are impacted by depression and stress may contribute to strategies directed towards achieving enhanced physical activity and reductions in obesity (Olive et al, 2016).
- There is a positive association between physical activity and several components of mental health, including self-esteem, emotive well-being, spirituality and future expectations (Institute of Youth Sport, 2010).
- Physical activity has a positive impact on anxiety, depression, mood and wellbeing (Institute of Youth Sport, 2010).

"Physical literacy is vital in helping us lead healthy and fulfilling lives."

Keegan, Barnett, Dudley, Telford, Lubans, Bryant, Roberts, Morgan, Schranz, Weissensteiner & Vella, 2019

PHYSICAL ACTIVITY IMPROVES BRAIN FUNCTION INCLUDING MEMORY AND ATTENTION SPAN

- The inclusion of cognitively engaging physical activity breaks can enhance school children's cognitive functions (Egger et al, 2019).
- Brief breaks for physical activity improve student time on task and effects persist for at least 45 min (Maykel et al, 2018).
- Positive effects were found for physical activity on executive functions, attention and academic performance in preadolescent children (de Greeff et al, 2018).
- Regular participation in quality physical education and other forms of physical activity can improve a child's attention span, enhance their cognitive control and speed up their cognitive processing (UNESCO, 2015).
- Physical activity had a positive effect on the Year Two students' classroom on-task behaviour (Herman et al, 2013).
- Physically fitter children have different brain structures to less physically fit children; e.g. greater bilateral hippocampal volumes, and larger basal ganglia (Chaddock et al, 2010, 2012).
- Perceptual skills, attention, and concentration are all improved by a bout of physical activity (Institute of Youth Sport, 2010).
- Students who participated in classroom-based physical activities that incorporate academic concepts demonstrate improvements in attention-to-task (Mahar, 2011).
- Children who participated in a weekly after school physical activity program over 9 months showed increases in working memory compared to those who didn't (Kamijo et al, 2011).
- A positive relationship exists between physical activity and cognition (Institute of Youth Sport, 2010).
- The physical activity portion of a physical education lessons may facilitate immediate and delayed memory (Pesce et al, 2010).
- After physical activity children have a more intense response within the brain than children who had been sitting – they were also able to respond to test questions with more accuracy and complete learning tasks faster and more accurately (Hillman et al, 2009).

PHYSICAL ACTIVITY IMPROVES STUDENT BEHAVIOUR

- Physical activity reduced anti-social behaviour, including aggressive and disruptive actions (Department of Health, 2019).
- Physical activity helps to develop cooperation and teamwork skills (Department of Health, 2019).
- Physical activity is a potential solution to increasing behavioural engagement, and in turn stimulating and enhancing learning (Harvey et al, 2018).
- Classroom-based physical activity had a positive effect on improving on-task and reducing off-task classroom behaviour (Watson et al, 2017).

PHYSICAL ACTIVITY IMPROVES HEALTH

- For children and young people (5 to 17 years), being physically active every day for more than 60 minutes can have health benefits such as:
  - Promotion of healthy growth and development.
  - Strong muscles and bones.
  - Improved physical fitness, including coordination and movement skills.
  - Reduced risk of disease and unhealthy weight gain.
  - Improved flexibility, balance and posture.
  - Development of vital brain connections, leading to improved concentration and thinking skills.
  - Reduced likelihood to develop chronic diseases, such as heart disease and type 2 diabetes. (Department of Health, 2019; Health Direct 2020).

PHYSICAL ACTIVITY HELPS IMPROVE STUDENTS' OVERALL WELLBEING

- Active students (16+) were the most confident that they would be employed within 6 months of graduating and rated themselves higher on employability skills (UK Active, 2019).
- Sport had more of an impact on improving student wellbeing than other extra-curricular activities (such as drama and music) (Clough, 2019).

Use the information in this resource to help your school leadership and broader school community understand the important role they play in developing the physical literacy of our children.

REFERENCES

Alvarez-Bueno, C., Pesce, C., Cavero-Redondo, I., Sanchez-Lopez, M., Martínez-Hortelano, J.A. and Martinez-Vizcaino, V 2017, 'The effect of physical activity interventions on children's cognition and metacognition: A systematic review and meta-analysis', *Journal of the American Academy of Child & Adolescent Psychiatry*, 56(9), pp.729-738.

Belanger, K., Barnes, J.D., Longmuir, P.E., Anderson, K.D., Bruner, B., Copeland, J.L., Gregg, M.J., Hall, N., Kolen, A.M., Lane, K.N. and Law, B 2018, 'The relationship between physical literacy scores and adherence to Canadian physical activity and sedentary behaviour guidelines', *BMC public health*, 18(2), pp.1042.

Booth J, Leary S, Joinson C, Ness A, Tomporowski P, Boyle J & Reilly J 2014, 'Associations between objectively measured physical activity and academic attainment in adolescents from a UK cohort', *British Journal of Sports Medicine*, 48, pp. 265-270.

Brown, D.M., Dudley, D.A. and Cairney, J., 2020. Physical literacy profiles are associated with differences in children's physical activity participation: A latent profile analysis approach. *Journal of Science and Medicine in Sport*.

Cairney, J., Clark, H., Dudley, D., and Kriellars, D 2019, 'Physical Literacy in Children and Youth – A Construct Validation Study', *Journal of Teaching in Physical Education*, 38, pp.84-90.

Chaddock L, Hillman CH, Pontifex MB, Johnson CR, Raine LB, Kramer AF 2012, 'Childhood aerobic fitness predicts cognitive performance one year later', *Journal Sports Science*, 30(5), pp.421-430.

Chaddock L, Erickson R, Prakash R, Kim J, Voss M and VanPatter M 2010, 'A neuroimaging investigation of the association between aerobic fitness, hippocampal volume and memory performance in preadolescent children', *Brain Research*, 1358, pp.172-183.

Coe DP, Pivarnik JM, Womack CJ, Reeves MJ, Malina RM 2006, 'Effect of physical education and activity levels on academic achievement in children', *Medicine and Science in Sports and Exercise*, 38, pp.1515-1519.

Clough 2019, 'The Headmasters' & Headmistresses' conference (HMC).

de Greeff, JW, Bosker, RJ, Oosterlaan, J, Visscher, C, and Hartman, E 2018, 'Effects of physical activity on executive functions, attention and academic performance in preadolescent children: a meta-analysis', *Journal of Science and Medicine in Sport*, 21(5), pp.501-507.

Donnelly JE, Lambourne K 2011, 'Classroom-based physical activity, cognition, and academic achievement', *Preventative Medicine*; 52, pp.S36-S42.

Dudley, DA. 2015, 'A conceptual model of observed physical literacy'. *The Physical Educator*, 72(5).

Edwards, L.C., Bryant, A.S., Keegan, R.J., Morgan, K. and Jones, A.M 2017. Definitions, foundations and associations of physical literacy: a systematic review. *Sports medicine*, 47(1), pp.113-126.

Egger F; Benzing V; Conzelmann A; Schmidt M 2019, 'Boost your brain, while having a break! The effects of long-term cognitively engaging physical activity breaks on children's executive functions and academic achievement', *Plos One*, 14(3), pp.1932-6203.

Harvey, S.P., Lambourne, K., Greene, J.L. 2018, 'The Effects of Physical Activity on Learning Behaviors in Elementary School Children: a Randomized Controlled Trial', *Contemporary School Psychology*, 22(3), pp.303-212.

Health Direct, viewed 23 June 2020 healthdirect.gov.au/benefits-of-physical-activity-for-children

Herman, Wi; Beer, C; and Morton, D 2013, 'The impact of a physical activity session on year two students' subsequent classroom behaviour, *TEACH Journal of Christian Education*, 7(1), pp.9.

Hillman CH, Pontifex MB, Raine LB, Castelli DM, Hall EE, Kramer AF 2009, 'The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children', *Neuroscience*, 159(3), pp.1044-1054.

Holler, P., Jaunig, J., Amort, F.M., Tuttner, S., Hofer-Fischanger, K., Wallner, D., Simi, H., Müller, A., van Poppel, M.N.M. and Moser, O 2019, 'Holistic physical exercise training improves physical literacy among physically inactive adults: a pilot intervention study', *BMC public health*, 19(1), pp.393.

Institute of Youth Sport 2010, 'The impact of physical education and sport on education outcomes: a review of literature'.

Kamijo, K., Pontifex, M.B., O'Leary, K.C., Scudder, M.R., Wu, C.T., Castelli, D.M. and Hillman, C.H 2011, 'The effects of an afterschool physical activity program on working memory in preadolescent children', *Developmental science*, 14(5), pp.1046-1058.

Kayani, S., Kiyani, T., Wang, J., Sánchez, M., Kayani, S., Qurban, H 2018, Physical activity and academic performance: The mediating effect of self-esteem and depression. *Sustainability*, 10, pp.3633.

Keegan, R.J., Barnett, L.M., Dudley, D.A., Telford, R.D., Lubans, D.R., Bryant, A.S., Roberts, W.M., Morgan, P.J., Schranz, N.K., Weissensteiner, J.R. and Vella, S.A 2019. Defining physical literacy for application in Australia: a modified delphi method. *Journal of Teaching in Physical Education*, 38(2), pp.105-118.

Mahar, M.T 2011, 'Impact of short bouts of physical activity on attention-to-task in elementary school children', *Preventive Medicine*, 52, pp.S60-S64.

Maykel, C, Bray, M, & Rogers, J. 2018, 'A classroom-based physical activity intervention for elementary student on-task behaviour', *Journal of Applied School Psychology*, 34(3), pp.259-274.

Mullender-Wijnsma, M., E. Hartman, J. de Greeff, S. Doolaard, R. Bosker, and C. Visscher 2016, 'Physically active math and language lessons improve academic achievement: A cluster randomized controlled trial', *Paediatrics*, 137(3), pp.1–9.

Munoz-Bullon, F., Sanchez-Bueno, M., Vos-Saz, A 2017, 'The influence of sports participation on academic performance among students in higher education', ***Sport Management Review. 20(4)***, pp.365-378.

Olive, L.S., Telford, R.M., Byrne, D.G., Abhayaratna, W.P. and Telford, R.D 2016. Psychological distress leads to reduced physical activity and fitness in children: the Australian longitudinal LOOK study. *Journal of behavioral medicine*, 39(4), pp.587-598.

Organisation for Economic Co-operation and Development 2019, viewed 12 June 2020. **oecd.org/education/2030-project/contact/**

Pesce C, Crova C, Cereatti L, Casella R, Bellucci M 2009, 'Physical activity and mental performance in preadolescents: effects of acute exercise on free-recall memory'. *Mental Health Physical Activity*, 2(1), pp.16–22.

The Department of Health, viewed 12 June 2020. **health.gov.au/internet/main/publishing.nsf/Content/phy-activity**

The Department of Health, viewed 23 June 2020. **health.gov.au/internet/main/publishing.nsf/Content/phy-activity**

Public Health England 2014, viewed 12 June 2020. **assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/370686/HT_briefing_layoutvFINALvii.pdf**

Singh, A., Uijtdewilligen, L., Twisk, J.W., Van Mechelen, W. and Chinapaw, M.J., 2012. Physical activity and performance at school: a systematic review of the literature including a methodological quality assessment. *Archives of pediatrics & adolescent medicine*, 166(1), pp.49-55.

Sport England 2019, viewed 12 June 2020. **sportengland.org/know-your-audience/data/active-lives#report_archiveaccess_the_data**

Telford, R., Olive, L., Keegan, R. and Barnett, L 2019. The physical education and physical literacy (pepl) approach: a multicomponent primary school intervention targeting physical literacy. *Journal of Science and Medicine in Sport*, 22, pp.S21.

Telford RD, Cunningham RB, Fitzgerald R, Olive LS, Prosser L, Jiang X, Telford RM 2012, 'Physical education, obesity, and academic achievement: a 2-year longitudinal investigation of Australian elementary school children', *American Journal of Public Health*, 102(2), pp.368-374.

Telford, R.D., Cunningham, R.B., Telford, R.M. and Abhayaratna, W.P 2012. Schools with fitter children achieve better literacy and numeracy results: evidence of a school cultural effect. *Pediatric Exercise Science*, 24(1), pp.45-57.

UK Active 2019, viewed 12 June 2020. **ukactive.com/reports/british-active-students-survey-further-education/**

United Nations Educational, Scientific and Cultural Organisation 2015, Paris, viewed 12 June 2020. **unesco.org/new/en/social-and-human-sciences/themes/physical-education-and-sport/policy-project/**

Watson, A., A. Timperio, H. Brown, K. Best, and K. Hesketh 2017, 'Effect of classroom-based physical activity interventions on academic and physical activity outcomes: A systematic review and meta-analysis', *International Journal of Behavioural Nutrition and Physical Activity*, 14, pp.181–24.

ASC35918

SportAus.gov.au

Leverrier Street Bruce ACT 2617
PO Box 176 Belconnen ACT 2616
+61 2 6214 1111

info@sportingschools.gov.au
1300 785 707