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Integrate Classroom Physical Activity in Schools

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THE 2018 REPORT CARD ON Physical Activity for Children and Youth reported that only 24% of U.S. children and youth ages 6 to 17 meet the national recommendation of 60 minutes of daily physical activity, grading the nation at a D– (National Physical Activity Alliance, 2018; The Child & Adolescent Health Measurement Initiative, 2016). Schools can help students meet this national recommendation, as close to 60 million children and adolescents attend school (U.S. Department of Education, National Center for Education Statistics, 2018). Schools are able to help students get up to 20 to 60 minutes of physical activity during the school day (Weaver et al., 2016; Yli-Piipari et al., 2016), and with students spending approximately 5 to 6 hours per day in the classroom, classroom physical activity is an important opportunity to increase physical activity (Centers for Disease Control and Prevention [CDC], 2011; Rasberry et al., 2011).

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Classroom physical activity is defined as any physical activity done in the classroom (CDC, 2018). Classroom physical activity can take place at any time, can occur in one or several brief periods of time during the school day, and can be offered across all school levels (elementary, middle and high school; CDC, 2018). As an important part of a Comprehensive School Physical Activity Program (CSPAP), classroom physical activity provides students with physical activity during the school day, in addition to recess and physical education.

The two primary approaches for classroom physical activity are:

1. Physical activity integrated into planned academic instruction, which can be added to a teacher's lesson-planning process to ensure that activities reinforce the desired content and academic standards and help limit the amount of time students are sedentary.
2. Physical activity outside of planned academic instruction, which is not necessarily tied to the lesson being taught. This physical activity approach can be spontaneously added to limit sedentary time or when the teacher sees a drop in student energy, attentiveness or content retention (CDC, 2018).

Numerous terms exist to describe physical activity in the classroom or some aspect of it (CDC, 2011, 2018). These include but are not limited to: movement integration, classroom physical activity breaks, active learning, active classrooms, energizers, and brain boosters. Regardless of the term used, the goal is the same: for schools to provide periods of physical activity to increase overall student physical activity minutes and reduce sedentary behavior in the classroom, which ultimately can help improve academic achievement (CDC, 2013; Institute of Medicine [IOM], 2013).

The purpose of this article is to explain the health and academic benefits of classroom physical activity, describe strategies and resources to help schools integrate classroom physical activity throughout the school day, and highlight the possible role of physical educators in supporting the implementation of classroom physical activity strategies. Throughout there will be quotations with practical ideas and shared learning from state and local practitioners across the country who support and implement classroom physical activity.

Benefits of Classroom Physical Activity

Classroom physical activity does not detract from student learning or take time away from academic instruction; rather, classroom physical activity enhances the effectiveness of instructional minutes to meet classroom and school academic goals (Martin & Murtagh, 2017; Rasberry et al., 2011). Classroom physical activity can boost students' cognitive performance, ability to learn, and enjoyment of learning, while also improving their health (Martin & Murtagh, 2017; Rasberry et al., 2011; Watson, Timperio, Brown, Best, & Hesketh, 2017). In addition, beyond the individual student, classroom physical activity can promote the health and well-being of teachers and staff who lead activities and positively affect the overall learning and social climate of a classroom and school. Specifically, benefits for students include:

- Improving their concentration and ability to stay on-task in the classroom (Martin & Murtagh, 2017; Reed, Maslow, Long, & Hughey, 2013; Watson, Timperio, Brown, Best, et al., 2017).
- Reducing disruptive behavior, such as fidgeting, in the classroom (Baker et al., 2017; Watson Timperio, Brown, Best, et al., 2017).
- Improving their motivation and engagement in the learning process (IOM, 2013; Kuczala & Lengel, 2018; Martin & Murtagh, 2017).
- Helping to improve their academic performance (higher test scores; Mullender-Wijnsma et al., 2015; Rasberry et al., 2011).
- Increasing their amount of moderate-to-vigorous physical activity daily, which promotes lifelong health and well-being, prevents or alleviates chronic health conditions, and improves students' moods and feelings of self-efficacy (Bassett et al., 2013; Drummy et al., 2016; Martin & Murtagh, 2017).

Benefits for teachers include:

- Providing them with effective behavioral management strategies to support their instructional goals (Ma, Mare, & Gurd, 2014; Martin & Murtagh, 2017).
- Increasing their own minutes of moderate-to-vigorous physical activity daily, leading to the same health benefits as students (CDC, 2011, 2018; S. L. Michael, Merlo, Basch, Wentzel, & Wechsler, 2015).

Benefits on the overall learning and social climate of a classroom or school include:

- Allowing students to collaborate and interact with each other in a fun way to create conditions for them to feel safe, comfortable, accepted and happy (CDC, 2009; Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013).
- Increasing connectedness between students, their peers, and their teachers (CDC, 2009).

Classroom physical activity can keep all students, regardless of gender, equally active, and it has a positive effect on students of all grade levels, kindergarten through 12th grade (Calvert, Mahar, Flay, & Turner, 2018).

Current State of Classroom Physical Activity

Despite the demonstrated benefits of classroom physical activity, national data show that less than half of schools have students participate in regular physical activity breaks outside of physical education during the school day (CDC, 2015). Figure 1 shows how this varies across the different school levels (CDC, 2015).

Across the country, schools, school districts and states have different policies and practices that can affect classroom physical activity. In 2016 Colorado was the only state that reported requiring classroom physical activity breaks for elementary school students, with no states requiring such breaks in middle or high schools (SHAPE America – Society of Health and Physical Educators & American Heart Association, 2016). At the school district level

the percent of school districts that required physical activity breaks during the school day declined from the elementary level to the high school level (Figure 2; CDC, 2017a). The presence of state- and district-level classroom physical activity policies can support schools to make the case for initiating, strengthening and expanding classroom physical activity practices.

While classroom physical activity has the potential to increase the number of physical activity minutes for all students, a 2017 nationally representative study demonstrated that classroom physical activity is not provided equally to all students. Specifically, elementary schools with a majority Latino population were less likely to include physical activity in planned academic instruction when compared to schools with a majority white population (Turner & Chaloupka, 2017). The same study demonstrated that elementary schools with a majority of students of a low socioeconomic position were also less likely to include physical activity breaks when compared to schools with a majority of students of a high socioeconomic position (Turner & Chaloupka, 2017). Students who are Latino and who have a low socioeconomic position have lower levels of participation in physical activity (CDC, 2017a; Sterdt, Liersch, & Walter, 2014). Therefore, ensuring all schools are equipped to provide classroom physical activity can be an approach that prioritizes equity while also increasing the daily minutes of physical activity for all students, regardless of background.

The findings underscore the need for state and district policy for classroom physical activity. Having a key policy in place will help garner the support needed to integrate classroom physical activity across all school levels.

National Guidance on Classroom Physical Activity

The Centers for Disease Control and Prevention, SHAPE America, the National Academy of Medicine, and other national organizations recommend providing classroom physical activity to all students from kindergarten through 12th grade, in addition to physical education and recess. Existing guidance from these organizations include:

- Incorporating classroom physical activity into the planning for a CSPAP.
- Not replacing physical education and recess with classroom physical activity.
- Integrating physical activity into planned academic instruction to reinforce academic concepts.
- Providing physical activity, such as physical activity breaks, outside of planned academic instruction.
- Using classroom physical activity as a way to reinforce skills learned in physical education.
- Ensuring that barriers to classroom physical activity, such as lack of equipment or available space, are minimized.
- Not withholding classroom physical activity from students as a disciplinary approach.

- Providing teachers with ongoing professional development on classroom physical activity (CDC, 2011, 2013; IOM, 2013; National Association of State Boards of Education, 2012; SHAPE America & American Heart Association, 2016).

This national guidance identifies possible policies and practices for how schools and districts can support teachers to integrate and sustain classroom physical activity.

Strategies for Classroom Physical Activity

To help schools and districts make the national guidance for classroom physical activity actionable, the CDC, in partnership with Springboard to Active Schools, an initiative of the National Network of Public Health Institutes and Health Resources in Action, developed *Strategies for Classroom Physical Activity in Schools* (CDC, 2018). This document identifies ten evidence-based strategies, within three categories, for districts, schools and individual teachers to consider as they adopt, promote, enhance and sustain classroom physical activity (see Figure 3). Although most evidence and expert opinion for these strategies came from elementary schools, many are applicable to middle and high schools and before-school and after-school extended day programs.

Some strategies are small changes in practices that can be made at the classroom level with relative ease. Others are broader, longer-term changes that may require administrative or budgetary commitment. Individual school districts, schools and teachers should determine which strategies are most feasible and appropriate according to the needs of the school and classroom, school level, and available resources.

Category 1: Build Buy-in and Provide Training for Classroom Physical Activity.

Building buy-in and capacity can promote widespread and sustainable classroom physical activity practices at the district, school and classroom levels. Initial steps include identifying existing physical activity champions and experts and cultivating potential champions; identifying existing classroom physical activity policies and practices; and equipping teachers and other physical activity champions with the skills and knowledge to conduct classroom physical activity through professional development and support.

Leveraging existing relationships and forging new ones can create the infrastructure for advancing classroom physical activity practices in a school and district (Baker et al., 2017; Webster, Beets, Weaver, Vazou, & Russ, 2015). District- and school-level administrators, wellness teams, and physical activity champions can implement or strengthen existing policies pertaining to classroom physical activity (such as through a local wellness policy) and identify classroom physical activity policies or practices that can be adopted (Ward, 2011). Examples of policies might include requirements for regular classroom physical activity or reporting the number of daily minutes of activity. CDC's School Health Index can also be used to assess and strengthen policies and practices related to physical education and physical activity (CDC, 2017a, 2017b).

Physical education teachers, teachers who already integrate physical activity into their classrooms, physical activity champions, and other community-based or educational

institutions can serve as resources to promote professional development, best practices, and techniques for classroom physical activity.

Students taught by teachers who have received training on classroom physical activity have higher levels of physical activity per week than those taught by teachers without this training (Ward, 2011). Yet the 2014 School Health Policies and Practices Study found that only 37% of classes or courses across all school levels had a teacher who received professional development on helping classroom teachers integrate physical activity into their classroom (CDC, 2015). Therefore, identifying and engaging champions who can provide such training and supporting them to build capacity would increase the likelihood that classroom physical activity would be provided to all students (CDC, 2011).

Building buy-in among students, particularly in the upper-elementary, middle and high school levels, is essential for the success of classroom physical activity. Students can be engaged as student champions to design, select and lead activities. As Terry Jones of Wellness Training Specialists in Colorado stated, “At the middle school and high school levels...student-led physical activity opportunities will be the most beneficial. It is important to put leadership in their hands” (National Network of Public Health Institutes & Health Resources in Action, 2018c).

Parents and community members can also be cultivated as champions to communicate with administrators and teachers about the benefits of classroom physical activity, advocate for and volunteer to help with activities, and share specific ideas with teachers (CDC, 2012). Creating community-level partnerships with universities and community-based organizations can also expand support and potentially provide resources and training for classroom physical activity (R. D. Michael et al., 2018). As Jennifer Woolard at the Vermont Department of Health shared, “For teachers who do not have the confidence or need support for classroom physical activity, look to the community and to parents — they offer new perspectives and new skills” (National Network of Public Health Institutes & Health Resources in Action, 2018b).

Category 2: Create Classroom Environments Supportive of Physical Activity.

To build a culture of physical activity in the classroom, teachers can integrate physical activity into planned academic instruction to reinforce the desired content and academic standards as well as provide physical activity outside of planned academic instruction (Kuczala & Lengel, 2018; Reed, 2018). These approaches help limit sedentary time and improve learning (Watson, Timperio, Brown, Best, et al., 2017; Watson, Timperio, Brown, & Hesketh, 2017). Teachers can identify how these approaches fit their teaching style and pre-plan, so they can easily incorporate them during class (Webster, Buchan, et al., 2015).

Other approaches teachers can use to increase physical activity in the classroom include encouraging physical activity as students move between activities or classrooms; using physical activity as an incentive for appropriate classroom behavior; adding physical activity at the beginning of the school day — for example, schoolwide exercise during morning announcements; and identifying ways to turn sedentary activities, such as waiting in line, into time for physical activity (Russ et al., 2017).

Another important strategy to create a culture of physical activity is for teachers to be able to identify opportunities and appropriate times to incorporate physical activity (Goh, Hannon, Webster, & Podlog, 2017). Teachers can intentionally plan for it by adding physical activity into daily lessons and creating prompts. Classroom physical activities should be supportive of positive classroom management; simple and easy to organize, requiring little preparation; and doable in any clothing worn by teachers and students (McMullen, Kulinna, & Cothran, 2014; Watson, Timperio, Brown, Best, et al., 2017; Whitt-Glover, Han, & Yancey, 2011). Teachers also can determine appropriate times for classroom physical activity by assessing which approaches work best for them and how their students respond at different times during the school day.

Adding physical activity to the classroom requires little or no materials or equipment (Reed, 2018). Music can be used to energize and motivate students and to serve as a signal to start and stop activities. Increasingly, digital platforms such as YouTube provide videos that teachers can use for classroom physical activity. Some schools might be able to add equipment or furniture that promotes movement — such as balance balls, learning mats, standing desks or bicycle chairs — to their classrooms (Minges et al., 2016). Teachers need to identify the resources they feel comfortable using as well as appropriate physical activities for their classroom’s physical space and then ask students to choose activities they would enjoy.

While classroom space has been identified as one of the main challenges for teachers who want to add classroom physical activity, a thoughtfully considered physical arrangement can safely include and increase physical activity (Brittin et al., 2015). Teachers can have students do most physical activities at or next to a student’s desk (Reed, 2018). Teachers also can use outdoor spaces or can advocate for their school to have a dedicated room where students can rotate through active learning stations to help them be more engaged in the learning process. Dr. Collin Webster at the University of South Carolina offered this practical tip: “Put students’ materials for different subject areas on different sides of the room. For example, place math material on one side of the room, science on another side, etc. When students have to retrieve materials for different subjects, they can walk, hop, or jog to the different sides of the room” (National Network of Public Health Institutes & Health Resources in Action, 2018e).

In addition, by setting and communicating safety and behavioral expectations, teachers ensure that classroom physical activity is appropriate and safe for all students (CDC, 2011). Teachers can use the school’s code of conduct or individually set classroom physical activity expectations for students. These expectations could include participating in the classroom physical activity to the best of their ability; being respectful of different levels of abilities; being aware of their proximity to other students and objects in the classroom; and helping others if needed. Physical education teachers also can be a good resource to help identify activities that are developmentally appropriate and safe to use in a limited space and provide guidance on variations and modifications to make physical activities inclusive of all students. Dr. Kristen Ford of Concordia College, MN and Dr. Jenny Linker of North Dakota State University, ND offered this practical strategy to ensure the safety of students for classroom physical activity: “When planning classroom physical activity approaches,

consider the 3 S's: 1) Safety – Is this physically and emotionally safe? 2) Skills – Are we teaching students skills? And 3) Success – Are we setting students up for success?” (National Network of Public Health Institutes & Health Resources in Action, 2018a).

Category 3: Collect and Share Information about Classroom Physical Activity.

Collecting and sharing information on classroom physical activity and its effects can promote a continuous learning culture (Dunn, Venturanza, Walsh, & Nonas, 2012; Holt, Bartee, & Heelan, 2013). This allows teachers, administrators and other physical activity champions to make improvements, strengthen what works, and facilitate ongoing buy-in for long-term sustainability. Teachers can track the types of physical activities they use in their classroom and include information such as preparation time, ease of implementation, whether students enjoyed the activity, and the length of the activity. No software or formal methods are required to collect such information, although funding and partnerships could help make such methods possible (Dunn et al., 2012; Holt et al., 2013). In addition, the information collected can guide best practices for both sustainability and improvement (CDC 2011). Such information also can help with future planning, guide professional development needs, and promote and expand buy-in among teachers and administrators. As Jessica Yoder from the Indiana Department of Health shared, “Classroom physical activity data can be used to identify ways to support teachers, celebrate schools, encourage new partnerships, and leverage more funding” (National Network of Public Health Institutes & Health Resources in Action, 2018f).

Putting Strategies into Practice

The integration of classroom physical activity may vary across states, districts, schools and classrooms. Therefore, different strategies may be more applicable in certain contexts, depending on the existing level of buy-in, experience and expertise. In addition, classroom physical activity is ultimately implemented at the classroom level and can vary based on an individual teacher’s buy-in and comfort with physical activity (Webster et al., 2017). As such, practical approaches may differ depending on factors such as the culture and context of the classroom and school, goals of individual classes or courses, preferences and comfort level of individual teachers, enjoyment level and preferences of students, and resources, time and spaces available.

The ten classroom physical activity strategies do not need to be addressed in order or all at once (see Figure 3). Teachers, administrators and other physical activity champions can determine which category seems most appropriate for their setting and then identify which strategies within this category are most feasible or are of greatest interest.

To support the implementation of the *Strategies for Classroom Physical Activity in Schools*, CDC and Springboard to Active Schools developed accompanying resources. While the purpose of each resource is distinct, all are intended to help school leaders, teachers, physical education teachers and physical activity champions to adopt, promote, enhance and sustain classroom physical activity. The resources include:

“Classroom physical activity data can be used to identify ways to support teachers, celebrate schools, encourage new partnerships, and leverage more funding.”

- *Integrate Classroom Physical Activity in Schools: A Guide for Putting Strategies into Practice* — This guide provides key questions and activities, along with practical templates that teachers and other champions can use to help them adopt, promote, enhance or sustain the strategies that they prioritize.
- *Online Platform: Integrate Classroom Physical Activity in Schools* — This online platform provides a comprehensive look at the ten classroom physical activity strategies. It includes key questions and activities, templates and tools, stories from the field that show how the strategies are being implemented in different states, and resources aligned with each of the recommended strategies.
- *Data Brief: Integrate Classroom Physical Activity in Schools* — This brief defines classroom physical activity, provides a snapshot of current classroom physical activity practices in the United States, and highlights ways to improve classroom physical activity through national guidance, practical strategies and resources.
- *Ideas for Parents: Classroom Physical Activity* — This one-pager provides ideas for parents to promote classroom physical activity in their child’s school.
- *Integrate Classroom Physical Activity: Getting Students Active during School* — This PowerPoint presentation explains the benefits and importance of classroom physical activity and identifies resources available for schools to use to promote and plan classroom physical activity.

Through the CDC Healthy Schools’ *Improving Student Health and Academic Achievement through Nutrition, Physical Activity, and the Management of Chronic Conditions in Schools* Cooperative Agreement (DP18–1801), 16 state education agencies will receive in-depth training and technical assistance to provide professional development to prioritized school districts and schools to use these resources. Outside of the 16 funded education agencies, school districts and schools across all 50 states have opportunities to dive deeper into the strategies and learn more about how to use these resources through live and recorded online webinars available on Springboard to Active Schools’ website: www.schoolspringboard.org.

Call to Action: The Role of the Physical Education Teacher

Active learning and movement should extend beyond the physical education classroom. All learning spaces can be leveraged to help students apply the skills learned in physical education and to promote a physically active school culture and physical literacy among students, faculty and staff. Physical education teachers have the professional training, knowledge, skills and confidence to support schools and districts to implement the national guidance and strategies for classroom physical activity. Specifically, physical educators can:

- Make the case for classroom physical activity to district and school administrators, staff and faculty by communicating the connection between physical activity and academic achievement.

- Find opportunities to incorporate classroom physical activity into the planning for a Comprehensive School Physical Activity Program to facilitate and sustain school environments supportive of physical activity.
- Educate school leaders, teachers and staff about the importance of providing classroom physical activity in addition to physical education and recess and not withholding classroom physical activity from students as a disciplinary approach.
- Provide teachers with ongoing professional development on classroom physical activity, including but not limited to:
 - Demonstrating and identifying developmentally appropriate and safe physical activities for students of all abilities.
 - Providing teachers with easy-to-implement physical activities that reinforce academic concepts or physical activities incorporated outside of planned academic instruction.
 - Working with teachers to identify opportunities to reinforce concepts learned in physical education.
 - Advising teachers on how to set up optimal space.
 - Helping teachers identify materials, technology and resources.
 - Identifying opportunities and appropriate times for classroom physical activity.
- Support tracking metrics and sharing successes and lessons learned related to classroom physical activity.

As Amy Riggio, health and physical education teacher in Loudoun County Public Schools, observed, “Previously, [physical educators] shied away from offering help to other classroom teachers. But, we have the knowledge — we know the anatomical basis for movement...and the research behind what happens when someone sits for hours and hours a day” (National Network of Public Health Institutes & Health Resources in Action, 2018d). Physical education teachers are the experts on physical activity in a school, and therefore play a key role in the planning and implementation of classroom physical activity.

Summary

Classroom physical activity is another opportunity that schools can offer to help students be better learners and achieve healthier outcomes (CDC, 2011, 2013; IOM, 2013). The evidence is clear that students, teachers and schools benefit from classroom physical activity (IOM, 2013; Martin & Murtagh, 2017; Watson, Timperio, Brown, Best, et al., 2017). Physical educators also have an important role to play to support the adoption, promotion, enhancement and sustainability of classroom physical activity strategies. Use of the new suite of resources for classroom physical activity developed by CDC and Springboard to Active Schools can support schools and districts in making classroom physical activity part of every student’s day.

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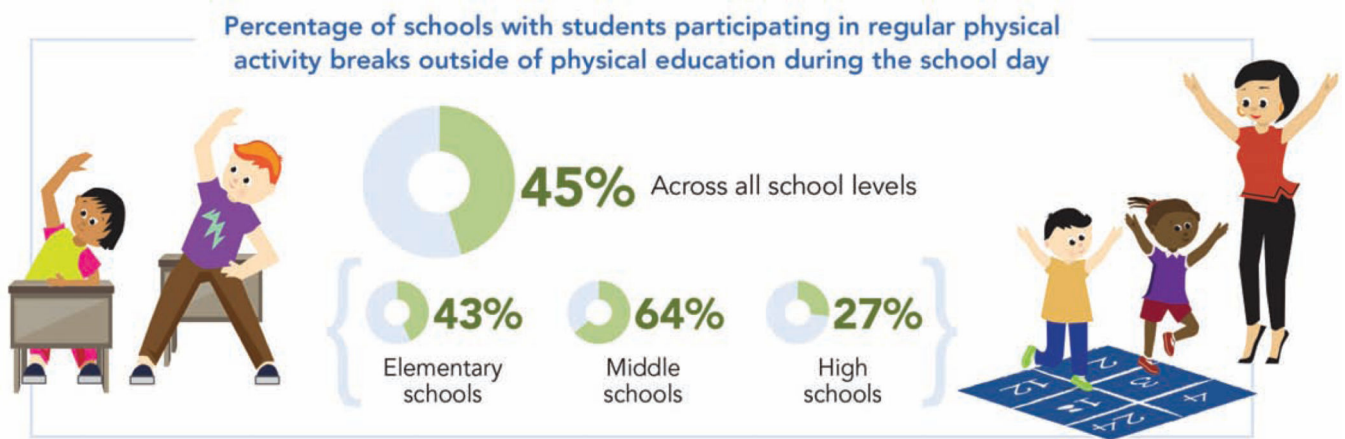


Figure 1. Percentage of schools with regular physical activity breaks
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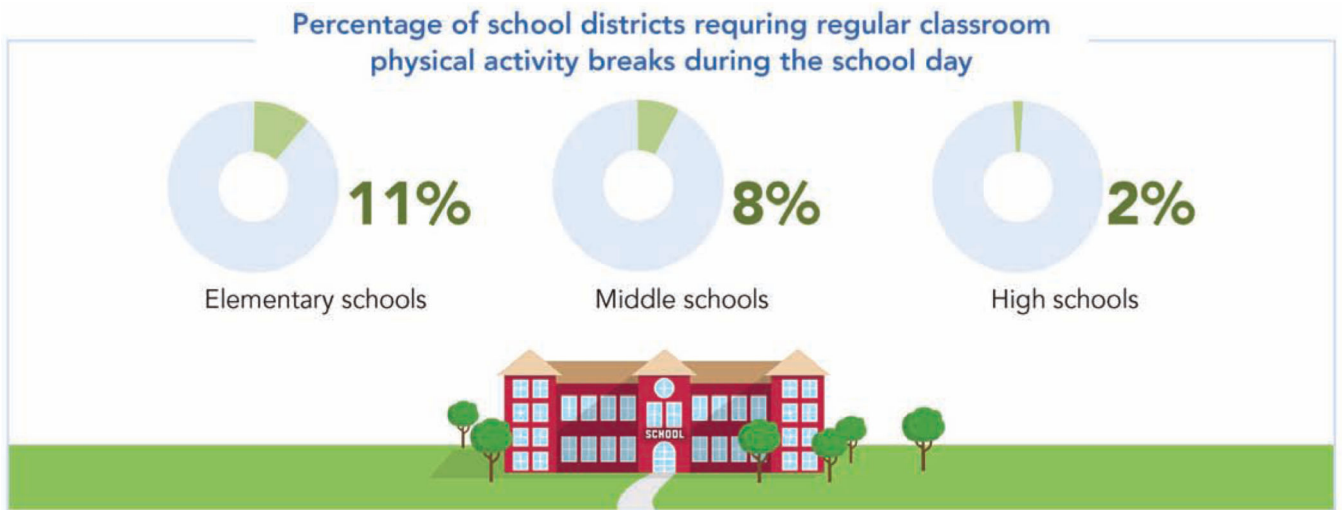


Figure 2. Percentage of school districts requiring regular classroom physical activity breaks during the school day
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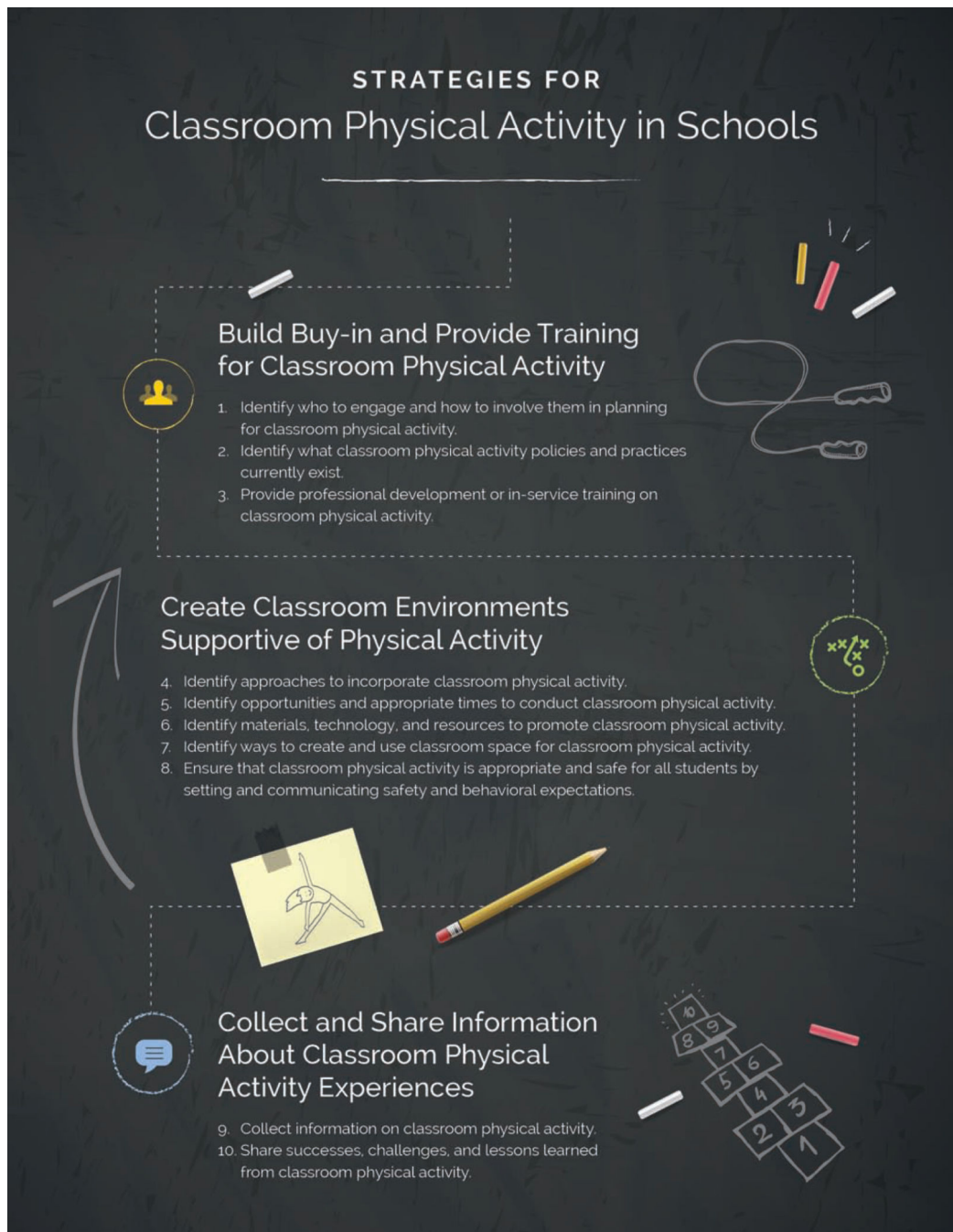


Figure 3. Strategies for classroom physical activity in schools

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