

# Youth Compendium of Physical Activities for Classroom Teachers

The Youth Compendium of Physical Activities provides a list of 196 common activities in which youth participate and the estimated energy cost associated with each activity.

## Who should use the Youth Compendium?

The Youth Compendium is intended for widespread use by researchers, state and local health departments, educators, and fitness professionals. The purpose of this document is to help classroom teachers select moderate-to-vigorous physical activities (MVPAs) and identify when students are engaged in MVPA.

## How much physical activity do children need?

The Physical Activity Guidelines for Americans recommends that school-aged children and adolescents ages 6 to 17 years do 60 minutes or more of moderate-to-vigorous physical activity daily.<sup>1</sup> This activity should include aerobic activity to improve cardiorespiratory fitness as well as age-appropriate muscle- and bone-strengthening activities to make muscles and bones stronger. Many of these minutes can be accumulated during the school day.

In fact, some states have mandates that require students to engage in a certain number of minutes of MVPA during the school day.<sup>2,3</sup> Minutes of MVPA can be counted during physical education (see [Youth Compendium Fact Sheet for Physical Education Teachers](#)) and through other opportunities during the school day such as recess, classroom physical activity, and physical activity before and after school (e.g., intramurals, physical activity clubs).<sup>4</sup>

## What is moderate-to-vigorous physical activity?

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure.<sup>1</sup> Examples of aerobic physical activity include walking, running, dancing, and jumping. These activities vary in intensity because some require more energy to do and others less energy. For example, students expend more energy running than walking. Intensity of physical activity is usually described as light, moderate, or vigorous.

Teachers cannot determine a student's heart or breathing rate during an activity. However, they can observe whether a student is doing an activity that is considered either moderate or vigorous intensity.

## Examples of moderate-to-vigorous physical aerobic activities for students

On the back page are physical activities that have been categorized as moderate or vigorous by school level. They are based on the absolute aerobic intensity, which is defined in terms of a metabolic equivalent of task, or MET.<sup>1</sup> MET is a unit for describing the energy expenditure of a specific activity.<sup>1</sup> See the [Youth Compendium of Physical Activities](#) to learn more about the absolute intensity of various activities for children and adolescents ages 6 years and older.

The following example describes two ways classroom teachers can use the Youth Compendium:

- Assist with selecting moderate-to-vigorous physical activities that students can do during recess, in the classroom, or in physical activity programs before and after school
- Assist with identifying when students are engaged in MVPA

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Intensity of Aerobic Activity	Elementary School	Middle/High School
Moderate Intensity	<ul style="list-style-type: none"> <li>• Brisk walking</li> <li>• Playing games that require catching and throwing, such as baseball and softball</li> <li>• Ball games such as bouncing, kicking, and dribbling</li> <li>• Freeze tag (low effort)</li> <li>• Stair walking</li> <li>• Jumping jacks</li> <li>• Hopping, skipping, and jumping</li> </ul>	<ul style="list-style-type: none"> <li>• Brisk walking</li> <li>• Playing games that require catching and throwing, such as baseball and softball</li> <li>• Ball games such as bouncing, kicking, and dribbling</li> <li>• Freeze tag (low effort)</li> <li>• Stair walking</li> <li>• Marching with instruments</li> <li>• Jumping jacks</li> <li>• Video games that include continuous movement</li> <li>• Volleyball</li> <li>• Ultimate frisbee</li> </ul>
Vigorous Intensity	<ul style="list-style-type: none"> <li>• Running</li> <li>• Active games involving running and chasing, such as tag or flag football*</li> <li>• Jumping rope</li> <li>• Sports such as soccer, basketball, swimming, tennis</li> <li>• Vigorous dancing*</li> <li>• Active video games which include vigorous activities like running</li> <li>• Freeze tag (high effort)</li> <li>• Games (e.g., slap the ball, builders and bulldozers, clean the room)</li> </ul>	<ul style="list-style-type: none"> <li>• Running</li> <li>• Active games involving running and chasing, such as flag football*</li> <li>• Jumping rope</li> <li>• Sports such as soccer, basketball, swimming, tennis</li> <li>• Vigorous dancing*</li> <li>• Active video games which include vigorous activities like running</li> <li>• Freeze tag (high effort)</li> <li>• Stair walking (vigorous effort)</li> </ul>

*\*If the exact activity is not listed in the Youth Compendium, search the Compendium for a similar activity in terms of sitting/standing or active, and use the METy value associated with that activity. Note: Bone strengthening activities can also be aerobic.*

**Background:** A classroom teacher in a local public elementary school is looking for different ways to incorporate physical activity throughout the school day. Students are required to engage in 60 minutes of moderate-to-vigorous physical activity (MVPA) daily.

**Considerations:** The teacher is interested in an array of activities that are similar in intensity or the effort it takes to perform the activity (energy expenditure). The activities should only involve equipment and settings available to the school.

**How to use the Youth Compendium:** The teacher opens the [Youth Compendium of Physical Activities](#) and clicks the green “Search the Compendium” box. From the top navigation, the teacher selects “METy (Metabolic Equivalent of Task for Youth) Values (Smoothed).” The smoothed values are recommended for use by practitioners in the field. The teacher is looking for activities that will allow for 3rd grade students to engage in MVPA. The Youth Compendium of Physical Activities does not separate the activities by moderate and vigorous activity. You will want to consult with your physical education teacher to determine the intensity or use the table. The teacher reviews the activities in the tables and can sort the table by METy level by clicking the arrows next to age categories. Based on the

METy values, the following activities would allow students between the ages of 6 and 9 to reach target MVPA levels:

Activity	METy
<b>Moderate</b>	
Brisk walking	4.6 METy
Bicycle/scooter riding	4.6 METy
<b>Vigorous</b>	
Jumping rope	6.9 METy
Freeze tag (high effort)	6.4 METy
Games (e.g., slap the ball, builders and bulldozers, clean the room)	6.4 METy

If teachers are required to track minutes of MVPA, they can have students keep a daily log of the types of physical activities they are doing and number of minutes of those activities. This information can then be aggregated to the classroom level. Another option is for teachers to keep a classroom log of physical activity by tracking the type of physical activities and time spent in the activities for all students. For example, all students engaged in a 10-minute YouTube dance video.

1. US Department of Health and Human Services. Physical Activity Guidelines for Americans, 2nd edition. Washington, DC: US Department of Health and Human Services; 2018.

2. SHAPE America. American Heart Association. Shape of the nation: status of physical education in the USA; 2016. Available at: [http://www.shapeamerica.org/advocacy/son/2016/upload/Shape-of-the-Nation-2016\\_web.pdf](http://www.shapeamerica.org/advocacy/son/2016/upload/Shape-of-the-Nation-2016_web.pdf).

3. National Association of State Boards of Education. State policy database: physical activity throughout the day; 2017. Available at: <http://statepolicies.nasbe.org/health/categories/physical-activity-and-physical-education/physical-activity-throughout-day>

4. Centers for Disease Control and Prevention. A Guide for Developing Comprehensive School Physical Activity Programs. Atlanta, GA: US Department of Health and Human Services; 2013.