Take Health Lessons to the Gym — Part I

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Take Health Lessons to the Gym — Part I

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Health lessons are typically taught in a classroom where students are seated and passively receive the information, followed by a test assessing their achievement levels. This direct teaching style may not be the optimal approach. Ratey (2008) thoroughly described how the human brain is more stimulative when the body is physically and actively engaged in the learning environment—rather than simply sitting and listening to a lecture. Health education programs that are knowledge based and evaluated by student achievement on cognitive assessments are no longer suitable for 21st-century learners. Learning in the 21st century requires a vast array of skills, including critical thinking, creativity, collaboration and communication, also known as the 4 Cs (e.g., Binkley et al., 2012; Dede, 2010; Soulé & Warrick, 2015). In a K–12 classroom that promotes the 4 Cs, children and adolescents are given the opportunity to share their thoughts, ask questions and propose solutions while being encouraged to work with others, think outside the box, and try new ways to get things done. Instead of receiving information passively from the teacher and simply memorizing the materials to pass a test, students in this learning environment become active agents who conceptualize, analyze, synthesize and evaluate information to achieve a common goal or solve a problem through effective verbal and nonverbal communication with others. The ability to master the 4 Cs is a critical element for success in work and life. Individuals who are able to approach every situation with an open mind, be receptive to all available information, and communicate their responses/solutions with objective logic to others are more likely to survive in the workplace. By the same token, people who possess the aforementioned qualities are more likely to sustain quality relationships with family members and friends in life because they have the 21st-century skills to adapt to today’s ever-changing world.

It is recommended that the traditional approach to teaching and learning in school health education (i.e., teacher-centered lectures with written tests at the end) be replaced with one that is standard based and skill focused (e.g., Benes & Alperin, 2016, 2019; Grimes & Heidorn, 2022; Oliver et al., 2020). According to the Joint Committee on National Health Education Standards (2012), the eight National Health Education Standards are created with “what students should know or be able to do” (p. 16) performance indicators, which emphasize the importance of real-life applications to adopt or maintain health-enhancing behaviors. Instructional activities for Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health should focus on multiple dimensions of health, benefits of practicing healthy behaviors, and ways to reduce/prevent risky behaviors. Living in this technology-driven era, instructional activities for Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors should equip students with the knowledge and skills to recognize and react to healthy and harmful practices in the mainstream culture of self-expression. Instructional activities associated with Standard 3: Students will demonstrate the ability to access valid information and products and services to enhance health should help students identify credible resources and how/when to use them for themselves and the people around them. Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks should be used to teach students how to be an active listener and effective communicator who knows the strategies to express feelings appropriately and resolve conflicts. When teaching Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health, instructional activities should help students analyze situations objectively, identify all possible solutions, and determine the best solution that benefits themselves and others. Instructional activities for Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health should be centered around the steps of setting SMART (i.e., specific, measurable, attainable, realistic and timely) goals to increase the quality of life. When teaching Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks, instructional activities allowing students to describe what they would do in certain situations are recommended. Lastly, Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health should be used to give students the opportunity to compile the knowledge and skills they have acquired and demonstrate them in and outside of school.

Each of the eight health education standards is aligned with most, if not all, of the 4 Cs. For example, when asked to describe when it is important to seek health care (Performance Indicator 1.5.5), upper elementary school students will have the opportunity to practice their critical thinking skills. In response to describe the interrelationships of emotional, intellectual, physical and social health in adolescence (Performance Indicator 1.8.2), middle school students will need to apply critical thinking skills in each of the health dimensions and then use creative ways to present the interrelationships. Many of the performance indicators in Standards 2 to 7 are aligned with the 3 Cs in a similar way as Standard 1, where students are expected to “describe,” “identify” and “explain” at the elementary levels and “examine,” “analyze” and “evaluate” at the secondary levels. To demonstrate the fulfillment of these performance indicators, students are working on their critical thinking, communication and creativity skills at the same time. Performance Indicator 8.8.3: Work cooperatively to advocate for healthy individuals, families, and schools and Performance Indicator 8.12.3: Work cooperatively as an advocate for improving personal, family, and community health are the only two that prompt the skill of collaboration in text. However, they should not be the only two times students get to work with others. This is why the instructional activities presented in this article are useful. In agreement with Ratey’s (2008) theory of active learning, the instructional activities presented here are designed for students to learn a health topic by experiencing hands-on activities, performing motor skills, or engaging in gameplay while developing 21st-century skills simultaneously.

The purpose of this two-part series is to describe how to teach specific health content through physical activities in a gymnasium to stimulate the brain and intensify the learning experience (Ratey, 2008). This first article presents two physical activities for each of the first five health education topics in Meeks et al’s (2020) book Comprehensive School Health Education (i.e., mental and emotional health, family and social health, growth and development, nutrition, personal health and physical activity). Part II, which will be published in the February 2024 issue of JOPERD, will present physical activities for the other five health education topics (i.e., alcohol, tobacco and other drugs; communicable and chronic diseases; consumer and community health; environmental health; and injury prevention and safety). Along with the description and materials needed for each activity, health standards/performance indicators,

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and 21st century skills that are aligned with the activity, suggested grade levels, and formative evaluations are provided. Teachers are encouraged to carry on further conversations for skill development and practice in the classroom/gymnasium and involve family members to do the same outside of school, as a way to pave the road for the future generations to master the 4 Cs and ultimately have a successful career and life.

Mental and Emotional Health

Activity #1: Be Resilient

Health Standards: 1, 3, 4.

Performance Indicators:

- 1.5.2 Identify examples of emotional, intellectual, physical, and social health
- 3.8.4 Describe situations that may require professional health services
- 4.5.1 Demonstrate effective verbal and nonverbal communication skills to enhance health
- 4.8.1 Apply effective verbal and nonverbal communication skills to enhance health
- 4.12.1. Use skills for communicating effectively with family, peers, and others to enhance health

Twenty-First Century Skills: Collaboration, communication.

Suggested Grade Level: 5th–12th.

Materials: Tennis balls.

Description: Students face many obstacles at home and in school. Developing resilience and the ability to withstand or recover quickly from difficult situations can be a tough task for many. This lesson is designed to lead the class through a visual and tactile activity that gets them to think and talk about what it means to have resilience in the face of adversity. This lesson can also help them develop and grow as a resilient individual by understanding why not being afraid of a challenge and not getting knocked down by failure are good qualities to have in life. The tennis ball symbolizes “work” or “struggle” in life, and it is used in this activity because of its ability to “bounce back” when dropped on the ground. The activity encourages students to bounce back (i.e., continue the tossing-and-catching activity) from failure (i.e., drop the ball in transition).

Activity Time: Modifying from Todnem’s (2017) lesson, students are seated while the teacher asks, “What does it mean to be resilient?” After allowing some time for the class to respond, the teacher asks them to give examples of something that requires work or something they struggle with. Then the teacher uses what the class has shared and discusses possible strategies to produce quality work or solutions to overcome struggles. Finally, the teacher brings out a tennis ball, which represents the “work” or “struggle” in life. The teacher now asks everyone to stand up and make a circle one arm length apart from one another. The teacher lightly tosses the ball to
the closest student and tells her or him to pass the ball around. While students are passing the ball around, remind them that this is the “work” or “struggle” they face every day. At some point, when the tennis ball is dropped by accident, the teacher uses the incident to emphasize that a resilient person is like this tennis ball; instead of lying on the ground (i.e., giving up because the work is too hard or the struggle is too much), the tennis ball bounces back up (i.e., finding resources or seeking assistance to do the work or overcome the struggle).

Next, assign students in groups of five and give each group a tennis ball to pass around in the circle. Encourage the groups to keep the ball up in the air. It is okay to drop the ball; encourage them to share one “work” or “struggle” within their small group when they drop the ball. Allot 30 to 60 seconds to pass the ball around and make sure everyone in the group has a chance to toss and catch. When the time is up, tell everyone to take two steps back. The circle is now a little bigger, indicating they must work a little harder than the first round to pass the ball around without dropping it. The same rule applies; when they drop the ball, encourage them to share one “work” or “struggle” within their small group. Suggestions for more challenging “work” or “struggle” include making a bigger circle as students are tossing and catching the tennis ball (symbolizing the work/struggle takes longer to go through/overcome), tossing and catching the ball with one hand or the nondominant hand (symbolizing the work/struggle requires a different skill), and adding another or multiple tennis balls (symbolizing there may be more than one work/struggle at a time in life).

**Evaluation:** Ask the following questions: What does it look like when you pass the ball during the first round? What happens as the ball is going across the circle rather than just in short passes or when you can simply hand it to the person next to you during the first round? How do you feel when the circle gets bigger, when you are asked to use one hand or your nondominant hand, or when there is more than one tennis ball being tossed around? Without naming names, what were some “works” or “struggles” shared in your small groups? Who do you think you can talk to when you face these “works” or “struggles”? When and in what situation do you think you need to talk about your feelings with a trusted adult or ask for professional help? Remind students that work, struggle, adversity and failure are all part of being a resilient person. Sometimes people do not learn as much from just taking the easy path. Failure and struggle are a part of life, and people learn more from the ups and downs.

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**Activity #2: Meditation to Calm Big Emotions**

**Health Standards:** 6, 7.

**Performance Indicators:**

- 6.8.3 Apply strategies and skills needed to attain a personal health goal
- 6.12.3 Implement strategies and monitor progress in achieving a personal health goal
- 7.8.2 Demonstrate healthy practices and behaviors that will maintain or improve the health of self and others

**Twenty-First Century Skill:** Critical thinking.

**Suggested Grade Level:** 6th–12th.

**Materials and Setup:** Give each student a floor/yoga mat and seat them in multiple lines facing the teacher or in a circle around the teacher.

**Description and Activity Time:** This activity illustrates a basic meditation routine in four stages. To begin the meditation, instruct students to close their eyes and focus on their breathing. Prompt them to take deep breaths through their nose and out through the mouth. Have them place one hand on their stomach and the other hand on their chest and work on sending the air in and out of their stomach instead of their chest. They should feel how it goes in while breathing in and how it goes out when breathing out (stomach moves in and out, chest should not move). Stage two focuses on feeling the body and noticing parts that are hurt, tight or tense and parts that feel comfortable and loose. Prompt students to find a part of their body that is tight or hurts and send their breaths there. Stage three focuses on all parts of the body such as the head, shoulders, back, arms and legs. The last stage transfers the focus from the body to the environment. Instruct students to notice the sounds in the space. This could be people moving, air conditioning in the building, or birds singing outside. Students should not think or focus on what the noises are but simply listen to the sounds around them. Their muscles should be relaxed as they breathe in and out slowly and peacefully. Before the meditation ends, have students take one last deep breath in and out and then slowly open their eyes.

**Evaluation:** After sitting for a few minutes, ask students how they feel about the meditation exercise, what makes them calm, and what prevents them from being calm. Discuss in what situations this meditation exercise would be helpful. As a resource to improve/maintain optimal emotional health, encourage students to practice meditation on a regular basis and whenever they feel stressed, and to use journaling to track their own progress. The goal is to make this healthy practice become a habit that will help improve other dimensions of health.

**Family and Social Health**

**Activity #3: Harmful Relationships**

**Health Standards:** 2, 4.

**Performance Indicators:**

- 2.2.1 Identify how the family influences personal health practices and behaviors
- 2.5.1 Describe how the family influences personal health practices and behaviors
- 2.5.3 Identify how peers can influence healthy and unhealthy behaviors
- 2.8.3 Describe how peers influence healthy and unhealthy behaviors
- 4.5.2 Demonstrate refusal skills that avoid or reduce health risks
- 4.8.2 Demonstrate refusal and negotiation skills that avoid or reduce health risks

**Twenty-First Century Skills:** Collaboration, communication.

**Suggested Grade Level:** K-8th.

**Materials:** Printouts of Figures 1 and 2.
Description: People in a healthy relationships respect themselves and others, encourage each other to do their best, and do not tolerate violence and/or abuse. People who lack self-respect discourage productivity and pressure others to do things that have serious consequences and are sources of harm in a relationship (Meeks et al., 2020). Five profiles of people who relate to others in harmful ways are described below. The tasks are designed to associate the characteristics of people pleaser, clinger, controller, center and promise breaker through movement performance.

“The people pleaser constantly seeks the approval of others. A people pleaser will do almost anything to be liked, including harmful behavior such as using alcohol or other drugs. Other people describe people pleasers as ‘doormats’ because others can walk all over them with no consequences” (Meeks et al., 2020, pp. 140–141). When people pleaser is called, students make a doormat by lying on their sides facing in to form a square by connecting each other with hands and feet (Figure 1).

“The clinger is needy and dependent. The clinger feels empty inside and constantly turns to another person to feel better.” They keep demanding more from others, “but no amount of attention or affection keeps [them] feeling fulfilled.” They suffocate others by not giving them time and space (Meeks et al., 2020, p. 141). When clinger is called, students form a line, place hands on the shoulders of the person in front of them and walk forward as a group in the general space.

“The controller is possessive, jealous and domineering. The controller seeks power. Controllers tell another person what to do, what
to wear, and what to believe, and they do not like to share the object of their attention with anyone else.” They sabotage their relationships “by not respecting the interests or opinions of others and trying to dominate others” (Meeks et al., 2020, p. 141). When controller is called, students do a four-person balance pose (Figure 2).

The center wears “a badge that says ‘ME, ME, ME.’ If you talk to the center on the phone, the center will do most of the talking and will show little interest in what you have to say. Centers want to do what they want to do when they want to do it and are not too concerned about what other people want to do or how other people feel” (Meeks et al., 2020, p. 141). When center is called, students form a circle, hold hands with the people next to them, and skip in the clockwise direction.

“The promise breaker is not reliable. [They] will make plans with another person and then no-show.” They sabotage their relationships “by not keeping their word. Other people doubt the promise breaker’s sincerity and commitment” (Meeks et al., 2020, p. 141). When promise breaker is called, students scatter in the general space and form a new group of four. When they find new members, they stand side by side and have their shoes touching each other’s shoes.

Activity Time: After receiving the instruction and demonstration, students are randomly assigned into groups of four. Make sure there is plenty of space between groups to minimize potential injuries when they are performing the commands/tasks (i.e., making a doormat, walking forward in a line, doing the group balance pose, skipping in a circle, and forming a new group). The teacher calls out the commands in a random order and allows certain time to complete the tasks (e.g., counting down 10 seconds after a command is called).

Evaluation: After the activity, the teacher discusses (1) ways to avoid relating to others as a people pleaser, clinger, controller, center or promise breaker; (2) nonviolent strategies to respond to a people pleaser, clinger, controller, center and promise breaker; (3) what a healthful relationship looks like; and (4) ways to build healthful relationships with others during different stages of life.

Activity #4: Conversation Keepers or Conversation Killers

Health Standards: 4, 8.

Performance Indicators:

- 4.8.1 Apply effective verbal and nonverbal communication skills to enhance health
- 4.12.2 Demonstrate refusal, negotiation, and collaboration skills to enhance health and avoid or reduce health risks
- 8.8.4 Identify ways in which health messages and communication techniques can be altered for different audiences
- 8.12.4 Adapt health messages and communication techniques to a specific target audience

Twenty-First Century Skills: Critical thinking, creativity, communication.

Suggested Grade Level: 6th–12th.

Materials: Enough green and red balls (various sizes and types for different skill levels) for everyone to participate in the activity within

the allotted time, two laundry baskets, and index cards with “conversation keepers” or “conversation killers” written on them (can be repeated for maximal participation).

Setup: Place the empty laundry baskets in the middle of the general space at least 10 feet apart. Place all green balls on one side of the space and all red balls on the opposite side. Scatter the index cards (facing down) in the space (avoid at least a six-foot radius around the baskets).

Description: The ability to carry on a conversation is a good strategy to initiate and maintain a friendship. A new friendship is likely to develop and an existing one is likely to continue when “conversation keepers” (e.g., listening carefully, making eye contact, encouraging others) are used and “conversation killers” (e.g., talking about yourself, being a know-it-all, interrupting others) are avoided (for more behaviors, see Meeks et al., 2020, p. 132). Before activity time, the teacher reviews each behavior and discusses how each behavior helps carry on a conversation or discourages it.

Activity Time: On the GO signal, everyone travels in the general space, picks up a card, and reads it. If the behavior is a conversation keeper, the player gets a green ball (a red ball for a conversation killer), sits down with their back facing the laundry basket (leaving enough room to lie down without hitting the basket), places the ball between the feet (Figure 3), swings the legs over the body and head (Figure 4), and drops the ball into the basket (Figure 5). If the ball is not dropped inside the basket, she or he picks up the ball and starts over. The activity can be performed for an allotted time or until all of the index cards are picked up by the students.

Evaluation: After reviewing the conversation keepers and conversation killers used in this activity, the teacher and students discuss other behaviors that are not used in the activity but have happened to them when a conversation goes on or dies down. As a class, debrief what constitutes a conversation killer and strategies to avoid them. Brainstorm what makes a conversation keeper, especially to the people they are communicating with (e.g., family members, teachers, friends), and follow-up prompts to keep the conversation going.

Growth and Development

Activity #5: Stages of Pregnancy

Health Standard: 3.

Performance Indicators:

- 3.8.1 Analyze the validity of health information, products, and services
- 3.12.1 Evaluate the validity of health information, products, and services

Twenty-First Century Skills: Collaboration, communication.

Suggested Grade Level: 6th–12th.

Materials: For a class of 24 students, this activity has its maximal activity time when there are six dice, six pens, six pieces of paper with “1, 2, 3, 4, 5, 6” written on them, 24 beanbags, and six soccer balls.
**Setup:** Divide the class into groups of four and assign each group a home base. For each home base, place a die, a pen and a piece of paper with “1, 2, 3, 4, 5, 6” written on it. Place the beanbags and soccer balls at different locations in the general space.

**Description:** According to the American Pregnancy Association (n.d.), a healthy baby needs approximately nine months to be fully developed in a mother’s womb. There are major developmental stages almost every month during a pregnancy, but in this activity only six stages are illustrated. Similar to Activity #3, the tasks are designed to associate the characteristics of the six stages of pregnancy through movement performance.

Within the first month after an egg has been fertilized and implants into the uterine lining, an amniotic sac grows around it with the purpose of holding the amniotic fluid and cushion the embryo. When a group rolls a “1” on the die, everyone performs six “egg rolls” (associating a small egg; i.e., tuck knees into the chest and roll/rock back and forth along the spine) at their home base. When the task is completed, they proceed to roll the dice.

During the second month, the brain, sensory organs and digestive tract begin to form and the cartilage in the embryo begins to be replaced by bone. When a group rolls a “2,” everyone balances a beanbag on top of their head (associating good posture supported by bones) while walking two laps around the perimeter of the general space. When the task is completed, they return the beanbags and continue rolling the die at their home base.

By the end of the third month, a baby’s hands, fingers, feet and toes should be fully developed, and the baby weighs about an ounce and is four inches long. When a group rolls a “3,” everyone does 10 “snow angels” (associating the ability to move hands and feet; i.e., lie on their backs and straddle arms and legs at the same time, like doing jumping jacks but lying down) at their home base. When the task is completed, they proceed to roll the die.

During the fifth month, a mother may start feeling the baby move/kick. When a group rolls a “4,” they form a square with everyone six feet apart and kick/pass a soccer ball to each other 12 times (associating the ability to kick; make sure everyone gets to pass and receive). When the task is completed, they return the soccer ball and continue rolling the die at their home base.

During the eighth month, most internal organs and systems are fully developed, but the lungs still need time to mature. When a group rolls a “5,” everyone does five burpees (associating how lung capacity can be built by exercising; i.e., stand up, squat down to a plank, do a push-up, get up with a jump) at their home base. When the task is completed, they proceed to roll the die.

When a baby is out of the womb, she or he is still connected to the mother by the umbilical cord, which is a strong conduit that supplies oxygenated, nutrient-rich blood from the placenta to the baby during the pregnancy. When a group rolls a “6,” everyone performs 20 scissor jacks (associating cutting the umbilical cord with a pair of scissors; i.e., feet shoulder-width apart and arms extended straight out to either side, jump to cross the feet while crossing the arms in front of the chest, jump back to the beginning position, and repeat). When the task is completed, they proceed to roll the die.

**Activity Time:** On the GO signal, each group rolls the die and performs the corresponding task (i.e., “1” is six egg rolls, “2” is walking two laps while balancing a bean bag on head, “3” is 10 snow angels, “4” is 12 soccer passes among group members, “5” is five burpees, “6” is 20 scissor jacks). The goal is to collect the six numbers in the

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**Figure 3.** Ball between feet

**Figure 4.** Legs swing over

**Figure 5.** Ball dropped into basket
order of 1, 2, 3, 4, 5, 6. The group still has to complete the task even though it may not be the number they need. For example, when a group rolls a “1,” they cross off the number “1” on the paper after completing the task. If they roll a “6” next, they jump 20 times without crossing off any number. They continue rolling the dice and performing the task(s) until they roll a “2.” The activity ends when a group crosses off all six numbers in the order 1, 2, 3, 4, 5, 6. After each round, the teacher gives a different order of numbers (e.g., “3, 6, 4, 5, 1, 2” or “4, 1, 3, 6, 2, 5”). Each group writes the numbers on the same piece of paper and crosses each off as they go.

**Evaluation:** See Table 1 for a six-question quiz associated with this activity.

### Table 1.
**Stages of Pregnancy Quiz**

<table>
<thead>
<tr>
<th>Stages of Pregnancy Quiz</th>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the human reproductive system, what is it called when an egg has been fertilized?</td>
<td>a. Baby</td>
<td>b. Embryo</td>
</tr>
<tr>
<td>2. Which of the following body systems develops the earliest during pregnancy?</td>
<td>a. Digestive system</td>
<td>b. Muscular system</td>
</tr>
<tr>
<td>3. During which major stage should a baby’s hands and feet be fully developed?</td>
<td>a. By the end of the third month</td>
<td>b. By the end of the fourth month</td>
</tr>
<tr>
<td>4. During which major stage is a mother likely to start feeling the baby move?</td>
<td>a. During the fourth month</td>
<td>b. During the fifth month</td>
</tr>
<tr>
<td>5. What is the conduit supplying oxygenated blood and nutrition from the placenta to the baby during the pregnancy called?</td>
<td>a. Amniotic sac</td>
<td>b. Digestive tract</td>
</tr>
<tr>
<td>6. What can you do to build up your lung capacity?</td>
<td>a. Playing basketball</td>
<td>b. Riding on a skateboard</td>
</tr>
</tbody>
</table>

**Activity #6: $10 and a Bone**

**Health Standard:** 3.

**Performance Indicators:**
- 3.12.1 Evaluate the validity of health information, products, and services
- 3.12.2 Use resources from home, school, and community that provide valid health information

**Twenty-First Century Skills:** Collaboration, communication.

**Suggested Grade Level:** 9th–12th.

**Materials:** One set of skeleton cutouts (Figure 6) per group, enough play money (Figure 7) for all groups to participate in the activity within the allotted time, signs of exercises (e.g., squats, wall sits, forward lunges, partner claps, push-ups, shoulder touches, burpees, mountain climbers, plank) and repetitions.

**Setup:** Divide the class into groups of four and assign each group a home base. Spread out the workout stations in the general space. Depending on the class size and space available, the number of workout stations and the distance between stations may vary.

**Description and Activity Time:** This activity will work best after a lecture on the skeletal system has been given because students will need to use the correct anatomical term to purchase a bone. The activity begins after a review on the skeleton system and physical demonstration of the exercises. On the GO signal, students as a group travel to different stations and complete the exercises. They earn $1 (Figure 7) for each exercise they complete as a group (encourage them to try different stations/work on different muscles). Once a group earns $10, they can buy a bone from the teacher. The group must specify which bone they need to complete the skeleton system (Figure 6) at their home base. Because the teacher has multiple jobs during the activity, it is a good idea to have volunteers as the banker (giving out play money when a group completes an exercise), fitness trainers (making sure everyone does the exercise correctly with the assigned repetition) and bone seller (collecting $10 for each bone that a group wants to purchase).

**Evaluation:** The same skeleton system as the cutouts is illustrated in Figure 8. Ten bones are pointed out for students to write down the anatomical terms. Correct answers from 1 to 10 are skull, ulna, radius, humerus, rib, tibia, fibula, femur, ilium and lumbar vertebrae.

**Nutrition**

**Activity #7: Scooter Nutrition**

**Health Standards:** 3, 7.

**Performance Indicators:**
- 3.5.1 Identify characteristics of valid health information, products, and services
- 7.2.1 Demonstrate healthy practices and behaviors to maintain or improve personal health
- 7.5.2 Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health
Twenty-First Century Skills: Critical thinking, creativity, collaboration, communication.

Suggested Grade Level: K–5th.

Materials: MyPlate printouts (one for each pair), scooters (one for each pair), enough pictures of food items (representing the five food groups) for all pairs to participate in the activity within the allotted time.

Setup: Set up multiple home bases around the perimeter of the general space; for each home base, place a MyPlate printout and a scooter. Scatter the pictures of food items (face up) in the general space.

Description: After learning about MyPlate (e.g., the five food groups, how each food group contributes to overall health, serving sizes), this activity gives students the opportunity to demonstrate their ability to build a plate based on the teacher’s request. The
Figure 8.
Skeleton system quiz
teacher divides students into pairs and sends each pair to a home base. By taking turns, one traveling on the scooter (rolling on the buttocks or belly; never standing on it) and another using a locomotor skill, the pairs find different food items in the corresponding food groups.

**Activity Time:** The teacher asks for a plate that contains two food items per food group and galloping as the locomotor skill. On the GO signal, one person (either scooter rolling or galloping) per pair travels to find a food item and brings it back to the home base. Then the other person travels to find the second food item for the plate. The two people communicate and decide what food item is needed for their turn. If one person brings back a food item they do not need, the other person must bring the picture back to the general space on the way out. The activity ends when a pair of students finishes building the plate. The teacher checks the plate with the rest of the class. After each round, the teacher gives a new request for building the plate, assigns another locomotor skill for traveling, and reminds each pair of students to switch with the other person.

**Evaluation:** Go over the pictures of food items used in this activity and verify which food group it belongs to. Then, discuss what a balanced meal looks like for breakfast, lunch and dinner. Finish the lesson with an emphasis on the importance of healthy meals and their relationship with other dimensions of health.

### Activity #8: Do You Really Want to Eat That?

**Health Standards:** 5, 7.

**Performance Indicators:**
- 5.5.3 List healthy options to health-related issues or problems
- 5.5.5 Choose a healthy option when making a decision
- 5.8.4 Distinguish between healthy and unhealthy alternatives to health-related issues or problems
- 5.8.6 Choose healthy alternatives over unhealthy alternatives when making a decision
- 7.5.2 Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health
- 7.8.2 Demonstrate healthy practices and behaviors that will maintain or improve the health of self and others

**Twenty-First Century Skills:** Critical thinking, collaboration, communication.

**Suggested Grade Level:** 3rd–8th.

**Materials:** For a class of 24 students, this activity has its maximal activity time when there are at least 30 index cards with different snacks and estimated calories written on it (see Figure 9 for samples, check the items in school vending machine for more ideas). Printouts of various free weight exercises with estimated calories they each burn (see Figure 10 for samples).

<table>
<thead>
<tr>
<th>Snack</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>A medium-size apple (180 grams)</td>
<td>95 calories</td>
</tr>
<tr>
<td>One cup of carrots (128 grams)</td>
<td>50 calories</td>
</tr>
<tr>
<td>1/4 cup of roasted salted cashew nuts</td>
<td>190 calories</td>
</tr>
<tr>
<td>One granola bar (28 grams)</td>
<td>130 calories</td>
</tr>
<tr>
<td>1/4 cup of trail mix with candy</td>
<td>175 calories</td>
</tr>
<tr>
<td>Microwave popcorn (100 grams, butter)</td>
<td>490 calories</td>
</tr>
<tr>
<td>One full size Snickers candy bar</td>
<td>250 calories</td>
</tr>
<tr>
<td>Regular soft drink (1 can, 368 grams)</td>
<td>140 calories</td>
</tr>
<tr>
<td>Classic potato chips (100 grams)</td>
<td>535 calories</td>
</tr>
</tbody>
</table>

*Figure 9.*

Estimated calories for different snacks.
Setup: Display the free weight exercise printouts on the walls around the general space.

Description: This activity focuses on food intake and energy expenditure. The goal is for students to make a healthier choice of snacks after learning the number of calories contained in them and the amount of energy they must expend. Introducing the nutrition facts label (specifically the number of calories per serving) and a variety of lifetime physical activities (e.g., running, jogging) and free weight exercises (e.g., push-up, sit-up) are the key concepts to include in this lesson. Students also need to know that there are many factors that can affect the amount of energy burned when two people participate in the same physical activity for the same duration (e.g., weight, body fat percentage, level of intensity). Though it is always beneficial for everyone to be physically active, the ability to analyze food intake and create an exercise routine that is individualized for one's own body condition has a greater chance to maintain or improve the health of self and others.

Activity Time: Students are seated while the teacher discusses different snacks and the calories contained in them. The teacher then introduces a list of lifetime physical activities and free weight exercises and the average calories a person might burn over a period of time. Explore a variety of lifetime physical activities (e.g., swimming, tennis, hiking) with students even though they are not part of the design to burn calories in this activity. After handing each student an index card with a snack and its calories written on it, the teacher gives the GO signal. Students go to an exercise station of their choice and attempt to burn the calories for the snack they just “ate.” For example, if a student has “a medium-size apple” (see Figure 9), she or he needs to do 19 standing toe touches (see Figure 10) to burn the 95 calories. Once the calories are burned, the student returns the “medium-size apple” card to the teacher, and the teacher hands her or him another snack. The activity continues as students “eat” different snacks and burn the calories with the exercise, completing a specific set of repetitions.

Evaluation: By the end of the lesson, students should be able to recognize that the “harder” exercises (i.e., exercises that get their heart rate up) burn more calories than the “easier” ones based on their own heart rate fluctuations during the activity time. They should also recognize that healthier snacks contain less calories and are associated with “easier” exercises or less repetitions. As a class, have students share their favorite snacks and discuss whether they are healthy or unhealthy. Healthy snacks are more beneficial to a person’s overall health than unhealthy ones. Unhealthy snacks become a burden to the human body when the person does not practice an active lifestyle to counterbalance the energy expenditure. Finish the lesson by encouraging students to choose healthier snacks over unhealthy ones. It is okay to have unhealthy snacks occasionally, but make sure they spend some time being physical active afterwards.
Personal Health and Physical Activity
Activity #9: Your Beating Heart

Health Standards: 1, 7.

Performance Indicators:
• 1.5.1 Describe the relationship between healthy behaviors and personal health
• 7.5.2 Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health

Twenty-First Century Skills: Critical thinking, creativity.

Suggested Grade Level: 3rd–5th.

Materials: One “Healthy Heart” handout (The Nemours Foundation, 2016, p. 4) per student.

Description and Activity Time: The heart is a muscle that pumps oxygen-carrying blood throughout the body. It is important to keep the heart strong and healthy by participating in physical activities regularly. Students learn how to find their pulse by placing two fingers gently against their wrist or the side of the neck where they can feel a blood vessel. They must be very still and quiet to feel the pulse. Once everyone finds their pulse, the teacher starts a 30-second timer for students to count their heart beats. When the time is up, the teacher instructs students to double the number they just counted, and this is their resting heart rate. Then, the teacher proceeds to say that when a person starts moving around, her or his blood needs to move oxygen faster than when the body is at rest. This causes the heart to pump faster, which is why sometimes people can feel their heart pounding in their chest. To experiment with this bodily reaction, everyone does a cardiovascular exercise (e.g., running in place, jumping jacks, jump rope) for one minute. After the time is up, everyone stops to find their pulse and count how many times their heart beats in 30 seconds. After doubling the number, the teacher asks students to compare this number with their resting heart rate. The teacher uses this moment to explain why everyone ends up with different heart rates after doing the same exercise. To help students further understand the concept, the teacher can implement individual exercises and large-group games (e.g., freeze tag, shark and minnow, Pac-Man). After each exercise/game, the teacher uses students’ heart rates to demonstrate the positive relationship between the heart rate and activity intensity; the harder they participate in the exercise/game, the faster their heart beats.

Evaluation: During closure, everyone receives a “Healthy Heart” handout. The teacher allows time for students to circle the activities that make the heart beat faster, draw a box around those
that do not cause their heart to beat any faster than normal, draw a heart around their three favorite activities, and make a list of different activities they can do at home to keep their heart healthy. Before dismissing the class, the teacher emphasizes the fact that the heart is a muscle; the more it is trained, the stronger it gets.

**Activity #10: Isometric or Isotonic?**

**Health Standards:** 6, 7.

**Performance Indicators:**
- 6.8.3 Apply strategies and skills needed to attain a personal health goal
- 6.12.3 Implement strategies and monitor progress in achieving a personal health goal
- 7.8.2 Demonstrate healthy practices and behaviors that will maintain or improve the health of self and others
- 7.12.2 Demonstrate a variety of healthy practices and behaviors that will maintain or improve the health of self and others

**Twenty-First Century Skills:** Collaboration, communication.

**Suggested Grade Level:** 6th–12th.

**Materials:** Two sets of giant posters with “isometric exercises” and “isotonic exercises” written on it; 25 index cards of different isometric exercises (e.g., plank, wall sit, V-sit hold); and 25 index cards of different isotonic exercises (e.g., push-ups, jumping jacks, sit-ups) that include upper body, lower body, abdominal and full-body focuses; one Hula-Hoop.

**Setup:** Tape one set of “isometric exercises” and “isotonic exercises” posters on one side of the general space (i.e., home base #1) and another set on the opposite side (i.e., home base #2), place the Hula-Hoop in the middle of the general space, and scatter the 50 index cards in it, face down.

**Description and Activity Time:** According to Meeks et al. (2020), “isometric exercises involve tightening for about five to eight seconds with no body movement” and “an isotonic exercise is one in which a muscle or muscles move a moderate amount of weight eight to fifteen times” (p. 233). After a short lecture defining these two types of exercises and giving examples of each, students are divided into two groups and one group is sent to home base #1 and another to home base #2. On the GO signal, one person from the group picks up a card inside the Hula-Hoop and brings it back. The group discusses and decides whether it is isometric or isotonic. After placing the card underneath the identified poster, everyone in the group performs the exercise for its duration or repetitions: 30 seconds for isometric exercises and 15 repetitions for isotonic exercises. The activity continues as the group picks up another card, identifies the type of exercise, and does the exercise. The goal is for each group to collect 10 isometric and 10 isotonic exercises. Once a group believes they have completed the challenge, the teacher checks their work. If there are mistakes, the teacher picks up the cards that are under the incorrect category and places them inside the Hula-Hoop and the group resumes the activity and collects the number of isometric or isotonic exercises that are taken away. If they are correct, the activity is over. The teacher divides students into different groups and starts another round.

**Evaluation:** By the end of the lesson, students should be able to distinguish the differences between isometric and isotonic exercises. They should also be able to recognize the muscles/muscle groups each exercise is working (i.e., upper body, lower body, abdominal, and full body). This activity should be used to introduce students to a variety of bodyweight exercises they can perform outside of school. Based on the knowledge and skills of the students, the teacher can carry on further conversations regarding creating a personalized exercise plan.

**Conclusion**

The purpose of this article is to illustrate how health content can be delivered in a way that gets students up and moving while helping them make a better connection with the lesson focus of the day. Although most of the activities are designed for a specific lesson focus, a few of them can be implemented with a different lesson focus or health topic. For instance, the design for #4 Conversation Keepers or Conversation Killers can be adopted to a lesson focus that requires students to distinguish between healthful and harmful behaviors. Examples include identifying characteristics between functional and dysfunctional families in the same health topic, habits to protect or harm reproductive health in the “growth and development” topic, and ways to prevent or increase the risk of infection with communicable diseases in the “communicable and chronic diseases” topic (which will be described in Part II of this article). In addition, the design for #7 Scooter Nutrition can be used in a lesson that focuses on collection corresponding items on demand. Examples include making a healthful breakfast, lunch or dinner plate in the same health topic; choosing various behaviors in developing social and emotional learning competencies in the “mental and emotional health” topic; and identifying habits to care for different areas of personal hygiene in the “personal health and physical activity” topic.

#2 Meditation to Calm Big Emotions, #8 Do You Really Want to Eat That?, #9 Your Beating Heart, and #10 Isometric or Isotonic are hands-on activities designed specifically for the lesson focus. Moreover, #1 Be Resilient, #3 Harmful Relationships, and #5 Stages of Pregnancy are thoughtfully created to help students retain the knowledge through the content-specific visual illustrations and physical tasks. The rest of the activities may not be content specific, but they require students to practice memory recall repeatedly, which helps retain the content knowledge as well. During discussion time, students may be able to “demonstrate” their understanding by “explaining” what they have learned to the teacher and their peers, but the higher-order performance indicators require more outside-of-school practices and reports. As students obtain the basic knowledge in the five health topics presented here, teachers may want to give them the opportunity to “analyze” and “evaluate” a health issue in a real-life situation so that they can “determine” or “justify” what is best for themselves and people around them. Active learning in the classroom/gymnasium combined with out-of-school projects will give students more opportunities to comprehend the health content and practice on their 21st-century skills at the same time.

Stay tuned for Part II of this article, which will present activities for the next five health topics.
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References


