

Title: Planning for Physical Activity

Section: Physical Activity

Investigative Question: Why is it important to develop a physical activity plan?

Description of Content:

The purpose of these activities is to put students in the frame of mind for developing short- and long-term physical activity plans with the objective of providing a sense of competence and positive self-image, as well as setting life-long patterns of physical activity. In particular, students are to use standard graphing techniques to indicate changes over time, as well as using visual depictions of data collected and subsequently analyzed. By emphasizing effort over actual performance, students will be motivated to engage in physical activity for more personal, intrinsic reasons rather than for extrinsic, performance-based reasons.

Relevant Standards:

National educational standards that correspond to this activity appear below. Grades 5-8 and grades 9-12 standards are listed to address those middle schools that include ninth grade.

National Science Education Standards

Grades 5-8, Standard F

- Individuals can use a systematic approach to thinking critically about risks and benefits. Examples include applying probability estimates to risks and comparing them to estimated personal and social benefits.
- Important personal and social decisions are made based on perceptions of benefits and risks.

Grades 9-12, Standard F

- Personal choice concerning fitness and health involves multiple factors. Personal goals, peer and social pressures, ethnic and religious beliefs, and understanding of biological consequences can all influence decisions about health practices.

National Health Education Standards

Grades 5-8

Standard 3

- Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.
- Students will explain the importance of assuming responsibility for personal health behaviors.

Standard 6

- Students will demonstrate the ability to use goal setting and decision making skills to enhance health.
- Students will predict how decisions regarding health behaviors have consequences for themselves and others.

Objectives:

Students will:

- Use graphs to establish the relationship between setting and reaching goals for physical activity.
- Distinguish between short- and long-term goals for physical activity.
- Set specific short- and long-term goals for physical activity.
- Develop a relationship of physical activity goals to long-term personal health.

Ideas Commonly Held by Students:

These ideas, drawn from the literature, represent some of the ways adolescents think and act with respect to their environment in general, and physical activity in particular. They are important considerations when developing lessons around the activities that follow.

- Two major achievement goals that involve different conceptualizations of ability or competence (Nicholls, 1984):
 - Task Orientation – Perceptions of ability are self-referenced. Improving one's performance or performing better than one had expected results in feelings of competence and perceived success.
 - Ego Orientation – Subjective evaluations of success are normatively references, and the focus is more on expressing superior ability in relation to others. Positive adaptive achievement behaviors are persistence, exertion of optimal effort, and choice of appropriately difficult tasks. Maladaptive behaviors, particularly if individuals doubt ability, result in reduction of effort, choice of inappropriate task difficulty, or withdrawal, especially when other references success seems slight.

- With these definitions in mind, the following points should be considered for goal-setting:
 - Boys put a greater emphasis on an ego orientation in sport (Duda, 1989; Duda, Fox, Biddle, and Armstrong, 1992) and physical education (Walling and Duda, 1995) settings with a focus on showing superior ability to others. Boys with an ego orientation are more likely to believe that success in physical education settings are related to deceiving the teacher.
 - Girls are higher on task orientation (Duda, 1989; Duda and Whitehead, 1998). Verbal encouragement alone does not have a strong effect on girls' participation. Modeling is most important.
 - Greater perceptions of friendship in the physical activity setting are associated with more positive affect and higher cognitive motivation for males and females and physical activity for females (Smith, 1999).
 - Perceptions of peer relationships, physical self-worth, and affective responses to physical activity are important predictors of cognitive motivation and physical activity behavior (Smith, 1999).
 - Peer comparison and evaluation are particularly salient sources of competence information as youths move through late childhood and early adolescence (Horn and Amorose, 1998) and are tied to the affective component of the physical activity experience (Duncan, 1993; Scanlan, Stein, and Ravizza, 1989)

Materials:

Calculator tape or long strip of paper
 Small ruler or straight-edge
 Colored pencils or markers
 Copies of small ventral and dorsal plan views of body (attached)

Safety:

Ample space will be needed for students to actively participate.

Be cautious of students that are overly sedentary; they could develop health problems if they partake in strenuous activities too rapidly. Also, be aware of pre-existing health conditions that could inhibit a student's ability to participate. Try to make adjustments in the suggested activities to accommodate students who are more sedentary.

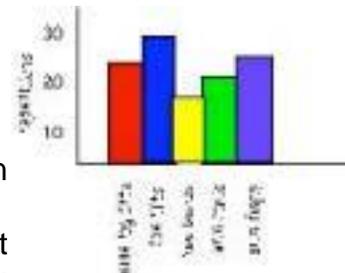
Be sure that you remind students that before performing physical activity, they should warm-up and stretch the muscle groups to be used. A warm-up is a physical activity that raises the temperature of the blood, muscles, tendons, and ligaments. Warm-ups prepare the body for vigorous physical activity by gently using the muscles to be worked in a manner that mirrors the activity to be undertaken, gradually raising the pulse and warming the joints.

Students should also cool-down after physical activity. A cool-down is a gentle physical activity that helps the body return to its normal state after vigorous activity. Cool-downs decrease the pulse gradually while helping to reduce stiffness.

Procedure:

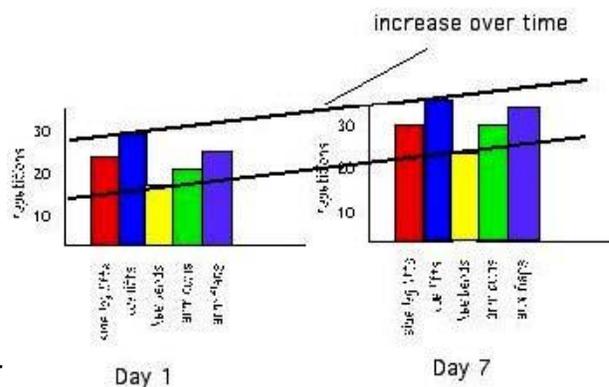
Engagement (time ~ 20 minutes)

1. Have students select a single physical activity, such as arm curls, jump rope, pushups, or situps and have them perform as many repetitions of the physical activity as they are comfortable with. Students can also visit the activity cards in the BAM.gov Physical Activity section for ideas on activities to select.
2. Have students plot their maximum number of repetitions using a bar graph on the long strip of paper, placing the paper sideways across their desk or table. Have them leave sufficient room on the graph for three to four additional plots (see example).
3. Students should now choose a different physical activity, performing as many repetitions as comfortably possible. Suggest that they choose activities that work different parts of their bodies. Students can refer to the BAM.gov activity cards in the Physical Activity section for information on the parts of the body that some activities work. Repeat this step three times, performing a different activity and plotting the data each time.
4. Once completed, the graph should show maximum repetitions of their five chosen physical activities next to each other.



Exploration (time ~ 5 minutes per day for 1 week)

1. Pair students randomly, for example, by choosing names out of a hat. Have the pairs work together in class each day for a total of one week to repeat the steps in the engagement above.
2. Students should record their graphs laterally on the long strip of paper, aligning their graphs with those of their partners'. These graphs will establish a baseline of student increase in capacity in each physical activity.
3. Students should calculate their percent increase for the week, comparing the first and last days of data collection. Student pairs should also compare their respective percent increases.



Explanation (time ~ 15-20 minutes)

1. Compile the class results of their graphing, ensuring that percentage increases are accurate and realistic.
2. Using these results, have students project a reasonable increase over the next two to three weeks, should they persist in the comparative physical activity. Set the increase as the goal that students can work towards as they engage in these activities.

Elaboration (time ~ 10-15 minutes)

1. Ask students to model the types of motions that they engage in during their favorite physical activity.
2. Have students shade in on a body plan (attached) the areas of the body that they use. Their work should also indicate if they performed a warm-up before and/or a cool-down after their activity. You may suggest that students outline the body part with a red pencil to indicate they performed a warm-up, and blue pencil to indicate they performed a cool-down.

Evaluation (time ~ 30 minutes)

1. Students are to develop a plan for engaging the unshaded portions of their body, relating specific activities to those portions.
2. Have students illustrate their proposed activities using small booklet of body plans. Students should also provide information on how often they would participate in that activity.
3. Have students provide descriptions of their goals for each activity, how they intend to reach those goals, what types of assistance or support they need (from adults or peers), and what attaining those goals will mean for their overall health.
4. Have students summarize these descriptions into a personal plan. Ask students if their plan is (a) realistic in terms of time required, and (b) if their plan is balanced.

Alternatively, have students identify a personal favorite athletic figure. The class should choose athletes from a variety of sporting or physical activity areas. For ideas, go to the BAM.gov activity cards in the Physical Activity section, or the Sports Illustrated for Kids website (www.sikids.com). Students should shade the portions of the athlete's body most frequently used, and those least frequently used, in the activity that the athlete performs. Have students find information about their chosen individual on the BAM activity cards or <http://www.sikids.com/>, looking specifically for references to the training or planning that the athlete employs. Shade the portions of the body that are used in this routine on a second body plan. Have students relate their "physical activity" shading body map to their "training" shading body map. Suggest that setting goals through training allows the athlete to reach the goals set for his or her activity.

Students overall evaluation for this activity can be based on the performance

descriptors scheme below.

Performance Descriptors:

Rating	Performance Descriptor
4	Graphs clearly demonstrate relationship between set goals and attaining those goals over time. Short-term goals are clear and distinct from long-term goals. Specific short-term and long-term goals are described. Relationship between goals and physical health are described.
3	Graphs show goals set and attained, but relationship is not defined. Both short-term and long-term goals are present but not distinct. Short-term and long-term goals are listed but only one set or the other is described. Goals and physical health ideas are described but not related.
2	Graphs are complete and show goals set, but attainment or progress towards goals are not noted. Short-term or long-term goals are present and described. Specific short-term and long-term goals are listed but not described. Goals and physical health ideas are present but not described.
1	Graphs are complete but show no goals. Short-term or long-term goals are present but not described. General goals are listed but not described. Goals or physical health ideas are present.

Web Resources:

BAM! is brought to you by the Centers for Disease Control and Prevention (CDC), an agency of the U.S. Department of Health and Human Services (DHHS). *BAM!* was created to answer kids' questions on health issues and recommend ways to make their bodies and minds healthier, stronger, and safer. *BAM!* also serves as an aid to teachers, providing them with interactive activities to support their health and science curriculums that are educational and fun.

KidsHealth provides health information about children from before birth through adolescence, presented on separate areas for kids, teens, and parents. The site was created by the Nemours Foundation's Center for Children's Health Media and all of its information is doctor-approved. <http://www.kidshealth.org>

MedlinePlus is a site maintain by the National Library of Medicine, National Institutes of Health. The "Exercise and Physical Fitness" page offers many links to web pages with information on physical activity and health. <http://www.nlm.nih.gov/medlineplus/exerciseandphysicalfitness.html>

CDC's physical activity and the health of young people fact sheet. Includes links to other related CDC resources. <http://www.cdc.gov/HealthyYouth/physicalactivity/pdf/facts.pdf>

This page provides a fact sheet on adolescents and young adults from the Surgeon General's Report on Physical Activity and Health.

<http://www.cdc.gov/nccdphp/sgr/adoles.htm>

This site offers physical activity definitions, as well as information on warming-up before, and cooling-down after, physical activity. <http://library.thinkquest.org/12153/basics.html>

The Excellence in Curriculum Integration Through Teaching Epidemiology (EXCITE) site provides a collection of teaching materials developed by the Centers for Disease Control and Prevention (CDC) to introduce students to public health and epidemiology, the science used by "Disease Detectives" everywhere. Students will learn about the scientific method of inquiry, basic biostatistics, and outbreak investigation. EXCITE adapts readily to team teaching across a variety of subjects, including mathematics, social studies, and even history and physical education.

<http://www.cdc.gov/excite/www-nehc.med.navy.mil/hp/fitness/index.htm>

NEHC Physical Fitness Homepage for the Navy Environmental Health Center, Norfolk, VA. Contains links for posters, physical tests, nutrition guides, and physical activity planning guides.

www.nih.gov/health/exercise

This online pamphlet from the National Institutes of Health and the National Heart Lung and Blood Institute offers information on how physical activity can benefit the body, with special focus on the heart and lungs. It also outlines ways to start and maintain a physical activity routine.

www.cdc.gov/excite/

The Excellence in Curriculum Integration Through Teaching Epidemiology (EXCITE) site provides a collection of teaching materials developed by the Centers for Disease Control and Prevention (CDC) to introduce students to public health and epidemiology, the science used by "Disease Detectives" everywhere. Students will learn about the scientific method of inquiry, basic biostatistics, and outbreak investigation. EXCITE adapts readily to team teaching across a variety of subjects, including mathematics, social studies, and even history and physical education.

Text Correlations:

Prentice Hall *Science Explorer – Human Biology and Health*, pages 21-28

Glencoe *Teen Health*

Glencoe *Science Voyages*

Southwestern Publishing *Science Probe I*, Chapter 10

Centerpointe Publishing *Science: Essential Interactions*

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Duncan, S. C. (1993). The role of cognitive appraisal and friendship provisions in adolescents' affect and motivation toward activity in physical education. *Research Quarterly for Exercise and Sport*, 64, 314-323.

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Scanlan, T. K., Stein, G. L. and Ravissa, K. (1989). An in-depth study of former elite figure skaters: II. Sources of enjoyment. *Journal of Sport and Exercise Psychology*, 11, 65-83.

Smith, A. L. (1999). Perceptions of peer relationships and physical activity participation in early adolescence. *Journal of Sport and Exercise Psychology*, 21, 329-350.

Walling, M. D. and Duda, J. L. (1995). Goals and their associations with beliefs about success in and perceptions of the purposes of physical education. *Journal of Teaching in Physical Education*, 14, 140-156.

PARTS OF THE BODY WORKED

