

Let's Get Serious About Fitness

Grade Cluster – 6-8

NETS-S - 4 - Critical Thinking, Problem Solving, and Decision Making

Quick Look:

Students use data to make a strong case for altering the health-related choices available at their school. An improved understanding of data collection techniques and analysis prepares these students to make healthier choices.

Scenario:

Mr. Harley's 8th grade health classes often point out the inconsistencies between his lessons that focus on making healthy choices and the lack of healthy options available to them in the place where they spend much of their time – school. He acknowledges that they have a valid point and this year he has put them in charge of doing something about it. They are using data to prepare a presentation for an upcoming school board meeting, during which they will use that data to make a compelling argument that changes should be made within their school to make it a healthier place for students.

Twice a year, for the past five years, Mr. Harley's students have taken the [Fitnessgram](#) physical fitness assessments. This series of fitness tests measures each student's aerobic capacity, muscular strength, endurance, and flexibility. These test results are compared to a national average and students are issued reports of their placement with a “healthy fitness zone.” These individual reports include recommendations for personal improvement in areas of fitness where a student might be deficit.

Mr. Harley makes an anonymous version of the school's fitness data available to his students. They use this data to establish a benchmark of their schools' overall fitness level. Students upload the data to a series of [Google spreadsheets](#) and use formulas to determine the range, median and mode of the fitness assessment results for boys and girls in their school for the last five years and use the Google chart feature to display this information relative to the national averages. They discuss the significance of this information, what it means for the overall health of the class and the possible reasons for the differences they can see between the fitness levels of the boys and girls and the change in their fitness levels from year to year. Students use this information to complete a [Google form](#) that asks them to assign a “grade” for their school's health and defend that grade by providing evidence from the data they analyzed. Their grades are averaged to establish a reference point for comparing their school's overall fitness level to other schools. A Google [Word Cloud](#) visually displays the popularity of the various reasons they have listed in their evidence. (4c, 6a, 6c, 6d)

Working in teams, students use the drawing tools in a [Google document](#) to create a [mind map](#) of the variables that might contribute to any school's overall fitness level. (4a, 6b, 6c, 6d) The responses fall into two main categories, variables that are unique to individual students and take place outside of school (membership in health clubs, access to

community pools and bike paths, opportunities for participation in community-sponsored athletic events, a high level of interest in fitness within a student's family, genetics, living in a fitness-oriented community, etc.) and factors within the school that may affect them all (amount and intensity of exercise during an average school week during PE classes and recess, opportunity for participation in intramural sports, quality of food available at school, quantity and quality of health education, etc.). Mr. Harley discusses the impact free access to a community pool or skating rink might have on the health of students, to illustrate the need to control for outside variables. (4b)

After an examination of several surveys and the kind of results they produce, students create a twenty-question survey designed to collect information about the factors that they believe would contribute to the health of middle school students both in and out of school. The survey is tested on a small group of students and their feedback is used to refine the survey. (4a, 4b) [Google Form](#) is used so the surveys can be easily distributed and the results will be immediately available in spreadsheet form. (6b) Under Mr. Harley's guidance, the students use class lists to produce a stratified random sample with equal representation of boys, girls, and grade levels. (4b, 4c) The survey is linked to the school's Web site and selected students complete the survey during their study hall. (6a, 6c, 6d)

Through the American Association for Physical Activity and Recreation *listserv* (<http://www.aahperd.org/membership/connect.cfm>), Mr. Harley has enlisted 24 middle schools from around the US to participate in their study. Each of these schools has also been collecting data about student fitness levels with the [Fitnessgram](#) program for a number of years and have agreed to share that data and respond to questions sent to them by the students. The Fitnessgram data has allowed the students to categorize the schools within their study along a continuum from "very fit" to "unfit." Analyzing the survey results helps them learn why some schools are "fitter" than others. (4c) This information will be used to determine what might be done to increase the fitness of students in their school and convince the school board to make these changes. (4a, 4c, 4d)

The students send an instruction sheet to all the participating schools that explains how to create a stratified random sample along with the link to their *Google Form*. (4b) After receiving an acceptable number of returns, students analyze the data using the same approach that they used to analyze their own school. (4c) A clear picture emerges about the differences between the more and less fit schools. Students use graphs from their data and illustrative graphics to create a [Google presentation](#). The Google presentation allows students to all work on the same presentation simultaneously and to continue their efforts outside of school. The slideshow is shared online with all the contributing schools who use the [chat](#) feature built into the Google presentation to gather feedback that they use to further refine their presentation. (4b, 4d, 6a, 6b, 6c, 6d)

A representative group of the Mr. Harley's students use their slideshow to present their findings and recommendations to their school board. Their recommendations focus on three areas where the data they collected demonstrates that "fitter" schools are significantly different than "less-fit" schools: the intensity of exercise during physical education classes, the opportunity for structured fitness activities instead of traditional unstructured recess periods, and a consistent effort to have healthy food alternatives at snack time, during celebrations, and during other occasions when students traditionally

only had less healthy choices. The slideshow is also embedded in the school's home page for students and community members to see. The project concludes with an online self-assessment by the students, using a rubric created as a [Google Docs](#) form, in which students make suggestions on how the project could have been improved and what the students may do as a follow-up health project the following year. (4a, 4b, 4d, 6a, 6b, 6c, 6d)

Student Standards – The following NETS-S are noted in the scenario:

4. Critical Thinking, Problem Solving, and Decision Making - A, B, C, D
6. Technology Operations and Concepts – A, B, C, D

Teacher Standards – Teachers who teach this unit address the following NETS-T:

1. Facilitate and Inspire Student Learning and Creativity – A, B, C, D
2. Design and Develop Digital-Age Learning Experiences and Assessments – A, B
3. Model Digital-Age Work and Learning – A, B, C, D
5. Engage in Professional Growth and Leadership – A, B, D

Content Grade Expectations

The scenario writer has identified the following content grade expectations that s/he felt might be assessed in this scenario. In most of these scenarios, there may well be opportunities to assess other or additional content grade expectations across a variety of disciplines. If you are interested in developing a unit or lessons based on the following scenario, and you don't see any grade expectations in your content area, we encourage you to capture the ideas presented in the scenario and make it your own by adding components that address the grade expectations you are most interested in assessing.

HE1: Self Management - Students will understand how to reduce their health risks through the practice of healthy behaviors.

- Select a variety of foods that can be eaten for healthy snacks.
- Create a list of foods that should be limited.
- Identify a variety of physical activities that are personally enjoyable.

HE2: Core Concepts - Students will show an understanding of health promotion and disease prevention concepts.

- Identify habits that are healthy and reduce the risk of disease (e.g., healthy food choices, regular physical activity, drinking water, adequate sleep and rest).
- Explain the importance of eating a variety of nutrient-rich foods.
- Identify a variety of nutritious food choices.
- Identify a variety of ways to be physically active and raise heart rate.

HE3: Analyzing Influences - Students will show understanding of how culture, media, peers, family, and other factors influence healthy behaviors.

- Explain how culture, media, peers, family and other factors influence eating behaviors and physical activity.

HE5: Interpersonal Communication - Students will demonstrate use of skillful communication to contribute to better health for themselves, their families, and the community.

- Demonstrate appropriate communication skills when asking adults/caretakers to offer healthy foods and time for physical activity.