## Food Intake and Physical Activity

Summary
Students graph their estimations of caloric intake and caloric expenditures
Main Core Tie
Health Education - 4th Grade
Strand 5: NUTRITION (N) Standard 4.N.3:

## Time Frame

2 class periods of 30 minutes each
Group Size
Small Groups
Life Skills
Thinking \& Reasoning
Materials
Calories Used Table
Internet links

## Background for Teachers

Definitions:
Calories are measured units of energy provided by food.
Calories are the measurement which various nutrients can supply your body.

## Student Prior Knowledge

Numeric order
Height and weight (this can be done discreetly by a parent volunteer.)
Familiarity with line graphs

## Intended Learning Outcomes

Students will be able to graph their estimations of caloric intake and caloric expenditures.
Instructional Procedures
Food changes to energy when we eat it. When we measure the energy we receive to make our body work, we call that measurement 'calories'.
Have students write on a small slip of paper how many calories they think they need for basic growth and body function. Have students stand in a line according to the estimate they wrote on the piece of paper. For a written record of their estimates, glue the papers to a chart to make a line plot. Have students use a caloric needs calculator (see web site listed below) to calculate their caloric needs.
Give the students a line graph of resting body functions, such as sitting or watching TV. After referring to the Calories Used Table, have students plot the caloric expenditures for activities such as, running, swimming, or bicycling. Have them compare their graphs with the resting body functions graph. Then have them compare graphs in their small group. Have them discuss the differences in their graphs
and justify their responses.

## Strategies for Diverse Learners

Work with a partner.
Use a calculator for extension activities. Allow students to experiment with a scale that measures in grams, ounces, pounds, or kilograms.

## Extensions

Calories are the measurement which various nutrients can supply your body. A gram of protein or carbohydrate provides 4 calories. However, a gram of fat provides 9 calories.
1 cup of milk $=8$ grams of protein, so: 8 grams $X 4$ calories $=32$ calories from protein.
$1 / 2$ cup of cooked spaghetti $=17$ grams of carbohydrate, so: 17 grams $X 4$ calories $=68$ calories from carbohydrate.
1 order of "large fries" = 22 grams of fat, so: 2 grams X 9 calories = 198 calories from fat.
Have students use calculators to calculate the calories in:
2 cups of milk
1 cup of cooked spaghetti (2 halves)
2 orders of fries
etc.

## Assessment Plan

Students rate their graphs using the Caloric Intake and Expenditures Rubric.
Rubrics
Graphing Caloric Intake \& Expenditures
Bibliography
Olsen, Larry K.; St. Pierre, Richard W.; \& Ozias, Jan M. PhD., R.N. Healthy For Life. Orlando: Harcourt, Brace \& Company, 1994.

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