

# Calories In – Calories Out

**Developed by:** Terrie Hanke 2006 Teacher on the Trail™

**Discipline:** Physical Education

**Topic:** Nutrition and Energy Expenditure

**Grade Level:** Middle and High School

**Resources / References / Materials Teacher Needs:**

Food/Calorie Chart; Exercise/Calorie Chart; Iditarod Trail Map

**Lesson Summary:** During Iditarod, students will participate in physical activity during class or outside of class. They will keep a record of calories expended and progress along the Iditarod Trail counting calories expended as miles. While there are mushers on the trail, there is no limit as to how many times a student can “calorically” travel between Anchorage and Nome.

**Standard’s Addressed: National Physical Education Standards**

**Standard 2** – The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

**Standard 3** – The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

**Standard 4** – the physically literate individual exhibits responsible personal and social behavior that respects self and others.

**Standard 5** – The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge self-expression and/or social interaction.

**Learning objectives:**

1. Students will examine energy expenditure as they cover the distance to Nome (1049 miles) counting calories expended during exercise as miles.
2. In the process students will consider the correlation between diet and exercise in maintaining a healthy weight.

**Assessment:**

1. Complete distance to Nome.
2. Track exercise - chart or Journal
3. Complete 5 Question Evaluation

**Procedural Activities**

This is a project that includes physical activity and journaling. As students participate in physical activity during class or outside of class, they will keep a record of calories expended or burned. For example, riding an exercise bike for 30 minutes at a rate of 16 mph burns approximately 200 calories. The student would progress this distance toward Nome. During the time there are mushers and teams on the trail between Anchorage and Nome, there is no limit as to how many times a student can “calorically” travel the Iditarod Trail. In their journal, students will create a daily chart to compare the number of calories burned during exercise with snack calories consumed during the day. Snacks would be considered any food or beverage consumed other than at mealtime. When entering the snack information, the students should also make a note as to why the snack was consumed, was it hunger, lacking energy, boredom, etc. Ask the students to make a note of how they felt before consuming the snack and after the snack at 30 minutes and 60 minutes. The final phase of this activity would be to address snacking behaviors and the amount of exercise it takes to burn off snack calories. Compare the caloric values of “junk” snacks to “healthy” snacks. After the first week of Iditarod, ask the students to make a conscientious effort to eat only healthy snacks and continue to enter information in their journals. When the Red Lantern has been awarded, ask the students to respond to the following questions –

- 1) How many calories did I burn each day through exercise?
- 2) How many snack calories did I take in during the first week of Iditarod?
- 3) How many snack calories did I take in during the second “healthy” week of Iditarod?
- 4) How did calories expended and calories consumed balance out for each week?
- 5) How will this information affect your exercise and snack habits?

**Materials Students Need:**

Journal and map of the Iditarod Trail to chart progress to Nome. Progress can be charted on individual scaled maps or a large scaled map to compare progress with other class members.

**Technology Utilized to Enhance Learning:**

Journal may be kept in the form of an excel spreadsheet. Excel can also be used to track caloric progress toward Nome.

**Other Information:**

Consider this variation – Specify that calories used to advance to Nome must come from exercise calories being greater than snack calories. Example: 200 exercise calories (30 minutes on bike @ 16 mph) – 80 snack calories (apple) = 120 calories or miles closer to Nome.

**Modifications for special learners/ Enrichment Opportunities**

Students who are interested in doing research on canine athlete nutrition can access information from any number of internet sites. Try MUSH with P.R.I.D.E. or sometimes mushers have nutritional information on their personal web page. An interesting project would be to compare nutritional requirements of canine athletes with human athletes.

**Notes:** This activity was designed to help students see the correlation between caloric expenditure and caloric consumption, especially those calories that are consumed other than at mealtime, often thoughtlessly. If students either continue with or convert to healthy, low calorie snacks, their journey on the Iditarod trail will be well worth the trip. This activity could be adapted for health club use.