

Lesson Plan Title

Musher Nutrition

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Discipline: Family & Consumer Science, Health, Science, Physical Education and Technology

Topic: Nutrition

Grade Level: Middle School

Resources / References / Materials Teacher Needs:

Metabolism instructional materials

Knowledge of Microsoft Office - Publisher or Microsoft Word – Brochure

Develop rubric for grading project

Video or DVD available from Iditarod web store (Iditarod 2005, 2004, Alaska’s Great Race, Sled Dogs an Alaskan Epic, Beyond Courage, Iditarod – a Far Distant Place, Season of the Sled Dog and others)

Lesson Summary:

This project has 2 phases. First, students will apply their knowledge of metabolism and nutrition by creating a brochure for mushers that explains how food is turned into fuel or energy for activity. For phase two the students will apply what is known about metabolism and nutrition, by forming recommendations for mushers regarding either energy drinks, energy snacks or suggested meals. Students must take into account the factors that affect mushers during the Iditarod including length of race, physical requirements, weather conditions, food safety and practicality. Students will work in small groups. The final product of the project will be a brochure that explains metabolism and communicates their recommendations regarding hydration, snacks or meals. Students will present their work to the class.

Standard’s Addressed:

McREL – Mid-continent Research for Education and Learning

Health Std 6) Understands essential concepts about nutrition and diet

Health Std 7) Knows how to maintain and promote personal health

Family / Consumer Science Std 12) Understands how knowledge and skills related to nutrition and food affect the well being of individuals.

Technology Std 2) Knows the characteristics and uses of computer software programs

Science Std 5) Understands the structure and function of cells and organisms

Physical Education Std 4) Understands how to monitor and maintain a health-enhancing level of physical fitness.

Learning objectives:

The students will

- 1) Understand how to make healthy food choices.
- 2) Understand how nutrient and energy needs vary in relation to gender, activity, and age.
- 3) Demonstrate ability to make choices for nutrition in harsh climates.
- 4) Know the effects of physical activity and nutrition on body composition.

Assessment:

- 1) Written information on metabolism
- 2) Written nutritional recommendations
- 3) Brochure
- 4) Presentation

Procedural Activities:

Phase 1

A) After viewing videos or photos of mushers on the Iditarod Trail or other sled dog races, describe the intensity of the musher’s activity. Compare and contrast with whatever athlete oriented activity is current such as the Olympics.

B) Create a brochure for mushers that explains the process of metabolism or how the body uses food as fuel for activity.

Phase 2

Then choose one of the following:

A) Analyze the drinks available to mushers

- a. List popular products aimed at athletes.
- b. Chart and compare the ingredients and nutrients found in popular sport/energy beverages including water, Sunny Delight, Red Bull, Cola and Mountain Dew.
- c. Decide what sport/energy drink would be best for an Iditarod musher (endurance athlete).
- d. Create a brochure that would encourage a musher to use products that would be most beneficial to performance. Include charts and facts that are appropriate.

Procedural Activities:

Phase 2 - continued

B) Analyze energy snacks (bars & gels) available to musher

- a. List popular snacks (bars & gels) geared to athletes.
- b. Chart and compare the ingredients and nutrients found in these products.
- c. Compare the contents of popular energy snacks to peanuts, potato chips, trail mix, Chex mix, granola bars and your favorite candy bar.
- d. Decide which energy snacks would be best for endurance athletes and Iditarod mushers.
- e. Create a brochure with information that would encourage a musher to use energy snack that would be most beneficial for performance. Include charts and facts that are appropriate.

C) Create a sample two day menu appropriate for mushers

- a. Go to www.mypyramid.com or another similar nutrition source to identify balanced meal suggestions for mushers during the Iditarod.
- b. Determine how extreme environmental conditions and prolonged energy expenditure affect the caloric needs of the mushers.
- c. List the environmental conditions that would determine what foods mushers can take on the trail or send to checkpoints.
- d. Create a sample two day menu, keeping these energy and environmental conditions in mind.
- e. Create an appealing menu brochure with your sample menu for mushers to use as a resource.

Materials Students Need:

Prior knowledge of nutrition and metabolism

Access to Internet

Access to program for creation of brochure (Microsoft Office Publisher or Microsoft Word)

Technology Utilized to Enhance Learning:

Web Quests

Word Processing for creation of brochure

*Optional power point presentation of final product

*Optional filmed commercial with audio and visual production techniques

Other Information: Suggested sources for a web quest –

www.bancroftarnesonexplore.com/expeditions/articocean2005_faq_food.asp

www.mypyramid.gov

www.accelerade.com

www.gatorade.com

www.powerade.com

www.clifbar.com

www.gusports.com

www.powerbar.com

www.ultimateiditarod.com

www.drsonny.com

Modifications for special learners/ Enrichment Opportunities:

Select specific and appropriate web sites for special learners. Final product may be done as an oral report or poster. Enrichment opportunities might include a power point presentation to class of final brochure and recommendation for mushers or creating a commercial for recommended product. Students interested in activities in extreme climates might research specific caloric considerations for explorers like Ann Bancroft, Liv Arneson, Will Steger and Paul Scherke.

Notes: Some students may hold the misconception that mushers ride the runners of the sled for the entire race and let the canine athletes do all the work. This is far from the truth. Mushers help the dogs throughout the race by poling, hustling, peddling and often running. Driving a dog team is a physically challenging and very demanding sport especially on the rugged terrain the Iditarod trail crosses. This picture from Cabelas' Iditarod web site shows a musher in action helping the dogs during the 1049-mile journey from Anchorage to Nome. Check out



the photo archives at [www.cabalasiditarod.com] for more pictures of mushers in action.