

SLED SHOPPING

Developed by:

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Discipline / Subject:

Math – Estimation and Rounding

Topic:

Estimating the cost for mandatory sled gear for a musher by rounding prices to the nearest 10, 100, or 1,000

Grade Level:

3rd grade – can be modified for other grades

Resources / References / Materials Teacher Needs:

1. <http://iditarod.com>
2. Sled shopping worksheet and spreadsheet

Lesson Summary:

Students will read the Sled Shopping post about rookie musher Kristin Pace and see what mandatory gear she has on her sled. They will estimate the total cost of sled gear for a musher in the Iditarod by using her sled gear prices and rounding them.

Standards Addressed:

Common Core State Standards – CCSS

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

CCSS.MATH.CONTENT.3.NBT.A.1

Use place value understanding to round whole numbers to the nearest 10 or 100.

CCSS.MATH.CONTENT.3.NBT.A.2

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Texas State Standards – TEKS

<http://ritter.tea.state.tx.us/rules/tac/chapter111/ch111a.html>

(b) Knowledge and skills

(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:

(A) Solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction;

(B) Round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems

Alaska State Standards – Math

https://education.alaska.gov/akstandards/standards/akstandards_elaandmath_080812.pdf

Grade 3: Number and Operations in Base Ten 3.NBT

Use place value understanding and properties of operations to perform multi-digit arithmetic.

3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100.

3.NBT.2. Use strategies and/or algorithms to fluently add and subtract with numbers up to 1000, demonstrating understanding of place value, properties of operations, and/or the relationship between addition and subtraction.

Grade 4 Number and Operations in Base Ten 4.NBT

4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place using a variety of estimation methods; be able to describe, compare, and contrast solutions.

Use place value understanding and properties of operations to perform multi-digit arithmetic.

4.NBT.4. Fluently add and subtract multi-digit whole numbers using any algorithm. Verify the reasonableness of the results.

Learning Objectives:

1. Students will estimate the total cost of mandatory sled gear for an Iditarod musher.

Assessment:

1. The teacher will check for understanding and make sure the student rounded correctly and added the numbers correctly for a total estimated cost.

Procedural Activities

1. Students will read the post “Sled Shopping with Musher Kristin Pace” and read the Iditarod rules about mandatory gear.
2. Discuss her gear and how it is used
3. Hand out the worksheets for mandatory gear and the prices listed. Review the amounts needed for each one. Why does a musher need so many booties? Why do they need so many sets of runners for the sled?
4. Students will fill in the required sled gear names on the spreadsheet and then write the estimated cost for each one. Students will round the prices to the nearest 10, 100, or 1,000.
5. Students will then find the total estimated cost of sled gear for a musher for the Iditarod.

Materials Students Need:

1. Sled shopping catalog worksheet and spreadsheet
2. Optional: tablet or computer for research

Technology Utilized to Enhance Learning:

1. <http://iditarod.com>
2. Tablet or computer

Other Information:

Use the www.iditarod.com site to view the rules for mandatory gear. Kristin provides information for some of the gear. You can have your students find the cost for other gear that is necessary to meet the requirements for the race, find the cost, and add that to your total.

Modifications for Special Learners/ Enrichment Opportunities:

Modified:

Students can work as a team or a class and work together to fill in the spreadsheet and find the total cost.

Enrichment:

Students can find all the required gear for a musher's sled by reading and researching the Iditarod rules. Instead of estimation, students can find exact cost and add tax to the total.

Students can write a research report about the gear and describe how it is used in the Iditarod to keep the musher and dog team safe and healthy all the way to Nome.