

# Idita-Math Challenge

**Developed by:** Terrie Hanke 2006 TOTT™

**Discipline:** Mathematics & Technology

**Topic:** Word problems using addition/subtraction, multiplication/division, fractions, decimals, bar graphs and spreadsheets.

**Grade Level:** K-2, 3-5, 6-8

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

Idita-math Challenge worksheets; Iditarod's Guide to the Last Great Race, Iditarod Trail Committee; Iditarod Trial Map.

**Lesson Summary:** Students practice problem solving and critical thinking when answering word problems that include multiplication, division, fractions, common denominators and graphs.

**Standard's Addressed:** McREL – Mid-continent Research for Education and Learning

**Mathematics**

Std 1. Uses a variety of strategies in the problem-solving process.

Std 2. Understands and applies basic and advanced properties of the concepts of numbers.

Std 3. Uses basic and advanced procedures while performing the processes of computation.

Std 4. Understands and applies basic and advanced properties of the concepts of measurement.

Std 8. Understands and applies basic and advanced properties of the concepts of geometry.

**Technology**

Std 2. Knows the characteristics and uses of computer software programs.

**Learning objectives:**

1. Students will practice basic math skills – counting, addition/subtraction, multiplication/division, decimals, estimation, fractions and graphs.
2. Students explore the features and uses of spreadsheets.

**Assessment:**

1. Completion of appropriate subject/grade level worksheets.
2. Participate in discussion of problems presented on worksheets.
3. Creation of a spreadsheet with appropriate mathematic operations.

**Procedural Activities:** After the critical math or technology concepts have been taught, provide students with the appropriate grade level word problem worksheet as an opportunity to practice math and technology skills with Iditarod based problems. These activities can be used individually or as a think (individual), pair (check with another person) and share (small group shares with class) format.

**Materials Students Need:**

Idita-math Challenge Worksheet, Graph paper, Ruler, Colored Pencils, Calculator (opt), Computer with spreadsheet application.

**Technology Utilized to Enhance Learning:**

Some problems in the challenge lend themselves to creating an electronic spreadsheet with basic functions of addition/subtraction, multiplication/division and percentage. The problems can also be solved creating a paper/pencil chart. Use the paper/pencil chart as a blueprint for designing the electronic spreadsheet. This is an excellent opportunity to implement basic spreadsheet technology standards.

**Other Information:**

The Idita-math Challenge is created with grade appropriate K-2, 3-5, 6-8 worksheets using Iditarod as a theme. The Kennel Budget problem is designed for group work.

**Modifications for special learners/ Enrichment Opportunities:**

Students can work in groups to utilize the knowledge and expertise of each individual. As an additional challenge, students can work ahead on higher-level problems. Students may also explore the capability of electronic spreadsheets in creating graphs and pie charts.

**Notes:** Activities are designed on the following assumptions for each grade level –

Kindergarten – counting

Grade 1 – Adding & Subtracting 1 digit numbers

Grade 2 – Adding and subtracting 1 & 2 digit numbers without barrowing then moving into barrowing or regrouping

Grade 3 – One digit multiplication

Grade 4 – One and two digit multiplication, begin easy dividing

Grade 5 – Decimals in multiplication and equivalent fractions

Grade 6 – Multiply and divide with decimals, add, subtract, multiply & divide fractions with common denominators and readiness for computer spreadsheet application.