

## Measuring an Iditarod Sled Dog

NCTM Standard – Measurement – Using non-standard and standard measurements for length, volume, weight, and time, using customary and metric units (Appropriate, with adaptations, for Kindergarten through 5<sup>th</sup> grade)

### Materials:

- Measuring Penny by Loreen Leedy
- One foot long ruler labeled with inches and centimeters (one per student/group)
- Keebler Scooby-Doo Graham Cracker Sticks (if you want dog bone shaped items for human consumption, otherwise other dog bone shaped treat appropriate, such as Milk-Bone) (approximately 12 treats per student/team)
- Cotton swab (at least one per student/team)
- Paw print copy (one per student/team) (Recommend getting paw print by putting dog paw on ink pad or in paint and then carefully putting it on paper) (This could be an activity during Teacher Summer Camp)
- Yard stick or tape measure with inches labeled (one per student/team)
- Balance (to compare two weights)
- Bathroom scale or small hand weights
- Volume containers (teaspoon, tablespoon, measuring cups, pint, quart, and gallon)
- Stopwatch
- Thermometer
- Stuffed animals, preferably dogs, or outline of dog on bulletin board paper

### Background information:

- This activity is intended to preview or review non-standard and standards measurement for students
- This lesson is intended for a whole class or small group and students can perform measurements individually or as part of a cooperative team
- Depending on student learning styles and teacher preference, the story could be read completely and then reviewed one by one to do activities, or story can be stopped to complete activities as it is read the first time as described below

### Invitation to Learn:

Talk to students about the Iditarod and the canine athletes; show pictures of sled dogs and sleds. Facts and figures on the sled dogs could be provided now or during the lesson.

Optional: Tell students the day before they are going to have a special math day and they need to bring in their favorite stuffed animal, preferably a dog, to help with their math project. (The teacher should have some on hand for students who may not have any, or instead of stuffed animals, the students could measure an outline traced on bulletin board paper.)

Instructional Procedures:

- Have each student get their stuffed animals and return to their desks or meet at small group table
- Read the story Measuring Penny stopping at appropriate spots
  1. Compare stuffed animals – which is bigger? Smaller? About the same size? (If using paper outline, ask students about what type of dog might be larger, smaller, or same size.)
  2. Measure nose length using inches
  3. Measure tail lengths using dog bones
  4. Measure ear lengths using cotton swabs
  5. Measure paw prints using centimeters and compare to **Iditarod dog paw print**
  6. Measure dog height using inches/feet/yard
  7. Guess-timate dog jump using students (maybe allow students to gently toss a stuffed animal to get jump height)
  8. May want to take time to demonstrate how balance works and let students compare a couple weights before comparing stuffed animal weights
  9. Allow students to weigh themselves to get idea of weight and/or have students pick up hand weights for one, two, and five pounds, could discuss **Iditarod sled dog weighs between 45 and 60 pounds**
  10. Show students various volume measurement tools and discuss how much food **an Iditarod dogs eats per day, about 200 calories per pound per day, or about 10,000 calories per day for a 50 pound dog and consumes about 1.5 gallons of water per day for the same 50 pound dog**
  11. As an extension, could make dog biscuits (or human cookies with a dog shaped cookie cutter) or could discuss food **Iditarod dogs eat (frozen and raw lamb trimmings, poultry skins, hamburger, moose, salmon steaks, oil, and vitamins)**
  12. Discuss classroom schedule versus Penny’s schedule and compare that to **Iditarod sled dog of running 6-8 hours followed by 6-8 hours of eating/sleeping and then repeat over the course of eight to fifteen days**
  13. Discuss requirements to take care of **Iditarod dogs, such as putting down straw beds, feeding, melting snow for water, changing dog booties, applying salves to sore paws, putting coats on dogs, etc.**
  14. Give students concept of time by timing them to jump for a minute, run in place for a minute, sit still for a minute, etc. Explain to students **Iditarod dogs run an average of 10 miles per hour (6 minute mile) for 1049 miles over the course of eight to fifteen days**
  15. Using thermometer, measure classroom and outdoor temperatures and compare to temperatures of the **Iditarod (coldest on record was -130 degrees Fahrenheit in 1973)**
  16. Compare value of Penny to actual **Iditarod dog which can cost in \$1000s to buy and upwards of \$40,000 to maintain a team for a year**

Resources/Website Suggestions:

- **Measuring Penny** by Loreen Leedy
- Iditarod Trail Committee Official Site <http://iditarod.com/>
- Scholastic's Iditarod Race Across Alaska: A Dog's Life  
[http://teacher.scholastic.com/activities/iditarod/dogs\\_life/index.asp?article=dogs\\_life](http://teacher.scholastic.com/activities/iditarod/dogs_life/index.asp?article=dogs_life)
- The Wall Street Journal: Are Sled Dogs the Planet's Best Athletes? March 9, 2009 <http://online.wsj.com/article/SB123655651750166135.html>
- Yukon Quest Sled Dogs <http://www.yukonquest.com/site/water-water-everywhere/www.lotteriesyukon.com>