

Lesson Plan Title: Gram Puppies

Developed by: Heidi Sloan, 2018 Teacher on the Trail™, borrowed from Kim Busch, 2018 finalist, Teachers on the Trail™ 2016-Laura Wright and 2007-Kim Slade

Discipline / Subject: Math measurement, science – mass, writing

Topic: Weight, mass, graphing, statistics, creative writing

Grade Level: First - Sixth grades

Resources / References / Materials Teacher Needs: gram weights, scales, baby or toddler socks, 5 – 10 lb. bag of rice, cups, rubber bands or twist ties; articles on dog training, kennels and their puppies

Lesson Summary: Students learn the “feel” of gram weights as they create puppy litters out of rice and socks; creative writing and mathematics computation are involved in this lesson as well. This lesson takes place over a period of several weeks.

Standards Addressed: (Local, State, or National)

VA Math 5.8

- Solve problems involving measurement by selecting an appropriate measuring device and a U.S. Customary or metric unit of measure for the following: mass: grams and kilograms

CCSS.MATH.CONTENT.3.MD.A.5, B.3, B.4

CCSS.MATH.CONTENT.4.MD.A.1, 2; 5.MD.A.1; 6.RP.A.1, 7.RP.A.1

HSS.MD.A.2, 4, B.7

Learning objectives:

1. The student will:
 - understand the weight of grams
 - write creatively about the puppy
 - plan and graph the weight growth of their puppy

Assessment:

Measurement test involving gram questions

Rubric assessing written expression, composing, and mechanics for story

Procedural Activities

1. Show pictures of puppies in mushers’ kennels by going to their websites; discuss the naming of puppies by themes and give examples; discuss runt of litter and what that means.
2. Divide students into groups of 3, 4, or 5
3. Groups work to problem-solve and determine litter weight of puppies and determine a name theme. No puppy may have the same weight as its littermates. One puppy per group member. One needs to be the runt, much smaller than the rest. Weight of entire litter must equal 150 grams.

4. On another day, have station set up for students to make their puppies. They use the gram weights and balances to weigh rice for each sock puppy. A partner holds the sock while the student fills the sock with the appropriate gram weight of rice. They then use a twist tie to close the sock opening. Eyes, nose, and ears may be added. Students keep their puppies in their desks. They decide on names based on their litter themes.
5. In subsequent days (until the socks are full), the puppies grow and for morning work or as a math station, students add 20 grams of weight to their puppies.
6. Students graph their puppies' weight on a line graph to show change over time.
7. Using pink, blue, brown, and black foam pieces, noses, eyes, and ears can be added to the sock puppies.
7. Meanwhile, for writing instruction, students create a story about the litter giving the background and the care and training the puppies will receive. Their background knowledge for this assignment will be the articles on dog training they read.
8. Take photo of each litter. Students enhance with text, typing the name of each onto the digital photo. These can be posted along with the stories on a bulletin board.

Materials Students Need: pencil, permanent markers to create features on the puppy, graph paper

Technology Utilized to Enhance Learning:

Google slides showing litters, their names, and articles about naming puppies
Research Iditarod dog weights, training young dogs for the Iditarod, why some dogs make the team and some don't

Other Information

Students LOVE their puppies. I often see them holding them like stress balls during the school day.

Modifications for special learners/ Enrichment Opportunities

Enrichment: students determine percentage of weight/mass of each puppy in the litter
Gather data from each puppy's weight; find the mean, median, mode, and range of the data