

Lesson Plan Title: Iditarod Science/Social Studies

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**Discipline / Subject: Science and Social Studies**

**Topic: Plan and Carryout an Investigation and Cardinal Directions**

**Grade Level: Kindergarten/First Grade**

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

Phenomenon Video: <https://www.youtube.com/watch?v=DEhIk1RDT8I>

Soil

Rocks

Snow (baking soda, white conditioner)

3 large baking sheets – to put the soil, rocks, and snow on

Small dog sled (toy, anything that resembles a sled, that can slide, this is what I used)

[https://www.amazon.com/PLAYMOBIL%C2%AE-Husky-Drawn-Sled-Playset-Multicolor/dp/B01LZEUL01/ref=sr\\_1\\_4?keywords=dog+sled+toy&qid=1572978002&sr=8-4](https://www.amazon.com/PLAYMOBIL%C2%AE-Husky-Drawn-Sled-Playset-Multicolor/dp/B01LZEUL01/ref=sr_1_4?keywords=dog+sled+toy&qid=1572978002&sr=8-4)

Pipe Cleaners

Plastic Straws

[Smart Notebook Presentation](#) (linked here)

[Map Images](#) (linked here)

**Lesson Summary:**

The purpose of this lesson is to have students plan and carry out an investigation about which surface is easier for dogs to pull the sled over.

The students also design their own dog sled based on a challenge they are given.

Using maps and images from the actual Iditarod Trail, students have to identify the cardinal directions of the trail, along with landforms and waterways that the mushers encounter.

**Standard's Addressed: (Local, State, or National)**

1. K-PS2-1: Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes or pulls on the motion of an object.

**The students will plan and conduct an investigation to determine which surface is the easiest for dogs to pull a sled on; Snow, Rocks, or Soil.**

**Engineering Challenge: The students will have a challenge to complete: You are mushing down the Iditarod Trail and your sled breaks. Oh No! Using only the materials in front of you, design and build a new dog sled. The sled has to be able to be pulled by dogs, slide on snow, and have a place for the musher to stand.**

2. Geography Standard One K-3a: Students will understand the nature and uses of maps, globes, and other geo-graphics

**Learning objectives:**

1. The students will be able to plan and conduct an investigation about which surface is easiest for a dog to pull the sled over.
2. The students will be able to complete an Engineering Challenge and design their own dog sled using the materials provided.
3. The students will be able to identify the cardinal direction, landform, or waterway when given a map.

**Assessment:**

- Method of assessment for learning
- The final model of the student's investigation.
- The dog sled that the students design.
- The completed labeled maps.

## Procedural Activities

1. First begin the lesson by watching the Phenomenon Video:  
<https://www.youtube.com/watch?v=DEhIk1RDT8I> Have the students focus on the fact that these dogs are pulling sleds without snow. After you watch the video ask the students, “What questions do you have?” Record their questions on the smartboard or chart paper.
2. Then have the students begin to think about how they can plan and carry out this investigation. Have the students talk to a partner to get their thoughts on how they can test this and what materials they might need. Then tell the students that this is their goal for the day, Using Snow, Soil, and Rocks, determine which surface is the best and easiest for dogs to pull the sled on. There should be 3 separate stations already prepared. One station has a tray with only soil. One station has a tray with rocks. One station has a tray with snow. Each tray gets a dog sled toy to slide over each material. Have the students discuss in their groups their observations as each sled slides over the surfaces.
3. After the students investigate, as a group they should complete the summary table.  
Testable Question We Investigated... We investigated this question by...  
Observations we observed... My claim is, Maybe...
4. Then have the students draw a model of their investigation. Make sure that they label their model using all the materials that they used during the investigation.
5. Next have the students work together to complete this Engineering Challenge: Oh no!! You are mushing down the Iditarod Trail and your sled breaks. Using only the materials in front of you design and build a new dog sled. The sled has to be able to be pulled by dogs, slide on snow, and have a place for the musher to stand. (Make sure that you have images of a dog sled on the board for students to see.) This is an easy scaffold for KN/1<sup>st</sup> grade students, especially if they have never seen a dog sled or used one. Materials for design challenge: Pipe Cleaners and Plastic Straws
6. Finally, finish out the lesson by projecting images of different parts of the Iditarod Trail onto the Smartboard and asking the students these questions: Label the cardinal directions that the mushers are traveling on this map. Label the Landforms and Water on this part of the trail. Label the directions on this part of the trail. (Map Images are attached)

### Materials Students Need:

Science Journal/Notebook

Pencil

Map Images

Access to the 3 Stations (Snow, Soil, Rocks)

Straws and Pipe Cleaners

**Technology Utilized to Enhance Learning:**

Phenomenon Video: <https://www.youtube.com/watch?v=DEhIk1RDT8I>

Smart Notebook Presentation

Iditarod Website

**Other Information**

N/A

**Modifications for special learners/ Enrichment Opportunities**

This lesson is extremely hands on and allows the students to do the discovering on their own. They are given the opportunity to work together and help each other out to discover and design.