Meet the Rookies

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Discipline / Subject: Math

Topic: Mean, Median, Mode, and Range

Grade Level: Fourth, others with modifications

Resources / References / Materials Teacher Needs:

Current Year Musher Roster: https://iditarod.com/race/2018/mushers/list/

Rookie story to share: http://www.adn.com/article/20150312/18-year-old-rookie-learning-fast-frigid-iditarod-race-trail

Story about a lucky rookie this year: https://www.adn.com/sports/2017/06/24/iditarod-rookie-from-two-rivers-gets-off-to-good-start/

Brain Pop Video: https://www.brainpop.com/math/probability/meanmedianmodeandrange/preview.weml

Number of dogs leaving the starting line in 2017 (use number of dogs into the first checkpoint – Nenana): https://iditarod.com/race/2017/checkpoints/4-Nenana/

Paperwork required for mushers: http://iditarod.com/resources/mushers/

Lesson Summary:
Students will determine mean, mode, median, and range of ages among this year's rookie mushers.

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

Common Core Sixth Grade:
6-SP: Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape.

Learning Objectives:	**Assessment:**
TLW calculate the mean, median, mode and range of a set of data.	Students can be assessed on their class assignment sheets.

Procedural Activities:

1. Have the students create a working definition of the word rookie as it is applied to the Iditarod.

2. Lead a discussion about the unique challenges that face rookie mushers as they attempt to complete their first race.

3. Share with the students the article about one rookie's 2015 Iditarod.

4. Explain that each year the rookies are a varied bunch – different genders, hometowns, and ages. The only requirements are that they are at least 18 years old and that they have completed their required qualifying races.

5. Today we will be focusing on the ages of the rookies to see what information we can gather from that data.

6. Explain to the students that there are four ways we can analyze a series of data like a list of the rookie mushers' ages. Introduce and define mean, median, mode, and range. Alternatively, you could show the BrainPop video listed above.

7. Practice the calculations with the following sets of data:

Mushers Who Started in 2017 w/o 16 Dogs	Number of Dogs
Sebastian Vergnaud	12
Hugh Neff	15
Misha Wiljes	15

2017 Top Ten Finishers	Number of Dogs
Mitch Seavey	11
Dallas Seavey	7
Nicholas Petit	13
Joar Lefseth Ulsom	8
Jessie Royer	16
Wade Marrs	9
Ray Redington, Jr.	9
Aliy Zirkle	9
Peter Kaiser	10
Paul Gebhardt	8

8. When the students are comfortable with the calculations, challenge them to determine the same information regarding the ages of this year's race rookies.

9. They will need to begin by gathering the ages of the rookies. They can visit the list of registrants shown above and create a list of the ages of the rookies and then find the mean, median, mode, and range with that new, larger data set.

10. As a summary, ask the students if they were surprised by what they found? Did they anticipate that the average rookie musher age would be higher or lower? When and why would you want to know the different mean, median, mode and range numbers?

Materials Students Need:

- Rookie musher age data – either from website or printed
- Scrap paper

Technology Utilized to Enhance Learning:

See Resources list above

Other Information:

You may want to take this time to explain that rookie mushers have additional requirements above and beyond veteran mushers. They have to complete a series of qualifying races and have report cards completed at each race. These musher report cards are a great way to have students self-assess their work as well. I have included a modified Musher Report Card for students at the end of this lesson.

Modifications for Special Learners/ Enrichment Opportunities:

As an added writing component, students could write about the pros and cons for being older or younger as a rookie. Is more experience key? Or is youth and athleticism key?

Students could use calculators to do the calculations.

Additional Information

What's The Average?
Vocabulary

Range:
The range is the difference between the highest and the lowest numbers in a set of data.

Mean:
The mean is the average of a set of numbers. To find this, add the numbers and then divide by the number of addends.

Median:
The median is the middle number in the set of numbers when the numbers are arranged in order from the least and greatest.

Mode:
The mode is the number that occurs most often in a set of numbers. It is sometimes easier to find the mode if the numbers are arranged in order from least to greatest.

Student Musher Assessment Form

Name: _____ Date: _____

In order to be prepared for the Iditarod, mushers have to complete a series of qualifying races and be evaluated by the judges of each of those races. Many of the skills the judges hope the mushers will demonstrate are also skills that we demonstrate in the classroom. Think back over your week and see how you did with these skills. Are you ready to meet the challenge?

	Always	Most of the Time	Some of the Time
General Attitude • Was I an eager and enthusiastic student?			
Compliance with Rules and Policies • Did I follow the classroom rules?			
Organization and Efficiency • Was my work completed neatly and on time?			
Equipment Care • Were my desk and locker kept neat?			
Preparedness • Was I prepared for class with completed assignments and needed materials?			
Interaction with People • Did I work well with my classmates?			

What was your biggest accomplishment this week?

_____

_____

_____

_____

Additional Comments:

_____

_____

_____

_____

Meet the Rookies

2018 Rookie Iditarod Mushers

Name	Gender	Age	Location
Tom Schonberger	M		AK
Shaynee Traska	F		MI
Jessie Holmes	M		AK
Brett Bruggerman	M		MT
Tara Cicatello	F		NY
Matt Hall	M		AK
Meredith Mapes	F		AK
Tim Muto	M		AK
Andy Pohl	M		AK
Anja Radano	F		AK
Emily Maxwell	F		IA
Bradley Farquhar	M		Canada
Jason Stewart	M		AK
Andrew Nolan	M		AK
Michi Konno	M		AK
Peter Fleck	M		Canada

Rookie Mushers' Ages:

Median: _____

Mode: _____

Range: _____

Mean (average): _____

Meet the Rookies – TEACHER SHEET

2018 Rookie Iditarod Mushers

Name	Gender	Age	Location
Tom Schonberger	M	50	AK
Shaynee Traska	F	29	MI
Jessie Holmes	M	36	AK
Brett Bruggerman	M	47	MT
Tara Cicatello	F	26	NY
Matt Hall	M	26	AK
Meredith Mapes	F	24	AK
Tim Muto	M	33	AK
Andy Pohl	M	43	AK
Anja Radano	F	43	AK
Emily Maxwell	F	33	IA
Bradley Farquhar	M	31	Canada
Jason Stewart	M	42	AK
Andrew Nolan	M	18	AK
Michi Konno	M	56	AK
Peter Fleck	M	27	Canada

SEE NOTES ON NEXT PAGE!

Notes:

- If the kids click on the bios of each musher, it will say how old they are in the bio. You can have them search for the info or just give them the numbers. Searching will give them a bit more familiarity with the mushers, which may be nice.
- Andrew Nolan's age isn't listed – he has no bio (as of 12/17/17). He was 17 when he won the 2017 Junior Iditarod, so I'm going with 18 for this race.