Let it Snow, Let it Snow

Grade Cluster - K-2

NETS-S - 3 - Research and Information Fluency

Quick Look:

Wilson Bentley was born and raised in Jericho, Vermont and is best known as Snowflake Bentley. His research about rain and snow was published extensively in newspapers and magazines during the 1800's. Students research his life and his work using several resources and present the information in digital form.

Scenario:

Snow is falling outside. Nobody really notices the flakes as they drift down. The teacher encourages her class to look outside, and then shares some information about a famous local character. "Wilson Bentley, better-known as "The Snowflake Man," loved snow and loved studying it! Did you know that he didn't go to school until he was fourteen years old? Isn't that amazing? And when he was fifteen, his mother bought him a microscope, which he used to look at snowflakes really closely. He was so fascinated by their different shapes, that at age seventeen he got a camera so he could start photographing the snowflakes before they melted!"

The students clamor for more. "Who was the Snowflake Man? Where did he live and how did he do his research on snowflakes?" The teacher tells the students that they should use some *kid-friendly search engines*, like Internet search Engines for Kids and Safe Search Engines, to find out the answers to these questions, as well learn more interesting information about him, and then share that information with their peers and parents. (3b, 3c, 6b) The class can hardly wait to begin!

Before they get started, the teacher reads aloud to the class the books, Snowflake Bentley, by Mary Azarian and My Brother Loved Snowflakes, by Mary Bahr. Students use the information from these two stories to brainstorm a list of more questions they have about Snowflake Bentley. This information is displayed in a *graphic organizer* for reference during their research. Some students comment that they can just ask their parents for answers to their questions, since they are confident that their parents know everything. "Really?" asks the teacher, "Let's find out about that."

A *Google Form* is developed to send out to their parents to quiz their parents' knowledge about Snowflake Bentley. (3a) This will be sent out via email and posted on the class *wiki or blog*. Additionally, students develop more questions from the research they do about Snowflake Bentley. The questions developed by the students are also used when they invite other classrooms to come and learn about Snowflake Bentley. (3a) Students will use *response systems* to quiz the other students about their knowledge of Snowflake

Bentley. They use this data to report on the wiki, "How much do our parents and friends really know about Snowflake Bentley?"

As part of their research, students take the virtual tour at the Snowflake Bentley Museum and record what they learn about Snowflake Bentley as a result. They record important dates, personal information about his life, information about how he took pictures of the snowflakes, as well as any answers to questions that they have generated. This new information is added to the information that they are gathering from their research of other web sites. They use a *simple graphic organizer* to record all of this information and keep track of it. Since the reading level of the websites is too advanced for some students, they listen to parts of the websites using the program *ReadPlease*. (3b, 6b)

The detailed pictures of snowflakes that they see fascinate the students. Using these pictures as a springboard, the teacher and students discuss symmetry and the characteristics of a snowflake. They also record this information in their *graphic organizer*. They are excited to learn that more photographs of snowflakes can be found at Snowcrystals.com. After looking at photographs as a large class, students will compare the photographs of snowflakes to actual snowflakes that they collect on black construction paper. Students soon gain a new appreciation for the work of Snowflake Bentley, since capturing just one snowflake and getting a clear image of that snowflake is much harder to do than they initially thought! They share their observations on a class *wiki*. Students will write short poems about the snowflakes and record their poems into *Photostory*, using drawings they have made, or photos they have taken of their snowflakes. The students' drawings will also be placed on the class blog.

"Just think, all these tiny snowflakes clump together to make all that snow!" marvel the students. "Just how much snow do you think we will get over the next month?" asks the teacher. Wanting to find out, students record how much snow falls over a period of a month. They document the changes over the time period with *digital cameras*. (6a, 6b) The data that they record is represented in a graph using *Inspiradata* and posted in their classroom. (3d) The information that students collect is posted in a *wiki* to share with parents. Each day, students post a weather report on the school's website as a podcast.

As a culminating activity for their research and data collection on weather, students invite community and family members to a WinterFest Celebration to watch their *Photostories* and share the information they discovered about Snowflake Bentley. Soon, the whole community gains a new appreciation for this famous Vermonter!

Student Standards – The following NETS-S are noted in the Scenario:

3. Research and Information Fluency – A, B, C
6. Technology Operations and Concepts – A, B

Teacher Standards – Teachers who teach this unit address the following NETS-T:

1. Facilitate and Inspire Student Learning and Creativity- B, D
2. Design and Develop Digital- Learning Experiences and Assessments- B, C,
3. Model Digital-Age Work and Learning – B, C, D
4. Promote and Model Digital Citizenship and Responsibility – A, B, D
5. Engage in Professional Growth and Leadership

Content Grade Expectations

The scenario writer has identified the following content grade expectations that s/he felt might be assessed in this scenario. In most of these scenarios, there may well be opportunities to assess other or additional content grade expectations across a variety of disciplines. If you are interested in developing a unit or lessons based on the following scenario, and you don't see any grade expectations in your content area, we encourage you to capture the ideas presented in the scenario and make it your own by adding components that address the grade expectations you are most interested in assessing.

R1: 7 Uses comprehension strategies (flexibly and as needed) while <u>reading</u> or listening to literary and informational text.
EXAMPLES of reading-comprehension strategies might include:

- using prior knowledge;

H&SS1-2:6 - Students make connections to research by…

- Discussing if their findings answered their research question.
- Proposing solutions to problems and asking other questions.

H&SS1-2:7- Students communicate their findings by…

- Speaking, using pictures, (including captions) or creating a simple report or "painted essay" containing a focus statement, details, and conclusions.
- predicting and making simple text-based inferences;
- generating clarifying questions;
- constructing sensory images (e.g., making pictures in one's mind); or making connections (text to self, text to text, and text to world)

R1: 12 Demonstrate initial understanding of informational texts (expository and practical texts) by…

- Obtaining information, using text features such as title and illustration (e.g., "From the title, what do we think this book will tell us?")
- Using explicitly stated information to answer questions
  EXAMPLE: "Where do penguins live?"

H&SS1-2:7- Students communicate their findings by…

- Speaking, using pictures, (including captions) or creating a simple report or "painted essay" containing a focus statement,

H&SS 1-2:6 - Students make research to connections by...

- Discussing if their findings answered their research question.
- Proposing solutions to problems and asking other questions.
- Establishing a clear topic
- <u>Distinguishing among a variety of types of text (e.g., informational texts: children's magazines, children's</u> <u>newspapers, lists, simple directions</u>)

Standard 1.23: Poetry
Standard 5.11: Literary Elements and Devices
Expressive Writing: Poetry
W2: 19 In writing poetry, use language effectively by…

- Using simple images and forms to describe
  EXAMPLES: concrete poems, shape poems, rhymes