Survival of the Fittest: Fiction vs. Science

Instructional Unit Resource Guides
Based on Principles of Universal Design and Differentiated Instruction

Garden City Elementary School
Focus Group: Fifth and Sixth Grade
Created by: Stacey Bowen
2005-2006

Authors' Note

During the first nine weeks, the data from the previous year, survey results, and running records for students revealed that the students did not retain needed skills over the summer in the areas of reading comprehension and written expression. The data gathered strongly suggested that there were continuous gaps in student achievement and progress with several groups, males and males with special needs.

Increasing the amount of time that students spend reading is essential, especially for the breakout groups. The goal of unit, *Survival of the Fittest: Fiction vs. Science*, was to place a fictional novel to the test to see if it could survive the criteria of a real world event. *Brian's Winter,* selected fictional novel, written Gary Paulsen was the key text utilized to spark the interest in the males in class. Throughout our reading of *Brian's Winter*, our class worked beyond reading comprehension to the areas of Science, geography, math, and written expression, to gain a great understanding of the novel.

The following concepts were study while reading *Brian's Winter* and building needed background information to support their reading.

Science:

- Classification of organisms
- Biotic and abiotic factors
- Food chains vs. Food Web
- Study of cells: Comparing and contrasting animal and plant cells
- Role of humans in protecting the environment

Math:

- Portions and fraction of food rations
- Calculating distances-algebra equations
- Estimating and calculating weight
- Problem solving

Written Expression:

- Comparing and contrasting events
- Summarizing the events
- Noting how characters changed throughout the text
- Gathering information on Canada, wolves, and survival skills

Through writing, the students needed to express their ideas clearly and support their conclusions with details, especially for the open-ended questions on the ISTEP test. Students were given differentiate questions, based on their individual skills, designed to look and sound similar to the ISTEP format. My goal was to expose the students to questions in which they must dig and refer to the text to support their answers through writing.

Each of the students was asked to generate a R.A.F.T. project and *Brian's Winter* Journal based on the novel, *Brian's Winter*. Please see examples of each within the lesson.

Writing is not the only area in which technology was utilized while completing our unit on *Survival of the Fittest: Science vs. Fiction*. In sixth grade, my classroom is comprised of reading and writing levels from first grade to eighth grade based on reading assessments. Technology is how I continue to reach all of the learners within my sixth grader class. The SMARTboard, digital camera, digital video cameras, Windows Media Player, wireless laptops, Alphasmarts, ereader, Write Out Loud program, internet, and

special features of Microsoft Windows were the various forms of technology used by the students. The use of technology traveled beyond the boundaries of the classroom to various other locations, such as on our trips to the Indianapolis Zoo and Bradford Woods Camp. The students used the digital cameras, video camera, and Alphasmarts to provide additional information needed to support their challenge of the novel *Brian's Winter*. Components of the novel were reviewed and investigate by the students on bears, wolves, skunks, camping in winter, building fires, nocturnal animals, and living off the land. The students even were given opportunities for community service projects to give back to the environment during our camping trip to Bradford Woods Camp. Continuously, the use of technology has been a true motivator for all learners in my sixth grade classroom in and out of the boundaries of the classroom.

Survival of the Fittest: Fiction vs. Science

Ms. Stacey Bowen

Garden City Elementary School

Sixth Grade

Indiana State Standards:

Language Arts:

Vocabulary Development

Decoding and Word Recognition

6.1.1
Read aloud grade-level-appropriate poems, narrative text (stories), and expository text (information) fluently and accurately and with appropriate timing, changes in voice, and expression.

Vocabulary and Concept Development

6.1.2
Identify and interpret figurative language (including similes, comparisons that use *like* or *as*, and metaphors, implied comparisons) and words with multiple meanings.

Reading Comprehension

Comprehension and Analysis of Grade-Level-Appropriate Text

6.2.3
Connect and clarify main ideas by identifying their relationships to multiple sources and related topics.

6.2.4
Clarify an understanding of texts by creating outlines, notes, diagrams, summaries, or reports.

Narrative Analysis of Grade-Level-Appropriate Text

6.3.3
Analyze the influence of the setting on the problem and its resolution.

6.3.4
Define how tone and meaning are conveyed in poetry through word choice, figurative language, sentence structure, line length, punctuation, rhythm, alliteration (repetition of sounds, such as *wild and woolly* or *threatening throngs*), and rhyme.

6.3.5
Identify the speaker and recognize the difference between first-person (the narrator tells the story from the "I" perspective) and third-person (the narrator tells the story from an outside perspective) narration.

6.3.6
Identify and analyze features of themes conveyed through characters, actions, and images.

6.3.7
Explain the effects of common literary devices, such as symbolism, imagery, or metaphor, in a variety of fictional and nonfictional texts.

- Symbolism: the use of an object to represent something else; for example, a dove might symbolize peace
- Imagery: the use of language to create vivid pictures in the reader's mind
- Metaphor: an implied comparison in which a word or phrase is used in place of another, such as *He was drowning in money*.

Literary Criticism

6.3.8
Critique the believability of characters and the degree to which a plot is believable or realistic.

Writing Process

Organization and Focus

6.4.1
Discuss ideas for writing, keep a list or notebook of ideas, and use graphic organizers to plan writing.

6.4.2
Choose the form of writing that best suits the intended purpose.

6.4.3
Write informational pieces of several paragraphs that:

- engage the interest of the reader.
- state a clear purpose.
- develop the topic with supporting details and precise language.
- conclude with a detailed summary linked to the purpose of the composition.

6.4.6

Use organizational features of electronic text (on computers), such as bulletin boards, databases, keyword searches, and e-mail addresses, to locate information.

6.4.7
Use a computer to compose documents with appropriate formatting by using word-processing skills and principles of design, including margins, tabs, spacing, columns, and page orientation.

Evaluation and Revision

6.4.8
Review, evaluate, and revise writing for meaning and clarity.

6.4.9
Edit and proofread one's own writing, as well as that of others, using an editing checklist or set of rules, with specific examples of corrections of frequent errors.

6.4.10
Revise writing to improve the organization and consistency of ideas within and between paragraphs.

6.5.2
Write descriptions, explanations, comparison and contrast papers, and problem and solution essays that:

- state the thesis (position on the topic) or purpose.
- explain the situation.
- organize the composition clearly.
- offer evidence to support arguments and conclusions.

6.5.6
Use varied word choices to make writing interesting.

6.5.7
Write for different purposes and to a specific audience or person, adjusting tone and style as necessary.

Capitalization

6.6.4
Use correct capitalization.

Spelling

6.6.5
Spell correctly frequently misspelled words (*their/they're/there, loose/lose/loss, choose/chose, through/threw*).

Technology and Science

6.1.7
Explain that technology is essential to science for such purposes as access to outer space and other remote locations, sample collection and treatment, measurement, data collection and storage, computation, and communication of information.

6.1.8
Describe instances showing that technology cannot always provide successful solutions for problems or fulfill every human need.

6.1.9
Explain how technologies can influence all living things.

Computation and Estimation

6.2.1
Find the mean and median of a set of data.

6.2.2
Use technology, such as calculators or computer spreadsheets, in analysis of data.

Manipulation and Observation

6.2.3
Select tools, such as cameras and tape recorders, for capturing information.

6.2.4
Inspect, disassemble, and reassemble simple mechanical devices and describe what the various parts are for. Estimate what the effect of making a change in one part of a system is likely to have on the system as a whole.

Communication Skills

6.2.5
Organize information in simple tables and graphs and identify relationships they reveal. Use tables and graphs as examples of evidence for explanations when writing essays or writing about lab work, fieldwork, etc.

6.2.6
Read simple tables and graphs produced by others and describe in words what they show.

6.3.19
Investigate that materials may be composed of parts that are too small to be seen without magnification.

Diversity of Life

6.4.1
Explain that one of the most general distinctions among organisms is between green plants, which use sunlight to make their own food, and animals, which consume energy-rich foods.

6.4.2
Give examples of organisms that cannot be neatly classified as either plants or animals, such as fungi and bacteria.

6.4.3
Describe some of the great variety of body plans and internal structures animals and plants have that contribute to their being able to make or find food and reproduce.

6.4.4
Recognize and describe that a species comprises all organisms that can mate with one another to produce fertile offspring.

6.4.5
Investigate and explain that all living things are composed of cells whose details are usually visible only through a microscope.

6.4.6
Distinguish the main differences between plant and animal cells, such as the presence of chlorophyll and cell walls in plant cells and their absence in animal cells.

6.4.7
Explain that about two-thirds of the mass of a cell is accounted for by water. Understand that water gives cells many of their properties.

Math

6.2.4
Explain how to multiply and divide positive fractions and perform the calculations.

6.2.5
Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation.

6.2.6
Interpret and use ratios to show the relative sizes of two quantities. Use the notations: a/b, a to b, $a:b$.

6.2.7
Understand proportions and use them to solve problems.

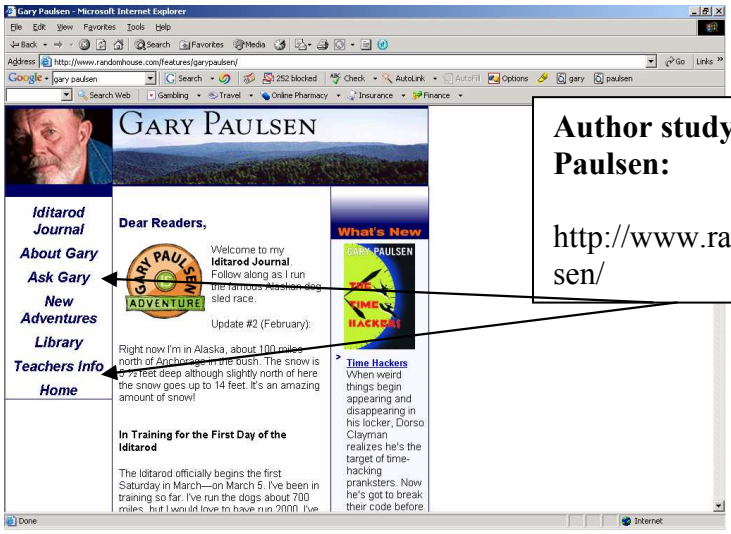
6.5.1
Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.

6.5.2
Understand and use larger units for measuring length by comparing miles to yards and kilometers to meters.

6.5.3
Understand and use larger units for measuring area by comparing acres and square miles to square yards and square kilometers to square meters.

Resources

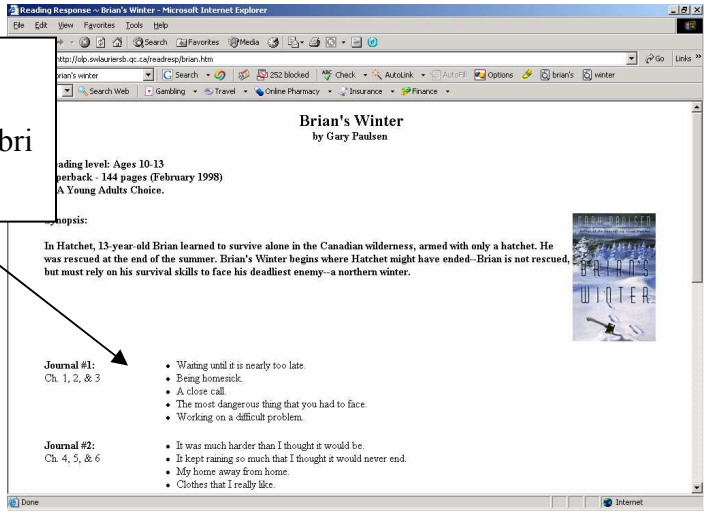
The following resources can be utilized by teachers or students.

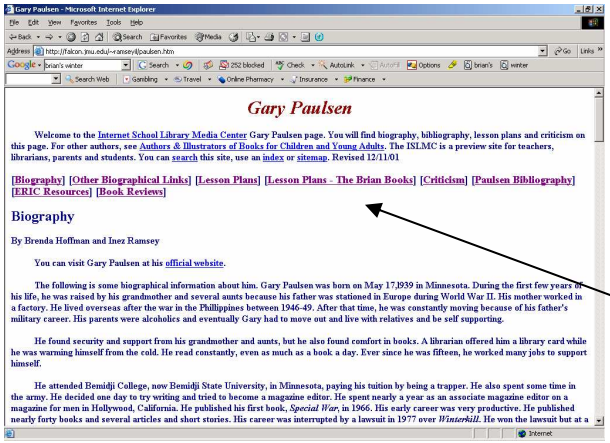


Author study and information on Gary Paulsen:

http://www.randomhouse.com/features/garypaulsen/

Questions and journal ideas provided for Brian's Winter
http://olp.swlauriersb.qc.ca/readresp/brian.htm



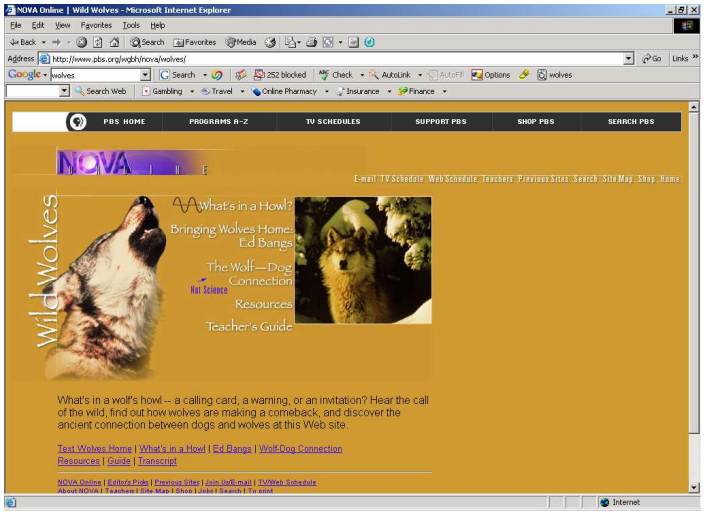


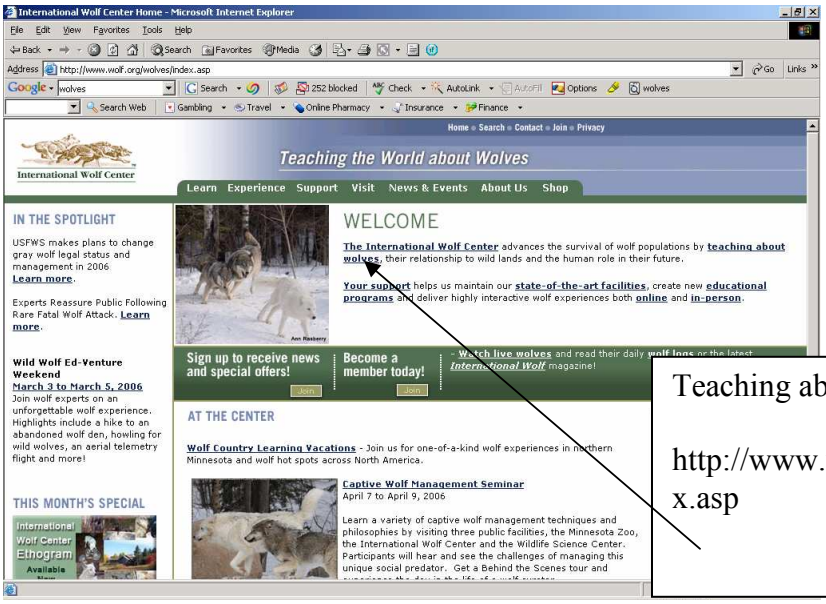
Information about other Gary Paulsen novels and ideas for survival skill/kits are provided.

http://falcon.jmu.edu/~ramseyil/paulsen.htm

Wolves Information and Science link

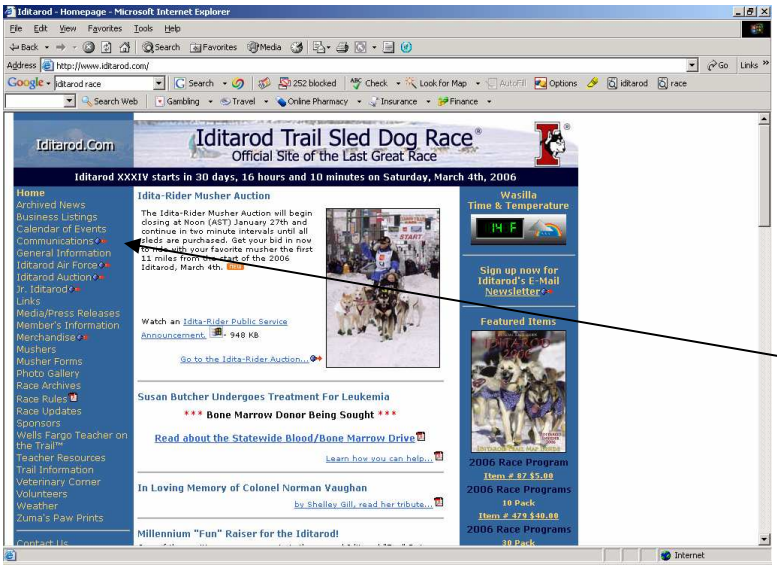
http://www.pbs.org/wgbh/nova/wolves/





Teaching about Wolves

http://www.wolf.org/wolves/index.asp

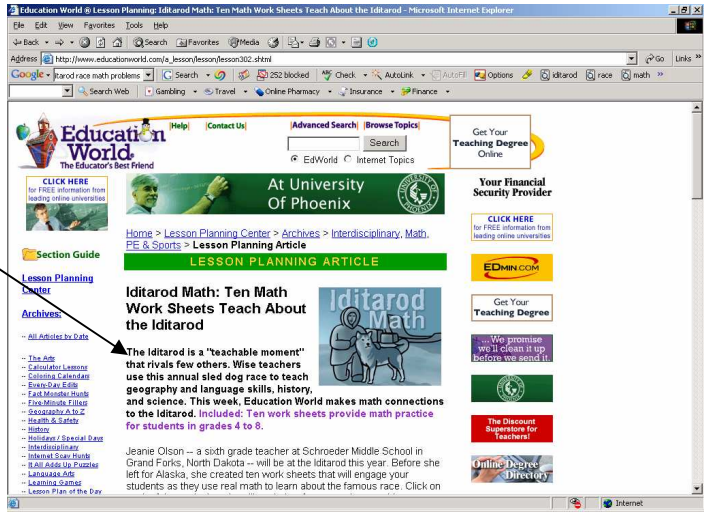


Iditarod Race in Canada- Great resource to see Brian's environment.

http://www.iditarod.com/

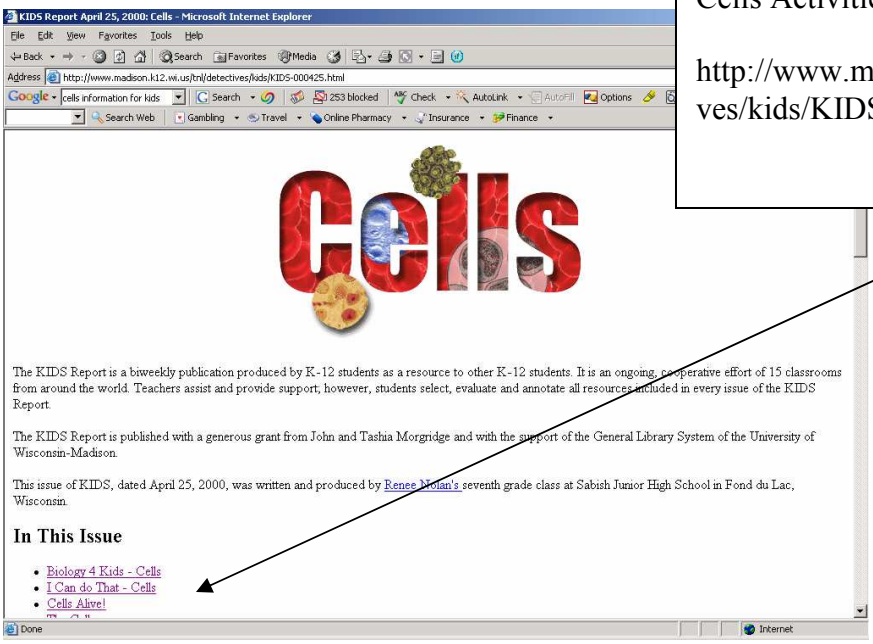
Education World-Math Problem Solving

http://www.educationworld.com/a_lesson/lesson/lesson302.shtml



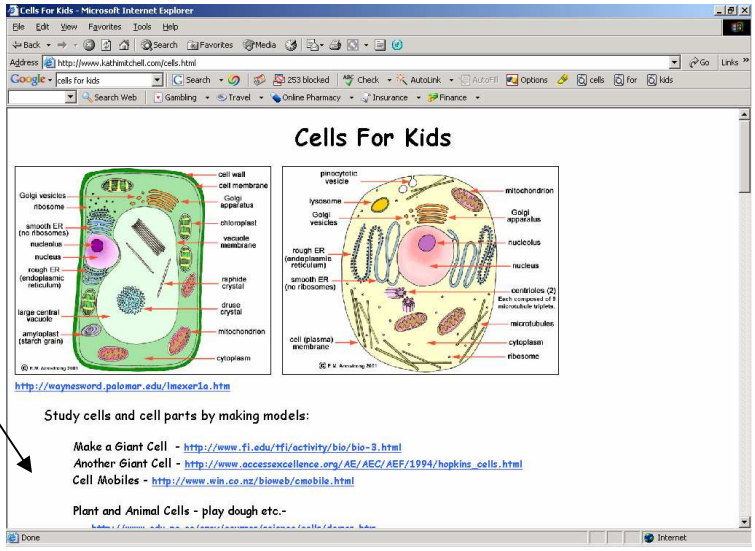
Cells Activities and Information

http://www.madison.k12.wi.us/tnl/detectives/kids/KIDS-000425.html



Cells

http://www.kathimitchell.com/cells.html



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Teacher Created Resources

Name:_____

Brian's Winter

RAFT Project

Choose one Role, one Audience, one Format, and one Topic. Your work is due on _____. I expect EXCELLENT WORK!

Choices:

Role	Audience	Format	Topic
Brian Robeson	Park Rangers	"King of the Jungle/Forest" Written and Given Speech	"I'm a survivor!" A Survival Guide
"Betty" the Skunk	Brian's Family	One page Persuasive Letter	"There is no place like home."
The Moose	The Hatchet or bow an arrow, "medicine"	Directions: How to Book	"Living off the Land" Nature provides all of the things you need.
"Mother Nature"	Brian	Diary Entry	"Change is good!"

Please use the back of this form to plan your work.

Welcome to *Brian's Winter*!

This is your official journal of Brian's conquest and challenges. It is your responsibility to keep a daily record of the events and progress throughout the novel. Below is a running list of the information that you should include daily.

- **Date**
- **Chapter number**
- **Brian's Duties**
- **Summary of his progress**
- **Challenges**
- **"What Holds Up Your Tent?"-Most important survival skills that Brian used that day or a suggestion you would give him.**
- **What Lifelong Guidelines did Brian use?**
- **Wow! I made a connection to….**
- **Oh! I predict ….**

Sample Journal Entry:

9/20/05

Chapter: One

Brian has many duties to complete throughout the day. Today, Brian had to check his fishing lines, remove fish to store for later, air out his sleeping bag, tend to his toilet, hunt for food, cook the food, and bank the fire for night. He mentioned that on page 12, "But that wasn't all of his life and it seemed that everything doubled." He has more and more work to do each day. Brian had a long day of chores, such as collecting the endless amount of firewood needed. He also had difficulty hunting and killing his dinner, a rabbit. One major challenge that he faced while hunting was that his gun broke. The firing pin could not be repaired without special tools that Brian did not have. Brian realized he must have food to survive. Brian used improvising to "Hold Up His Tent." Instead of using the rifle to kill the rabbit, Brian used the bow and arrow he had made. After all of that trouble, the rabbit dinner tasted like rubber. Gross!

WOW! While reading, I made a text-to-self connection. I realized that I improvised on Monday night when I lost power during the storm. I had to use a flashlight to see because the lights in my house did not work. Brian and I were both resourceful. In chapter two, I predict Brian will kill an animal much faster this time as he gets use to his bow and arrow. I cannot wait to find out what happens next! This novel is full of suspense!

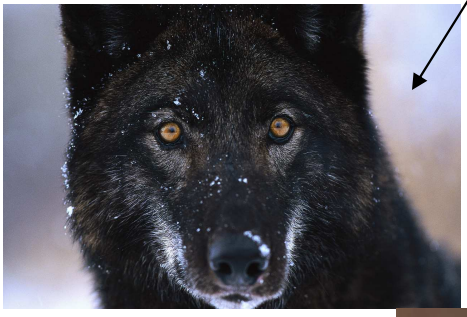
Student Examples Utilizing Various Forms of Technology

Example of Student's Work

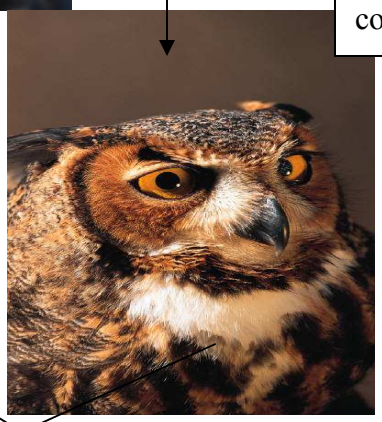
My Brian's Winter Scrapbook

While reading Brian's Winter, I had to justify my ideas, like a detective and lawyer, about if the novel Brian's Winter could really happen.

Science and research on the internet were important to prove my answers to my teacher and other students in class.



I learned about how organisms are classified in nature, like a rock or a leaf. The class went on a scavenger hunt for organisms, biotic, and abiotic factors around us. Here is a student on the hunt. Brr! It was cold that day!



Here is a student working on our Alphasmarts to make her debate based on *Brian's Winter* and life.

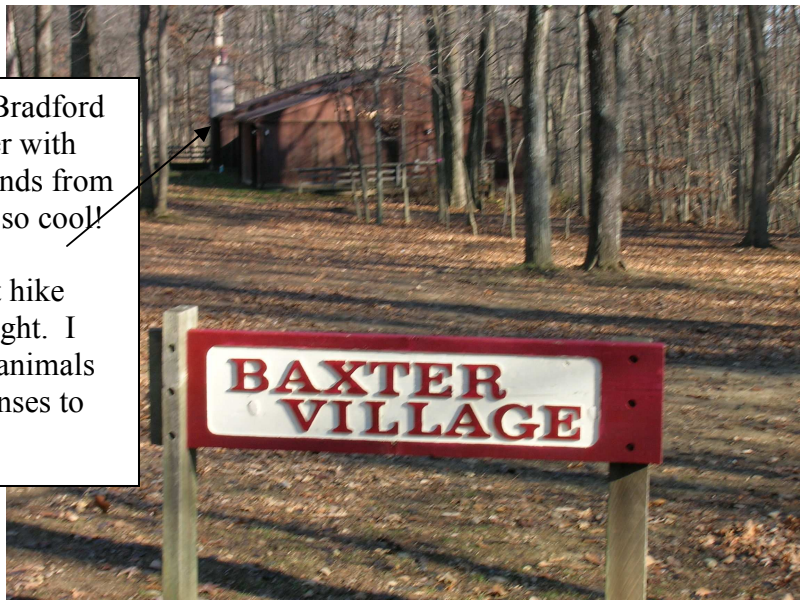
I got to summarize the chapter 6 by writing on the SMARTboard in my class.

The boys are finding information in the book to write in the journals.

I learned the *Brian's Winter* is a realistic fiction novel. There are lots of different types of novels. All books are part of a category like candy or leaves are in a category like a filing cabinet.

I went camping at Bradford Woods in the winter with my teacher and friends from sixth grade. It was so cool!

We went on a night hike and stayed up all night. I learned about why animals have specialized senses to life at night.



I learned how to build a shelter and fire like Brian in the story.

The environment is important. Everyone had to work on helping out around camp. My team won the clean up contest against my teacher. There were a ton of leaves and mulch to clean up and rake. The leaves would not let in sunlight for the grass to grow.

Bowen 2005-2006 GC

Ms. Bowen's Student

Student Response Preferences Survey Results

The survey was given in early October to determine the variety of different ways the students would like to response to open-ended questions and learn about technology. The results of the survey allowed me to incorporate choices for students and aided in creating several assignments throughout the first semester.

Charted results included.

Modifications

Planning for Academic Diversity