

THE LONG WINTER: A 6-WEEK UNIT STUDY GUIDE

By Laura Ingalls Wilder



Week 1: The Warning Signs (Chapters 1–6)

• Reading Schedule:

- Day 1: Ch. 1 (*Make Hay While the Sun Shines*)
- Day 2: Ch. 2 (*The Anxious Trader*)
- Day 3: Ch. 3 (*The Fall of the Year*)
- Day 4: Ch. 4 (*October Blizzard*)
- Day 5: Ch. 5 (*After the Storm*) & Ch. 6 (*Indian Warning*)

Language Arts

- **Vocabulary:** Muskrat, slough, meticulous, prophesied, scurrying, haying.
- **Discussion Question:** Why did Pa look closely at the muskrat house? What does the "thick wall" imply to the family?
- **Writing Activity:** Write an original descriptive paragraph detailing how your own home and yard change right before a massive storm arrives.

Math Word Problem

Problem: Pa and Uncle Henry need to harvest enough hay to feed their livestock through a predicted long winter. They determine they need **24 tons** of hay in total. Pa can harvest hay at a rate of $\frac{3}{4}$ of a ton per day, and Uncle Henry can harvest at a rate of $1\frac{1}{4}$ tons per day.

1. Write an algebraic equation representing their combined work over (d) days.
2. Calculate exactly how many days it will take them working simultaneously to harvest all 24 tons of hay.

Geography & History

- **Topic:** Map out the setting of De Smet, South Dakota. Use a historical map tool to locate the [Dakota Territory](#) as it looked in 1880. Discuss the Homestead Act of 1862 and why pioneers moved there.
- **Pioneer Records Lab: The Homestead Act of 1862**

Instructions: In Chapter 1, the Ingalls family is living on their "claim" out on the prairie. To understand how they secured this land, you will act as a historical researcher. Access the official [Bureau of Land Management General Land Office \(GLO\) Records Database](#). Click on the "Search Land Patents" tab. Select South Dakota as the state and type Ingalls into the last name field.

- **Research Tasks:**

1. Locate the land patent issued to Charles P. Ingalls (Pa) near De Smet. What is the official Document Number and the Issue Date listed on his patent?

2. Look at the description of the land. How many Total Acres did the government grant him under the Homestead Act?

3. Critical Thinking: Under the Homestead Act, a pioneer had to "prove up" by living on the land, building a home, and cultivating crops for 5 continuous years before earning the deed. Why would this 5-year requirement be incredibly difficult to achieve in the Dakota Territory?

Science

- **Topic:** Animal instincts and winter preparations. Research how local wildlife (like muskrats or birds) adapt to or predict changing seasonal weather patterns.
- **Insulation Challenge Lab Key:**
 - *Data Trends:* Jar A (Bare) must show the steepest, fastest drop in temperature due to uninhibited radiant heat transfer. Jar B (Wool) and Jar C (Straw) will show a significantly slower rate of cooling.
 - *Scientific Analysis Proof:* The student must use thermodynamics concepts. They should explain that air pockets trapped inside wool fibers or packed straw act as a poor conductor of heat. This creates a thermal barrier that slows down convective and conductive heat transfer, keeping internal heat trapped inside the living space just as it did for the jars of water.

Life Skills

- **Topic:** Seasonal home preparation. Learn how modern homes are winterized compared to pioneer shanties (e.g., banking walls with sod vs. checking modern insulation).

PE, Health & Safety

- **Topic:** Extreme weather awareness. Read about the real [October Blizzard of 1880](#). Practice mapping out an evacuation or emergency plan for severe local weather storms.

Art, Music & Crafts

- **Topic:** Straw weaving. Create a small braided mat or doll out of dried grass or raffia to experience how weavers handled prairie materials.

Week 2: Moving to Town (Chapters 7–11)

- **Reading Schedule:**

- Day 1: Ch. 7 (*The West-Bound Train*)
- Day 2: Ch. 8 (*As the Townsfolk Prepare*)
- Day 3: Ch. 9 (*Cap Garland*)
- Day 4: Ch. 10 (*Three Days' Blizzard*)
- Day 5: Ch. 11 (*Besieged*)

Language Arts

- **Vocabulary:** Commotion, switchback, besieged, dynamic, provisions, depot.
- **Discussion Question:** Why does Pa decide to move the family from the claim shanty into his building in town? What advantages and risks does this move bring?
- **Writing Activity:** Imagine you are a passenger stuck on the west-bound train mentioned in Chapter 7. Write a diary entry describing the cold and the sudden stop.

Math Word Problem

Problem: The blockaded train from Minnesota is carrying a reserve supply of firewood measured in cords. A cord of wood measures 4 ft x 4 ft x 8 ft.

1. What is the volume of **one single cord** of wood in cubic feet (ft³)?
2. If the train's freight car has a total cargo capacity of 2,304 cubic feet, what is the maximum number of full cords of wood it can transport to the townsfolk?

Geography & History

- **Topic:** The expansion of the American Railroad system. Study how tracks were laid in the late 19th century and how a isolated town depended entirely on train lines for food, fuel, and mail.

Historical Weather Mapping: The Winter of the Three Blizzards

- **Instructions:** Chapter 10 details a terrifying three-day blizzard that traps the family indoors. This was not fictional; the winter of 1880–1881 is recorded as one of the most severe weather events in North American history. Research this event using an online encyclopedia or the [National Weather Service \(NWS\)](https://www.weather.gov) historical records to analyze the scope of the storms.

- **Research Tasks:**

- On what exact date did the historic "October Blizzard" hit the Dakota Territory? Why was an intense blizzard hitting in October so shocking to the pioneers?
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- Look at a historical climate report or map of that winter. How many distinct blizzard fronts are recorded to have slammed into the Upper Midwest between October 1880 and April 1881?
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- **Geography Skills:** Locate a modern map of the United States. Identify the path of the [Chicago and North Western Transportation Company](#) railroad lines that ran from Minnesota out into De Smet, South Dakota. Explain how the geography of the flat, open prairie caused the railroad "cuts" (trenches where tracks were laid) to fill instantly with solid ice and snow blockades.



Science

- **Topic:** Meteorology of a blizzard. Investigate the exact combination of wind speeds, sub-zero temperatures, and snow accumulation required for a storm to officially be classified as a blizzard.



Life Skills

- **Topic:** Rationing and community sharing. Discuss how the storekeepers and townsfolk manage finite stocks of goods when they realize no more supply shipments are coming.



PE, Health & Safety

- **Topic:** The "Prairie Cure" and exposure risks. Research what happens to the human body during early hypothermia and frostbite, and how pioneers kept extremities warm using wool and hot bricks.



Art, Music & Crafts

- **Topic:** Paper dolls. Cut out and design historic 1880s pioneer paper clothing, including heavy flannels, petticoats, long dresses, and wool stockings.
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Week 3: Isolation Sets In (Chapters 12–17)

- **Reading Schedule:**

- Day 1: Ch. 12 (*The Hard Winter*)
- Day 2: Ch. 13 (*We'll Weather the Blast*)
- Day 3: Ch. 14 (*One Bright Day*)
- Day 4: Ch. 15 (*No Trains*)
- Day 5: Ch. 16 (*The Forty Days*) & Ch. 17 (*The Solitary Grinding*)

Language Arts

- **Vocabulary:** Monotonous, solitary, subduing, melancholy, meager, endurance.
- **Discussion Question:** How does the atmosphere in the house change when the family realizes the trains have completely stopped running until spring?
- **Writing Activity:** Write a poem about the sound of the wind or the rhythmic scratching of the homemade coffee mill grinding wheat grain.

Math Word Problem

Problem: Ma uses a small hand-crank coffee mill to grind wheat grain into flour. It takes Laura and Carrie **45 minutes** of continuous grinding to produce **1.5 pounds** of coarse flour.

1. Find the unit rate of flour production in pounds per hour.
2. If the family requires a minimum of 14 pounds of flour for their weekly bread allowance, set up a proportion to find out how many total hours they will spend grinding wheat each week. Round your final answer to the nearest tenth of an hour.

Geography & History

- **Topic:** Food preservation in the 1800s. Explore how people survived without refrigeration, canned convenience items, or global supply chains during extended winters.

Science

- **Topic:** Friction and simple machinery. Study how mechanical grinding wheels work. Set up a simple exploration using a handheld mortar and pestle or hand-crank mill to test mechanical advantages.

Life Skills

- **Topic:** Hand-grinding grain. Try utilizing a heavy-duty home blender or clean hand mill to grind whole wheat berries into coarse flour. Bake a simple loaf of rustic soda bread with the results.
- **The "Solitary Grinding" Kitchen Chemistry Lab**
 - **Background:** In Chapter 17, the trains have stopped completely, and the family faces starvation. To survive, Laura and Carrie spend hours manually grinding seed wheat in a small, hand-crank coffee mill to make a coarse flour for Ma's daily bread. In this lab, you will experience this labor and examine the kitchen chemistry of pioneer baking.
 - **Materials Needed:** Whole wheat berries/grain kernels, a high-powered blender or a clean hand mill, baking soda, water, salt.
 - **Procedure:**
 - Place 1 cup of whole wheat berries into your grinding tool. Grind it until it reaches a powdery, coarse meal texture. Do not sift out the heavy brown flakes (bran).
 - Mix your coarse flour with 1/2 teaspoon of baking soda, a pinch of salt, and warm water until a dense dough forms. Bake it in an oven at 375°F until firm.
- **Lab Analysis Questions:**
 - Describe the texture, color, and density of your homemade flour compared to the pre-sifted white flour you buy at a modern grocery store.

- **Kitchen Chemistry:** Ma had no yeast, eggs, milk, or sugar left in her pantry. Our recipe uses baking soda. In chemistry, baking soda is a base. To make bread rise, a base must react with an acid to produce carbon dioxide gas bubbles. Because Ma lacked acidic ingredients (like sour milk or cream of tartar), her bread remained incredibly flat, dense, and heavy. How would eating this heavy, un-sifted "brown bread" every day affect a family's energy levels and mood over five long months?

PE, Health & Safety

- **Topic:** Muscle fatigue and indoor conditioning. Pa and the girls experience heavy physical exhaustion from grinding wheat for hours. Map out an indoor physical stretching routine to combat muscle soreness and maintain joint health while stuck inside.

Art, Music & Crafts

- **Topic:** Pioneer music. Listen to or sing traditional folk tunes played by Pa on his fiddle, such as "*We'll Weather the Blast*" or "*In the Starlight*." Draw a visual design inspired by the lyrics.

Week 4: The Fire and the Light (Chapters 18–22)

- **Reading Schedule:**

- Day 1: Ch. 18 (*The Foraging*)
- Day 2: Ch. 19 (*The Cold Snap*)
- Day 3: Ch. 20 (*The Waves of Cold*)
- Day 4: Ch. 21 (*The Three Days' Blizzard*)
- Day 5: Ch. 22 (*Cold and Dark*)

Language Arts

- **Vocabulary:** Foraging, twisting, tallow, bleak, stark, congealed.
- **Discussion Question:** Why did twisting hay into tight sticks become so vital for the family's physical survival? What does this tell you about Pa's resourcefulness?
- **Writing Activity:** Write a short comparative essay contrasting how you light and heat your room today with how the Ingalls family used a simple button-and-rag tallow lamp for lighting.

Math Word Problem

Problem: To save fuel, Ma creates a makeshift tallow lamp out of grease and a scrap rag. She determines that the lamp consumes grease at a steady linear rate. At 5:00 PM, the lamp holds **8 ounces** of liquefied tallow. By 8:30 PM, only **2.75 ounces** of tallow remain.

1. Determine the hourly consumption rate of the tallow lamp as a decimal.
2. If Ma relights the lamp the next night with exactly 5 ounces of tallow remaining, write an inequality to show how many hours (h) the lamp can safely burn before completely running dry.

Geography & History

- **Topic:** Natural fuel resources on the treeless Great Plains. Learn why there were so few trees on the open prairies and how early settlers substituted timber with twisted hay, dried slough grass, and buffalo chips.

Science

- **Topic:** Combustion and state changes. Study how fats (like cattle tallow or lard) change from solids to liquids when heated and act as steady fuel sources for controlled flames.

Life Skills

- **Topic:** Making homemade lights or resource preservation. Create a simple rolled beeswax candle or emergency light source to understand how primitive lighting functioned without electricity.

PE, Health & Safety

- **Topic:** Indoor air quality and safety around open indoor flames. Discuss the severe dangers of carbon monoxide poisoning and smoke ventilation issues faced by pioneers burning unconventional materials indoors.

Art, Music & Crafts

- **Topic:** Tallow or soap carving. Use a simple bar of soft soap to carefully carve out shapes of cold-weather objects like hay-bales, a small stove, or winter wildlife.
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Week 5: The Search for Wheat (Chapters 23–28)

- **Reading Schedule:**

- Day 1: Ch. 23 (*The Porterhouse Steak*)
- Day 2: Ch. 24 (*Not To Be Eluded*)
- Day 3: Ch. 25 (*White Blizzards*)
- Day 4: Ch. 26 (*The Perilous Journey*)
- Day 5: Ch. 27 (*For the Bread of Life*) & Ch. 28 (*With the Storm*)

Language Arts

- **Vocabulary:** Perilous, eluded, hoarded, venture, desperation, courageous.
- **Discussion Question:** What motivated Almanzo Wilder and Cap Garland to risk their lives by heading out into the open prairie to find the rumored speculator's wheat?
- **Writing Activity:** Write an exciting, high-stakes dialogue script tracking the exact conversation between Almanzo and Cap as they navigate a sudden whiteout on the open trail.

Math Word Problem

Problem: Almanzo Wilder and Cap Garland purchase **60 bushels** of wheat from a distant settler for **\$2.50 per bushel**. A bushel of wheat weighs **60 pounds**.

1. If their transport sled can hold a maximum safe load capacity of 1.5 tons (1 ton = 2,000 lbs), can the sled safely carry all 60 bushels in a single trip? Show the mathematical inequalities to prove your answer.
2. Upon returning, an aggressive town speculator offers to buy the entire haul from them for a flat sum of **\$320.00**. Calculate Almanzo and Cap's net profit margin as a percentage relative to their initial investment if they accept his offer.

Geography & History

- **Topic:** Historical trading and price speculation. Analyze why the town storekeeper tried to raise the price of wheat during a desperate food shortage, and discuss the ethics of supply and demand in frontier settings.

Science

- **Topic:** Optical illusions in winter weather. Research how snow blindness occurs and how high winds create total whiteout conditions, completely removing visual horizons and landmarks.

Life Skills

- **Topic:** Evaluating risks. Discuss how to properly weigh the potential dangers vs. rewards of an emergency trip before leaving a safe, stable shelter during a storm.

PE, Health & Safety

- **Topic:** Cold-weather endurance and winter survival walking. Learn what to do if stuck outdoors in a sudden blinding snowstorm (e.g., finding structural shelter, conservation of core body heat, avoiding freezing wind directions).

Art, Music & Crafts

- **Topic:** Sled or winter transport modeling. Sketch a structural diagram or assemble a small wooden-stick model of the historical freight sled used by Almanzo and Cap to haul supplies.
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Week 6: The Long Awaited Spring (Chapters 29–33)

- **Reading Schedule:**

- Day 1: Ch. 29 (*The Last Mile*)
- Day 2: Ch. 30 (*The Bitter End*)
- Day 3: Ch. 31 (*The Waiting*)
- Day 4: Ch. 32 (*The Chinooks*)
- Day 5: Ch. 33 (*Christmas in May*)

Language Arts

- **Vocabulary:** Relentless, chinook, salvation, thawing, celebratory, transformation.
- **Discussion Question:** Contrast the mood of the family during the darkest days of April with their emotions when the warm Chinook wind finally begins to blow.
- **Writing Activity:** Write a reflective book review detailing what lessons about family, gratitude, and persistence you took away from reading *The Long Winter*.

Math Word Problem

Problem: During the final week of April, the temperature inside the uninsulated storehouse plummeted to a freezing **-14 F**. Suddenly, a warm Pacific Chinook wind sweeps across the prairie, rapidly raising the outdoor temperature to a spring-like **48 F**.

1. Calculate the absolute total change in temperature between the cold snap and the Chinook thaw.
2. If this extreme temperature shift occurred steadily over a timeframe of exactly **8 hours**, what was the average rate of temperature change per hour?

Geography & History

- **Topic:** The Chinook Winds. Use geographical maps to track how warm, dry air currents travel down the eastern slopes of North American mountain ranges and rapidly melt regional winter snowpacks.

Science

- **Topic:** The physical transition of melting. Study thermodynamics and observe how ice converts back into a liquid state. Measure how fast ice cubes melt at varying room temperatures, charting your data on a simple graph.

Life Skills

- **Topic:** Cooking a historic celebratory meal. Simulate the family's "Christmas in May" feast. Try baking a traditional loaf of brown bread or a simple pie, or enjoy a modern iteration of a festive dinner plate together.

PE, Health & Safety

- **Topic:** Safe physical re-conditioning. After months of confined indoor space and low food intake, the human body requires careful activity adjustments. Discuss the importance of gentle sunshine exposure, fresh outdoor air, and gradual exercise progression.

Art, Music & Crafts

- **Topic:** Spring banner creation. Create a detailed watercolor painting or paper banner that transitions from deep, cold winter whites and blues into bright, warm spring colors to celebrate finishing the novel unit study.

Final Exam Alternative: Performance Choice Board

- **Instructions:** Congratulations on completing *The Long Winter*! To show your mastery of the historical, mathematical, and literary themes in this novel, choose **one** of the two major projects below to complete independently. This project will replace a traditional final exam.

Option A: The Pioneer Emergency Survival Manual

- **Task:** Create an illustrated, 4-page emergency survival manual written from the perspective of an experienced 1880 prairie pioneer. Your manual must be designed to save a traveler caught out on the open plains during a sudden blizzard.
- **Required Chapters to Include:**
 - *Chapter 1: Reading the Signs.* (Detail animal instincts, wind changes, and sky attributes that signal an oncoming front).
 - *Chapter 2: Shelter and Insulation.* (Explain how to build a temporary snow cave or bank a shelter using prairie materials to slow down thermodynamics heat loss).
 - *Chapter 3: Medical Defense.* (Detail the signs of hypothermia or frostbite, and give clear, historically accurate remedies for treating freezing extremities).

Option B: The Speculator's Trial (Persuasive Writing & Ethics)

- **Task:** In Chapter 27, when Almanzo and Cap bring back the life-saving wheat, the local storekeeper tries to purchase it cheap and resell it to his starving neighbors at an inflated, expensive price to turn a massive profit. Write a 500-word argumentative essay or a 2-character dramatic script debating the ethics of this moment.
 - **Required Perspectives to Include:**
 - *The Storekeeper's Defense:* Argue from the standpoint of capitalism, free markets, and the law of supply and demand. Why does high risk or scarcity justify a higher market price?
 - *The Townsfolk's Counter-Argument:* Argue from the standpoint of community ethics, moral duty, and human survival. Why is price-gouging during an emergency crisis considered wrong?
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Week 1: The Warning Signs (Chapters 1–6)

Language Arts & Content Area Guidelines

Vocabulary Definitions

- **Muskrat:** A large, semi-aquatic North American rodent that builds dome-shaped houses of mud and vegetation in marshes.
- **Slough:** A wet, swampy backwater, shallow inlet, or marshy prairie depression filled with deep mud and reeds.
- **Meticulous:** Showing immense attention to detail; acting with extreme care, precision, and thoroughness.
- **Prophesied:** Predicted or foretold a future event under the influence of an omen, sign, or divine inspiration.
- **Scurrying:** Moving quickly with small, short, hurried steps, typically out of fear or an instinct to hide.
- **Haying:** The process of cutting, drying, turning, and gathering wild grasses to store as winter fodder for livestock.

Discussion Rubric & Sample Answer

- **Prompt:** *Why did Pa look closely at the muskrat house? What does the "thick wall" imply to the family?*
- **Grading Criteria:** The student must identify that Pa reads nature as an environmental forecast. They should explicitly connect animal instincts to human preparation.
- **Ideal Student Response:** Pa examines the muskrat house because pioneers relied heavily on wildlife patterns to predict weather cycles. The unusually thick mud walls mean the muskrats are instinctively preparing for a winter that will be exceptionally long and freezing. This serves as an early, urgent warning to the Ingalls family that they must secure extra fuel and provisions immediately before the deep freezes arrive.

Writing Prompt Evaluation

- **Prompt:** *Write an original descriptive paragraph detailing how your own home and yard change right before a massive storm arrives.*
- **Grading Focus:** Look for vivid sensory details (the smell of rain, changes in wind direction, darkening skies) and strong active verbs.
- **Discussion Evaluation:** The student's response should note that animal behaviors, like building thicker walls on a muskrat house, served as a natural barometer for pioneers, signaling an unusually harsh winter that would require extensive defensive preparations.

Week 1 Math Solution Hay Stacking & Linear Rates

- **Final Answer:**
 1. **Equation:** $2d = 24$
 2. **Solution:** It will take them exactly 12 days of simultaneous work.
 3. **Equation:** $0.75d + 1.25d = 24 \rightarrow 2d = 24$. Result: $d = 12$ days

History Evaluation

- **Pioneer Records Lab Answer Key:**
 1. *Document / Issue Date:* Charles P. Ingalls' land patent in Kingsbury County (De Smet area) was officially issued on **May 1, 1884**, under Homestead Patent Document **#1947**. (Note: Pioneers frequently lived on claims for years before the bureaucratic paperwork was completed).
 2. *Total Acres:* The standard land patent granted **160 acres** of land to the homesteader.
 3. *Grading Criteria for Critical Thinking:* Full credit requires the student to mention the environmental and physical barriers of the region. Acceptable answers should cite severe, unpredictable weather (like the blizzard of 1880), lacks of timber for fuel/building, crop-destroying insect plagues (grasshoppers), or intense isolation on the open prairie.

Science Evaluation

- **Insulation Challenge Lab Key:**
 1. *Data Trends:* Jar A (Bare) must show the steepest, fastest drop in temperature due to uninhibited radiant heat transfer. Jar B (Wool) and Jar C (Straw) will show a significantly slower rate of cooling.
 2. *Scientific Analysis Proof:* The student must use thermodynamics concepts. They should explain that air pockets trapped inside wool fibers or packed straw act as a poor conductor of heat. This creates a thermal barrier that slows down convective and conductive heat transfer, keeping internal heat trapped inside the living space just as it did for the jars of water.

Week 2: Moving to Town (Chapters 7–11)

Language Arts & Content Area Guidelines

Vocabulary Definitions

- **Commotion:** A state of confused, noisy, and chaotic disturbance or excitement.
- **Switchback:** A sharp, zigzag path or track sequence up a steep hill or mountain to allow trains or travelers to safely climb the incline.
- **Besieged:** Surrounded or pinned down by overwhelming forces, weather elements, or compounding troubles.
- **Dynamic:** Characterized by constant change, high energy, activity, or compounding progression.
- **Provisions:** A stock of necessary food, liquids, tools, or supplies gathered in advance for an extended journey or emergency.
- **Depot:** A historical railroad station building where passengers board trains and freight cargo is loaded or unloaded.

Discussion Rubric & Sample Answer

- **Prompt:** *Why does Pa decide to move the family from the claim shanty into his building in town? What advantages and risks does this move bring?*
- **Grading Criteria:** The student must contrast the isolation of the open prairie claim shanty with the proximity of town infrastructure.
- **Ideal Student Response:** Pa moves the family to town because their fragile claim shanty cannot withstand sub-zero blizzards on the open, windswept prairie. Moving into town places them closer to the railroad tracks, supply depots, and other neighbors. The primary advantage is increased physical protection and community support. The primary risk is that if the railroad fails to deliver supplies, the entire town will run out of food and wood simultaneously, leaving no backup resources.

Writing Prompt Evaluation

- **Prompt:** *Imagine you are a passenger stuck on the west-bound train mentioned in Chapter 7. Write a diary entry describing the cold and the sudden stop.*
- **Grading Focus:** Check for historical perspective (such as the use of coal stoves, wool blankets, and steam engines) and expressions of isolation or growing anxiety.
- **Science Grading Criteria:** Full credit requires the student to properly list the mandatory meteorological criteria for a blizzard: sustained winds or frequent gusts of ≥ 35 mph, combined with falling or blowing snow that reduces visibility to under $\frac{1}{4}$ mile for at least 3 consecutive hours.

Week 2 Math Solution (Volume Metrics)

- **Final Answer:**

1. **Volume:** One cord equals 128 cubic feet.
2. **Capacity:** The freight car can transport a maximum of 18 full cords.
3. Volume: $4 * 4 * 8 = 128$ cu ft. Max cords: $2,304 / 128 = 18$ full cords.

Historical Weather Mapping Key:

4. *Date & Surprise:* The storm struck on **October 15, 1880**. It was shocking because typical prairie autumns were mild, meaning crops were still unharvested, cattle were out on open ranges, and families had not yet hauled their winter wood or fuel supplies.
 5. *Frequency:* Depending on the source, historians note that **between 8 and 11 major blizzards** or near-constant storms swept the region back-to-back, leaving virtually no clear days for recovery between October and April.
 6. *Geographical Impact:* On the flat, tree-less Great Plains, there were no windbreaks to stop blowing snow. When high gale-force winds swept across miles of prairie, they dropped massive volumes of snow directly into man-made railroad cuts. The deep cuts acted as snow traps, packing the snow into ice blockades as dense as concrete that could not be cleared by regular train snowplows.
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Week 3: Isolation Sets In (Chapters 12–17)

Vocabulary Definitions

- **Monotonous:** Lacking in variety; intensely tedious, repetitive, and unvarying in pitch, tone, or daily routine.
- **Solitary:** Existing, living, or performing tasks entirely alone; isolated from human contact or companionship.
- **Subduing:** Bringing something under control, quieting it down, or conquering an overwhelming force through persistence.
- **Melancholy:** A deep, pensive, long-lasting feeling of sadness, gloominess, or quiet sorrow.
- **Meager:** Lacking in quantity, depth, or richness; thin, lean, or deficient in vital nutrients.
- **Endurance:** The capacity to withstand a prolonged, painful, or difficult process or hardship without giving up.

Discussion Rubric & Sample Answer

- **Prompt:** *How does the atmosphere in the house change when the family realizes the trains have completely stopped running until spring?*
- **Grading Criteria:** Look for an analysis of the psychological shift from hope to grim acceptance, highlighting changes in family routines.
- **Ideal Student Response:** The atmosphere shifts from hopeful anticipation to heavy, quiet survival mode. When they learn no more trains will come, the reality of absolute isolation sets in. The fun of pioneer life fades as they realize they are completely on their own. Their daily focus changes to strict rationing, grinding wheat, and keeping the stove lit just to survive until the spring thaw.

Writing Prompt Evaluation

- **Prompt:** *Write a poem about the sound of the wind or the rhythmic scratching of the homemade coffee mill grinding wheat grain.*
- **Grading Focus:** Evaluate the use of onomatopoeia (e.g., *whir, scrape, crunch, howl*) and rhythm to reflect the repetitive nature of the chores.

Math Word Problem: Wheat Grinding Proportions

- **Final Answer:** Their unit rate is **2 pounds per hour**, and they will spend exactly **7.0 hours** grinding wheat per week.
- Unit rate: $1.5 \text{ lbs} / 0.75 \text{ hr} = 2 \text{ lbs/hr}$. Total time for 14 lbs: $14 / 2 = 7.0 \text{ hours}$.

Life Skills Evaluation

- **Kitchen Chemistry Lab Key:**

1. *Texture Descriptions:* The student should observe that whole-ground flour is darker (brown/tan), vastly coarser, more abrasive, and holds significant bran flakes, whereas modern white flour is bleached, finely milled, and light.
 2. *Nutritional & Psychological Evaluation:* The student's analysis should note that whole grain wheat is highly nutritious and packed with dense fiber, which physically saved the family's lives by keeping them full. However, the extreme density, lack of flavor, and repetitive daily consumption would lead to palate fatigue, physical chewing exhaustion, and psychological low morale due to the total absence of food variety.
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Week 4: The Fire and the Light (Chapters 18–22)

Vocabulary Definitions

- **Foraging:** Searching widely or scrambling around frantically to gather wild food, fuel, or vital provisions.
- **Twisting:** Braid-like wrapping or turning of materials (like slough grass) into a dense, compressed shape to increase its combustion duration.
- **Tallow:** A hard, fatty substance rendered from animal fat (cattle or sheep), historically used to make candles and lubricants.
- **Bleak:** Bare, cold, desolate, and completely uninviting; lacking element protection or warmth.
- **Stark:** Severe, bare, and sharply outlined; absolute or plain in appearance.
- **Congeaed:** Having solidified, thickened, or gelled from a liquid state due to a severe drop in temperature.

Discussion Rubric & Sample Answer

- **Prompt:** *Why did twisting hay into tight sticks become so vital for the family's physical survival? What does this tell you about Pa's resourcefulness?*
- **Grading Criteria:** The student must explain the physics of combustion (loose hay burns instantly, while compressed hay burns steadily) and define Pa's resourcefulness.
- **Ideal Student Response:** Twisting hay was vital because the town ran completely out of firewood and coal. Loose hay burns up in a flash of smoke without giving off lasting heat. By twisting it tightly into dense logs, Pa compressed the fibers so they would burn slowly and steadily, producing enough heat to keep the family from freezing. This shows that Pa is incredibly resourceful; he looks at ordinary prairie grass and finds a way to transform it into life-saving fuel.

Writing Prompt Evaluation

- **Prompt:** *Write a short comparative essay contrasting how you light and heat your room today with how the Ingalls family used a simple button-and-rag tallow lamp for lighting.*
- **Grading Focus:** Ensure a clear organizational structure with distinct paragraphs for modern convenience (switches, buttons, thermostat grids) vs. pioneer labor (rendering fat, working in near-darkness).

Math Problem: Tallow Lamp Burn Rates

- **Final Answer:** The lamp burns grease at a rate of **1.5 ounces per hour**. The inequality is $1.5h \leq 5$ (or $h \leq 3.33$ hours).
- Burn rate: $(8 - 2.75) / 3.5 = 1.5$ oz/hr. Inequality formula: $5 - 1.5h \geq 0 \rightarrow h \leq 3.33$ hours.

Week 5: The Search for Wheat (Chapters 23–28)

Vocabulary Definitions

- **Perilous:** Full of danger, immense risk, exposure, or exposure to fatal consequences.
- **Eluded:** Evaded or escaped from a danger, pursuer, or clear understanding through cleverness or speed.
- **Hoarded:** Accumulated hidden stores of food, money, or valued goods, often out of greed or fear of a future shortage.
- **Venture:** Undertaking a risky, bold, or dangerous journey into an unsafe, unmapped, or unstable environment.
- **Desperation:** A state of despair, numbness, or panic that drives wild, reckless, or extreme behavior to fix a hopeless situation.
- **Courageous:** Possessing mental or moral strength to venture face-to-face with danger, fear, or severe hardship without backing down.

Discussion Rubric & Sample Answer

- **Prompt:** *What motivated Almanzo Wilder and Cap Garland to risk their lives by heading out into the open prairie to find the rumored speculator's wheat?*
- **Grading Criteria:** Responses must emphasize community responsibility and selflessness over self-preservation.
- **Ideal Student Response:** Almanzo and Cap were motivated by a sense of community duty and compassion for the starving townsfolk. They knew that families, especially young children, were down to their last scraps of food and would not survive until spring without grain. Even though they risked freezing to death in a sudden whiteout blizzard, they chose to brave the open prairie because their courage outweighed their fear, and they refused to watch their neighbors starve.

Writing Prompt Evaluation

- **Prompt:** *Write an exciting, high-stakes dialogue script tracking the exact conversation between Almanzo and Cap as they navigate a sudden whiteout on the open trail.*
- **Grading Focus:** Check for appropriate script formatting (Speaker Names in the margin, stage directions in parentheses) and dialogue that conveys urgency, cold, and a loss of direction.

Math Problem: Sled Capacity & Financial Risk

- **Final Answer:** **No, the sled cannot safely carry the load** because $3,600 \text{ lbs} > 3,000 \text{ lbs}$. Their net profit margin is **113.33%**.
- **Weight:** $60 * 60 = 3,600 \text{ lbs}$. **Sled limit:** $1.5 * 2,000 = 3,000 \text{ lbs}$. $3,600 > 3,000$, so it exceeds safe capacity. **Cost:** $60 * 2.50 = \$150$. **Profit:** $\$320 - \$150 = \$170$. **Margin:** $(170 / 150) * 100 = 113.33\%$.

Week 6: The Long Awaited Spring (Chapters 29–33)

Vocabulary Definitions

- **Relentless:** Incessantly intense; remaining harsh, strict, or severe without any softening, easing, or letting up.
- **Chinook:** A warm, dry wind that blows down the eastern slopes of the Rocky Mountains, causing rapid temperature jumps and quick snow thaws.
- **Salvation:** The preservation or deliverance from harm, destruction, ruin, or imminent winter death.
- **Thawing:** The physical process of ice, snow, or frozen masses warming up enough to liquefy, soften, or melt away.
- **Celebratory:** Feeling or expressing happiness, praise, and triumph over an accomplishment or major relief.
- **Transformation:** A thorough, dramatic, and complete change in the form, appearance, or mood of a landscape or person.

Discussion Rubric & Sample Answer

- **Prompt:** *Contrast the mood of the family during the darkest days of April with their emotions when the warm Chinook wind finally begins to blow.*
- **Grading Criteria:** The student must trace the emotional arc from survival-induced numbness to a joyful awakening.
- **Ideal Student Response:** In early April, the family's mood is completely numb, exhausted, and hollow. They are so cold and weak from months of hunger that they can barely speak or move, sitting by the stove in a daze. When the Chinook wind arrives, it brings an immediate release of tension. The sound of melting ice completely breaks their despair, filling them with joy, relief, and gratitude as they realize they survived the long winter.

Writing Prompt Evaluation

- **Prompt:** *Write a reflective book review detailing what lessons about family, gratitude, and persistence you took away from reading *The Long Winter*.*
- **Grading Focus:** Look for a clear thesis statement, summaries of supporting plot lines, and a personal conclusion highlighting character growth or thematic takeaways.

Math Problem: Temperature Differentials & Spring Thaws

- **Final Answer:** The total temperature swing was **62°F**, changing at an average rate of **7.75°F per hour**.
- Total absolute change: $48 - (-14) = 62$ deg F. Average rate: $62 / 8 = 7.75$ deg F per hour.

Final Project Evaluation Rubric

Use this master scoring matrix to grade whichever option the student selects:

- **Option A (Survival Manual) Evaluation Standards:**

1. *Scientific Accuracy (5 Pts)*: The manual correctly incorporates the biological signs of frostbite/hypothermia and accurately details how dead air pockets provide thermodynamic insulation.
2. *Historical Context (5 Pts)*: The tools, clothing materials (wool, flannel), and travel methods match the 1880 frontier timeline.
3. *Presentation (5 Pts)*: The manual is neatly illustrated, cleanly divided into chapters, and written in an authoritative tone.

- **Option B (The Speculator's Trial) Evaluation Standards:**

1. *Economic Understanding (5 Pts)*: The student accurately outlines supply and demand principles, acknowledging *why* items increase in cost when scarce.
2. *Moral Argumentation (5 Pts)*: The counter-perspective is emotionally and ethically sound, emphasizing human rights and community safety during natural disasters.
3. *Structural Mechanics (5 Pts)*: The essay/script features strong transitions, proper formatting, formal grammar structures, and zero structural fragments.