

# ***From Felling to Finish***

*5th Grade Desk Building Project*



**The following was produced in conjunction with Four Winds Nature Institute and an Upper Valley Linkages in Environmental Literacy grant.**

**Teacher name:** *Andrew Wood - 4th/5th Grade Lead Teacher  
Albert Bridge School, Brownsville, VT*

**Unit title:** *From Felling to Finish - 5th Grade Desk Building Project*

**Grade level:** 4th/5th

**Goals of this unit:** Student will gain a sense of empowerment and success by building their own desks.

**Essential questions to consider:**

1. How do different manufacturing techniques impact the economy and environment. Which are more sustainable?
2. What factors contribute to healthy forest ecosystems?
3. How have manufacturing techniques changed over time?
4. How do different working conditions impact workers' health, satisfaction, and rights?
5. How does it feel to make something yourself?

**Engage:** After working closely with the Vermont Institute of Natural Sciences (VINS) in the year prior, my students built nesting boxes for barred and screech owls. Though the sawing and drilling involved with those projects was laborious, it clearly left students with a sense of empowerment par excellence. At the end of 4th grade, I floated the idea of having us build our desks next year. Enthusiasm rang throughout the classroom. Despite the passing of time, several students still reported interest in this unit in an end of year questionnaire. As a classroom teacher, that sort of motivation is invaluable. During the summer, I relied heavily on Steven Levy's book, *Starting from Scratch* for guidance and inspiration. **Prior to the school year, several hours of preparation went into networking with local experts to procure resources and arrange field trips.**

**Students will understand:**

1. Area, Perimeter, Measurement, Multiplication, Fractions, Decimal

**Students will know:**

1. 3-LS4-3 ELA - Inf. Text
2. 4-ESS3-1 ELA - Inf. Text

**Students will be able to:**

1. 3-5-ETS1-1
2. 3-5-ETS1-2

**Assessments of learning:**

See Appendixes 1-

**Length of Unit** - Approximately 5 weeks, though some students will take longer to finish than others.

**Timeline:** Not knowing the impact that being deskless might have on my students, I began the Felling to Finish Project on the 2nd day of school. In the days that followed, students quite naturally worked on the floor and found comfortable spots around the room to work. Clipboards were available. Though an initial concern, not having desks was not a hindrance.

**Lesson Plans/Learning Activities to support learning targets:**

Week One -

1. Students brainstorm. "What are the steps to making a desk?"
2. Students work in teams to write request letters to lumber yards, mills, local woodworkers, etc. (Letter Writing Groups sheet is attached - Appendix 1) Hearing back from these constituents with an affirmative show of support was incredibly powerful for the students.

#### Week Two -

3. Students read tiered informative articles on the history of Vermont's forests and then presented their respective articles in a carousel format.
4. Our desk building unit continued with a visit to the school by [National Park Ranger Kyle Jones of the Marsh Billings-Rockefeller National Historical Park](#). Ranger Jones led us on a guided forest walk. We gained insight into the origins of everyday objects around us, how wood products are sourced, and the spectrum of sustainable techniques within the knotty world of product procurement. In the spirit of sustainable ecosystem management, we felled a tree on the school grounds. Though milling and drying this tree for our own project was time prohibitive, the tree was quickly used by students during recess for fort building. ([Forest Tour Recording Sheet is attached - Appendix 2](#))
5. Students copy desk diagram into notebooks with a focus on scale drawing. Due to time and sourcing constraints students followed a predetermined design to build their own desks in our classroom workshop. Basic tools such as measuring tapes, hand saws and mitre boxes, and saw horses were necessary. After completing the initial build students were able to design and build desk add-ons, such as leg rests, shelves, etc.
6. Students use diagram dimensions to discuss the total amount and cost of supplies.

#### Week Three -

7. A subsequent trip to two local mills helped students understand the post harvesting steps which prepare lumber for its eventual use. ([Mill Tour Permission Slip is attached - Appendix 3](#)) Our first mill was a small, portable, back-yard mill at [Christian Huebner's home in West Windsor](#). The second mill visit was at [Sheehan and Sons Lumber in Perkinsville, VT](#). The proximity of these locations made it possible to visit them both in one day. Due to the varying scales of the operations, the students were quickly able to draw comparisons between the two operations. ([Mill Tour Recording Sheet is attached - Appendix 4](#)) The intention with both of these trips is that they are not only informative, but provide an experience that lays the foundation for increase student inquisitiveness.
8. Students read tiered informative articles focusing on climate change, our economy, forest ecosystems, etc.
9. Thank you notes are written to all the organization and supporters that have responded to the children's initial round of request letters.
10. Students begin to build their desks. Typical lessons involve a modeling of measuring techniques, conversations about fractions, and how to's on tool use and safety.

#### Week Four -

11. Students are introduced to iconography.
12. Students begin writing personal myths.
13. Students begin working with the art teacher to design personal myth icons that will be laser-burnt onto the front of their desks by Woodstock artist, [Logan Davis of VT3D Print](#).

#### Week Five -

14. Students sand and finish desks with Vermont made, non-toxic, whea based finish.

#### **Frequently Asked Questions:**

1. *How did the students handle not having desks at the beginning of the year?*  
Students quite naturally worked on the floor and found comfortable spots around the room to work. Clipboards were available. Though an initial concern, not having desks was not a hindrance.
2. *What will happen to the desks next year?*

Student will have the opportunity to write persuasive essays convincing the 6th grade teacher to allow them to travel to 6th grade with their own desk.

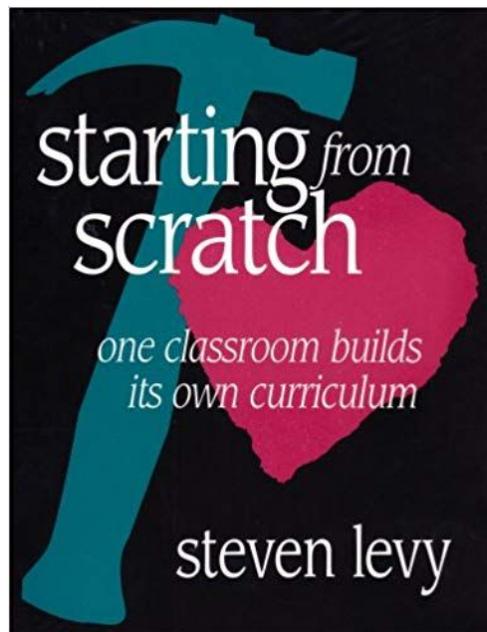
**Three Reasons to Complete the Unit with Students:**

1. Your room will smell nice all year.
2. Student quote, "Wow, from not wanting to saw, to finishing building my desk."
3. Creative experiences empower and stick in one's psyche.

**Three Challenges to Completing the Unit with Students:**

1. A lot of background work connecting with experts is required by the instructor prior to the beginning of the unit.
2. Maintaining safety and managing interactive workspaces with limited staff can be challenging.
3. Students work at their own paces and don't finish at the same time.

**Supporting resources:** Steven Levy - *Starting from Scratch*



## Appendixes 1 - 4

### Letter Writing Groups

#### Group Project

Write a letter to Kyle Jones at Marsh Billings Rockefeller National Historic Park inviting him to come to school here on Monday, September 10th at eleven o'clock to give us a tour of our forest and discuss sustainable logging practices and forest ecology. 54 Elm St, Woodstock, VT 05091

#### Group Project

Write a letter to Home Depot in West Lebanon 296 N Plainfield Rd, Lebanon, NH 03784 asking them to donate supplies.

#### Group Project

Write a letter to Mill to Sheehan Lumber 251 Stoughton Pond Rd, Perkinsville, VT 05151 asking if we can come to the mill for a tour on Sept 12 at 11:40.

#### Group Project

Write a letter to Ron Baker at Baker Lumber 1113 VA Cutoff Rd, White River Junction, VT 05001 asking if he can donate lumber for our project.

#### Group Project

Write a letter to Four Winds Nature Institute 4 Casey Rd, Chittenden, VT 05737 asking for donation of funds to support our desk making project.

#### Group Project

Write a letter to Mr. Scott Duffee at Rockledge Farm Woodworks 58 Ascutney Basin Rd, Reading, VT 05062 asking him to come in and help us build our desk.

**Rainbow Team Trip to Local Saw Mills**  
**Departure: 10:40AM – Wednesday, September 12th .**  
**Permission slips due Tuesday, September 11, 2018.**

Dear Rainbow Team Families:

We are in the midst of preparing for our first study trip of the year. At school, your children have begun a unit of study we're calling, **From Felling to Finish**. They're learning about the many steps involved with building a simple desk out of wood. This coming Monday, Kyle Jones, of Marsh Billings Rockefeller National Historical Park will be stopping by to lead us on a forest walk here at the school. On Wednesday, we'll be traveling to two local sawmills to learn about the process of preparing raw materials for consumption and craftwork. We are excited for this trip and need your help in preparing the children.

We are asking that the attached permission slip be returned to us no later than Tuesday, September 11th. Unfortunately, a child without the proper documentation before the trip date will not be able to participate in this experience. *In order to offset the bus costs, parents have volunteered to drive.*

**Some items that students need to keep in mind include:**

- \* We'll return for our normal lunchtime at school.
- \* Water bottle.
- \* Comfortable **sneakers (close-toed) & casual clothes that can get dirty.**
- \* Rain gear, depending on the forecast - Except for severe/thunderstorms, we will be outdoors rain or shine. Please check the forecast on Wednesday.
- \* Backpack to put everything in.
- \* Students may want to bring a book to read on the bus.

Sincerely,  
Mr. Wood

**FIELD TRIP PERMISSION FORM**

**On Wednesday, September 12<sup>th</sup>, students in Mr. Wood's class will travel to two local sawmills.**

**Mode of transportation: Parent Drivers**

**Day: Wednesday, September 12<sup>th</sup>**

**Departure: 10:40 AM Return: by 12:30 PM**

**PLEASE RETURN PERMISSION SLIP by:  
Tuesday, September 11, 2018**

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**I give my child, \_\_\_\_\_ permission to go on the sawmill study trip on Wednesday, September 12, 2018. I've been notified that there will be parent drivers helping with the trip.**

**Parent signature: \_\_\_\_\_**

**Date: \_\_\_\_\_**

**Phone # where you can be reached \_\_\_\_\_**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Mill Tour Recording Sheet

**Directions: Use the vocabulary below to help you answer these questions in incomplete sentences.**

Industrial Revolution      sustainable      manufacturing      deforestation  
industry                  local economy      community      cause      effect

1. Which milling technique is more sustainable? Why?

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2. Which milling technique is better for manufacturing purposes? Explain.

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3. What does it mean to use resources sustainably?

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4. How did our trip change the way you think about the world around you?

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5. How have sawmills in Vermont changed over the past 100 years?

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6. Use the space below to sketch the major steps of the milling process.