NASEF Farmcraft 2025 Project Based Learning:

Georgia Challenge #3: Georgia's Working Forests

Overview:

The third challenge highlights Georgia's timber industry and its contributions to the economy. Students will research working forests, sustainable forestry practices, and the wide range of products derived from Georgia's pulp and timber. Using Minecraft for Education, they will design a 3-D display table or interactive exhibit featuring the various commodities produced from Georgia's wood resources. This model will emphasize the connection between forestry and sustainability, highlighting the renewable resources that support the state's economy.

Focus Standards:

Georgia Agriculture Standards

AFNR-SA-3 Define sustainability and discuss the principles and concepts of sustainable agriculture.
AFNR-PSB-19 Analyze the effect of plant production on the environment.
AFNR-SA-6 Identify the importance of crop management and its relationship to sustainable agriculture

NGSS Standards

2-ESS2-1 Earth and Human Activity –
Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land
3-ESS3-1 Earth and Human Activity –
Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.
MS-ESS3-3 Earth and Human Activity –
Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment
MS-ESS3-4 Earth and Human Activity -
Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems
HS-LS2-7 Ecosystems: Interactions, Energy, and Dynamics -
Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity

ITTEA Standards for Technological and Engineering Literacy

STEL-1Q - Conduct research to inform intentional inventions and innovations that address specific needs and wants.

ISTE Standards

3 Knowledge Constructor - Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.
6 Creative Communicator - 6c Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.
7 Global Collaborator - Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Objectives:

- Students will understand the benefits of working forests
- Students will understand the economical and environmental value of forests
- Students will demonstrate knowledge through creative application, as they design a Minecraft world that showcases products made with Georgia trees.

Requirements/Task(s):

Task 1:
Students will research the benefits of working forests. They will answer questions about the forestry industry using the provided links as a guide. Next, students will research three products made from Georgia trees and complete the table below.

Task 2:
Using their research, students will design, narrate, and submit a Minecraft world that showcases their learning. The world should demonstrate their understanding of the importance of Georgia's working forests and sustainable timber practices while also educating others about products made from these trees.

Procedures:

Use the following guide to set up this project with your students. Of course, adjust the schedule and requirements to fit your needs, these are only suggestions!

In advance
Daily bellringer and agenda.
Day 1
Day 2
Day 3/4
Day 5/6
Rubric for Minecraft build
Student Instruction sheets to post/print

In Advance

Prior to beginning, obtain permission from your school system and/or principal to use Minecraft for Education. Verify that Minecraft for Education is compatible with your school network if you plan to allow time in class to build. Be aware that even if students can download Minecraft on their school-issued laptops, some networks may restrict students from sharing codes to join each other's worlds on campus. Additionally, some systems may block students from accessing a teacher-initiated world using the teacher's code. In such cases, students will need to take turns working on their shared world while continuing to collaborate effectively. Click Here for general Minecraft for Education tips.

Check if your school system has a site license for Minecraft for Education. If not, adult facilitators (e.g., teachers, coaches, or club sponsors) may request a license for the season for each player during the registration process (don't do this yet, you need their team names!)

After securing permission and discussing potential firewall issues with your local tech team, you may want to survey your students to assess their familiarity with Minecraft. If you are NOT an inexperienced gamer, find a trusted student who IS savvy to be your "project lead" in this experience, they will LOVE it. You will pair experienced players with those who are less experienced to foster collaboration and ensure an inclusive experience. Additionally, confirm that students download Minecraft for Education when the time comes and avoid using personal Minecraft accounts for this activity.

Finally, send a letter or email to parents informing them that their child may be using gaming as part of their homework. Reassure them that their child is not making this up!

Day 1

Display Day 1 of the slide deck and Hand out Bellringer sheet

Activating strategy: To engage students in the topic, make a list of all of the products students list on their bellringer sheet. Distribute a KWL chart prior to watching the video. Let them fill in what they know about GA working forests and products from forests. After the video, have them fill in what they learned and what they want to learn more about!

Then, introduce the Challenge:

Georgia Challenge 3: Understanding Georgia's Working Forests

Georgia's timber industry plays a critical role in both the state's economy and environmental sustainability. By managing working forests responsibly and understanding the wide variety of wood products created from these resources, students can explore how forestry contributes to renewable solutions and economic growth. We need your help to showcase the importance of sustainable forestry practices!

Research sustainable forestry practices and the diverse products derived from Georgia's wood resources. Create a 3-D display table/ interactive exhibit- in Minecraft for Education that demonstrates your learning, highlights key forestry products, and educates others on how forestry supports sustainability and the economy.

Consider the following questions when researching and designing your exhibit:

What are working forests, and how do they contribute to Georgia's economy and environment?
What are some sustainable forestry practices used in Georgia?
What are the primary products derived from Georgia's timber industry, and how are they used?
How does sustainable forestry help balance economic growth and environmental conservation?
What role does forestry play in providing renewable resources?
How can the public support sustainable forestry efforts?

*This is an example of a student product from last year, it is not the same challenge but similar. Click here. This video is also included in the student agenda/bellringer!

Divide students into pairs or small groups of three to four members. Groups should not exceed four members. You can either pre-assign groups using the survey or simply divide students by their familiarity with Minecraft, ensuring each group includes at least one Minecraft expert (there will likely be more experts than non-experts). Allow students to choose a group name before beginning their research because you will have to register each group into the registration form.

Have students divide up the research tasks questions and remind them they have to pick three different strategies for the tables (see the student materials below to either print or post to your learning repository.)

During the last five minutes of class, have students complete the wrap-up section of their warm-up sheet.

*After class, you will register each team name using the registration form and you will need to request the total number of site licenses for each student to have their own download.

Day 2

Display Day 2 of the slide deck **Research:** After the warm up, students will continue researching the answers to the questions using the links provided on the student print outs, as well as filling out their table(s). A suggestion would be to have them select different products than their teammates, and then they have to create an argument as to which three they select for their actual build! The last five minutes of class, remind them to complete their cool down.

These are some suggested links to guide their research, feel free to add your own (these are provided below on the student handouts).

Georgia Forests I Virtual Learning Journey
Forestry Live Exploration
Georgia Forests II Virtual Learning Journey
American Forest and Paper Association
Timber Products-GA Forestry Commission
Georgia's Forests for our Earth
Sustainability Report, GA Working forests
gatrees.org Forests For Georgia
What is a working forest?
Timber Harvester Virtual Field Trip

Day 3/4

Display Day 3/4 of the slide deck

Reinforcement Activity-Vocabulary Matching game.

First, distribute the vocabulary matching cards and have them match the term/photo with the definition. Then, students will continue researching. However, by day 3 you may have some groups ready to start their build. You should be ready to show them how to download Minecraft for Education according to your district's guidelines or provide the instructions from NASEF (it is in their Team Guide). Have the group's expert assist with facilitating the Minecraft world download, as all participants must download it!
After you approve of their research, they may begin construction. Students will work together with their team to complete the challenge in Minecraft Education Edition. Use this time to remind students to refer to their research table(s) to ensure they are including the information and discussion points.They need to use signage or voice overs.

Review the challenge with the students.

Georgia Challenge 3: Understanding Georgia's Working Forests

Georgia's timber industry plays a critical role in both the state's economy and environmental sustainability. By managing working forests responsibly and understanding the wide variety of wood products created from these resources, students can explore how forestry contributes to renewable solutions and economic growth. We need your help to showcase the importance of sustainable forestry practices!

Research sustainable forestry practices and the diverse products derived from Georgia's wood resources. Create a 3-D display table or interactive exhibit in Minecraft for Education that demonstrates your learning, highlights key forestry products, and educates others on how forestry supports sustainability and the economy.

Consider the following questions when researching and designing your exhibit:

What are working forests, and how do they contribute to Georgia's economy and environment?
What are some sustainable forestry practices used in Georgia?

Day 5/6

Display Day 5/6 of the slide deck **Finalize and submit!:** Students will continue working on their build, you may give them only a day in class and then have them finish it for homework, it depends on your timing. When it is complete, they will use the video software of their liking (Capcut, Loom, Adobe premier, screen-cast-omatic, ScreenRec, Bandicam, to demonstrate their knowledge on the research questions they answered, they can speak about the questions or create signage. Also, remind them they must physically display at least three products they researched in their Minecraft world.

Submission:

> **To submit their projects, students will record a video explaining their build while answering the research questions. Or, students will write a blog about what they did along with photos and submit Here.**

Before submission, students should be asked to consider the following regarding their videos:

- Make sure we can see what you are showing us.
- No shaking: Consider the viewer. Are you keeping the "camera" steady?
- Can we hear you? Is the audio clear?
- Make sure to have the team's name

Minecraft Skill Survey: Ticket Out the Door
Use this if you want to pre-build the groups. Otherwise, just have them move to one side of the room if comfy and the other side if they are not and let them pair/group up!

Name: _____ Have you played Minecraft before? ● Yes, a lot! ● Yes, a little. ● No, this is new to me. How comfortable are you with building structures in Minecraft? ● I can build anything! ● I can build simple structures. ● I haven't tried building yet. Do you know how to craft tools and items in Minecraft? ● I know most of the recipes! ● I know some recipes. ● I need help with crafting. Have you ever joined or created a multiplayer world? ● Yes, many times. ● A few times. ● No, this is new to me. How confident do you feel about collaborating with others in Minecraft? ● Very confident. ● Somewhat confident. ● I might need help.	**Name:** _____ Have you played Minecraft before? ● Yes, a lot! ● Yes, a little. ● No, this is new to me. How comfortable are you with building structures in Minecraft? ● I can build anything! ● I can build simple structures. ● I haven't tried building yet. Do you know how to craft tools and items in Minecraft? ● I know most of the recipes! ● I know some recipes. ● I need help with crafting. Have you ever joined or created a multiplayer world? ● Yes, many times. ● A few times. ● No, this is new to me. How confident do you feel about collaborating with others in Minecraft? ● Very confident. ● Somewhat confident. ● I might need help.

Bellringers Farmcraft Georgia

Name_____

Day/Date	Warm-ups (summarize the ?/answer)	Wrap-ups (what ELSE did you learn today?)

Georgia's Working Forests Background Research

You will investigate and explore the information below to complete the two research tables. Possible resources:

- ☐ Georgia Forests I Virtual Learning Journey
- ☐ Forestry Live Exploration
- ☐ Georgia Forests II Virtual Learning Journey
- ☐ American Forest and Paper Association
- ☐ Timber Products-GA Forestry Commission
- ☐ https://youtu.be/fbQVVX3ioUo
- ☐ https://youtu.be/fbQVVX3ioUo
- ☐ Sustainability Report, GA Working forests
- ☐ gatrees.org Forests For Georgia
- ☐ What is a working forest?
- ☐ Timber Harvester Virtual Field Trip

TABLE 1: Research Questions

Research Question	Answer
What are working forests, and how do they contribute to Georgia's economy and environment?	
What are some sustainable forestry practices used in Georgia?	
What are the primary products derived from Georgia's timber industry, and how are they used?	
How does sustainable forestry help balance economic growth and environmental conservation?	
What role does forestry play in providing renewable resources?	
How can the public support sustainable forestry efforts?	

TABLE 2: Working Forests and their Products

You will choose 3 different forest products to research (your group members will choose 3 different products each, for a total of 9 products for a group of 3 members). After your teacher approves your research, your group will then decide which **3 products** your group will demonstrate in your Minecraft world.

Product name	Tree species used	Life cycle of product from raw material to consumer use	How is product integral to life and industries?	How is this product sustainable?	How can you represent this in your Minecraft world?

Student Checklists

Did you remember to:

- Fill out your own table with strategies different from your partner(s)
- Answer the research questions inside of your build (with a voice over or signage)
- Construct/display at least three different products
- Video record your world using a video recording software
    - OR Create a blog with photos describing the build
- Submit the video link to teacher's dropbox or Google Form
- Submit parent permission form
- Have fun while learning

Did you remember to:

- Fill out your own table with strategies different from your partner(s)
- Answer the research questions inside of your build (with a voice over or signage)
- Construct/display at least three different products
- Video record your world using a video recording software
    - OR Create a blog with photos describing the build
- Submit the video link to teacher's dropbox or Google Form
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- Have fun while learning

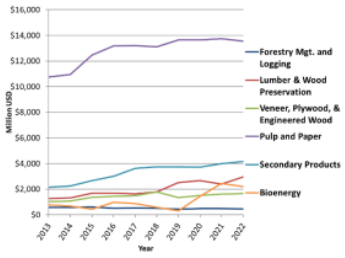
Did you remember to:

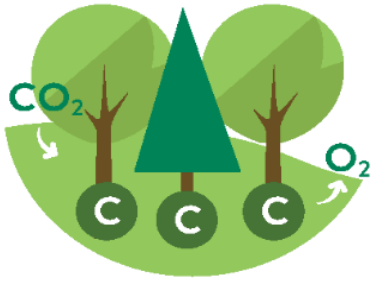
- Fill out your own table with strategies different from your partner(s)
- Answer the research questions inside of your build (with a voice over or signage)
- Construct/display at least three different products
- Video record your world using a video recording software
    - OR Create a blog with photos describing the build
- Submit the video link to teacher's dropbox or Google Form
- Submit parent permission form
- Have fun while learning

Did you remember to:

- Fill out your own table with strategies different from your partner(s)
- Answer the research questions inside of your build (with a voice over or signage)
- Construct/display at least three different products
- Use only species that are common in Georgia
- Video record your world using a video recording software
    - OR Create a blog with photos describing the build
- Submit the video link to teacher's dropbox or Google Form
- Submit parent permission form
- Have fun while learning

Forests actively managed for sustainable resource production, wildlife habitat, and recreation.	**Working Forests** 
Techniques used to maintain and preserve forest ecosystems, including replanting and selective harvesting.	**Sustainable Forestry Practices** 
Items made from wood pulp, such as paper, cardboard, and packaging materials.	**Pulp Products** 
The sector of the economy involved in growing, harvesting, processing, and selling wood products.	**Timber Industry** 
Natural resources that can be replenished naturally over time, such as trees when sustainably managed.	**Renewable Resources** 

The role industries, like timber, play in creating jobs, generating revenue, and supporting local and state economies.	**Economic Contributions** 
A forestry method where specific trees are harvested, leaving the remaining forest intact and healthy.	**Selective Harvesting** 
The process of replanting trees in an area that has been deforested or harvested.	**Reforestation** 
Energy derived from organic materials, such as wood chips and other forest byproducts.	**Bioenergy** 

A land management system that combines trees with crops or livestock to enhance biodiversity and resource efficiency.	**Agroforestry** 
Interconnected systems of plants, animals, and microorganisms in a forest environment.	**Forest Ecosystems** 
The process by which forests absorb and store carbon dioxide from the atmosphere, helping mitigate climate change.	**Carbon Sequestration** 

K-W-L Chart

Topic:

What I **KNOW**	What I **WANT** to Learn	What I **LEARNED**

Rubric

Criteria	Exemplary (4)	Proficient (3)	Developing (2)	Beginning (0-1)
Visual Design	The Minecraft exhibit is highly detailed, visually appealing, and clearly displays forestry products and practices.	The exhibit is well-designed and displays key forestry products and practices but lacks minor details.	The exhibit includes some forestry products but lacks clarity or design elements.	**(1 pt)** The exhibit is incomplete or **(0 pt)** does not display forestry products and practices clearly.
Research Integration	Includes all 5 requirements (see below)	Includes 4 of the requirements (see below)	Includes 3 of the requirements (see below)	**(1 pt)** Includes 1-2 of the requirements (see below) **(0 pt)** Includes 0 of the requirements (see below)
Sustainability Focus	Demonstrates 2 innovative and effective ways forestry supports sustainability and renewable resources.	Includes 2 effective sustainability features but lacks innovation or minor details.	1 Sustainability feature is present	Lacks sustainability focus or has features that are irrelevant or ineffective.
Voice-Over & Video Presentation	Voice-over is highly enthusiastic and engaging, Volume is consistently appropriate, Speaker seems confident and well-prepared.	Voice-over is generally enthusiastic, Volume is mostly appropriate, Presentation is mostly smooth with only minor hesitations.	Voice-over shows limited enthusiasm (flat or monotone), Volume is inconsistent (some parts too quiet or too loud), Presentation is hesitant or uneven	Voice-over is consistently flat, Volume is frequently too low, too loud, or uneven, Presentation is unpolished, with frequent hesitations, errors, or a lack of preparation.
Creativity	The exhibit is highly creative, showcasing original ideas and a deep understanding of the topic.	The exhibit is creative and demonstrates understanding, with some originality.	The exhibit shows minimal creativity or originality.	The exhibit lacks creativity and does not demonstrate a clear understanding.
TOTAL SCORE	**_____ / 20 Possible Points**			

Research Integration:

- ☐ Includes definition of working forests
- ☐ Includes at least 3 different types of products made from Georgia's forests
- ☐ Explains the economical value of forests
- ☐ Explains the environmental value of forests
- ☐ Explains how the public can support sustainable forestry efforts

Create a written script to read from while recording your voice-over.

Make sure to introduce your team name and ____ High School

- Example: We are the Forest Friends from Brookwood High School in Snellville, GA and we are here to present info on working forests and forest products.

Questions to answer in voice-over video:

- ☐ *What are working forests, and how do they contribute to Georgia's economy and environment?*
- ☐ *What are some sustainable forestry practices used in Georgia?*
- ☐ *What are your 3 chosen primary products derived from Georgia's timber industry, and how are they used?*
- ☐ *How does sustainable forestry help balance economic growth and environmental conservation?*
- ☐ *What role does forestry play in providing renewable resources?*
- ☐ *How can the public support sustainable forestry efforts?*

Websites to use to make your videos:

➔ Canva
➔ Screencast-O-Matic
➔ CapCut
➔ Screencastify
➔ Loom

One person from each team needs to upload your video to YouTube. Make sure the privacy is set to Public and share the link in our "Google Classroom" (or whatever you use for digital assignments) dropbox.

or

Uploading and Submitting your Video to Farmcraft

1. **Upload your video to YouTube**
    a. One person from each team needs to upload your video to YouTube. Make sure the privacy is set to Public and share the link in the Google Classroom dropbox.
2. **Submit your YouTube video link to Farmcraft**
    a. One person from each team will upload the video link to Farmcraft using the following directions:
        i. Open the Google Submission Form **HERE**.
        ii. Enter the Adult Facilitator First Name: **(enter your first name)**
        iii. Enter the Adult Facilitator Last Name: **(enter your last name)**
        iv. Enter the Adult Facilitator Email:
        v. Enter the City:
        vi. Enter your Team Name: **Ex. Forest Friends**
        vii. Choose the challenge: **Challenge #3: Understanding Georgia's Working Forests**
        viii. Copy/paste your YouTube Video link
        ix. Click SUBMIT