

STEAM FORWARD – EPISODE 11

Soup to Nuts [Teacher Version]

Welcome to STEAM FORWARD!

The importance of math in the production line!

Career: Public Affairs Manager

Episode: Soup to Nuts

What do diapers, ice cream and LCD screens have in common? They're all made with cellulose fibers from right here at Georgia Pacific's Foley Cellulose Mill.

Just where do all of these cellulose fibers come from?

We'll explore how this mill extracts a whopping 465 thousand metric tons of cellulose a year from trees.

Public Affairs Manager Scott Mixon shows us all the specialized machinery and hundreds of skilled workers needed to make that happen.

During this episode, hosted by Dr. Meisa Salaita, we follow Scott as he shows us the whole process... from soup to nuts.

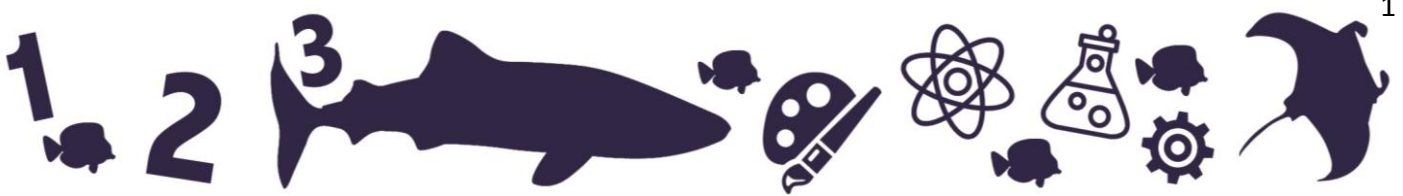
OBJECTIVES: Why am I learning this?

At the completion of this mini-unit, you will be able to:

- Conduct background research
- Use artistic skills to convey scientific information
- Present scientific information to others
- Understand the composition and uses of cellulose
- Use math to determine supply amounts to match demands

THE ESSENTIALS: ASK & ANSWER

- ❖ Students will learn about the process of cellulose as well as its composition.
- ❖ Students will enhance poster and oral presentation skills.
- ❖ Students will enhance math skills in a business context.



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Activity 1

Video Video segment: 0:00-2:09

OBJECTIVES: Why am I learning this?

At the end of this lesson, you will be able to:

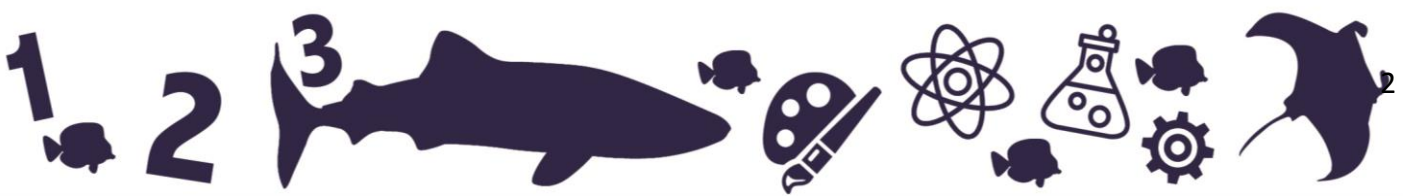
- Explain the relationship between flow and efficiency
- Create line graphs

Introduction

You have been hired as a consultant by Georgia Pacific to help them sell more cellulose!

1. Design a poster for Georgia Pacific that includes the following information:
 - a. What is the composition of natural cellulose and where can you find it?
 - b. How cellulose that people can use is produced
 - c. Uses of cellulose.

Have students use online resources and the video to make lists of information that they want to include on their poster. Next, have them design and present the poster to the class. It may be beneficial to have students work in groups of 2-4 on this project.



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Activity 2

Video segment: 2:15–4:14

OBJECTIVES: Why am I learning this?

At the end of this lesson, you will be able to:

- Use math to determine the supply of materials to meet demands.
- Draw line graphs.

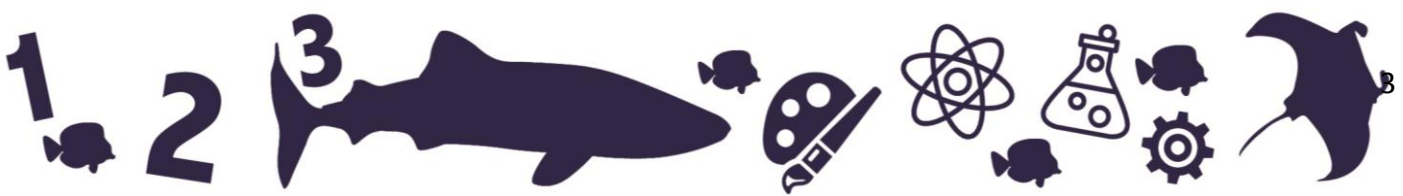
Introduction

Georgia Pacific has put you in charge of ordering raw chips for one of their plants. You have received the orders shown in Table 1 below. You need to figure out what mass of chips to order to meet the demand. To produce 1 ton of pulp, you need to use five tons of chips.

1. Complete Table 1

Table 1. Monthly needs for pulp at your plant.

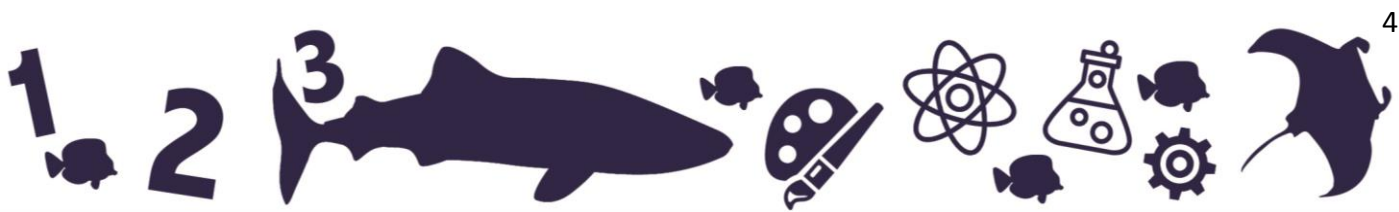
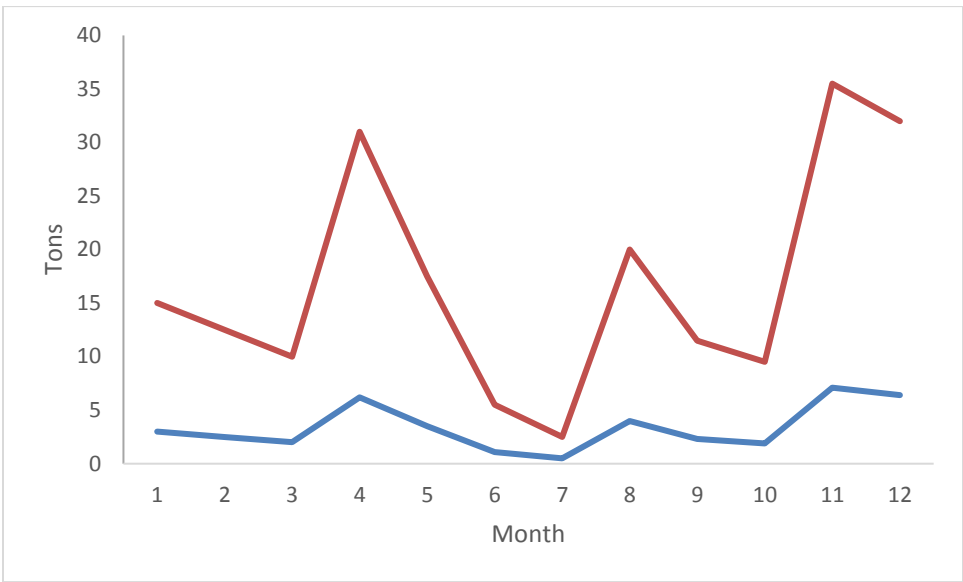
| Month | Pulp needed (tons) | Chips ordered (tons) |
|-----------|--------------------|----------------------|
| January | 3.0 | 15 |
| February | 2.5 | 12.5 |
| March | 2.0 | 10 |
| April | 6.2 | 31 |
| May | 3.5 | 17.5 |
| June | 1.1 | 5.5 |
| July | 0.5 | 2.5 |
| August | 4.0 | 20 |
| September | 2.3 | 11.5 |
| October | 1.9 | 9.5 |
| November | 7.1 | 35.5 |
| December | 6.4 | 32.0 |



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2. Draw a line graph that shows the monthly demand for pulp and the amount of chips needed to meet this demand.



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In The Field

What better way to bring STEAM FORWARD alive than to meet an expert at Georgia Pacific? Here, you will learn more about the background and experience it takes to be a member of the STEAM TEAM. Let's get up close and personal!

MEET AN EXPERT

**Meet: Scott Mixon, Public Affairs Specialist at Foley Cellulose
University of Central Florida
Major: Bachelor of Science in Business Administration**

What is the most exciting part of your job at Georgia Pacific? I have to know and understand everything about our business to talk about it to others.

What advice do you have for students interested in doing what you do? Focus on being the best at communication and public speaking.

What is something surprising or unexpected about your career path? That I would return to the place where I grew up and my dad and my uncles made their careers.

What do you say to students who ask "Why am I learning this?" If you want to make a difference and a career in a global economy, you need a solid foundation in math and science.

