

Scaling Impact

Follow the steps to scale the impact of your carbon sink:

1. Students practice calculating Carbon Sink Sequestration Amounts
 - a. **Option 1:** Use the [EcoMatcher tool](#) formulas to practice calculating the green and dry weight of the students' trees
 - b. **Option 2:** Use the [Go Carbon Neutral Calculator](#) from the Mora Lab to offset personal carbon emissions
 - c. **Option 3:** Complete the estimation chart to calculate your unique carbon sink's impact over time. Calculate impact over time using proportional relationships. **2000 pounds = roughly 1 ton CO2/year**

Type of Carbon Sink	Estimated Amount of CO2 (in pounds) Sequestered in 1 year by a tree*	Estimation of Sequestered CO2 in 5 years	Estimation of Sequestered CO2 in 10 years <i>(this is how long it takes for a tree to get to it's most productive stage of carbon!)</i>	Average person's CO2 Footprint (worldwide)	How big does your carbon sink need to be to offset an average person's footprint?
Native Hawaiian Tree		240 pounds		4 tons/year	4 Trees = 1 ton/year I need to plant 12 trees to offset 1 person's footprint
1 x 1 sq. ft Lo'i (Kalo) Patch			22 pounds		
1 x 1 sq. ft garden bed with regenerative garden practices	1.2 pounds				

*Please note that this is an area of ongoing research in science. Quantifying carbon sequestration was based on general numbers available with the purpose of giving students a chance to grapple with modeling in mathematics.

*Assumes a constant rate of change

2. Create visual representations of data
 - a. Represent projections using a bar graph

TITLE:



3. Calculate the scaled and collective effect of multiple/many carbon sinks

4. Write a short argument explaining the type of sink chosen, why it was chosen, and what the impact will be. Students can include their data visualizations into their reflection to support their choice.

CCSS.MATH.CONTENT.7.RP.A.2

Recognize and represent proportional relationships between quantities.

CCSS.MATH.PRACTICE.MP4

Model with mathematics

CCSS.ELA-LITERACY.WHST.6-8.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.6-8.9

Draw evidence from informational texts to support analysis, reflection, and research.

NGSS MS-ESS3-3.

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.