

Lab Framework

Text:CORD

Unit number and title: #3 Measurement and Conversion

Short Description: Students will use units of measurement to calculate how much water is required to grow an apple.

Developed by: Paul Quick

Contact Information: Chelan H.S. quickp@chelanschools.org

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Lab Title

How much water does it take to grow an Apple?

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
Students answer the question by converting units of measurement.
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
Basic skills in reading, addition, subtraction, multiplication and division.
- **Vocabulary**
Pound, Ounce, Inch, Foot, Yard, Mile, Acre
- **Materials List**
Apples, Slicer, Dehydrator, scale
- **State Standards addressed**
Math: 4.2.C, 5.2.A, 5.2.C, 5.2.E, 5.2.H,6.1.D
Reading: 1.2.2, 3.2.2
Writing: 2.2, 2.4,3.1
- **Leadership Skills**
FFA
- **SCAN Skills/Workplace Skills**
Thinking Skills Creative thinking, Decision making, problem solving, Reasoning
- **Set-up information**
Need a bag of medium apples
- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required**)
This is a two day lab, students should be in small groups from 2 to 4
- **Teacher Assessment of student learning** (scoring guide, rubric)
Students accurately convert units of measurement and can analyze the accuracy of their conclusion
- **Summary of learning** (to be finished after student completes lab)
-discuss real world application of learning from lab
Water is a resource that needs conservation
-opportunity for students to share/present learning
- **Career Applications**
Farmer, extension agent, resource manager, politician

LAB TITLE: Water to grow an apple

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
Calculate the amount of water used in an orchard to grow one apple
- **Grouping instructions and roles**
Students pair up for cooperative learning
- **Procedures** – steps to follow/instructions
 1. Pick an apple from the bin.
 2. Weigh your apple on the scale and record _____
 3. cut your apple into thin slices (use apple slicer)
 4. Place your apple slices into the dehydrator (use solar dehydrator built in previous lab) let it work overnight (skip ahead to procedure 7)
 5. Weigh your dried apple slices and record _____
 6. Subtract the difference and record _____ this is the amount of water in your apple.
 7. What other information do we need to answer the question?
 - 8.
 - 9.
 - 10.
 - 11.
 12. Research
- **Outcome instructions**
Use the information from lab and research to calculate the amount of water used to grow an apple.
- **Assessment instructions**
Explain your work to another group. Did you agree on the answer?
Y / N Student shows work
Y / N Unit Conversions are correct
Y / N Student can explain answer or process
Y / N Student calculated the correct answer

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Lab Data Collection

Student: _____ Date: _____

Unit: _____

Lab Title:

Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

Other Assessment(s)

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