

Restructuring Your Science Class Unit:
A How-To Guide for Napa High School

- I. Select your Standards - A Google Form
 - A. Next Generation Science Standards
 1. Student Expectations
 2. Disciplinary Core Ideas
 3. Crosscutting Concepts
 4. Science and Engineering Practices
 - B. Common Core Standards
 1. English Language Arts in Science and Technical Classes
 2. Mathematics
 3. Technology
 - C. School Wide Learning Outcomes
 1. Agency
 2. Collaboration
 3. Knowledge and Critical Thinking
 4. Oral Communication
 5. Written Communication
 - D. You then get an email of a Unit Plan Template with your selected standards already filled in
- II. Building Your Unit
 - A. Process overview
 1. Backwards Planning Principles
 2. Problem Based and Project Based Learning
 3. Formative Assessments
 4. Using Products as Assessments
 5. Rubrics
 - B. Summative Assessment
 1. Assign Standards to assess
 2. Give example types of problems (if applicable)
 3. Design rubric (if applicable)
 - C. Chunking your unit
 - D. Do to each chunk
 1. Formative Assessment
 - a) Assign standards to assess
 - b) Give example types of problems (if applicable)
 - c) Design rubric (if applicable)
 2. Learning Activities
 - a) Assign Standards to be learned
 - b) Describe the activity
 - (1) Content delivery
 - (2) Skill Building
 - (3) Practice
 3. Double Check: Do students have ample opportunities to learn and master each standard that is assessed on the Formative Assessment?
 - E. The Final Double Check:
 1. Do students have ample opportunities to learn and master each standard that is assessed on the Summative Assessment?
 2. Were students given a chance to improve their understanding between the Formative Assessments and the Summative Assessments?

Restructuring Your Science Class Unit:
A How-To Guide for Napa High School
Applicable to other New Technology Network Schools

- I. Justification
 - A. General Concerns
 - 1. What's wrong with how I have been teaching?
 - 2. This is just a fad, and will go away soon enough.
 - B. PISA
 - C. Napa High School Passing Rates
 - D. 21st century skills
 - 1. Digital Citizenship
 - 2. Communication
 - a) Written
 - b) Oral
 - 3. Research Skills
 - 4. Other
 - E. Common Core
 - 1. Goals
 - 2. Summary
 - F. Next Generation Science Standards
 - 1. Goals
 - 2. How to read
 - 3. Summary of CA Framework
 - G. All Students mentality
 - 1. College and Career
 - 2. Making Career equal to College in value
 - H. New Technology Network
 - 1. Five Learning Outcomes
 - a) Agency
 - b) Oral Communication
 - c) Written Communication
 - d) Collaboration
 - e) Knowledge and Thinking
 - 2. Project Based and Problem Based Learning
 - I. Effects of Collaboration on Individual Student Achievement
- II. What am I responsible for teaching?
 - A. Common Core English Literacy
 - B. Common Core Mathematics
 - C. Common Core **Technology**
 - D. NGSS Disciplinary Core Ideas
 - E. NGSS Crosscutting Concepts
 - F. NGSS Science and Engineering Practices
 - G. School Wide Learning Outcomes (SWLOs)
 - 1. Collaboration
 - 2. Knowledge and Critical Thinking
 - 3. Agency
 - 4. Written Communication

5. Oral Communication

H. Add the things you think should be in there, but weren't in the standards

I. Choose What standards you will cover in your unit

III. Shooting for the sky: What do I want to have in each of my units?

A. Embrace your inner idealist

B. How do students learn?

1. Your experience
2. Current research
3. How they work together

C. Make your Ideal Checklist

IV. Building That Unit

A. Combine standards by theme

B. Make the learning objectives

1. Students should know...
2. Students should be able to...
3. Students should do...

C. Brainstorm Student Products

1. Lab reports
2. Projects
3. Problems of the Day
4. Other

D. Assessments

1. Formative vs Summative summary
2. Student Products as Assessments
 - a) Building Rubrics for Student Products
3. Writing your quiz or test
4. Determine your feedback medium

E. Scaffolding

1. Initial Delivery of Content
2. Skill Building
3. Practice Practice Practice

V. Make your Unit Outline/Timeline

A. Introduction to the Unit Template

B. Write down what you have so far

C. Check that Checklist

1. Add missing items

D. Assigning Time

1. For every activity

E. Reintroducing Your Not-So-Inner Realist

1. Prioritizing
2. Condensing
3. Culling

F. Smoothing everything out

1. Chosen Learning Outcomes
2. Move through the unit
 - a) Checking the flow
 - b) Is there enough practice and skill building before the assessments?
 - c) Make necessary changes

- VI. Example Unit Building Process
- VII. Example Unit