

WAMC Lab Template

Math Concept(s): geometry, algebra, volume

Source / Text: core plus curriculum Makah cultural and research center

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Attach the following documents:

- Lab Instructions printed copy of directions
- Student Handout printed copy of materials and directions for construction
- Rubric and/or Assessment Tool measurement of weight of pennies x2.5g per penny

Short Description (Be sure to include where in your instruction this lab takes place):

Lab Plan

Lab Title: ALUMINUM FOIL CANOE PROJECT

Prerequisite skills: An understanding weight, mass and volume.

Lab objective: To construct and float an aluminum canoe full of pennies to measure mass

Standards: (Note SPECIFIC relationship to Science, Technology, and/or Engineering)

Mathematics K–12 Learning Standards: Identify outcomes in geometry, algebra, volume, displacement, mass.

Standards for Mathematical Practice:

G-GMD.1, G-GMD.2, G-MG.1, g-md.2

K-12 Learning Standards-ELA (Reading, Writing, Speaking & Listening):

- L9-10.6, 569-101, 569-10.4

K-12 Science Standards *

- Mass, volume

Technology construction of canoe that will hold weight and float for 5 seconds

- 1.2.1-communication, 1,1,c, 2.2a

Engineering design and construct canoe

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Leadership/21st Century Skills: team building skills, group work, estimation, comparisons

21st Century Interdisciplinary themes (Check those that apply to the above activity.)

- Global Awareness Financial/Economic/Business/Entrepreneurial Literacy Civic Literacy
 Health/Safety Literacy x Environmental Literacy

21st Century Skills (Check those that students will demonstrate in the above activity.)

LEARNING AND INNOVATION

Creativity and Innovation

- Think Creatively x
 Work Creatively with Others x
 Implement Innovations x

Critical Thinking and Problem Solving

- Reason Effectively x
 Use Systems Thinking x
 Make Judgments and Decisions x
 Solve Problems x

Communication and Collaboration

- Communicate Clearly

INFORMATION, MEDIA &

TECHNOLOGY SKILLS

Information Literacy

- Access and Evaluate Information x
 Use and manage Information x

Media Literacy

- Analyze Media x

- Create Media Products

Information, Communications and

Technology (ICT Literacy) x

- Apply Technology Effectively

LIFE & CAREER SKILLS

Flexibility and Adaptability x

- Adapt to Change x

- Be Flexible x

Initiative and Self-Direction

- Manage Goals and Time x

- Work Independently x

- Be Self-Directed Learners x

Social and Cross-Cultural

- Interact Effectively with Others x

- Work Effectively in Diverse Teams

Productivity and

Accountability

- Manage Projects x

- Produce Results x

Leadership and

Responsibility

- Guide and Lead x

- Others x

- Be Responsible to

- Others x

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Teacher Preparation: (What materials and set-up are required for this lab?)

Materials

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Set-Up Required:

-

Lab Organization Strategies:

Leadership (Connect to 21st Century Skills selected):

-

Cooperative Learning:

-

Expectations:

-

Timeline:

-

Post Lab Follow-Up/Conclusions:

Discuss real world application of learning from lab

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Career Applications

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Optional or Extension Activities

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