WAMC Lesson Plan

Name(s): WAMC Trainers
Email Address: najohnso@fwps.org

Lesson Title: Building Geodesic Domes/Area of triangles, surface area
Date: Summer 2018
Text: handouts STEM Correlation: all STEM Lesson Length: 2 class periods

Big Idea (Cluster): Area of triangles, surface area of geodesic dome	
Mathematics K–12 Learning Standards: G-CO 8, 9,10, 12, 13	
Mathematical Practice(s): 1-8	
Content Objectives: to calculate the area of equilateral and isosceles triangles and the surface area of a geodesic dome	Language Objectives (ELL): SL 9-10.1A-D SL 9-10.4-5
Vocabulary: Equilateral and isosceles triangles	Connections to Prior Learning measurement, area and surface area
Questions to Develop Mathematical Thinking: • How can this be used in the real world?	Common Misconceptions: • Surface area of a geodesic dome is the same as the surface area of half of a sphere

Assessment (Formative and Summative):

- Walk around and check for understanding, class discussion (formative)
- Unit test and calculations (summative)

Materials:

- Paper, pencil, ruler

Instruction Plan:

Introduction: discussion and explanations of equations
Explore: polyhedrons and platonic solids
When I observe students: discussing and working on calculations I believe they are understanding the concepts
Questions to Develop Mathematical Thinking as you observe: How does this shape stronger than a rectangle or a cube?
Answers: Stress is to the bottom and out. Designed from arcs
Summarize: class discussions, starting to build a geodesic dome.

Career Application(s):

- Engineers, construction workers, architects, housing developers

Leadership/21st Century Skills:

21st Century Interdisciplinary themes (Check those that apply to the above activity.)
x 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
x Think Creatively
x Work Creatively with Others
x Implement Innovations
Critical Thinking and Problem Solving

INFORMATION, MEDIA & TECHNOLOGY SKILLS
Information Literacy
x Access and Evaluate Information
x Use and manage Information

LIFE & CAREER SKILLS
Flexibility and Adaptability
☐ Adapt to Change
☐ Be Flexible
Initiative and Self-Direction
☐ Manage Goals and Time

Productivity and Accountability
☐ Manage Projects
☐ Produce Results
Leadership and Responsibility

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

Communication and Collaboration
x Communicate Clearly
x Collaborate with Others

Media Literacy
☐ Analyze Media
☐ Create Media Products

Information, Communications and Technology (ICT Literacy)
☐ Apply Technology Effectively

x Work Independently
x Be Self-Directed Learners

Social and Cross-Cultural
☐ Interact Effectively with Others
☐ Work Effectively in Diverse Teams

☐ Guide and Lead Others
☐ Be Responsible to Others