MODIFIED UBD LESSON PLAN



COURSE: MIDDLE SCHOOL

UNIT: STRUCTURES | EXERCISE: TOWER CHALLENGE | TIME FRAME: 2-4 Hours



PREPARATION: Summary of "to do's" that the teacher should understand and prepare before bringing this lesson to the classroom.

Teachers will need to ensure that the proper supplies are available for students to build their solutions.

You will need these items:

Materials:

- 1Plastic cup
- Plastic straws
- Rubber bands
- Popsicle sticks
- Paper clips
- 4" x 4" pink foam square
- Hot glue sticks
- Cardboard strips
- Balsa wood strips
- Clear platform

Tools:

- Hot glue gun
- Scissors
- Pencil



SAFETY: Summary of safety strategies in the lesson.

Hot glue guns are very hot. Avoid touching the tip of the hot glue gun. Allow gun to cool before putting away.

S1 DESIRED RESULTS:

ESTABLISHED GOALS:

Problem Solving Techniques and Applications Standards:

TRANSFER:

Students will be able to independently use their learning to...

Better understand structures

MEANING:

UNDERSTANDINGS

Students will understand that...

 A well-built structure comes from following a design process and not just using trial and error

ESSENTIAL QUESTIONS

Students will keep considering...

Better structural designs and solutions

ACQUISITION OF KNOWLEDGE AND SKILL:

Students will know...

- The design process
- How different structural shapes and designs affect performance
- Proper joinery

Students will be skilled at...

- Construction of structures
- Designing
- Prototyping



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S2 EVIDENCE:

Placeholder

EVALUATIVE CRITERIA:

ASSESSMENT EVIDENCE:

Performance Task(s):

The design and construction of the student's structure will be assessed

Other Evidence:

End of unit test

LEARNING PLAN: Summary of Key Learning Events and Instruction

1. Introduce Activity

a. Design and build a tower that will hold as many 5 lb. weights as possible

2. Brainstorm

a. Research and design a solution

3. Construct

Build the structure based on sketches in the engineering notebook

4. Test

a. Test solution by placing as many 5 lb. weights on the structure until it fails

5. Communicate Results

a. Submit all documentation to instructor

Progress Monitoring:

Teacher should observe students and provide on-going feedback during the activity. While introducing the unit, the teacher will pause and ask for questions to make sure everyone understands.

Students will complete self-assessment and brainstorm how they could improve their skills in the future. At the end of the unit, there will be a quiz to measure their overall understanding.

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DIFFERENTIATION: Summary of Key Differentiation Techniques

The ASCD Study Guide for Integrating Differentiated Instruction and Understating by Design: Connecting Content and Kids. by Carol Ann Tomlinson, Jay McTighe

Integrating Differentiated Instruction and Understating by Design: Connecting Content and Kids. by Carol Ann Tomlinson, Jay McTighe

ISBN-13: 978-1416602842

ISBN-10: 1416602844

Differentiating Reading Instruction by Laura Robb.

ISBN13: 9780545022989

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A Teacher's Guide to Differentiating Instruction
The Center for Comprehensive School Reform and Improvement



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CAREER CONNECTIONS: Summary of Career Opportunities Associated with this Lesson

Good sources for career connections:

Occupational Outlook Handbook http://www.bls.gov/ooh

The National Career Clusters® Framework http://www.careertech.org/career-clusters



KEYWORDS: Please Insert Keywords from this Lesson with their Definitions

Use resources like dictionary.com to find definitions to your keywords

