

COURSE: MIDDLE SCHOOL

UNIT: Architecture

EXERCISE: Understanding Architectural Floor Plans

TIME FRAME: 2-3 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:

- Pencil
- Colored Pencils
- Paper (8 ½” x 11”)
- Trace Paper
- Provided Floor Plans (Printed- Stem 101 website)
- Masking tape

Tools:

- Architects Scale
- Compass



SAFETY: *Summary of safety strategies in the lesson.*

Please use this space to describe safety procedures or highlights for this lesson.

S1

DESIRED RESULTS:

ESTABLISHED GOALS:

Problem Solving Techniques and Applications Standards:

TRANSFER:

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

- Architects use many different plans to communicate building designs with people all over the world. Using the materials and the resources provided, students will explore and learn how to read floor plans, use architect scales, and even begin creating floor plans on their own

MEANING:

UNDERSTANDINGS

Students will understand that...

- Architects do more than design buildings
- Blueprints are key to building
- Bubble diagrams is the beginning of good designing

ESSENTIAL QUESTIONS

Students will keep considering...

- Floor layout
- Design intent
- Spatial concepts

ACQUISITION OF KNOWLEDGE AND SKILL:

Students will know...

- How to use an Architect Scale
- How to create their own bubble diagrams
- Residential home layout
- Sizes of spaces in a home

Students will be skilled at...

- Measuring to scale accurately
- Basic drawing techniques
- Laying out a residential home accurately



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S2 EVIDENCE:

EVALUATIVE CRITERIA:

- Placeholder

ASSESSMENT EVIDENCE:

Performance Task(s):

Task Placeholder

Online quiz

Other Evidence:

- Floor plan evaluation
- Activity assignments

S3 LEARNING PLAN: *Summary of Key Learning Events and Instruction*

1. Activities

Architects Scale

Using the presentation provided, discuss architectural key terms. Architects need to be detailed when creating plans for buildings, using proper terminology helps them to explain their ideas and communicate them effectively.

Show the video provided, learn how to read and use an architect's scale. Have students complete the worksheet.

Bubble Diagrams

Show the video provided, create a bubble diagram of your dream home. Make sure that the home functions like a home before adding extra spaces to their designs. Make sure their home includes the following spaces: kitchen, bathroom, bedroom, living room space). Students will create a bubble for each room and organize the home, so the function of the room matches the rooms next to it.

Show the video provided, create a legend on your Bubble Diagram to show three different privacy levels within a home. Have students label them Private, Semi-Private, and Public. Assign a color to each privacy level and make sure to color in the circles on the bubble diagrams. Study the diagram to make sure that the public spaces are not next to the private spaces. If this is the case, move bubbles around so that the home functions properly.

Show the video provided, use a premade floorplan to put your bubbles inside the exterior walls. Make sure students place the following rooms in their bubble diagram: kitchen, coat closet, bedroom, bedroom closet, bathroom, living room, utility closet. Assign colors to show privacy of the spaces and move on to the next step.

Trace Paper Overlay

Show the video provided, you will elevate your bubble diagrams to look like a floor plan. Students begin by laying a piece of trace paper over their bubble diagram. Trace the exterior walls first. Now they turn their bubbles into straight walls (demonstrated in the video). Make room for hallways if needed and erase lines to create access points (doorways). Use the 1/4"=1'-0" scale to make 32" door openings for rooms and closets. The compass will be used last to show the swing paths of the doors.

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*

Please use this space to insert your differentiation techniques. Depending on the needs of students, various techniques might be needed in a classroom, therefore use the information below and experts in the area needed to design your plan for differentiation.

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

Integrating Differentiated Instruction and Understanding 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

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



CAREER CONNECTIONS: *Summary of Career Opportunities Associated with this Lesson*

Please use this space to insert careers that might be connected to this lesson. This section will need continuous updating as new careers and emerging technologies change the opportunities available in the workforce.

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*

Please use this space to insert keywords and their definitions

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