ARCHITECTURE AS A LEARNING TOOL

Grade Level: 6 – 12th

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2018 – 2019 Teaching Artist in Residence

A. Hays Town and the Architectural Image of Louisiana
June 15th, 2018 – December 29th, 2018

Architercture As A Learning Tool Lesson Plan
Grade Level: 6–12th Grade

Lesson Description:

Teaching artist Maureen Dugas Foster, who has a master's degree in architecture, will lead students on a tour of *A. Hays Town and the Architectural Image of Louisiana* from October 2 to December 21, 2018. Scientists, artists and architects all use scale drawings and models to convey information and solve design problems. On the tour, students will explore how architects use scale in their design work and will examine blue prints, elevation drawings, renderings and scale models of A. Hays Town's iconic homes. In a pre-visit activity, students will examine different definitions of scale and how scale is used in the art and science fields. At the museum students will study and compare the two museum buildings, including one designed by A. Hays Town. They will discuss why scale models are useful and look at the different ways that architects convey their design ideas. In the museum's classroom, students will create a scale drawing as part of a design challenge. In the post-visit activity students will use what they learned on their museum visit to complete another scale drawing design challenge.

Overarching Theme/Universal Concept: Scale

Essential Questions:

- What is scale?
- How do we use scale drawings and models to solve problems?

Objectives and Focus Questions:

- How do architects use scale drawings and models to convey their design choices and solve problems?
- Can I create a scale drawing or model that solves a problem or design challenge?
- How do two buildings compare in terms of scale, architectural features, materials and design choices?
- What are the different types of drawings, plans, models, and tools that architects use?

Standards:

Louisiana Science Standards

Science instruction will focus on the crosscutting concept of scale and the design process that both scientists and artists use to solve problems. Also, students will examine different formats for conveying technical information.

Crosscutting Concept

3. Scale, Proportion, and Quantity

Science and Engineering Practices

6. Constructing Explanations and Designing Solutions
Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints. Optimize performance of a design by prioritizing criteria, making tradeoffs, testing, revising, and retesting.

8. Obtaining, Evaluating, and Communicating Information
Communicate scientific and/or technical information or ideas in multiple formats.

Louisiana Visual Arts Standards:

Art instruction will focus on recognizing and comparing design choices. Students will compare different architectural features and design choices and use this knowledge when explaining aesthetic judgements about the built environment.

VA-AP-E4 Recognize that there are many possibilities and choices in the processes for designing and producing visual arts.

VA-CA-E4 AND VA-CA- M3 Express and explain and justify aesthetic judgments about the created built environment.

Pre-Visit Activity

Discuss: What is scale?

Ask students to list different types of scale and different times they might use scale. Record answers on the board. Different examples might include; musical scale, scales for measuring weight, Mohs scale of hardness, scales on a fish or lizard's skin, etc. As a group create a working definition of scale. You may need more than one definition to address multiple meanings.

Research: Definitions of Scale

Look up the different definitions of scale. Compare those with the working definition that the class created.

Discuss how scientists and artist might use scale in their work. Artists might consider scale in making design choices, such as designing a human scale chair. Or artists might make a scale model of a project such as a sculpture to test out the design before building on a larger scale. Scientists might use different scales for measuring, such as thermometers, graduated cylinders or balances. They might also think about what can been seen and measured on a small (microscopic) scale and what can be seen on a larger scale.

Discuss: Architecture and Scale

Project an image on the board that compares the height or scale of different famous buildings. Here is one site to check out: http://travelingwv.com/new-river-gorge-bridge-infographic-height-comparison/

Ask students if they are surprised by anything in this comparison of buildings. Discuss how scale might affect the design choices of architects. How does being in a room with a high ceiling compare to a room with a lower ceiling? How does a structure fit with its surroundings in terms of scale? Does it tower over other buildings or look small compared to the surrounding landscape. A building that is massive or tall might project authority and power, while a small space might be cozy.

While architects consider the scale of buildings and building elements when making design choices, they also use scaled drawings and models to solve problems and convey information. Ask students how creating a scaled model or drawing might help an architect solve a problem? If students are not familiar with scale drawings or models, look up different examples on line such

as blue prints, floor plans, and maps. Explain how the scale on a drawing works, for example 1 inch equals 1 foot. Students can even practice by making a scale drawing of a textbook or the top of their desk.

Key Terms

Architecture: the art and science of designing buildings and structures

Design: to decide how something will look or function, usually by making a drawing or plan for it

Façade: the exterior faces of a building

Plans: a set of drawings or two-dimensional diagrams used to describe a place or object, or to communicate building instructions.

Scale: 1. A graduated range of values forming a standard system for measuring or grading something; 2. the relative size of something; 3. a proportion between two sets of dimensions (as between those of a drawing and its original)

Prepare for Visiting the Museum

Explain to students that they will be taking a field trip to the art museum to view an exhibit about A. Hays Town and to see examples of scale drawings and models. On their visit to the museum they will compare the two museum buildings, one of which is designed by Town. Discuss how to act respectfully in the museum.

- Observe and be attentive.
- Gather information by asking questions and recording information.
- Protect the space and art work for others to enjoy.
- Walk slowly and move carefully when exploring the galleries.
- Be respectful of the design and work space choices of others.

The class can also research online about the museum to preview the exhibit and gallery spaces.
http://www.hilliardmuseum.org/

At the Museum

Before entering the museum, students will compare and contrast the architectural features of the museum's two buildings, including one designed by A. Hays Town. The students will compare the scale or difference in size between the two buildings and how this affects the look and feel of the two spaces. Students will write in their graphic organizer about which building they prefer and support their choice by discussing the design choices made by the architects.

Gallery Tour

In the gallery students will examine the recreation of A. Hays Town's work area and discuss the tools, including a scale, that architects use to create blue prints and artistic renderings. In the exhibit students will discuss different types of building materials and their impact on a building's design. Students will view the different methods of representing and organizing information that architects use to express their design choices and solve problems. Examples of different methods include blue prints, renderings, elevation drawings, and scale models. Students will discuss why scale models and drawings are useful.

STEAM Activity

In the museum classroom, students will do a warm up exercise of creating a scale drawing of their table using a ruler and graph paper. Students will discuss any difficulties they had while doing the exercise and what they learned. They will then create a scale drawing of a room. They will make design choices including placement of doors, windows, and furniture. Students will calculate the square footage of their room and share their design choices. As a group the class will discuss some of the challenges and benefits of creating scale drawings and models.

Materials List
- ¼ inch graph paper
- Pencil
- Rulers
- To-scale furniture cut outs
- Colored Pencils

Post-visit Activity

Design Challenge

Students will design their dream bedroom and create a scaled drawing to communicate their design choices.
Each bedroom design must:
- have a square footage of 144 ft.²
- have 1 window
- have 1 door
- have 1 bed and other furniture
- be drawn to scale and include a key indicating the scale used

Reflection

Have students write or speak about their design choices. Ask them if they encountered any problems during the design challenge or had to make any modifications to their project.
As a class look at the different ways that students solved the square footage problem. Did everyone draw a square or did some draw a rectangle? Ask students what other information an interior designer might need to create their room? What are some ways they can convey this information?

Use the 6–12 rubric to assess projects.

Extension

Have students create a three dimensional scale model of their room design, using cardboard and paper. Students may need to work in groups. Discuss if the scale should stay the same or change for the model. Ask them what math skills or equations they would use to solve the problem of building a scale model.

Teach students to use cross multiplication to solve scale problems. If you are using a 1 inch to 1 foot scale to create a wall 10 feet long, then:

$$\frac{1 \text{ inch}}{1 \text{ foot}} = \frac{X \text{ inches}}{10 \text{ feet}}$$

Resources

A. Hays Town Resources

Sachs, David H. "A. Hays Town" *https://64parishes.org Encyclopedia of Louisiana*. Ed. David Johnson. Louisiana Endowment for the Humanities, 25 Jan 2011. 19 Sep 2018. https://64parishes.org/entry/a-hays-town

A. Hays Town: From House to Home by Nick Campbell (Video from Exhibition) https://www.youtube.com/watch?v=grJtzTgzooE&t=93s

Vetter, Cyril E. and Philip Gould. *The Louisiana Houses of A. Hays Town*. LSU Press, 1999.

Other Architecture Resources

Archkidecture Website- Lesson Plans and Projects http://archkidecture.org

Building Big Website- Projects and Computer Activities https://www.pbs.org/wgbh/buildingbig/