

STEAM Lab Lesson Plans

Week of October 29-November 9

8:40-9:10 Morning Duties

9:10-10:10- RtI

11:50-12:20- Lunch

3:40-4:00 Afternoon Duties

Grade Level	Objectives/Learning Targets	Learning Activities and Instructional Strategies	Standards Assessed
2nd (10:10-11:00)	<p>I can develop a sketch of a house.</p> <p>I can create a house out of given materials.</p>	<p>Focus for the week: Architecture</p> <p>Vocabulary: Architecture, Architect, Design, Building, Shapes</p> <p>Read Aloud: <u>If I Built a House</u> by Von Dusen</p> <p>Discussion: Whole group discussion on how houses are built. Show students time lapse videos of houses being built. Students will look a pictures of different types of houses.</p> <p>Strategies/Activities: Students will be given time to design their own house. They will draw a picture of a house they would like to build.</p>	<p>K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>VA:Cr1.1.2 Brainstorm collaboratively multiple approaches to an art or design problem.</p>

		<p>Week 2:</p> <p>Students will use their design drawing from last week to create a paper bag house. Students will be given a paper bag, drawing/coloring utensils, and various types of paper to create their own house.</p>	
<p>3rd (11:00-11:50)</p>	<p>I can create a blueprint of my house or my school.</p>	<p>Focus for the week: Architecture/Blueprints</p> <p>Vocabulary: Architecture, Architect, Design, Building, Shapes, Blueprints, Floor Plan</p> <p>Discussion: Whole group video on architecture. Discussion- what is an architect? What is architecture? What are some examples of architecture here in Shepherdsville? How is the architecture here different than the architecture in a city? What is a blueprint and why are they important?</p> <p>Strategies/Activities: Students will begin planning out the blueprint of their house or the school. Students may work independently or with a partner. Students will use graph paper and a pencil.</p> <p>Week 2:</p> <p>Students will finish their blueprints by adding</p>	<p>3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p> <p>VA:Cr2.3.3 Individually or collaboratively construct representations, diagrams, or maps of places that are part of everyday life.</p>

		<p>detail and color to their piece. All doors, windows, and rooms will be labeled.</p>	
<p>4th (12:20-1:10)</p>	<p>I can design and create a building using my knowledge of modern architecture.</p>	<p>Focus for the week: Architecture</p> <p>Vocabulary: Architecture, Architect, Design, Building, Shapes, Blueprints, Floor Plan</p> <p>Discussion: Whole group video on architecture. Discussion- what is an architect? What is architecture? What are some examples of architecture here in Shepherdsville? How is the architecture here different than the architecture in a city? What is a blueprint and why are they important?</p> <p>Strategies/Activities: Students will design a building on a piece of graph paper with a partner or independently. Students may also use tinkercad.com to design their building.</p> <p>Week 2:</p> <p>Students will use paper to create the building from their design plan. Each class will make a city or town using all of their paper buildings. This will be displayed on a large piece of flat cardboard.</p>	<p>3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.</p> <p>VA:Cr1.1.4 Brainstorm multiple approaches to a creative art or design problem.</p>

<p>K (1:10-2:00)</p>	<p>I can identify shapes in architecture.</p> <p>I can design and create a piece of architecture using geometric shapes.</p>	<p>Focus for the week: Architecture</p> <p>Vocabulary: Architecture, Architect, Design, Building, Circle, Semi-circle (half circle), Rectangle, Shape, Square, Trace, Triangle</p> <p>Read Aloud: <u>Iggy Peck Architect</u> by Andrea Beaty</p> <p>Discussion: Introduce the basic two-dimensional shapes and their names: circle, semi-circle, rectangle, square, triangle.</p> <p>Strategies/Activities: Have the students find examples of these shapes in objects around the classroom. Label the shapes they find.</p> <p>Show slideshow of pictures of various buildings. Students will also have these pictures printed out at their tables to look at. Students will identify examples of the shapes found on the buildings.</p> <p>Students will use pre-cut shapes to design and create their own two-dimensional building on paper. Students will glue the shapes to their paper and present their piece of architecture to their table groups.</p> <p>Week 2:</p>	<p>VA:Cr1.1.K Engage in exploration and imaginative play with materials.</p> <p>K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>CC.K.G.A.2 Correctly name shapes regardless of their orientations or overall size.</p>
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		<p>Whole group discussion: What is architecture? What does an architect do? How are geometric shapes used in architecture around the world?</p> <p>Students will use their two-dimensional design from last week to build their creation by using wooden blocks or legos.</p>	
1st (2:00-2:50)	<p>I can identify shapes in architecture.</p> <p>I can design and create a piece of architecture using geometric shapes.</p>	<p>Focus for the week: Architecture</p> <p>Vocabulary: Architecture, Architect, Design, Building, Circle, Semi-circle (half circle), Rectangle, Shape, Square, Trace, Triangle</p> <p>Read Aloud: <u>Iggy Peck Architect</u> by Andrea Beaty</p> <p>Discussion: Introduce the basic two-dimensional shapes and their names: circle, semi-circle, rectangle, square, triangle.</p> <p>Strategies/Activities: Have the students find examples of these shapes in objects around the classroom. Label the shapes they find.</p> <p>Show slideshow of pictures of various buildings. Students will also have these pictures printed out at their tables to look at. Students will identify examples of the shapes found on the buildings.</p>	<p>VA:Cr1.1.1 Engage collaboratively in exploration and imaginative play with materials.</p> <p>K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>CC.1.G.A.1 Distinguish between defining attributes versus non-defining attributes; build and draw shapes to possess defining attributes.</p>

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5th (2:50-3:40)	I can collaborate in a group to create a pulley system to carry the weight of a pumpkin using various materials.	<p>Focus for the week: Collaboration</p> <p>Vocabulary: collaboration, synergize, critical thinking, problem solving, growth mindset, length, measure</p> <p>Discussion: Whole group discussion on growth mindset, perseverance, problem solving, and collaboration.</p> <p>Whole group discussion on simple machines and their importance in the real world. Students will watch this video on pulleys.</p>	3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

		<p>Students will be given the following materials to complete a STEM challenge.</p> <ul style="list-style-type: none">- Cardboard- Cardboard rolls- 1 Wooden dowel rod- Scissors- Tape- Ruler- Small pumpkin <p>Once given the materials, students will create a pumpkin pulley in small groups. Students will be able to use materials to create a pulley that will lift a small pumpkin off of the table. Each pulley must have a wheel and a rope/string.</p> <p>Students will use the Engineering Design Process to keep testing and improving their pulley.</p>	
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