

Middle School Career Investigations

Architecture and Construction Design Process

Design Process Introduction

Design Process

Like other professions, people in the Architecture and Construction Career Cluster use a design process for their projects. Drag and drop the slider onto each mark to learn more about this design process in detail.

1 2 3 4 5 6

The graphic features a dark blue background with a white grid. At the top, the title "Design Process" is written in a large, white, sans-serif font. Below the title is a line of italicized text. In the center, the numbers 1 through 6 are displayed in a very large, white, sans-serif font. Below the numbers is a horizontal white bar with a small orange square at the left end and six vertical tick marks corresponding to the numbers. To the right of the bar is a cartoon illustration of a woman with brown hair, wearing a red long-sleeved shirt, blue overalls, and red safety glasses.

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Identify Problem/Issue

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1 Identify the Problem/Issue

Examples: new construction of homes, renovations of existing structures, maintenance of historical buildings, and additions or redesigns of parks

Includes A LOT of research

The first step in the process is to identify the problem or issue. Some examples of problems or issues to be solved are new construction of homes, renovations of existing structures, maintenance of historical buildings, and additions or redesigns of parks. As part of identifying the problem, we gather as much information as we can through research and site visits.

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Brainstorm Ideas

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2

Brainstorm Ideas

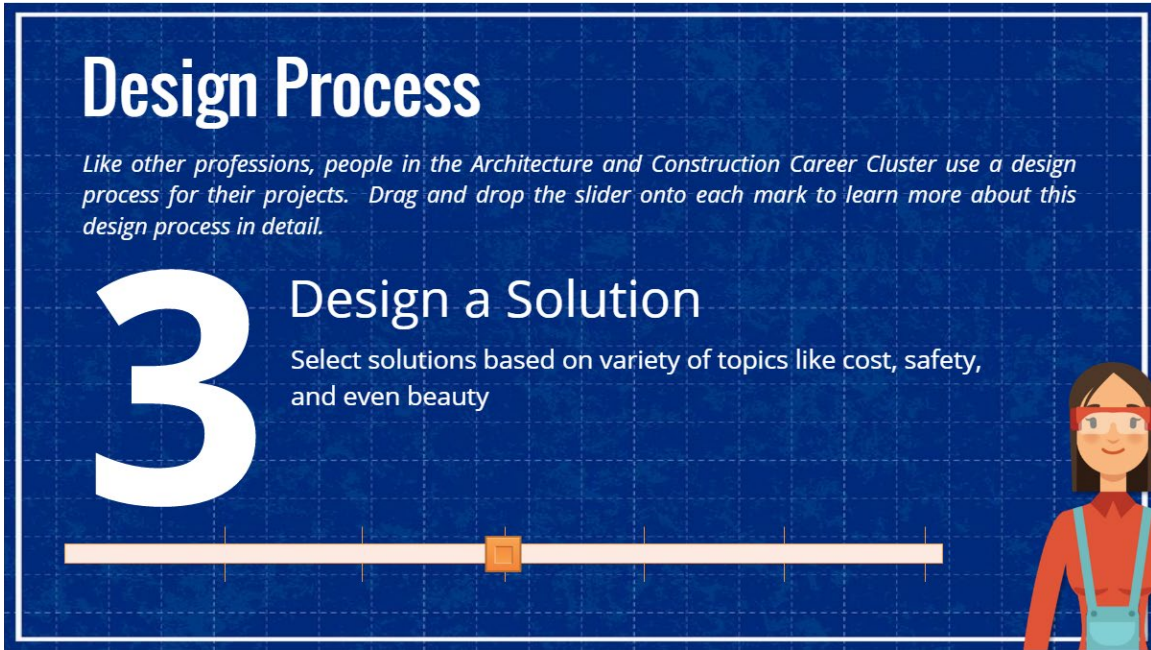
Use the research to think of as many solutions as possible

The second step in the process is brainstorming to generate ideas and/or solutions. We research to help us find as many solutions as possible. The goal is to not exclude any possible solutions, even if a solution seems like it might not work.

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Design a Solution



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3 Design a Solution

Select solutions based on variety of topics like cost, safety, and even beauty

The third step in the design process is to design a solution. We look at all of the ideas that we brainstormed and select one based on variety of topics like cost, safety, and even beauty. Architects, engineers, and construction managers work together to make sure that the design matches the available material.

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Test the Solution

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4

Test the Solution

Working as a group, the design is checked to make sure that it meets all of the different criteria

Individuals build models for testing

(Note: A horizontal slider bar is present below the text, with a yellow square marker positioned at approximately the 40% mark.)

The fourth step is where we work together as a group to test the solution. In this step, the design is checked to make sure that it meets all of the different criteria, and that it can actually be built. Once it has been approved, then individuals build models for testing.

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Edit Solution/Design

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5 Edit the Solution/Design

If the models or testing prove that the design needs editing, the group continues to modify the design and re-test.

Can return to Step 3 and pick a new solution



The fifth step in the process is to edit the solution/design. If the models or testing prove that the design needed editing, the group continues to modify the design and re-test. If the design will not work at all, the group can return to Step 3 and pick a new solution.

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Build the Solution/Design

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6

Build the Solution/Design

The construction on the project begins

The architect and engineer work closely with construction workers to make sure that they have all of the information that they need, as well as to check to make sure that the design is being followed

The final step is to build the design or solution. Once we have selected a final design, then the construction of the project begins. During the construction phase, the architect and engineer work closely with construction workers to make sure that they have all of the information that they need, as well as to check to make sure that the design is being followed.