

Model Design & Building Merit Badge

Types of Models

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Types of models

The Merit Badge describes five types of models

- Architectural
- Structural
- Process
- Mechanical
- Industrial

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Types of models

Architectural Model

- A model of a finished building, such as a house
 - Used to show how a building will look
 - May be used to show how the building will fit in its environment
 - May be used to show how a building will function

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Types of models - Architectural Model



Railroad Freight House
HO Scale 1:87

This model is an example
of “kit bashing”



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Types of models

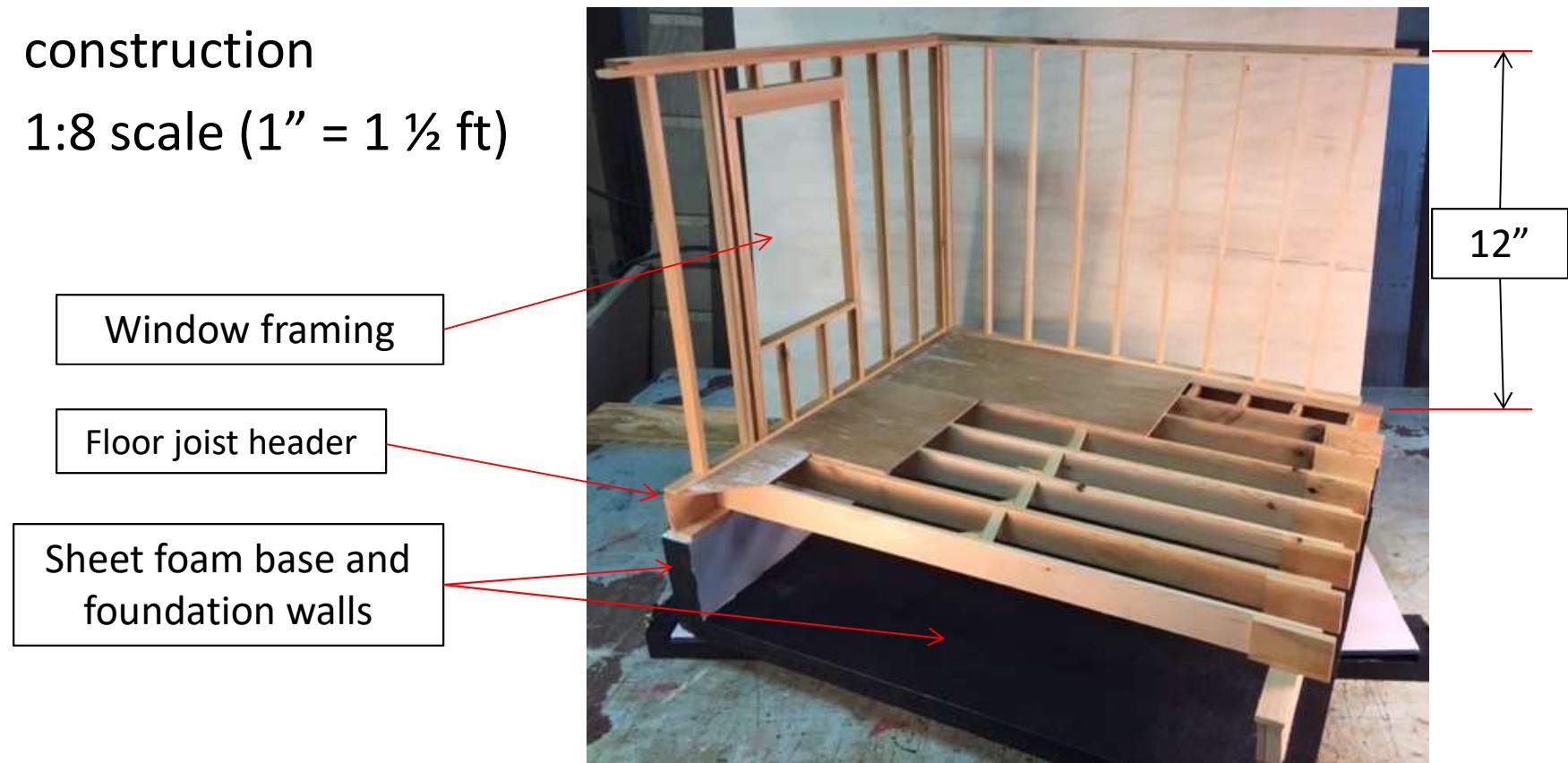
Structural Model

- Shows how something is built, such as a wood framed house
 - Foundations
 - Structural supports and bracing
 - Wall and roof coverings

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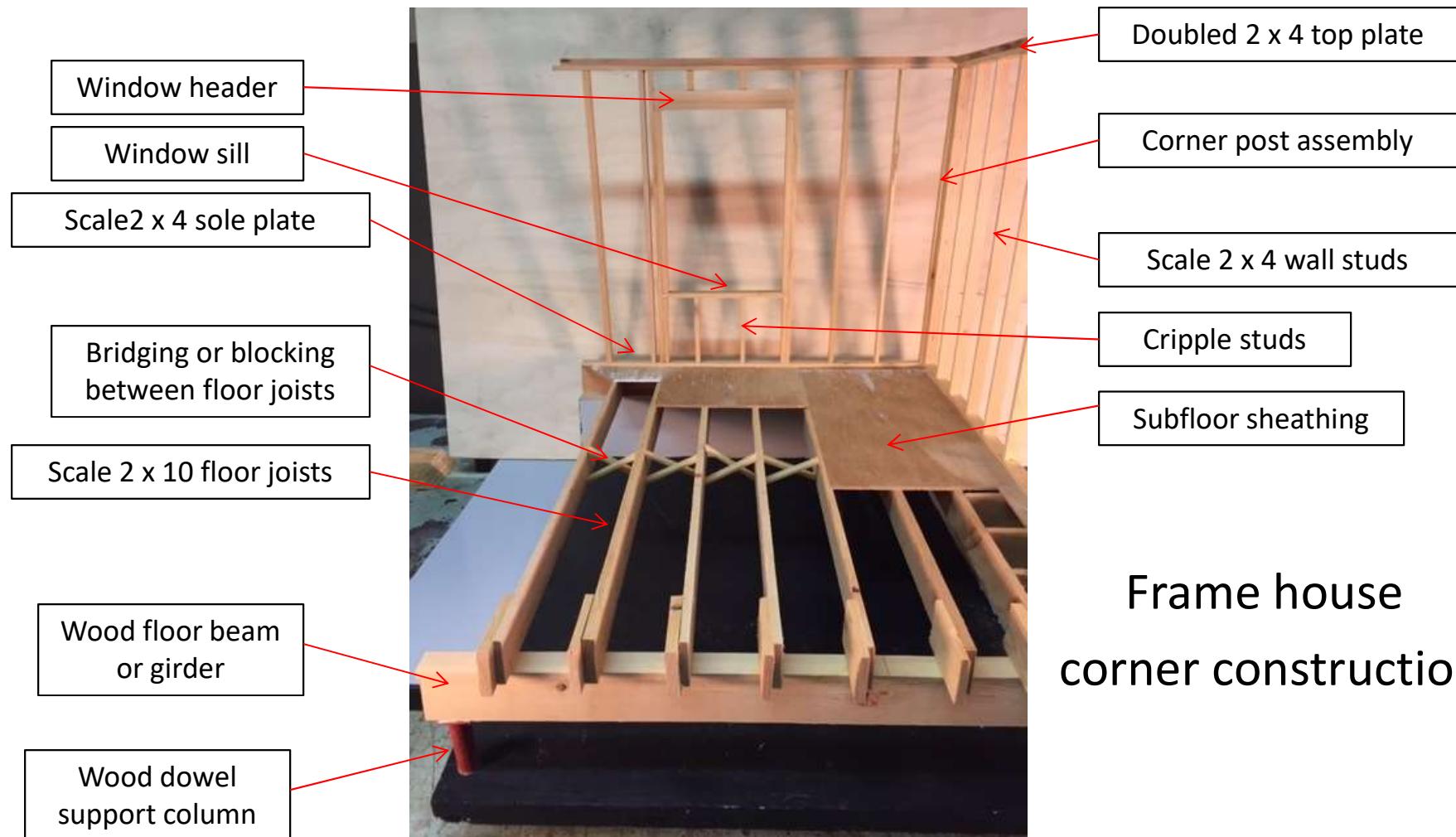
Types of models - Structural Model

- Frame house corner construction
- 1:8 scale (1" = 1 ½ ft)



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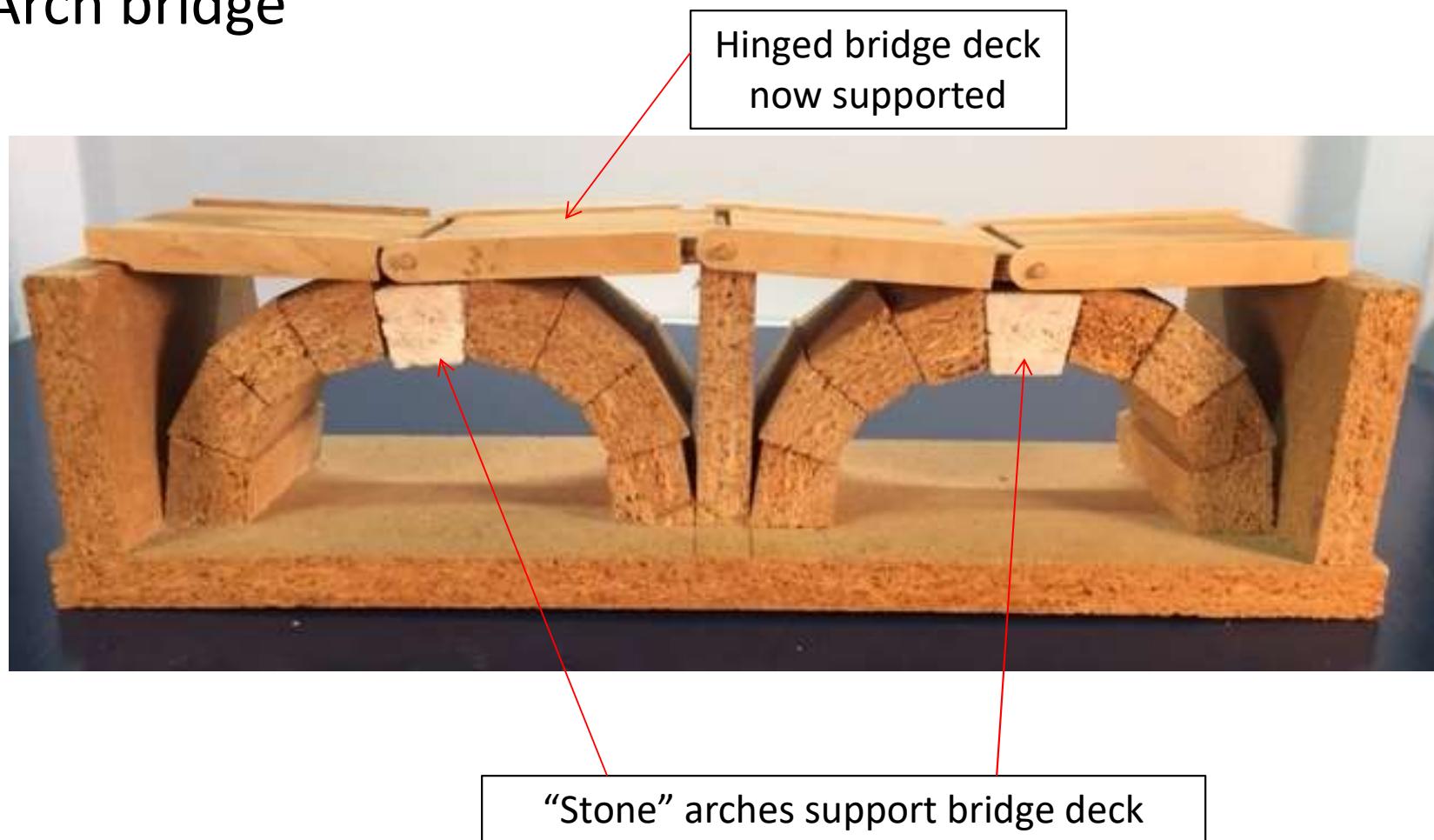
Types of models - Structural Model



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Types of models - Structural Model

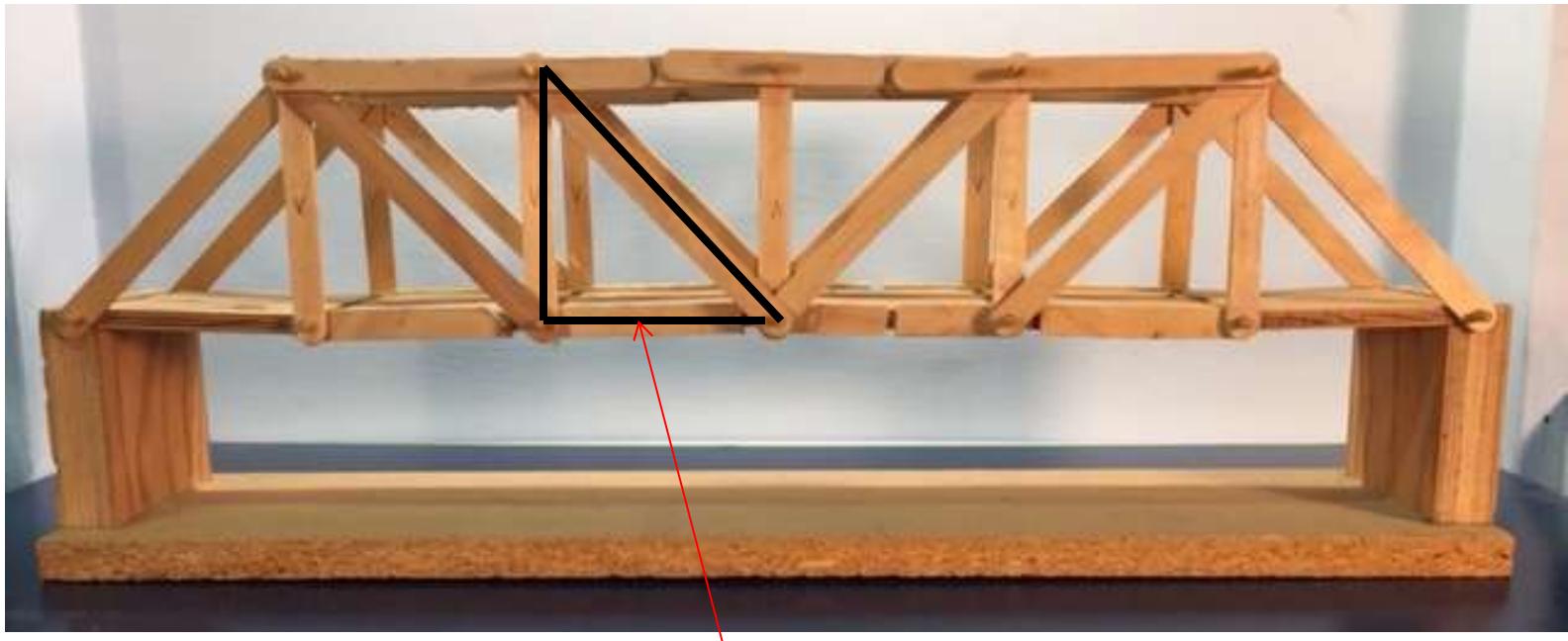
Arch bridge



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Types of models - Structural Model

Truss bridge



Illustrates the use of triangles to form a rigid structure

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Types of models

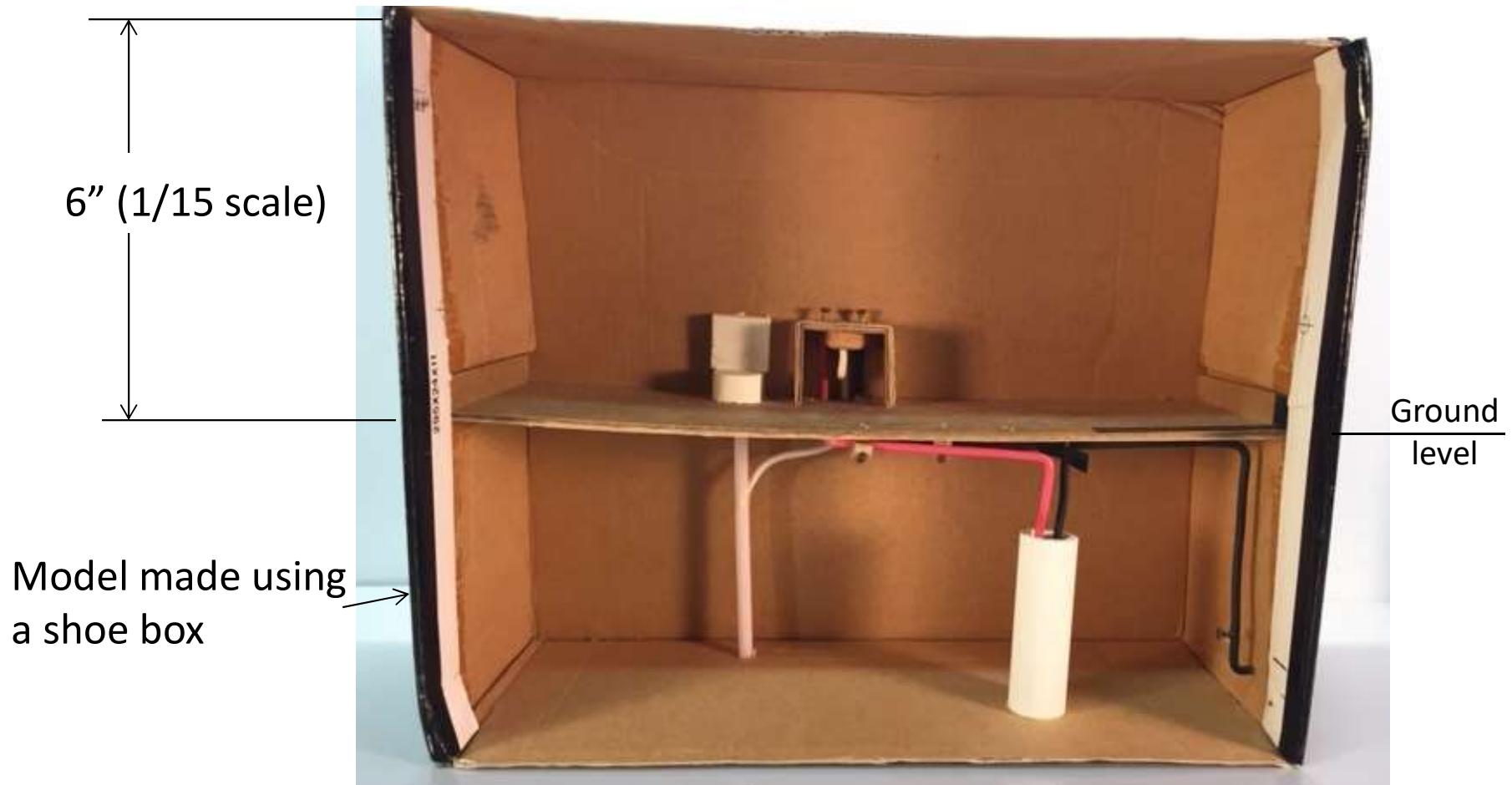
Process Model

- A model showing how material is moved or handled and how machinery is arranged to perform work
 - The plumbing system in a house
 - An auto assembly line
 - A chemical refining plant
 - A distribution warehouse

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Types of models - Process Model

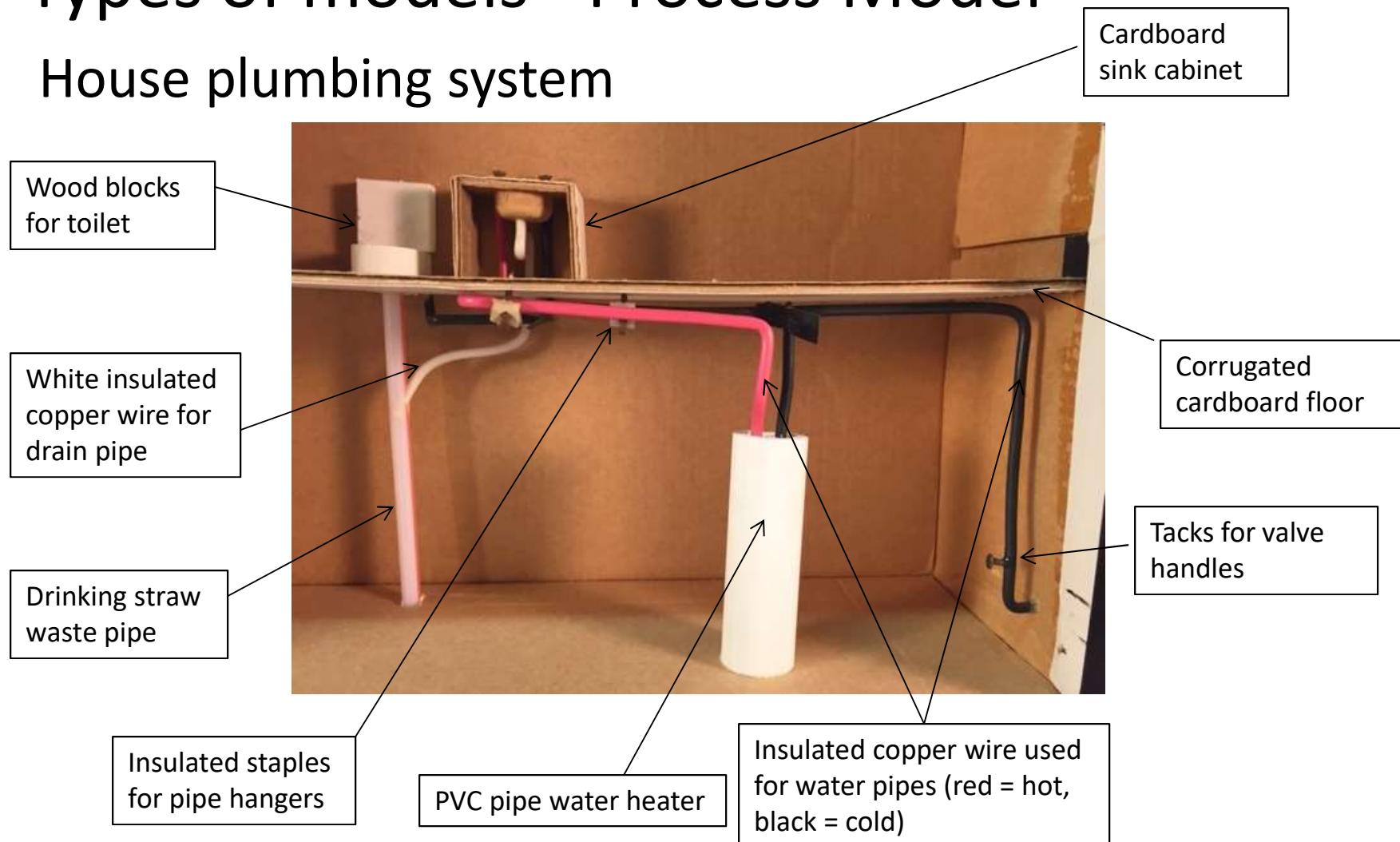
House plumbing system



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Types of models - Process Model

House plumbing system



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Types of models

Mechanical Model

- A model showing how a mechanism or machine is made to perform work, particularly utilizing combinations of the six simple machines
 - Lever
 - Wheel and axle
 - Pulley
 - Inclined plane
 - Screw
 - Wedge
- We will discuss Mechanical Models and simple machines in the 2nd week sessions

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Types of models

Industrial Model

- A model showing any finished product
 - Passenger carrying vehicle
 - Furniture
 - Home appliances
 - Toys

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Types of models - Industrial Model



1969 AMX
(1:40 scale)

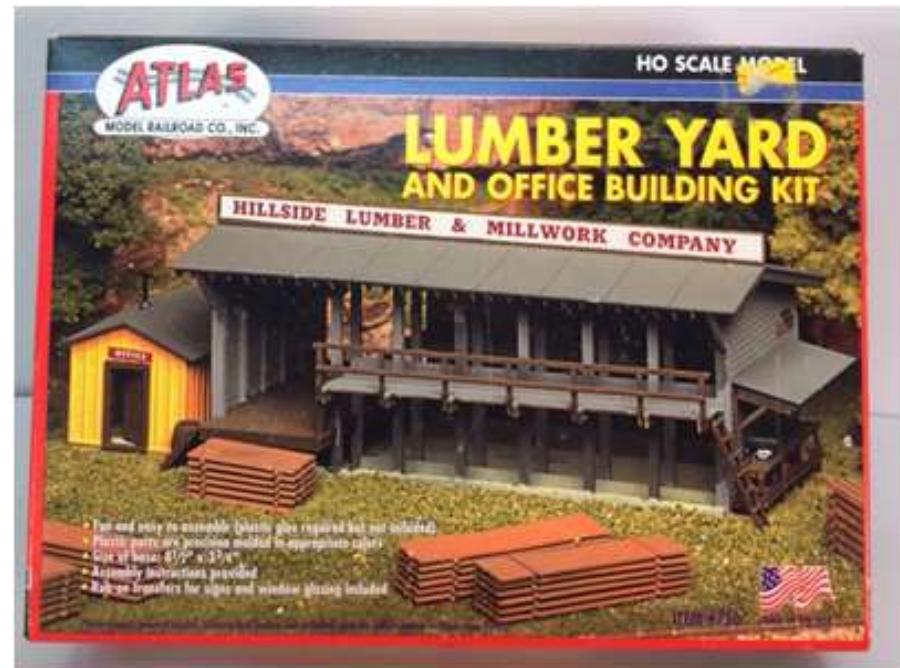
Appendix

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Types of models - Architectural Model

“Kit bashing” is taking one or more kits and using the parts to make something different than the kit subject

- The original kit was for a lumber yard
- Two Lumber Yard kits were used to make the freight house
- Wall panels from both kits were combined to make an enclosed building.
- Platform pieces were used to make the loading dock and ramp
- Doors were scratch-built from cardboard

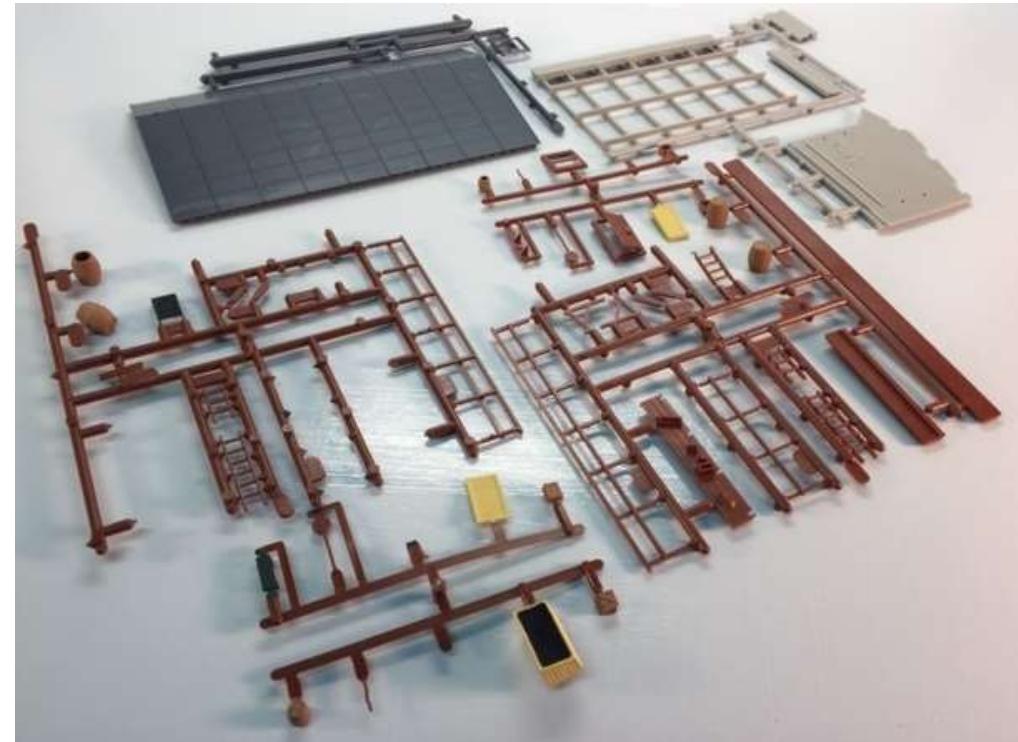


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Types of models - Architectural Model

This introduces a new way to look at a model kit

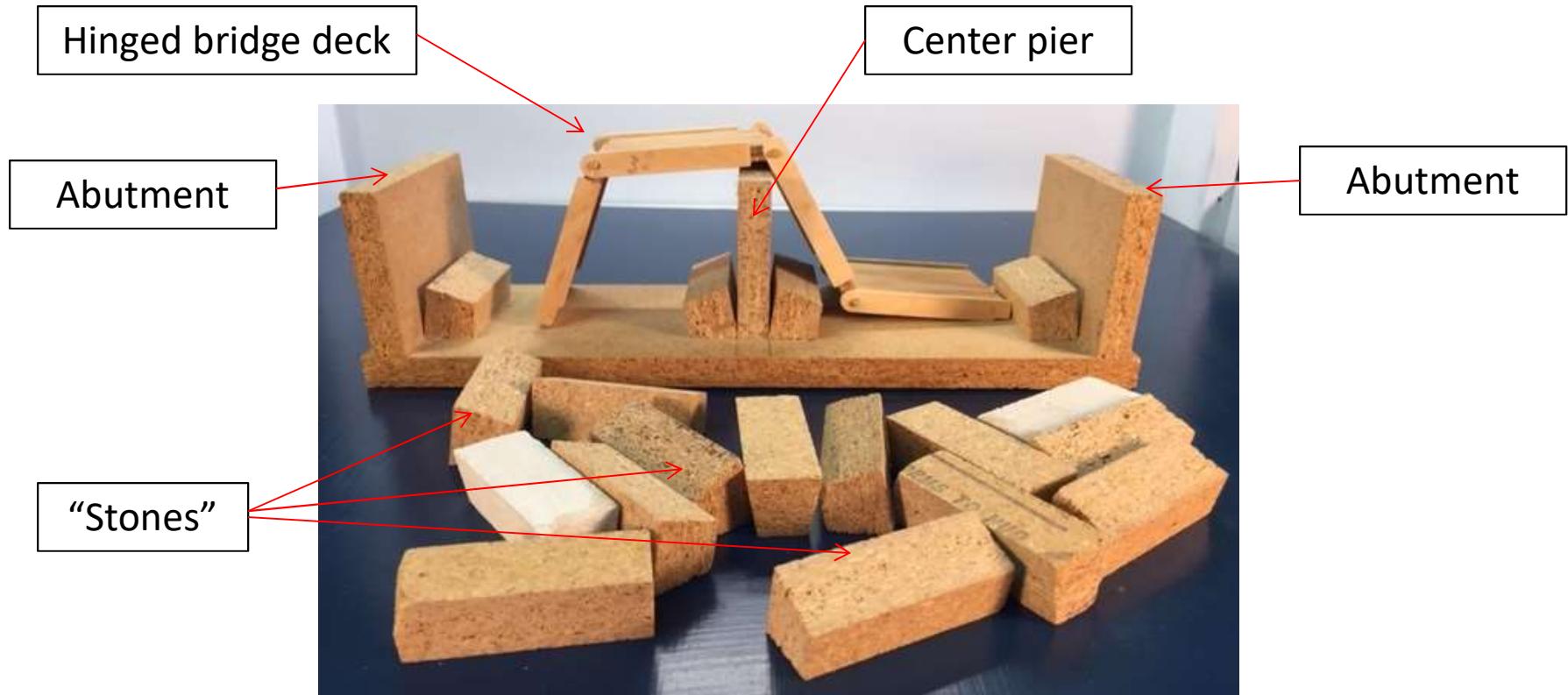
- Instead of thinking of it as a kit to build just one particular subject, it can be a box of parts to be used to make something very different



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Types of models - Structural Model

Arch bridge

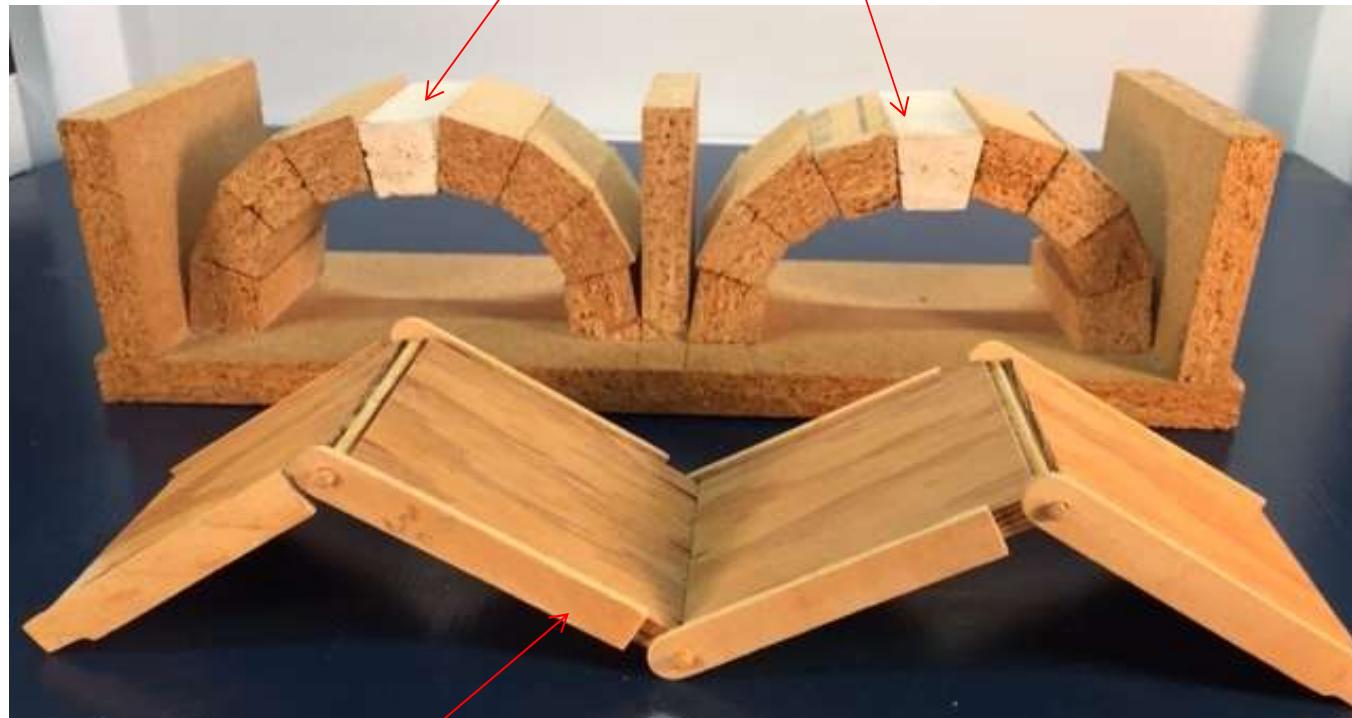


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Types of models - Structural Model

Arch bridge

“Stones” stacked to form arches

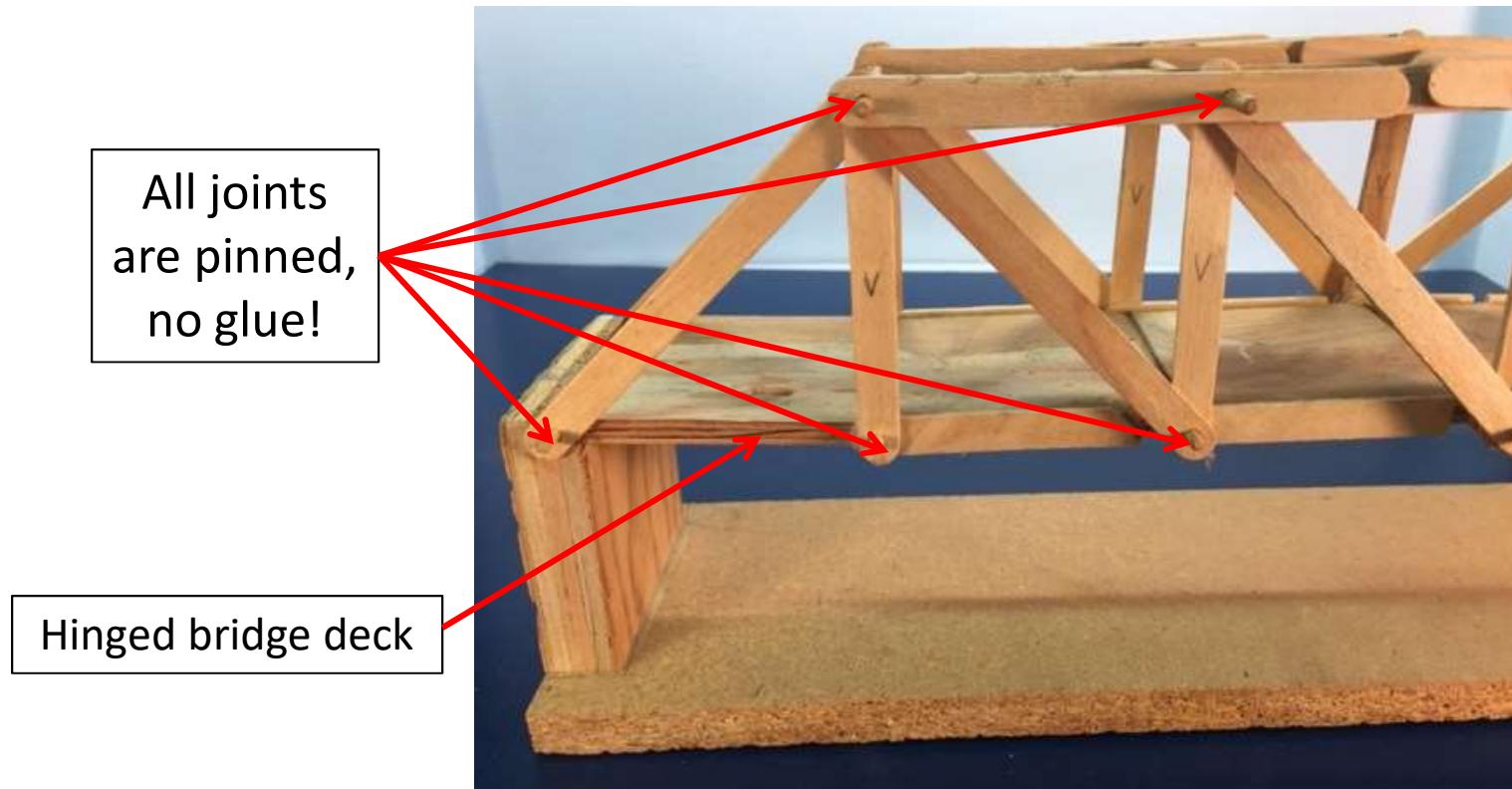


Hinged bridge deck

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Types of models - Structural Model

Truss bridge

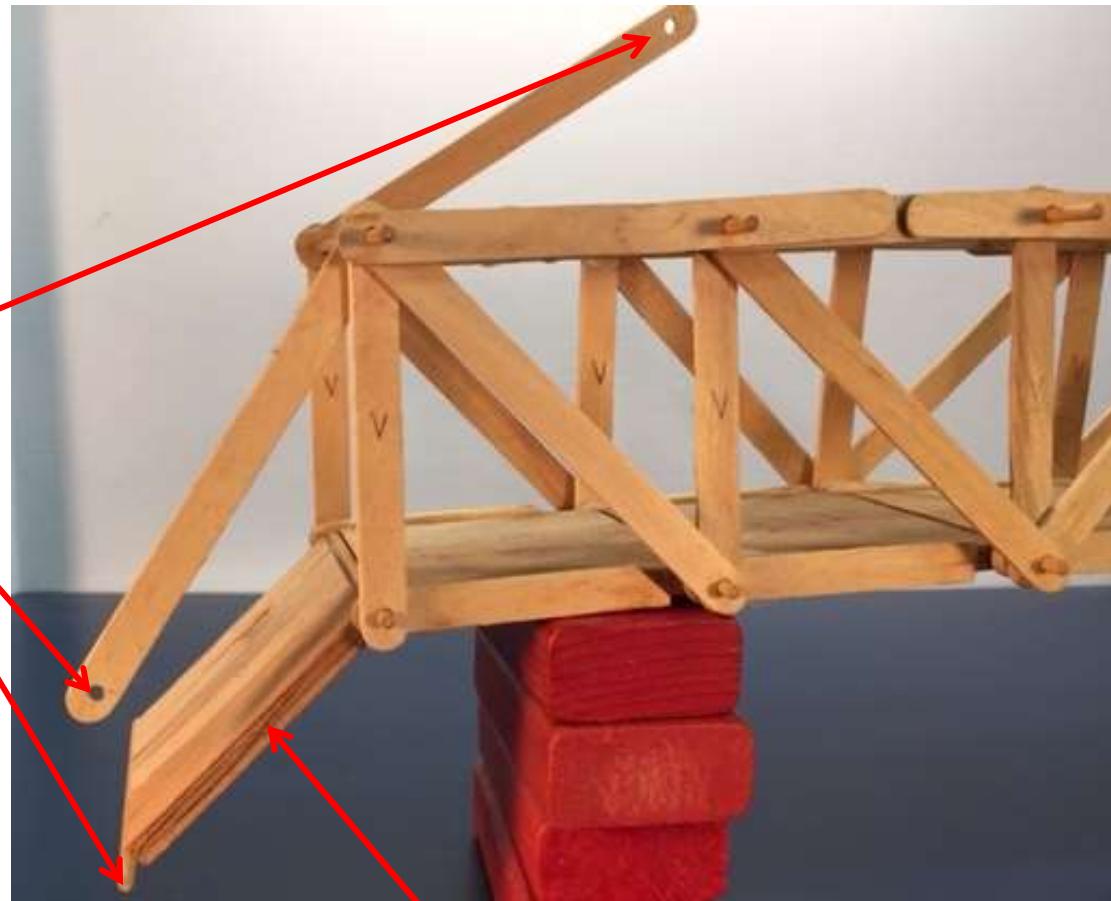


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Types of models - Structural Model

Truss bridge

Joints
unpinned,
deck flops!



Hinged bridge deck