



Brick League

WEEKLY UPDATES

SPRING SESSION DATES

March 1, March 8, March 15,
March 29, April 12, April 19

DONT FORGET

- Please wear masks and use sanitizer at the beginning of each session.
- Who wants a LEGO League summer camp?
- Please feel free to utilize our feedback forum available on our website after each session. We value your experience and want to meet needs and make accommodations as needed for all.

FEEDBACK

We are so thrilled you are joining us on this fun STEM adventure together. We hope this league delivers educational challenges and lifelong friendships. If you have any feedback please email us at heybrickleague@gmail.com

Imagine. Invent. Inspire.



BRIDGE 3/1/23

ENGINEERING DESIGN PROCESS

For each weeks challenge we will follow the engineering design process. This weeks challenge is to design a bridge that can hold 5 lbs. and/or 10 lbs..

We will test your design by adding a 5 lb or 10 lb weight to the center of your bridge.

In this lesson students will use geometry and measurement to create a bridge of their own using LEGO. Students should understand that gravity, compression and tension are all forces that determine longevity of a bridge. Bridges are designed to balance two opposing forces; **compression** (pushing force) and **tension** (pulling force). The load of these forces are channeled onto supports at the ends of the bridge called abutments and piers. There are four types of bridge designs; **truss** (takes the load off the deck and transfers it to the supporting piers and abutments), **beam** (made of two or more supports which hold up a beam), **arch** (weight is carried outward along two paths, curving toward the ground), and **suspension** (hung by cables which hang from towers, cables transfer the weight to the towers, which transfer the weight to the ground).

- **Ask**- define the problem:
 - what forces are acting on your bridge?
- **Imagine**- brainstorm possible solutions
 - What bridge design are you going to design?
- **Plan**- think! sketch! label!
 - pick a brainstorm idea, and plan your build
- **Create**- make a prototype and test it
 - Engineers work best in collaboration with others. Find an idea and build on it.
- **Improve**-how can you modify your design to make it better?
 - make your conclusion, iterate. How can you make your simple machine work best for your design? Challenge yourself beyond the design challenge.