

LEGO Bridge Design Log

Project: The Great Brick Span Challenge

Engineer(s): _____

Date: _____

Level 1 – Simple Span (8-Inch Gap)

- ☐ Bridge successfully spanned the 8-inch gap.
- ☐ Roadway was wide enough for the test vehicle.
- ☐ Test vehicle crossed the bridge without structural failure.

Observations: _____

Level 2 – Distance Stretch (12-Inch Gap)

- ☐ Bridge successfully spanned the 12-inch gap.
- ☐ Roadway was wide enough for the test vehicle.

Maximum Live Load Supported: _____ lbs / grams

What happened during testing?

Level 3 – Structural Efficiency Challenge (16-Inch Gap)

- ☐ Bridge successfully spanned the 16-inch gap.
- ☐ Roadway was wide enough for the test vehicle.

A. Dead Load (Weight of the bridge): _____ lbs / grams

B. Maximum Live Load Supported: _____ lbs / grams

Structural Efficiency Score

Efficiency Score = Live Load (B) ÷ Dead Load (A)

Final Score: _____

Engineering Reflection

Where did your bridge begin to fail?

What design change would you make before testing again?

What Does Your Efficiency Score Mean?

Your Structural Efficiency Score compares how much weight your bridge carried to how much the bridge itself weighed.

For example, a score of **10** means the bridge supported a load **10 times its own weight**. A higher score indicates a stronger and more efficient design—not simply a heavier bridge.