

CHAPTER 5: PHYSICS



End-of-Unit Summative Assessment

Performance-Based Assessment

Students will work in pairs to design a miniature cardboard bridge that applies the physics of tension and compression. Students will describe their design plan during a presentation and in a report.



Integrated Objective

What should students know or do by the end of the lesson?

Describe the tension and compression acting on a bridge design.

Exit Ticket Prompt

Describe where tension and compression are acting on your bridge design.

Model Response

We decided to design a truss bridge. The top beam of the truss bridge experiences compression because it is being pulled down by the rest of the bridge and the load. To balance this compression, the bottom beam experiences tension because it is being stretched by the top beam. The triangular supports in the middle provide additional compression while the vertical supports produce tension.

Integrated Objective

Thinking verb + content + language use (by . . .)

Describe the tension and compression in your bridge design by describing how the different members (parts) experience one of these forces.



Establish Comprehensible Input

Scaffold(s)
Background,
Sensory, Graphic,
Interactive,
Linguistic

Sensory: Students will read the labeled diagram of different types of bridges in a Britannica article.

Interactive: Students will co-read the Britannica article, stopping at each sentence to explain what that sentence means.



Structure Academic Output

Scaffold(s)
Word, Sentence,
Organization,
and Context
Dimension

Organization: Provide the following paragraph frame: *We decided to design a . . . bridge. The . . . of the . . . bridge experiences . . . because . . . To balance this . . ., the . . . experiences . . . because . . .*