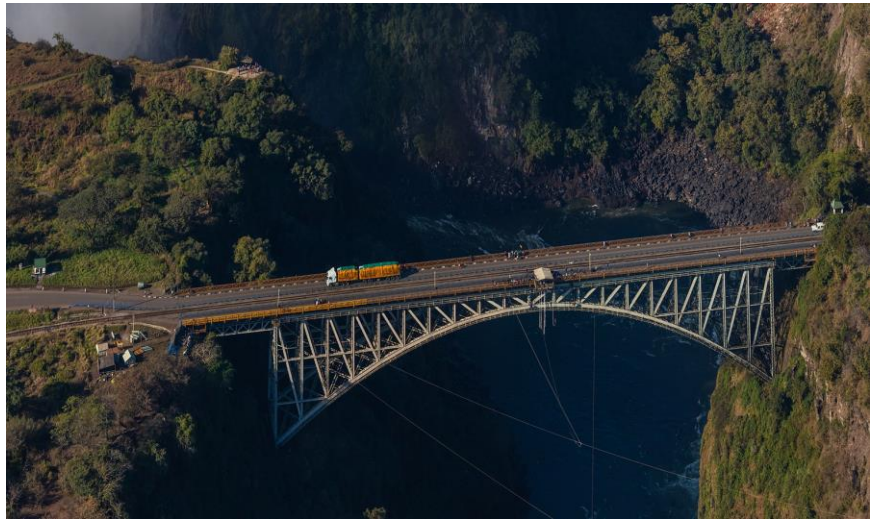
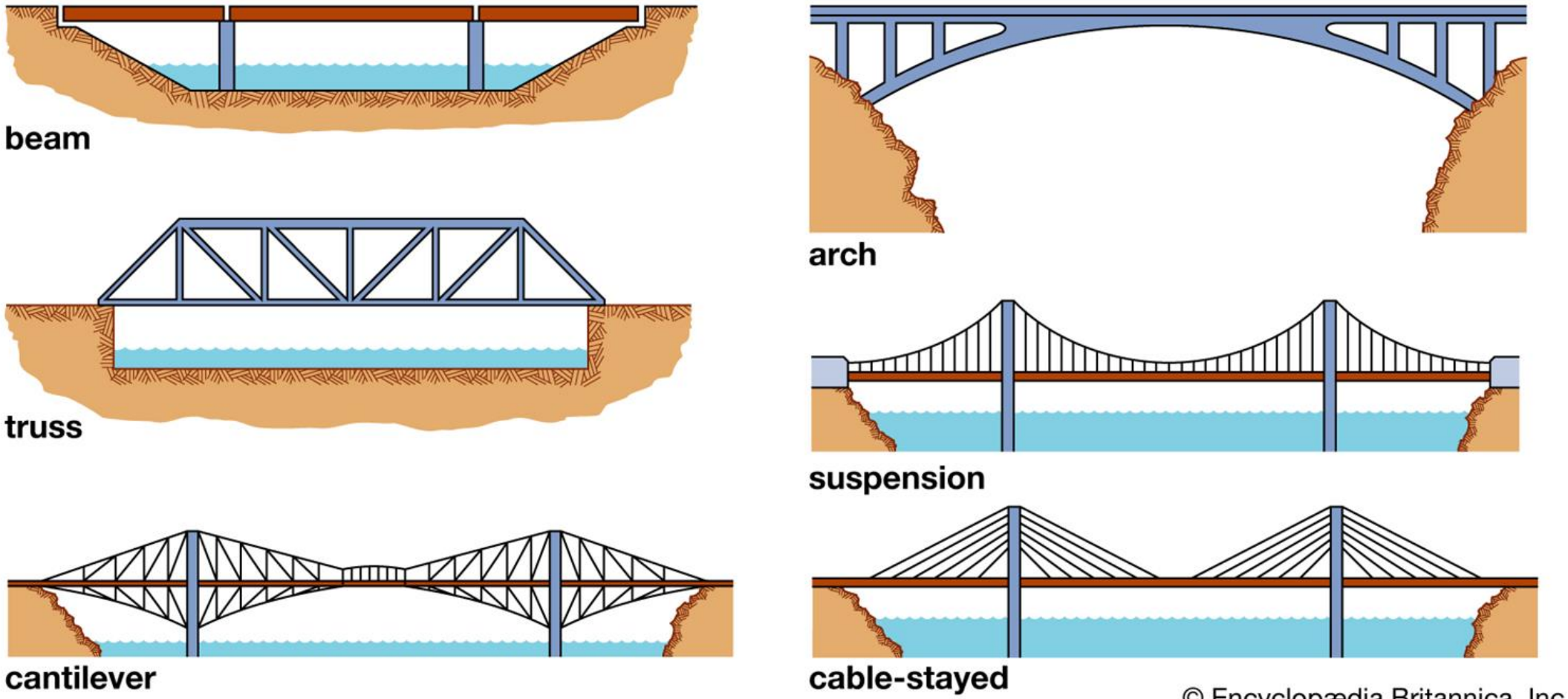
BRIDGE DESIGN CHALLENGE



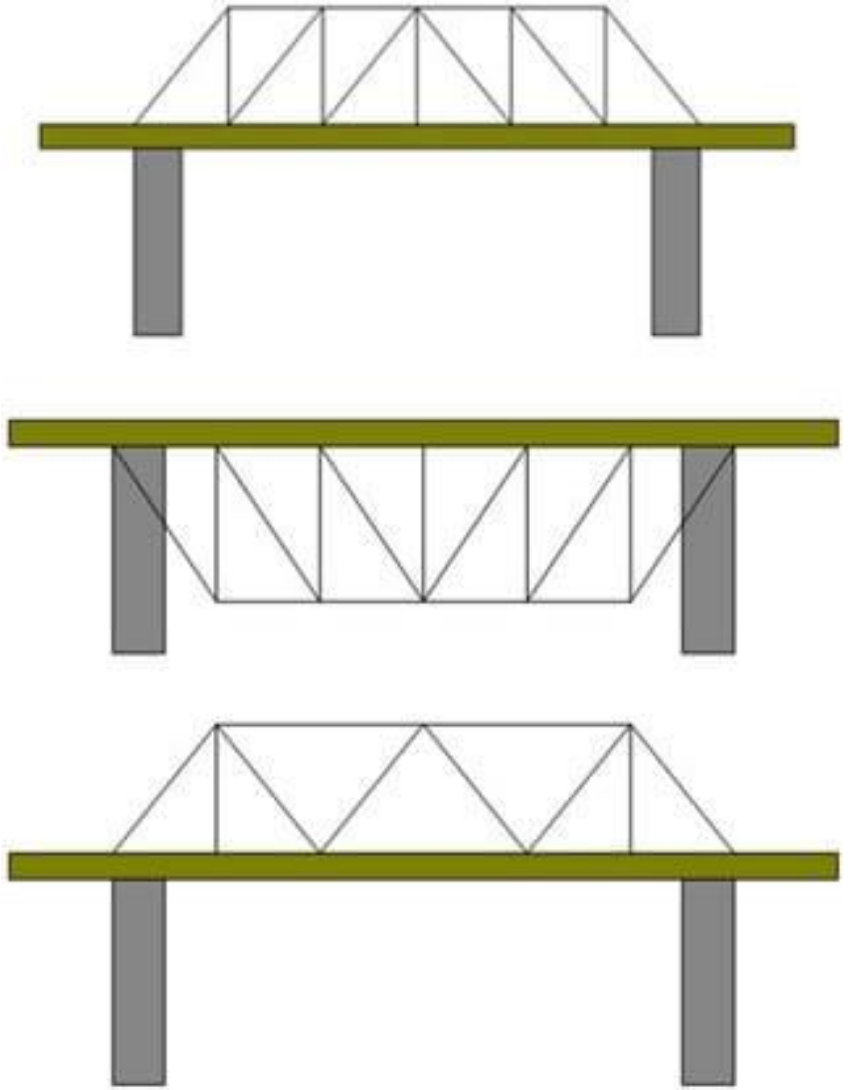
BRIDGE TYPES



The most common type of bridge is a **beam bridge**—a structure made of horizontal, rigid beams whose ends rest on two columns.

The **load** of the bridge is supported by the **columns**. Load refers to the bridge's own weight that needs to be supported, as well as any weight that is added to the bridge such as cars, trucks and people.

A **truss bridge** is a type of beam bridge that has **triangular** units to distribute the load and support the bridge.



Example truss bridge designs.

STRAW BRIDGES DESIGN CHALLENGE

Today, you will be working as structural engineering design teams to take on a design challenge to construct a model bridge. Your team will be given a set amount of supplies and a time limit of two class periods (*constraints*) to complete this design challenge.

Your team's bridge must:

- be at least 10 inches (25 cm) in length; able to span an 8-inch (20-cm) gap
- be able to securely hold small cup to which weight may be added until the model bridge fails (begins to bend)
- incorporate a truss design
- be made of 20 (or fewer) straws
- not be taped to the desk

Materials per team:

- 20 plastic drinking straws
- scotch or masking tape
- scissors
- measuring stick or ruler

Make sure to follow each step and answer each question in your Straw Bridges Worksheet!