

ENGINEERING DESIGN: BUILDING BRIDGES

KEY CONCEPTS

Review with your students before your visit. Students should be familiar with basic lab techniques such as using a microscope and following written lab procedures.

CIVIL ENGINEER

A person who designs structures such as roads, bridges and skyscrapers, and supervises their construction and inspection.

COMPRESSION

A force that squeezes an object together. Materials in compression tend to become shorter and fatter.

TENSION

A force that stretches an object. Materials in tension tend to become longer and thinner.

SPAN

The distance a bridge extends between supports.

LOAD

The weights and forces acting upon a bridge or structure.

BEAM BRIDGE

A horizontal structure with supports at each end.

TRUSS BRIDGE

The triangles on a truss bridge allow weight to be evenly spread throughout the bridge, allowing it to be rigid and strong.

ARCH BRIDGE

The curved structure of an arch bridge transfers the downward force of the load into an outward force along its sides and base.