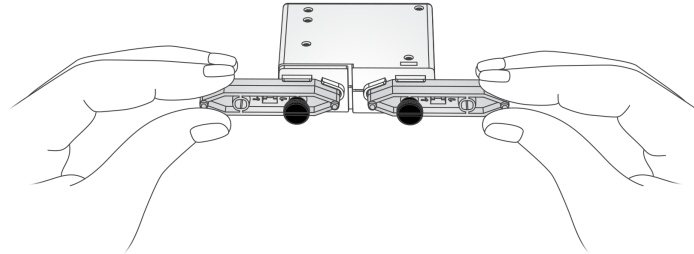


Investigation 2: Internal forces

Essential question: How are forces distributed within a truss when a load is applied?



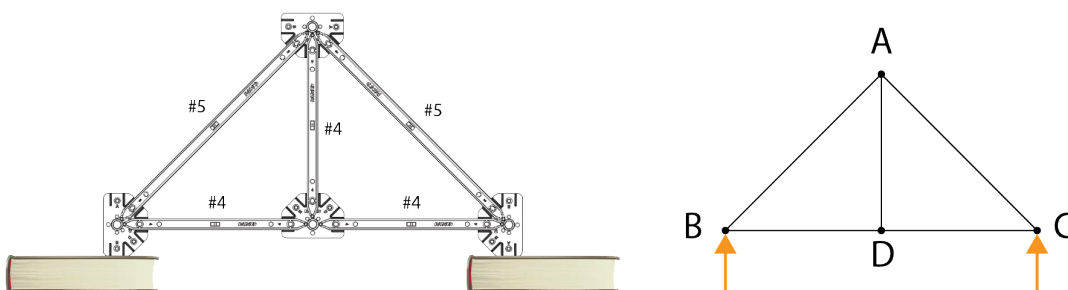
Part 1: Measuring tension and compression

1. Connect a beam to each side of the load cell.
2. Start data collection and zero the load cell. Perform the following while observing the force measurement:
 - a. Apply a **tension** force by *pulling* the beams away from each other
 - b. Apply a **compression** force by *pushing* the beams toward each other.

Questions

- a. What is different about the force measured by the load cell when a beam is in compression versus tension?

Part 2: Tension and compression in trusses



1. Build the bridge shown in the image. Support it at points B and C.
2. Place the washers on the hook. Measure the weight. Record the value on the diagram below.
3. Hang the weight from point D.
4. Start data collection. Measure and record the force in each member with the Load Cell.
5. Indicate whether a member is in tension or compression by drawing arrows on the member in the diagram.

