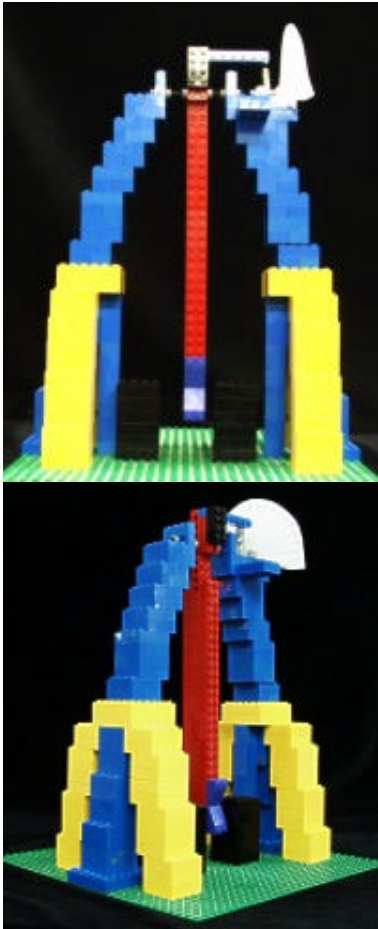
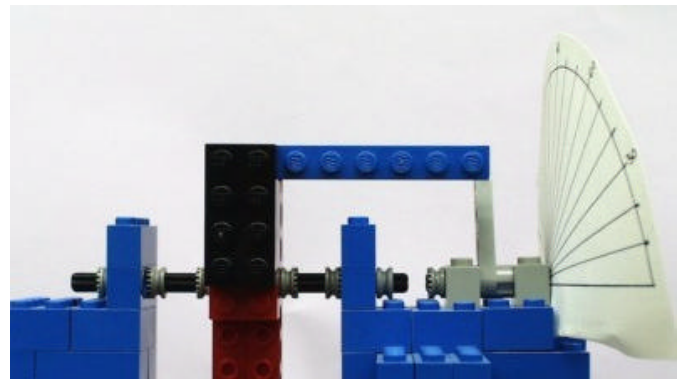


# Impact Strength Testing



Engineers and materials scientists use methods such as the Charpy V-Notch (CVN) and Izod impact strength tests to measure the amount of energy required for a swinging hammer to break a sample of a material. The amount of energy required to break the sample can be calculated by measuring the height (or angle) the hammer reaches after breaking the sample. Therefore the higher the angle, the greater the impact strength of the material. The LEGO<sup>®</sup> impact tester consists of a swinging hammer mounted between two support towers. This model can be used to test household materials such as newspaper, paper towels and aluminum foil.

The hammer is hung from an axle that allows the hammer to freely swing. To test a sample, the hammer is manually pulled to a maximum height and released.



A 1x8 brick attached perpendicular to the top of the hammer comes in contact with a “needle” (crank arm) which is parallel to the starting position of the hammer. A protractor can be traced onto paper, which can be used as a scale to compare samples. This needle is pushed at the same angle as the hammer, and is held in place by friction between the needle and two adjacent 1x2 beams.