

<p><u>The Estimator: Estimating Tic-Tac-Toe (Construction)</u> Competitor selects a square on a tic-tac-toe board. Win X's by estimating items requested on cards within tolerances. A loss places an 'O' in the chosen square. Items checked by physical measurements. 5 Points = 3 X's on board 10 Points = Full board 25 Points = WIN</p>	<p><u>That Dam Challenge (Geotechnical / Water Resources)</u> Using Craft Sticks, Supplied Sand, Clay and other Supplied Materials 5 Points = Creating a Free-standing Dam 10 Points = That holds some water 25 Points = That holds almost all the water (only ¼ max from the top)</p>
<p><u>Balloon Tower (Architectural)</u> Using balloon animal balloons and pumps, design a free-standing tower. 5 Points = A freestanding balloon structure over 3' tall. 10 Points = A 5' tall freestanding balloon structure. 25 Points = A 5' or more structure in which a student can fit inside.</p>	<p><u>West Point Bridge (Civil)</u> Using West Point Bridge Design software. 5 Points = Designing a bridge that is capable of carrying the truck 10 Points = Designing a bridge that can carry the truck and under \$200,000 25 Points = A bridge that can carry the truck and under \$170,000</p>
<p><u>Pop-Fly (Mechanical)</u> Using paint stirrers, corks, duct tape and small drinking cups, design a free-standing device to launch a ping pong ball at a target. NOTE: launcher must stand on table and be launched without holding device. Device cannot be taped to table. 5 Points = A free-standing device: Not attached to the table - resting on table - launched with 1 hand - ball hitting the wall 10 Points = Same as above PLUS hitting the target 25 Points = Same as above AND hitting the bullseye</p>	<p><u>Water Quality Testing (Environmental)</u> Using supplied test kits 5 Points = Completion of 2 or 3 tests. 10 Points = Completion of all tests with accurate results. 25 Points = Accurate assessment of the overall quality of the water based on results.</p>
<p><u>Chopstick Cars (Mechanical)</u> Using chopsticks, craft sticks, CDs, duct tape, rubber bands and balloons, make a model car that can propel itself. 5 Points = A car that stands and can roll (2 wheels needed) < 5'. 10 Points = A car that stands and can roll (2 wheels needed) < 10'. 25 Points = A car that stands and can roll (2 wheels needed) ≥ 10'.</p>	<p><u>Mag-Lev Cars (Mechanical)</u> Using Styrofoam blocks, glue and magnets 5 Points = A car that can get on the track. 10 Points = A car that can make it the length of the track. 25 Points = A car that can make it the length of the track UNASSISTED.</p>
<p><u>Card Towers (Structural)</u> Using 11x17 Cardboard Sheets ONLY – NO BENDING / CUTTING / TAPING -- Build a free-standing TOWER 5 Points = A tower taller than the builder. 10 Points = A tower taller than the builder using 18 sheets. 25 Points = A tower taller than the builder using 15 sheets.</p>	<p><u>Jenga Challenge (Structural)</u> 5 Points = All rows of 2. 10 Points = All rows of 2 with at least 2 rows of 1. 25 Points = All rows of 2 with 3 or more rows of 1.</p>
<p><u>Craft Stick Bridges (Structural - Transportation)</u> Using Craft Sticks, Paper and Duct Tape – Build a Bridge 5 Points = That can span a clear span of 24" 10 Points = That can carry 10 pounds 25 Points = That can carry 20 pounds or more</p>	