

HANDS-ON PROBLEM: HIDE 'N GO SCORE

This is a two-part Hands-On Problem. In Part 1, you will build as many structures that measure at least $\frac{1}{4}$ " x $\frac{1}{4}$ " x $\frac{1}{4}$ " in dimension as possible. In Part 2, you will stack your structures in such a way that each structure entirely hides the one immediately beneath it when viewed from above. You will have 4 minutes to build your structures in Part 1 and 2 minutes to stack them for score in Part 2. You may talk among yourselves at any time.

YOUR PROBLEM IS:

Part 1: Your team is to use the materials given to build as many structures as possible which you will stack in Part 2. Each structure must be at least $\frac{1}{4}$ " high, $\frac{1}{4}$ " wide and $\frac{1}{4}$ " long. In part 2 structures will receive 5 points for each one hidden by the one above it and 1 point for each inch in total height of the finished stack regardless of whether any structures are hidden. You will have 4 minutes to build your structures. You may use the scissors and the tape measure, but they may not be part of the structures in any way. (Repeat "Part 1:...".) You have 4 minutes to build. (Begin.)

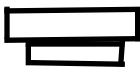
Part 2: You now have 2 minutes to stack your structures. To receive a score of 5 points, a structure must be hidden from view by the one stacked directly on top of it when viewed from directly above. You will receive 1 point for each inch in height of the final stack, separately from the score for structures being hidden. (Repeat "Part 2: ...") You have 2 minutes to stack your structures. (Begin time.)

FOR JUDGES ONLY: The team should be given a pair of scissors, but they are not to be used in the solution. Also not included is a ruler or tape measure to measure the height of the stacked structures. You must view the stack from directly above when it is finished, which will be easiest if the team stacks structures up from a hard floor, but it may be easier for them to build the structures on a table.

Give the team the following items: 1 6" x 6" piece of aluminum foil, 2 soda straws, 1 3" x 5" index card, 2 sticky labels, 2 pipe cleaners, 1 small paper cup, 2 paper clips, 2 toothpicks and 2 sheets of 8 1/2" x 5 1/2" sheets of paper, scissors, tape measure. The following diagram shows what should be scored for "hidden":



NOT OK



OK

Note: structures may be entirely visible when viewed from the SIDE; they must only be hidden from view by the one above when viewed from the TOP.

JUDGE NOTE: This problem involves strategy. A team may choose to ignore the hidden requirement and "go for height."

A. Number of correctly stacked structures

= _____ x 5 = _____

B. Height in inches of final stack

= _____ x 1 = _____

TOTAL A+B = _____