Construction: **Binary Adder**

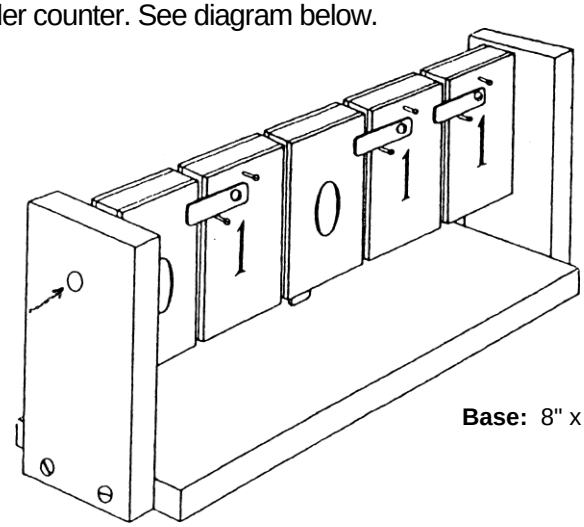
Research how the base two system operates. Be able to add and subtract in base two.

Build a binary adder and demonstrate it to the class. Explain why it counts or adds in base two.

Instructions for building a binary adder counter. See diagram below.

Sides: 5" x 2" x l/2"

Drill 1/4" diameter hole 1" from top of sides



Base: 8" x 3" x l/2"

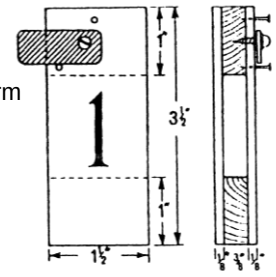
Assembly: Attach the sides to the base with glue and nails or screws. Push a 1/4" dowel 9" long through the hole in one of the sides.

Put on a washer, then a counter block, and continue alternating washers and blocks until the dowel goes into the other side. The positioning of the carry arm is very important. The screw hole is purposely off center.

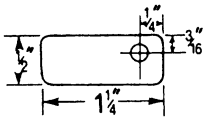
Screw the thin metal strip loosely to the counter block as shown in the diagram. Use washers. Insert two small nails or pins to act as stops.

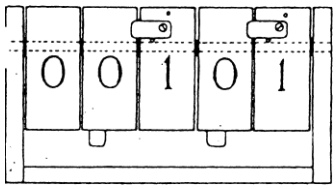
Carry Arm

Detail of Number Block



Carry Arm





Operation: Gently push on the top of the block causing it to rotate and topple. The toppling causes the carry arm to fall into position.

EXTENSION: *Try to discover a way to subtract using your binary adder.*