

Creative Thinking Circle

CTC II Homework Due 1/28

Challenge: Build a bridge that can hold 100 pennies using 1 sheet of paper and up to 5 paper clips

A bridge must support its own weight (the dead load) as well as the weight of anything placed on it, like the pennies (the live load). Your paper bridge must span 20 centimeters (about 8 in.). The sides of your bridge will rest on two books and cannot be taped or attached to the books or the table.

Supplies You Will Need

- plain paper
- 5 paper clips
- ruler
- 2 books or blocks
- at least 100 pennies or other small weights
- scissors



Design and Testing

1. Consider several possible designs before you start building. What can you do to the paper to make it stronger? When you have decided on a design, construct your bridge.
2. Place the bridge across two supports that are 20 cm apart. Remember that the space below the bridge must be clear, just like a real bridge, to allow boats to pass!
3. To test your bridge, load it with pennies one at a time, until it collapses. Record how many pennies your bridge supported.

Is there a difference in the load your bridge can hold if you put the load in the center of the bridge compared to spreading it out along the bridge? Make a prediction and test it.

Come up with your best design – *you will be reconstructing it in class next week.*

Strongest bridge WINS!