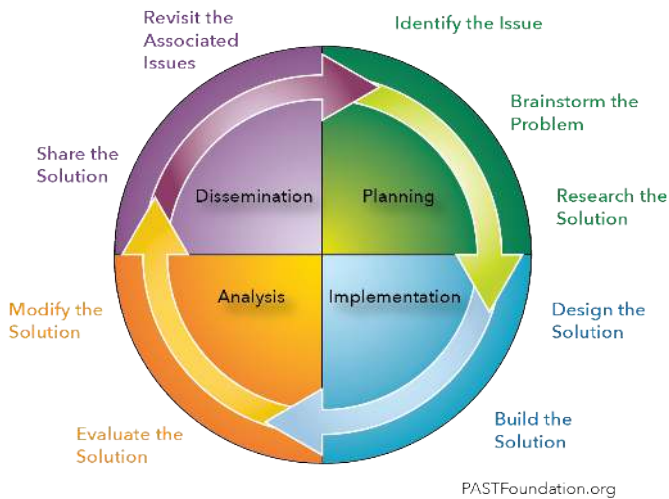


Beam Design Mini Challenge

Name: _____

Date: _____



Problem Scenario:

You are designing a bird feeder for your backyard and must design a beam to hold it away from the house where you mount it. You will be using index cards and masking tape to construct a beam that holds a mass 10 inches away from the table.

Challenge:

What can you design to feed the birds, but keep them away from the house? How can you attract birds to your backyard? How can you feed the Angry Birds?

Criteria/Supplies:

- 3x5 index cards/ tape/ a mass approximately 50g-100g
 - ie, 50g=1 small egg, 9V battery, 2 slices of bread
 - ie 100 g=100 skittles, medium sized apple, Hershey's chocolate bar
- The beam must be self-supported

1. Brainstorm: Use the space below to brainstorm the design and approach to building a strong bird feeder;

- Index cards by themselves can't hold up the weight.
- What are two ways you can make the index card stronger?

2. Design:

Sketch your beam to hold your bird feeder from two views:

A. Side View:

B. Cross Section View

Draw your beam as if you were looking down it towards the table from the bird feeder.

4. Evaluate:

See how much weight your beam can hold.

Can your beam hold the mass at least 10" away from the table?

Do you think your beam can hold a bigger mass than the one provided? Why or why not?

5. Modify:

If you answered no to either A or B of part 4 write down a way you can fix your design and then do it.

After it can hold the weight, modify your design to reduce the number of index cards and amount of masking tape that you use. Write down any changes that you did.

3. Build:

Use the materials to build your beam. It does not have to be exactly like you drew it if you find some other way works better (just be sure to document your changes.)

6. Share:

Share your creation on Social Media!

Tag us on Facebook, Twitter or Instagram @pastfoundation

Use the hashtag #ThisIsPAST or #DesignThinking