

ACTIVITY THREE

Overview

In this activity you will learn about beam and truss construction and you will simulate bridge construction with the *Bridge Builder*[®] software program.

STEP 1



Inventory

If necessary, turn on the computer and wait for it to go through its "boot up" procedure. When the Media Cruiser interface is displayed, log in, and click **Lessons, Activity 3**, then **Inventory**. As you locate the various items on the list, click Yes beside each of their names. If you are unable to find an item, click No. Report any problems such as missing or damaged items to the instructor. When finished, click Score It.

STEP 2

Vocabulary words

This activity includes these three new vocabulary words. Be sure to list them on the Vocabulary **Word Work Sheet**. Look for them as you work through the activity and write the definition for each.

7. Truss
8. Cantilever
9. Neutral axis

STEP 3

Study questions

There are more questions to answer as you work through the module activities listed on the following page. Use your **Study Question Work Sheet** to answer the questions. You may see these questions at the end of the module on the Post-test so do your best to answer them accurately.

VOCABULARY WORD ANSWER KEY

All answers come from the *Engineering Structures* software.

1. **Dead load:** a permanent load that does not change; i.e. the roof on a house
2. **Stress:** the measurement of the intensity of the forces trying to push or pull a solid material apart
3. **Strain:** the amount or distance a material deforms when placed under stress
4. **Compression:** the tendency of material to be condensed
5. **Tension:** the tendency of a material to stretch or to be pulled apart
6. **Shear:** the tendency of a material to be divided by two opposing forces
7. **Truss:** a beam that has been divided horizontally and moved apart to increase depth
8. **Cantilever:** the method of allowing the beams to extend past the support walls
9. **Neutral axis:** the line in a beam where there is no tension and no compression
10. **Load bearing wall:** a wall that transfers roof loads to the foundation

MULTIPLE CHOICE ANSWER KEYS

All study question answers come from the *Engineering Structures* software.

Study Questions	Pre-test	Post-test
1. C	1. D	1. B
2. D	2. D	2. D
3. A	3. C	3. C
4. A	4. B	4. D
5. C	5. A	5. A
6. C	6. A	6. B
7. D	7. B	7. A
8. B	8. A	8. B
9. B	9. B	9. C
10. D	10. C	10. A