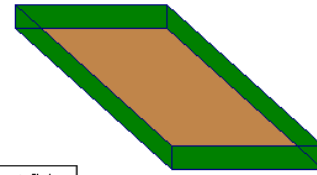


Directions

1. Move the red dot on the edge of the green paper to change the length of the corner cut.
2. Notice that the number of 1" cubes that will fill the box changes. Why does this happen?
3. Place a few of the cubes into the box by dragging their red dots. How many cubes would you estimate it would take to fill the base? HINT: how could the values of length and width of the box help you answer this?
4. Click on the "Reset Cubes" button to replace the cubes. Now find the length of corner cut that yields the largest box.



side length of corner cut = 1.0 inches



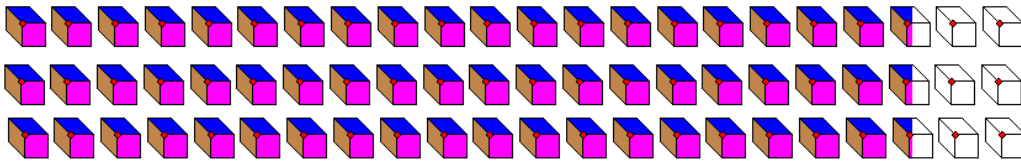
Reset Cubes

height of box = 1.0 inches

width of box = 6.5 inches

length of box = 9.0 inches

Volume = 58.5 cubic inches



*Instructors Comments: This applet can be used to help the students create a dynamic image of the box problem. The mouse can be used to drag the red button which will vary the size of the cutout. The box to the right will vary as the cutout is dragged. In addition, each cube represents a unit of volume. The students can get an idea of how the volume accumulates by watching it simultaneously accumulate in the boxes. An additional feature of this applet is that the boxes can be dragged by clicking on the corner with the red dot and placed in the box created by cutting out a corner. This gives the students a method of verifying that they represent the same volume.*