

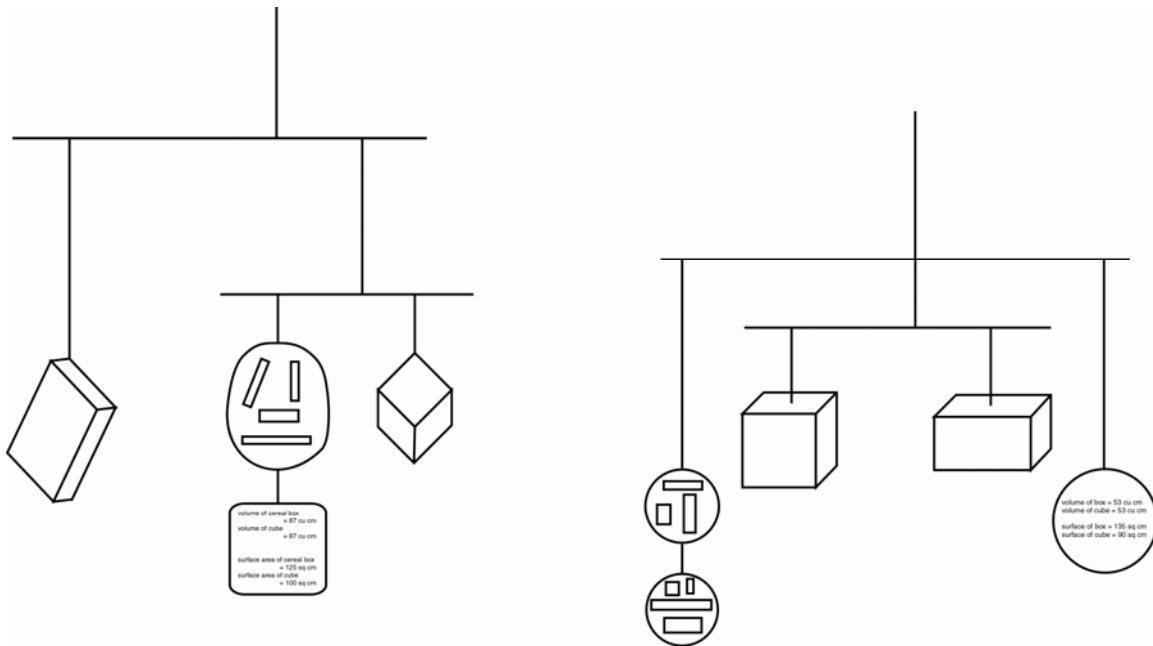
## The Boxes Go Mobile Instructions for Students

Now that you've made a cubical box from a rectangular one, you can create an artistic display of your work by making a mobile. A good-looking and interesting mobile requires some planning in advance, however, and patience is essential when it comes to actually hanging the individual components.

Your mobile should have four components. Components one and two are your boxes. Component three is your collection of scraps, artistically arranged and glued to poster paper. Be creative! You can cut the poster paper to any size and shape that will be visually appealing and appropriate to the size of the scraps you have.

The fourth component of your mobile is a mathematical comparison of the two boxes. This should be printed neatly or word-processed on white or light-colored paper, and then glued to another piece of poster paper. Again, you can cut the paper to an appropriate size and shape to make it visually appealing. Your comparison should list the pertinent information for each box, including the dimensions, volume, and surface area. It should also include the total area of the scraps.

Once you've got all four components together, you will need to decide how to arrange the components so they hang from sections of dowel rods *and* can be balanced so the dowels will hang horizontally. There are lots of ways to do this, so experiment and see what works and looks interesting. A few examples are shown below.



To cut a dowel rod to the length you need, make a pencil mark where you want the cut to be. Hold the dowel rod firmly on a tabletop or on the floor, and press the blade of a utility knife into the mark. You do not need to move the blade in a sawing motion, and you do *not* want to try to press it all the way through the dowel. You just need to cut a groove in it. Roll the dowel slightly and make another groove in line with your first, and repeat the process until there is one groove all the way around the dowel. Then pick up the dowel, and holding it with your thumbs on either side of the groove, make a quick snapping motion to break the dowel.

To hang a box from the dowel, punch a hole in the box and run a piece of thread through the hole. Then knot the thread well. Simply taping the thread to the box, instead of tying it through a hole, will not work – at least not for long. The other end of the thread should be tied to the dowel. Again, simply taping the thread to the dowel may or may not hold up over time, and it generally doesn't look very good.

Once all four components of your mobile are in place and the mobile is well balanced so that the dowel rods are horizontal rather than slanted downward, check to make sure that the different components of the mobile will not bump into each other or get tangled up when the mobile turns. When you are satisfied with your mobile's appearance, put a small dab of white glue or clear nail polish on every knot. This will make sure they stay in place over time – even if you drop your mobile or some other disaster befalls it.

Finally, trim off any extra pieces of thread hanging down from your knots, and you should be ready to hang your mobile from the ceiling.