

COMPILATION: CASTLE - how to break light bulbs to check for continuity

Date: Tue, 15 Oct 2002

From: Rob Spencer <rspencer@KIVA.NET>

I am implementing CASTLE this year for the first time ... and so I am not much more than a lesson ahead at a time in terms of previewing what the students are doing. Tomorrow, *the students are supposed to check the continuity of various parts of a normal household light bulb.* In order to do this, the glass bulb needs to be removed. Before I address this problem at home with my own meager light bulb stash ... *is there a preferred technique for removing the globe without damaging the filament?*

-----  
Date: Tue, 15 Oct 2002

From: Rob Spencer <rspencer@KIVA.NET>

Well, I happened into a source of light bulbs that I did not finance so I found my answer. *If you score the base of the bulb with a good file, you can then tap the glass bulb and it will break along the score.* The filament region is narrow enough to fit through the hole in the base of the globe. Make sure the break occurs in an enclosed region like a box, to corral the little shards of glass. Also, use pliers to snap off the remnant glass around the screw in metal base. I am storing them in plain Dixie cups for support...so far so good. I use safety gloves and glasses as well.

-----  
Date: Wed, 16 Oct 2002

From: Paul Wendel <pwendel@KENT.EDU>

You have solved the problem, but you might be interested in another method from Lou Turner: *wrap a towel (or paper towel) around the bulb, then slowly tighten a C-clamp onto it.* Most filaments survive the procedure, although few filaments survive handling by a hundred students or so.

-----  
Date: Wed, 16 Oct 2002

From: Bob Bogenrief <RBogenrief@STLUCIE.K12.FL.US>

Re: removing the glass from a bulb. I tried both breaking the bulb with a C clamp and filing the glass at the base along the threads. I broke the filament once with the C clamp and not at all with the filing method. I took care to place the bulb on a flat surface in such a way that the glass did not drop on the filament when the glass broke loose from the base.

-----  
Date: Wed, 16 Oct 2002

From: Lou Turner <louturn67@AOL.COM>

*I get 100% success by using a triangular file to saw away at the base of the bulb.* It takes a few minutes to cut through the glass, but once through, it is fairly easy to finish the job.

Date: Fri, 18 Oct 2002

From: Diane Dutkevitch <Diane\_Dutkevitch@YC.EDU>

Last year I used some of the CASTLE curriculum. I broke each light bulb by wrapping it in a paper towel, and putting the wrapped bulb in a vise. Tighten the vise slowly, until the glass breaks. The broken glass will be in the paper towel, which makes cleanup a lot easier. Use pliers to carefully remove any glass near the bulb threads, and cover any sharp edges with tape (I used duct tape). I put the glass removed with the pliers into the paper towel, wrapped up all the glass in the paper towel, taped the paper towel closed, and threw the whole thing into the trash. The whole technique worked quite well. I didn't break any filaments, or have any broken glass shards on the table or floor.

-----  
Date: Sat, 19 Oct 2002

From: Chris Horton <chrisahorton2@HOTMAIL.COM>

I found it most useful to remove the base without breaking the glass! The students could then see where the leads came in and follow them. This is not easy to do as the base is firmly attached to the glass. Heating the base with a heat gun helped break the glue down. It took many tries, but was worth it. Towel and vice is a good idea but not tightening enough to break the globe.