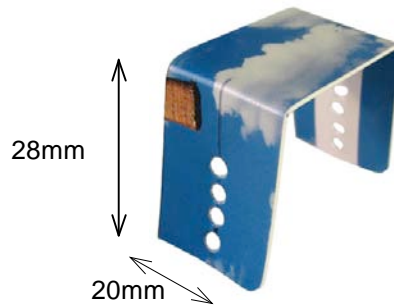


Front Axle PV Cell Angle Adjustment:

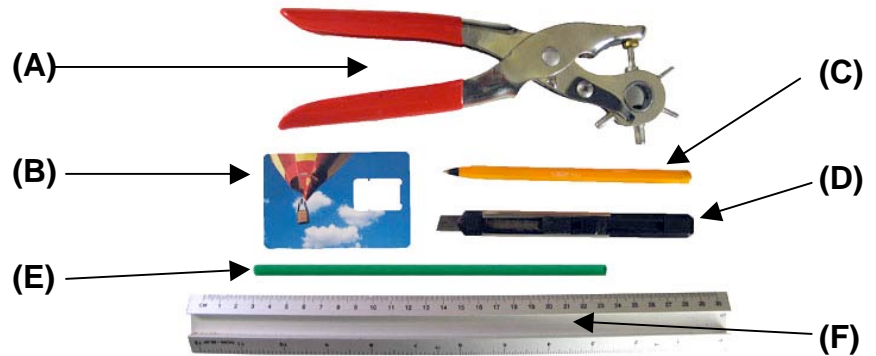
Instructions for construction of axle support to adjust angle of cell to source of light

The axle adjustment support



Equipment Required:-

- (A) Leather Punch
- Mobile Phone Sim-card/ Credit
- (B) Card
- (C) Ball Point Pen
- (D) Craft Knife
- Drinking Straw, approximately
- (E) 6mm diameter
- (F) Ruler



A right angled straight edge (such as a non-curved desk edge) is also required.

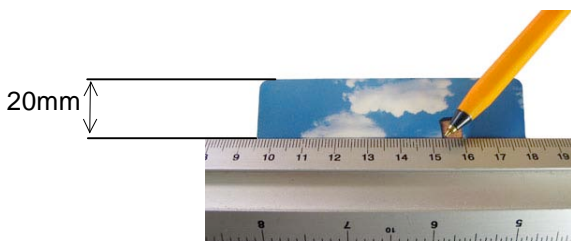
N.B. In place of the Leather Punch (A) use a hand/ power drill with a 2mm bit. You may prefer to use scissors or a guillotine in place of the Craft Knife (D).

Health & Safety and other tips:-

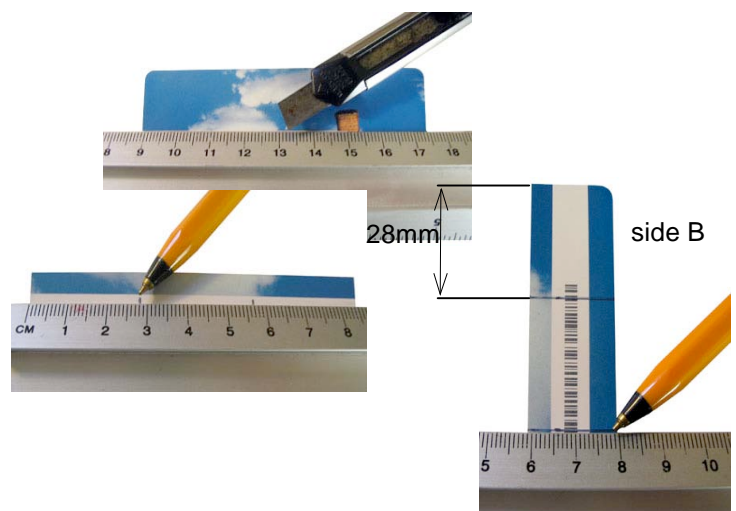
- Read through instructions before starting the process.
- Ensure due care is taken throughout the process when using equipment.
- Be as accurate as possible throughout with measurements.

Steps:-

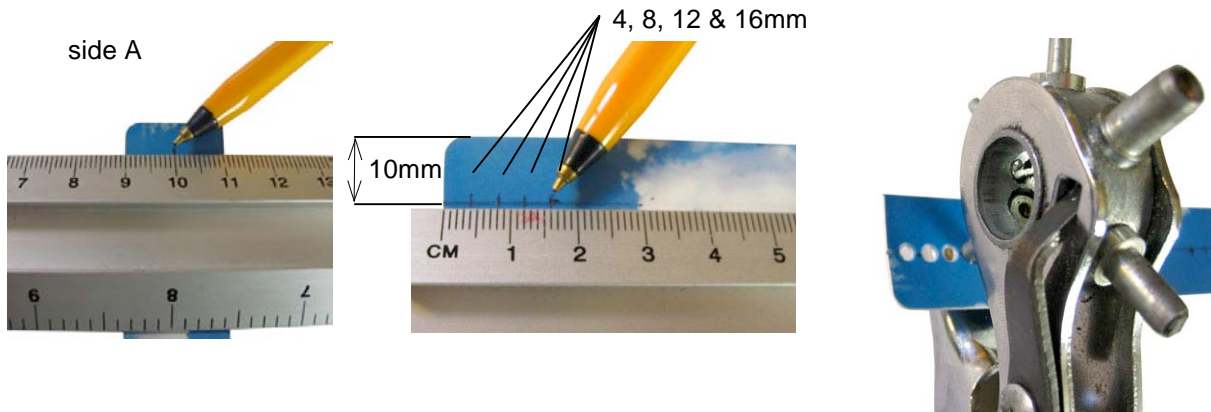
1. Carefully mark and cut along a parallel line **20mm** from the edge of the card (on the opposite side to the sim-card 'hole'), thus leaving a strip to produce the axle support. For the cut use **craft knife, scissors** or **guillotine** (and supervision where required). Do not use a plastic ruler as a guide for the craft knife as it will cut through, use a metal ruler.



2. On both sides of the card mark and draw a line **28mm** from each end. Ensure the lines are parallel with the ends.



Turn the strip over and, on side A, mark and draw a centre line along the length of the strip (if you cut the strip accurately) this should be **10mm** (1cm) in from each side. If it is not then find the centre for your measurements. Now, measuring from each end, on this line, with your pen mark at **4mm, 8mm, 12mm and 16mm** (0.4cm, 0.8cm, 1.2cm and 1.6cm).



3. Using the marks, make 8 holes, each **2mm – 3mm (0.2cm – 0.2cm)** in diameter, through which the axle will be fed. To make the holes use the **leather punch, borer or drill**. Use these tools with caution (and supervision where required) and ensure you keep the area clear when creating the hole. **Students may require assistance with this**, this section can be quite tricky. A practice on the discarded section of the card may help build confidence and accuracy.

4. Using the straight edge of a desk, or such like, line up the two lines drawn on side B (part 2.) and use the slight groove created by the pen to help bend the axle support into the correct shape.



Now you have read through the method, begin construction using the instructions as you go.

Remember to work safely and under supervision when required!

Finally...

Students should measure up for the Velcro patch and attach to the axle support as shown to the right.

Use the straw to help reduce play in the axle by measuring the 3 lengths of axle and cutting to size. Fit on to the axle as shown.

