

## Constructing an electric field compass

The electric field compass exploits the fact that the sticky side of cellotape has a different electronegativity from the non-sticky side. When two layers of the cellotape on the table are peeled apart, the top layer will be positively charged and the bottom layer will be negatively charged.

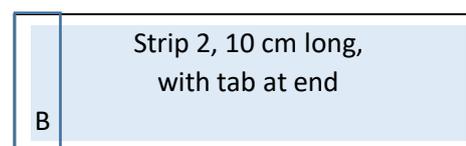
1. Cut a piece of cotton, about 30cm long.

2. Place a 10cm strip of cellotape on the table.



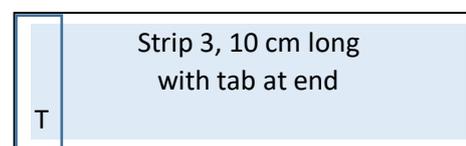
3. Fold the end over on the cellotape roll to make a tab 5mm long.

4. Place a second 10cm strip, ending with the tab on top of the first strip. Write the letter "B" (for bottom) on the tab.



5. Fold the end over on the cellotape roll to make a tab 5mm long.

6. Place a third 10cm strip, ending with the tab, on top of the second strip. Write the letter "T" (for top) on the tab.



7. Carefully peel off the top two layers from the initial layer, keeping them together.

8. Stroke the top layer with your finger to remove excess charge.

9. Separate the two tape layers.

10. Carefully lay the two layers non-sticky side down on the table. Lay the cotton on the edge of the tape labelled "B", and place the tape labelled "T" next to the "B" tape, so that they overlap by about 5mm.

11. On the tab, draw an arrow pointing from the "B" to the "T".

Congratulations! You have constructed an electric field compass!

Now you are ready to probe the shape of the electric field from electrostatically charged rods.

