

You will need:

Red paper or card

Black paper or card

Pritt stick

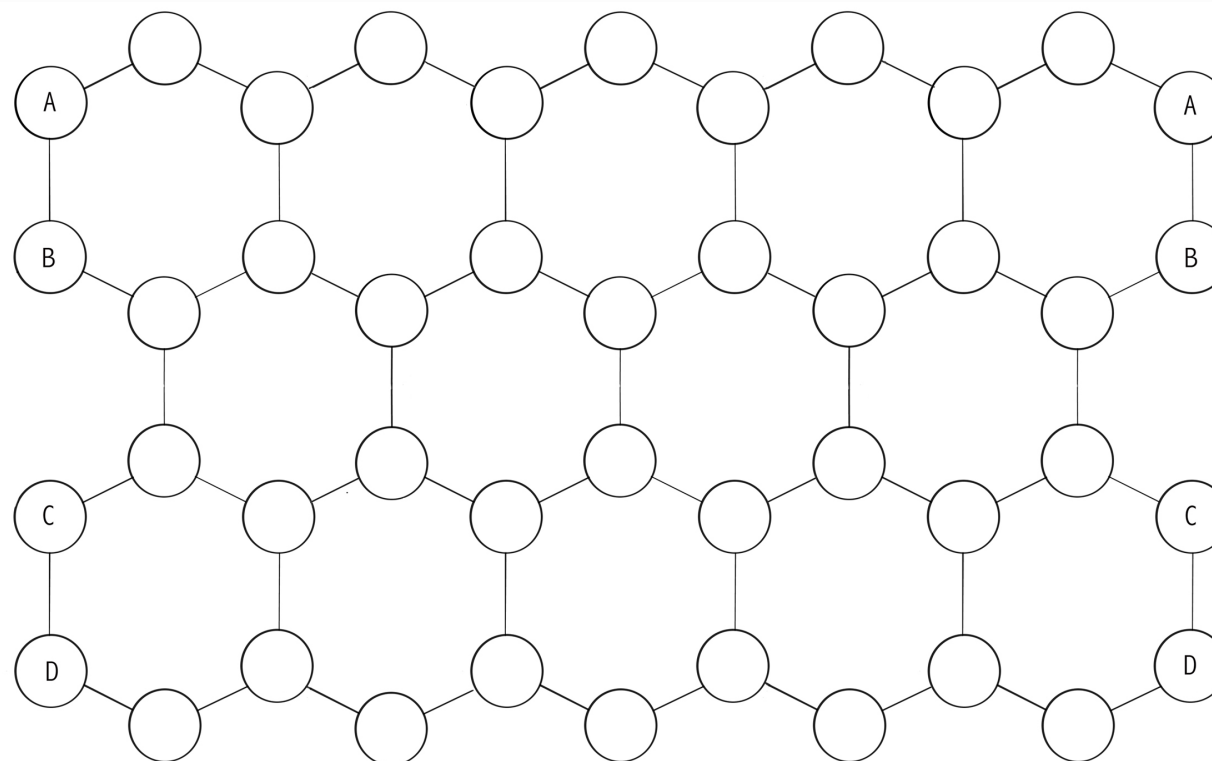
Scissors

Ruler

Pencil

1. Cut out 44 red circles about the size of a 1p coin, these will be your carbon atoms!
2. Cut out 57 black strips, roughly 4cm long and 5mm wide, these will be your chemical bonds.
3. Download and print the sheet 'Cut and stick your own molecule!' and use it as a guide to arrange and glue your first 14 atoms and their bonds together. Lay your cut out pieces on top of the graphene molecule diagram. Make sure you glue your pieces to each other only. Don't glue them directly onto the paper activity sheet.
4. When gluing, glue your bonds on top of your atoms. It might look shabby at this stage but fear not! when your all done you can turn it all over onto the neater side.
5. Once you have your first pieces glued, follow the pattern of the diagram on this sheet to arrange and glue your pieces together. check the photo on the next page to see how your carbon nano tube should look when you've finished this step.

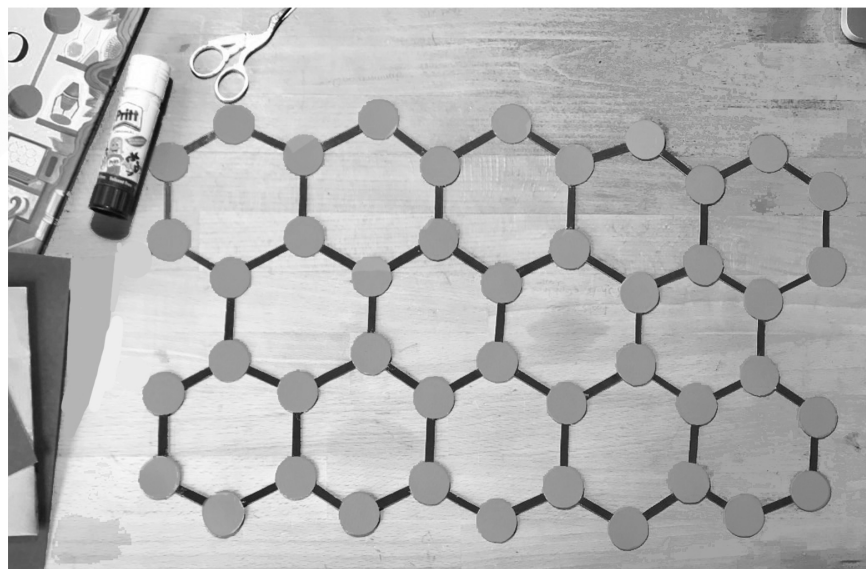
Cut and stick your own carbon nano tube!



About Carbon Nano Tubes

If you roll up a graphene sheet into a cylinder, you create a 'carbon nanotubes'. Carbon nanotubes are ultra-light, very tough and very good at conducting electricity. We already use carbon nanotubes to make aeroplanes and spaceships lighter and stronger. We can also fill their hollow insides with other nanomaterials, like medicines, and work with doctors to make sure the medicine reaches exactly the right part of a patient's body.

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Once you have cut and glued all of your red carbon atoms and your black chemical bonds by following the diagram, CONGRATULATIONS! You're almost there!

6. This is the last and most exciting stage, where you get to see your nano tube come to life!

Roll up your carbon sheet by connecting the two shortest sides and then glue together the atoms with the corresponding letters (A to A, B to B etc) to create a strong connection. And VOILA! You have your very own carbon nano tube!

If you like, you can cut out more red circles and stick them on the inside of your tube, this will hide the glue and overlapping paper and make your creation look even better.

