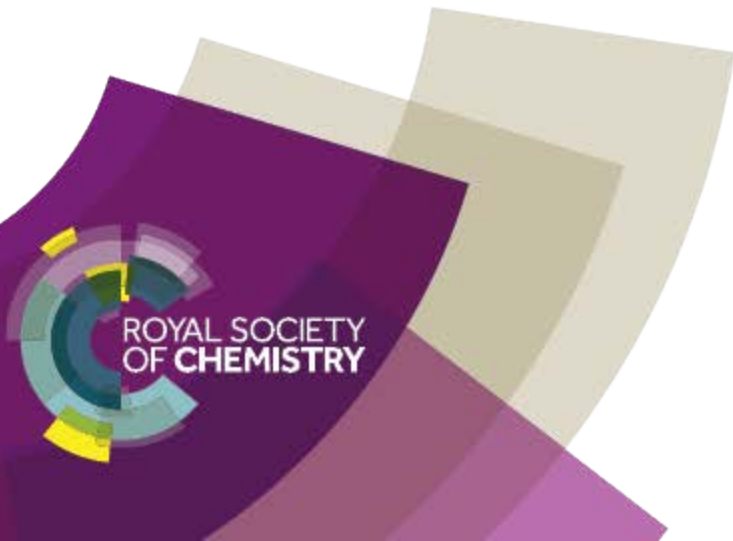




# Make a model of the bonding in ammonia



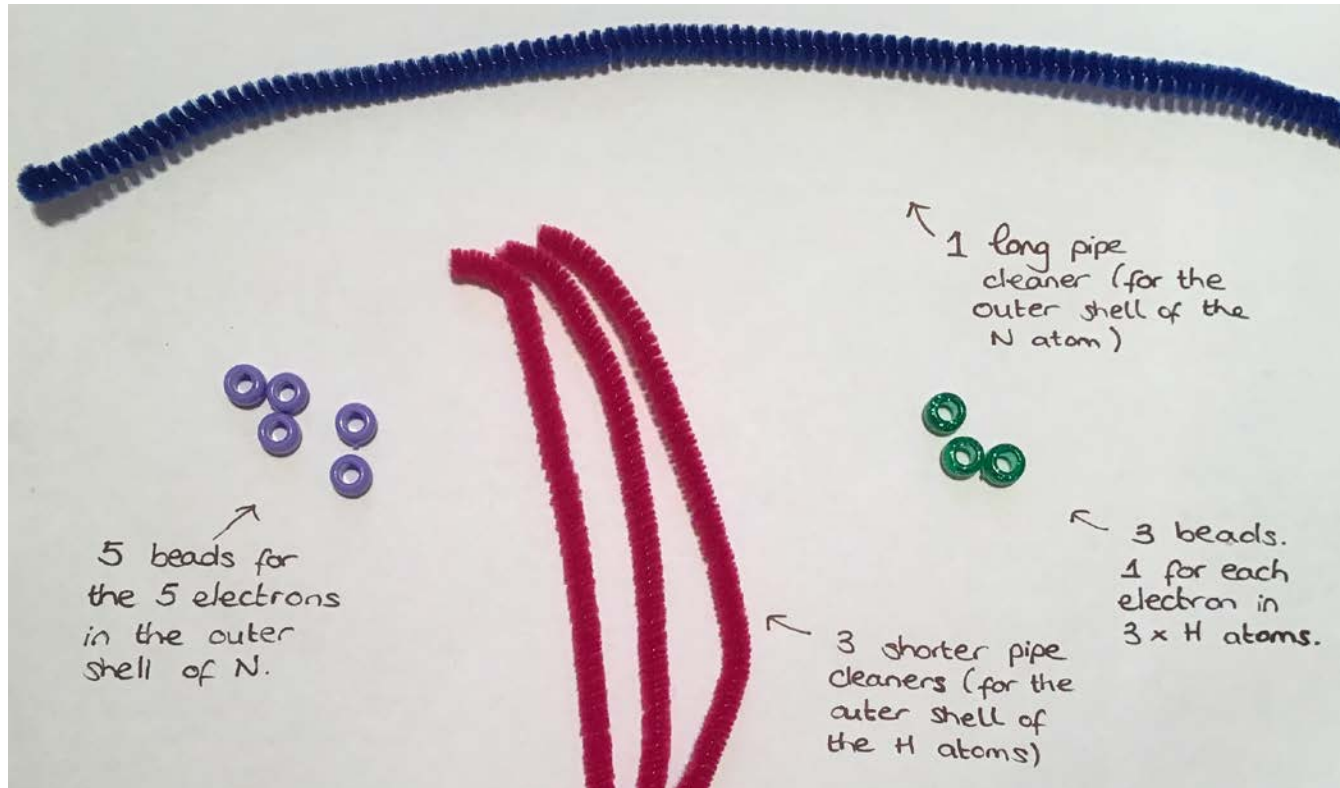


Lewis 'dot and cross' diagram  
of ammonia

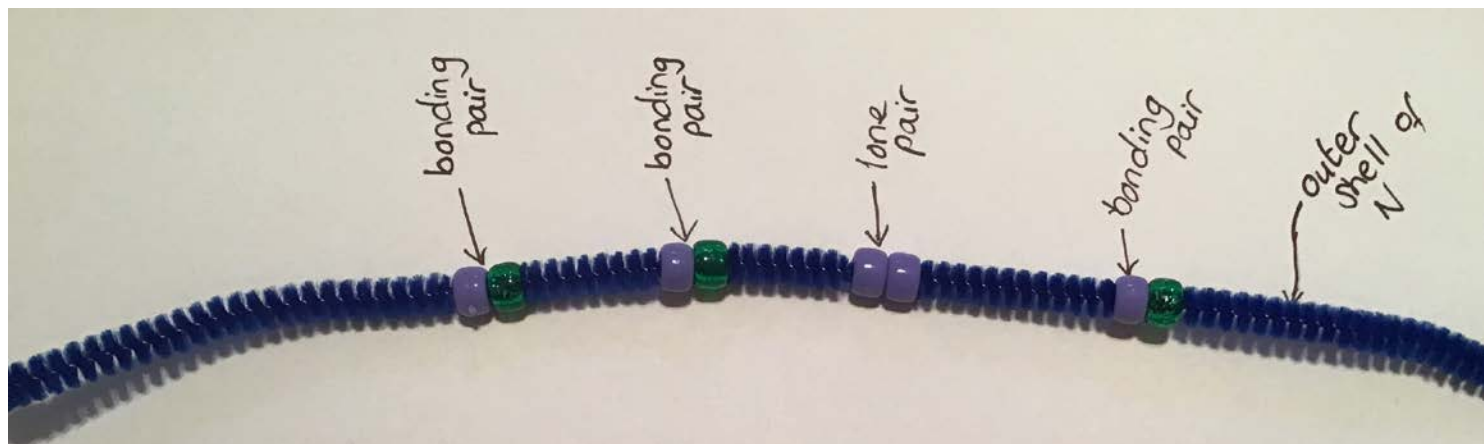
Sketch a diagram of the bonding of  
ammonia



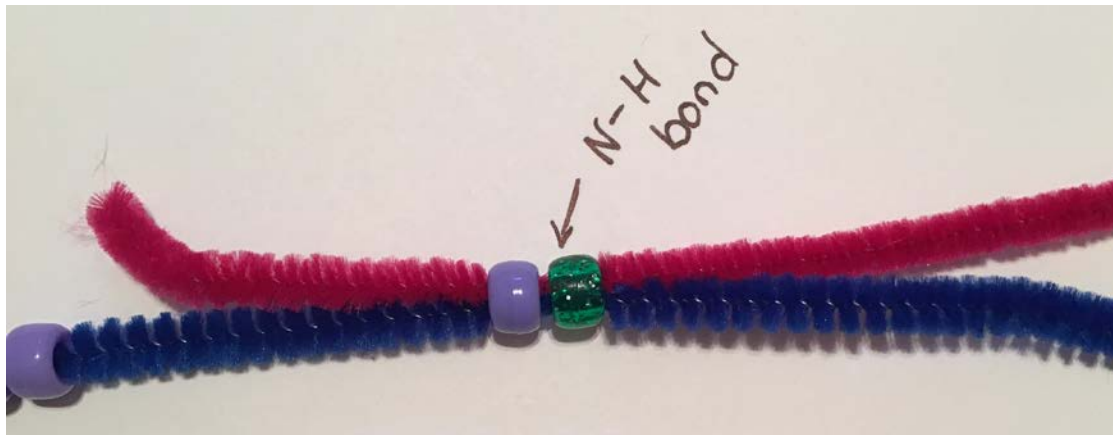
# Materials needed



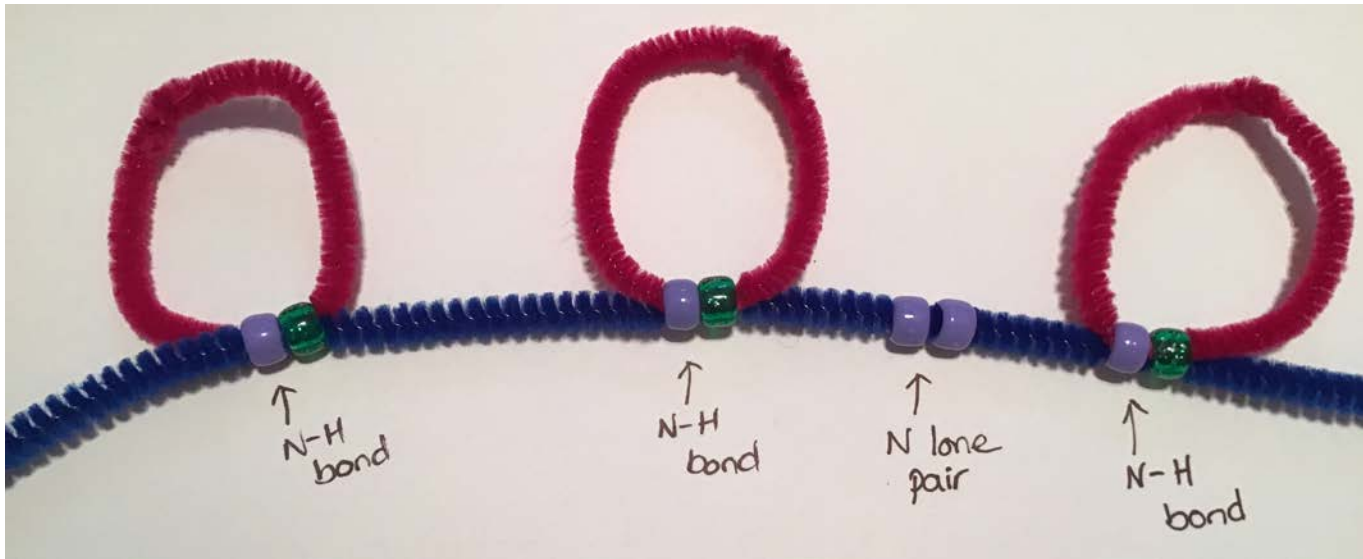
# Step 1: Prepare the electron pairs on the central atom (N)



**Step 2:** Form the bonding pairs, making sure the beads (electrons) are shared between both atoms making the bond.



**Step 3:** Do this three times and join up the pipe cleaners to make the electron shells for the H atoms.



**Step 4:** Bend round the pipe cleaner that represents the central atom and arrange your beads in suitable positions.





# Follow-up questions

1. Why were different-sized pipe cleaners used for the N and H atoms?
2. What other molecule could your model represent?

Now try to make a model of a different covalent molecule using the same rules.

