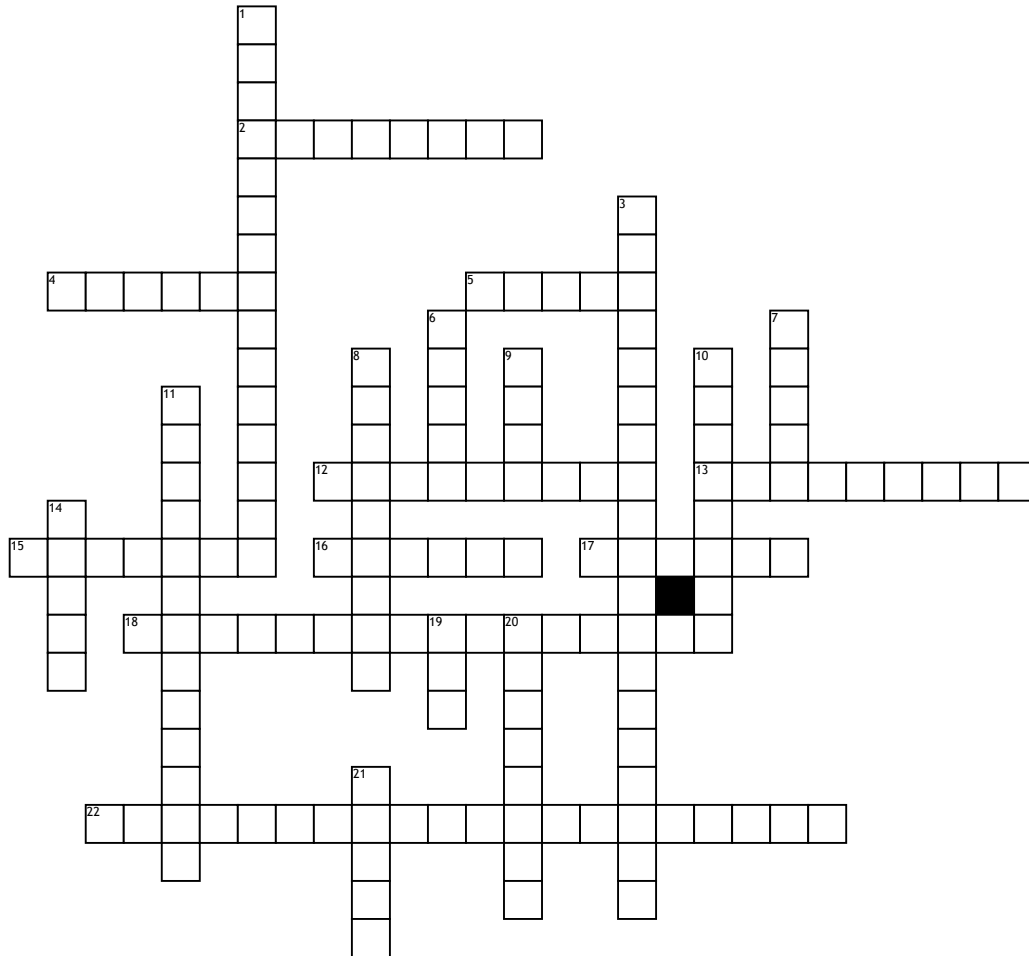


Name: \_\_\_\_\_

# Bonding



**Across**

- 2. These are neutrally charged.
- 4. Carbon nanotubes are far far \_\_\_\_\_ than their diameter.
- 5. In graphite, each carbon is bonded to \_\_\_\_\_ other carbons.
- 12. These are negatively charged.
- 13. The positive ions and delocalised electrons are \_\_\_\_\_ to each other in metallic bonding.
- 15. These are positively charged.
- 16. The giant covalent structures we have looked at are all made out of the element...
- 17. Graphite is soft due to its weak intermolecular forces between its ...

18. If we need lots of energy to break the bonds, the structure will have a \_\_\_\_\_.

22. Diamond does not have these and so cannot carry a charge.

**Down**

- 1. metals are known as ...
- 3. There are \_\_\_\_\_ of attraction between positive ions and delocalised electrons.
- 6. This is the bonding where electrons are transferred.
- 7. Atoms in group 0 do not form ions as there are \_\_\_\_\_ electrons in its outer shell.
- 8. This word means we can bend, reshape or draw metals into wires.

9. In diamond, how many carbons are each carbon bonded to?

10. This is the bonding where electrons are shared.

11. If we don't know the group number of an element we can check the?

14. We can tell the number of electrons in the outer shell of an atom by looking at its \_\_\_\_\_ number

19. If an atom gains or loses electrons it forms an ....

20. This structure is one single layer of graphite.

21. Buckminsterfullerene has \_\_\_\_\_ carbons all covalently bonded.

**Word Bank**

- |                      |                    |                  |                |                       |
|----------------------|--------------------|------------------|----------------|-----------------------|
| layers               | high melting point | carbon           | malleable      | three                 |
| group                | ionic              | sixty            | Periodic Table | covalent              |
| electrons            | attracted          | Graphene         | four           | eight                 |
| neutrons             | ion                | giant structures | protons        | delocalised electrons |
| electrostatic forces | longer             |                  |                |                       |