

# Structures and Bonding

## Covalent Bonding

### Worksheet

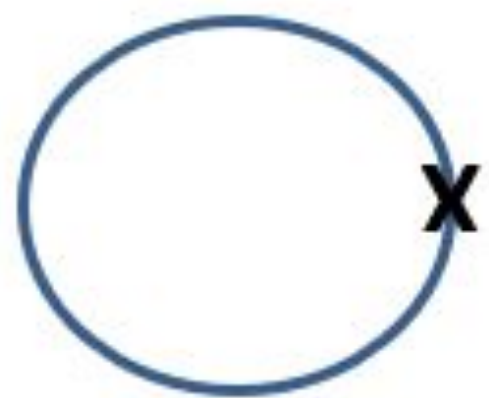
Combined science - Chemistry - Key Stage 4

Mr Robbins

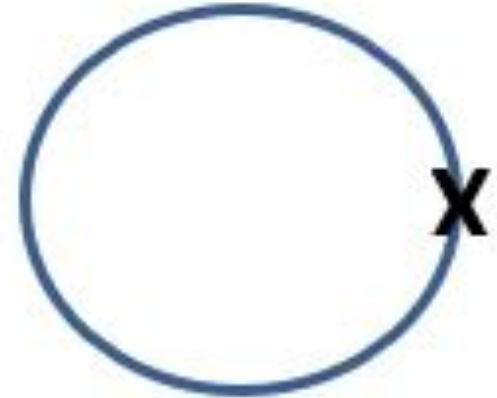


# Complete the dot-and-cross diagrams

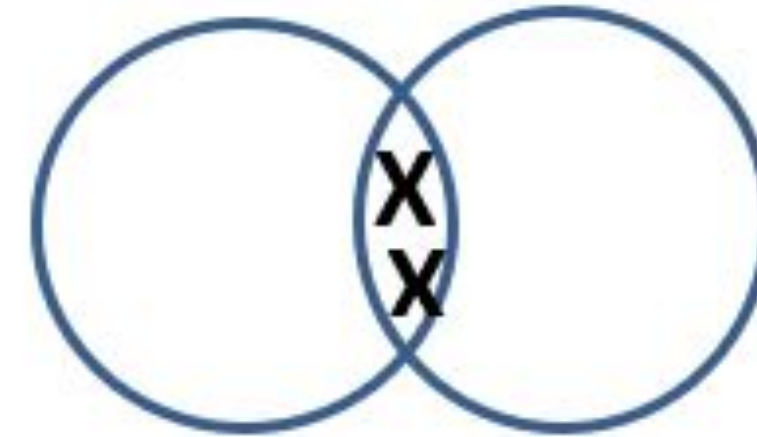
Put the outer shell electrons on the atoms and then complete the molecule. Below is a completed example:



Hydrogen



Hydrogen



Hydrogen molecule

Tips:

Sometimes you might need more than one of a particular atom

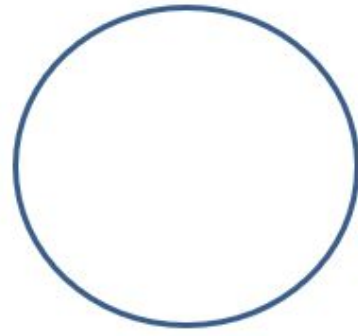
Check your work: You should always have a full outer shell



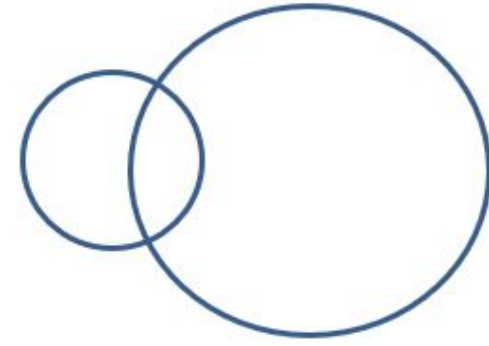
1.



Hydrogen

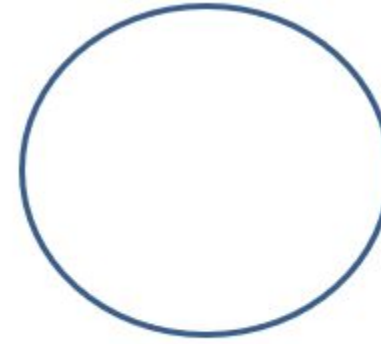


Chlorine

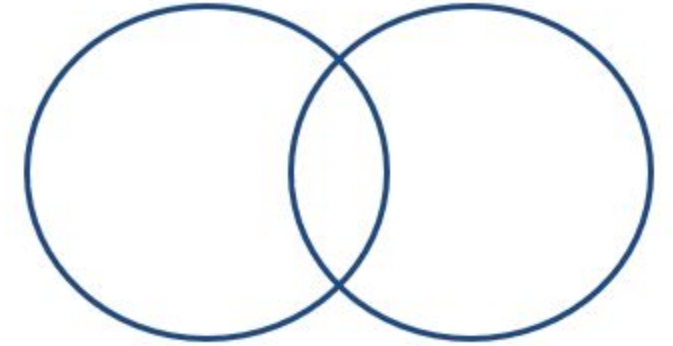


Hydrogen Chloride

4.



Oxygen

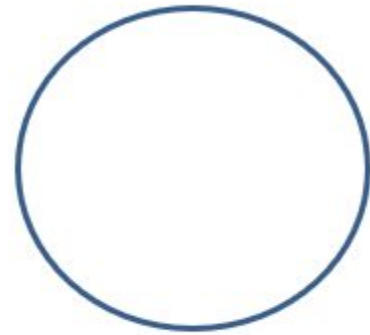


Oxygen molecule

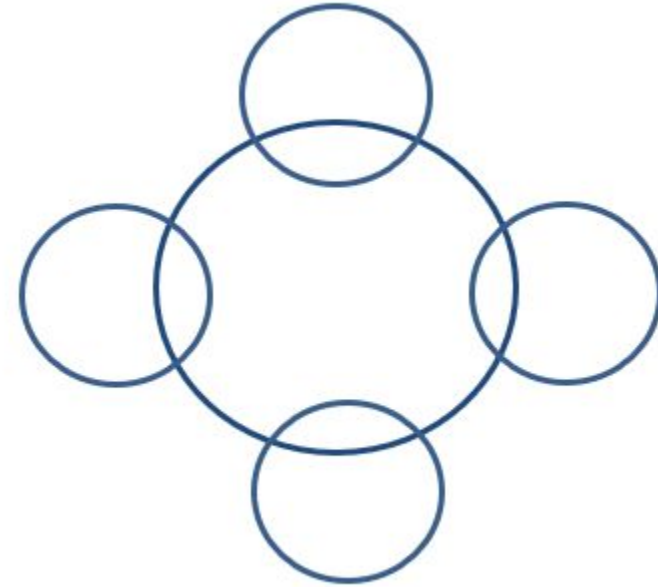
2.



Hydrogen

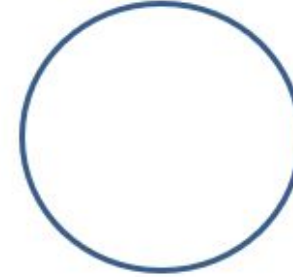


Carbon

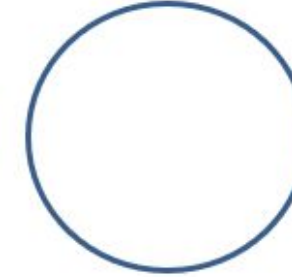


Methane

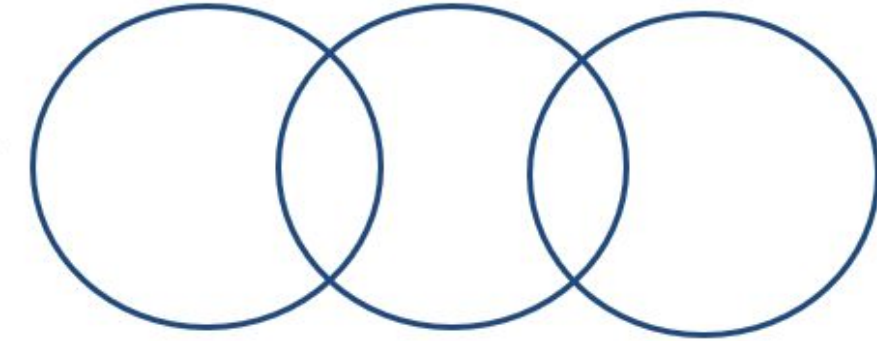
5.



Sulfur

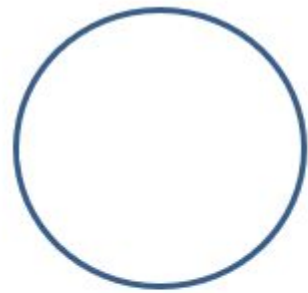


Oxygen

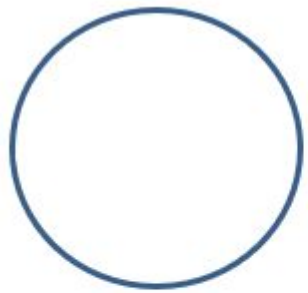


Sulfur dioxide

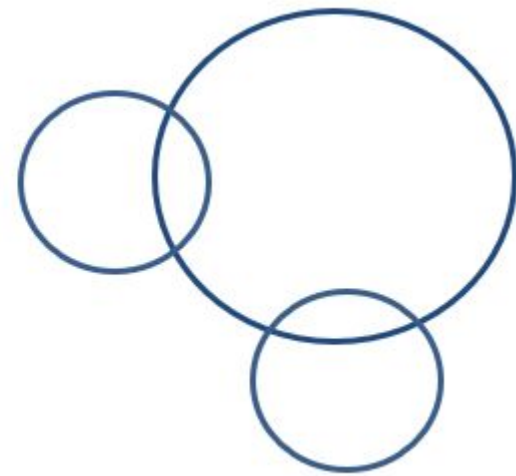
3.



Hydrogen

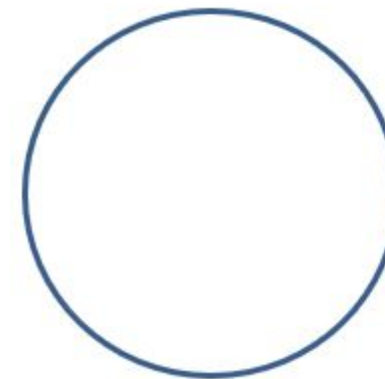


Oxygen

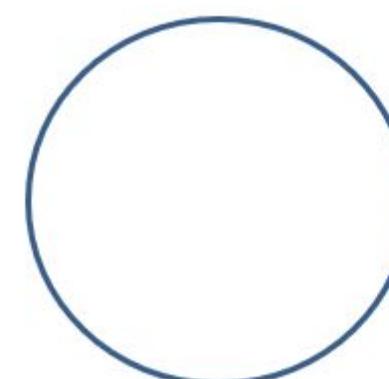


Water

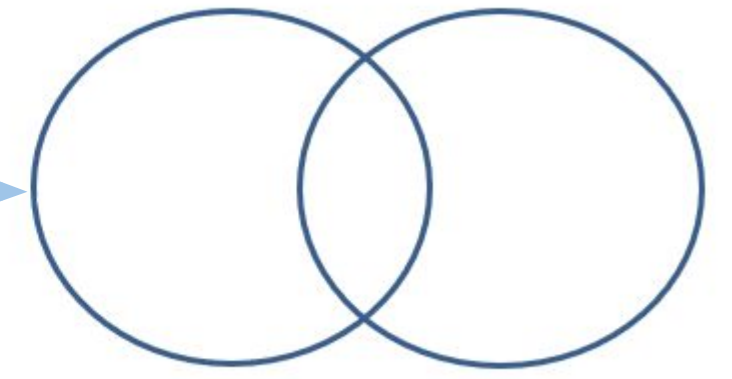
6.



Nitrogen



Nitrogen

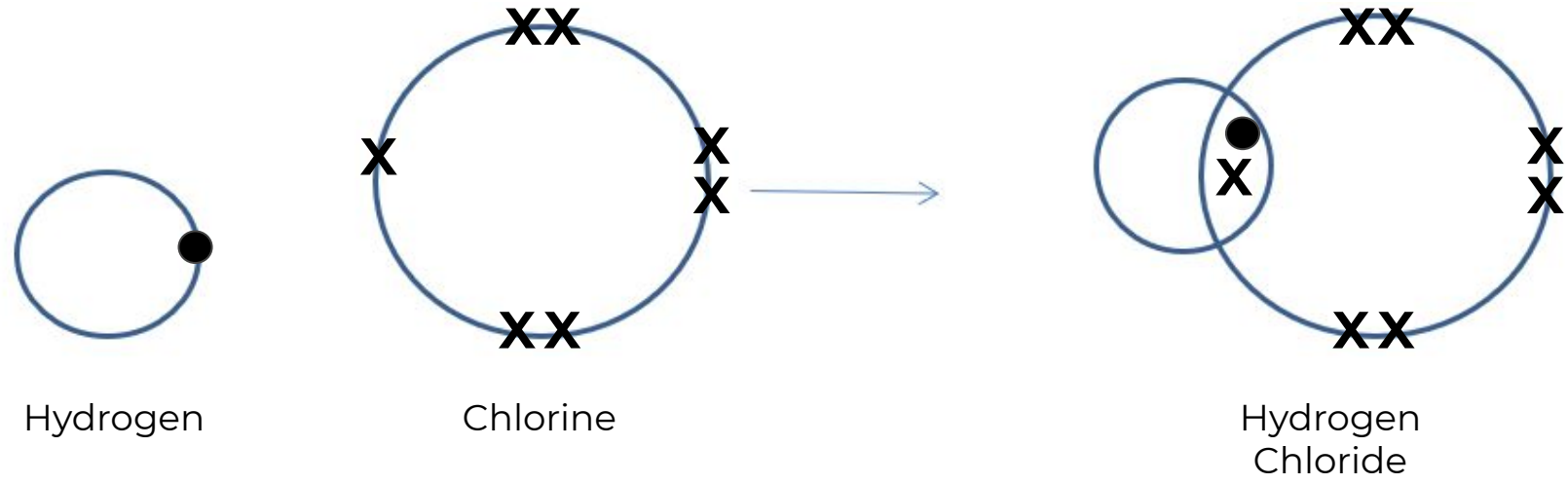


Nitrogen molecule

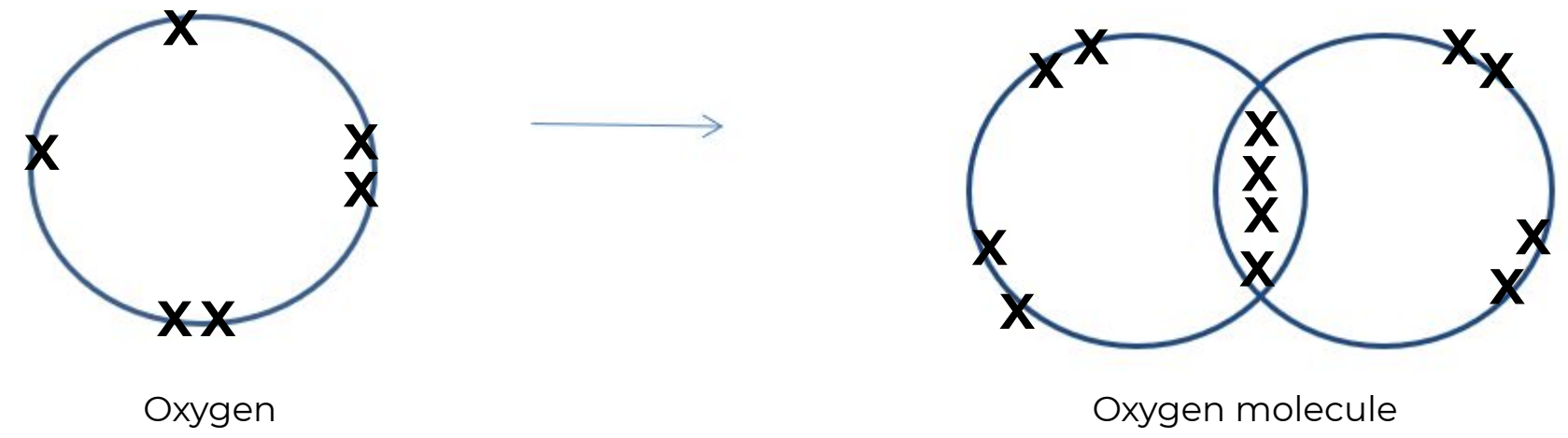


Answers

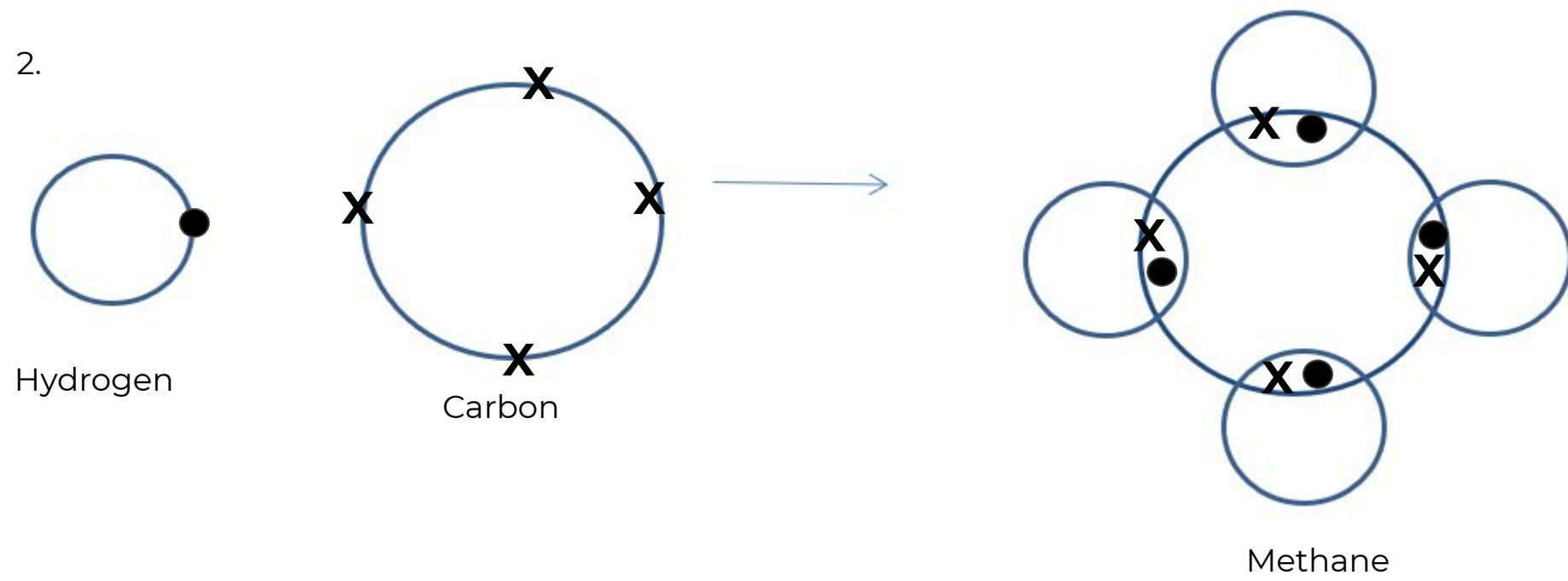
1.



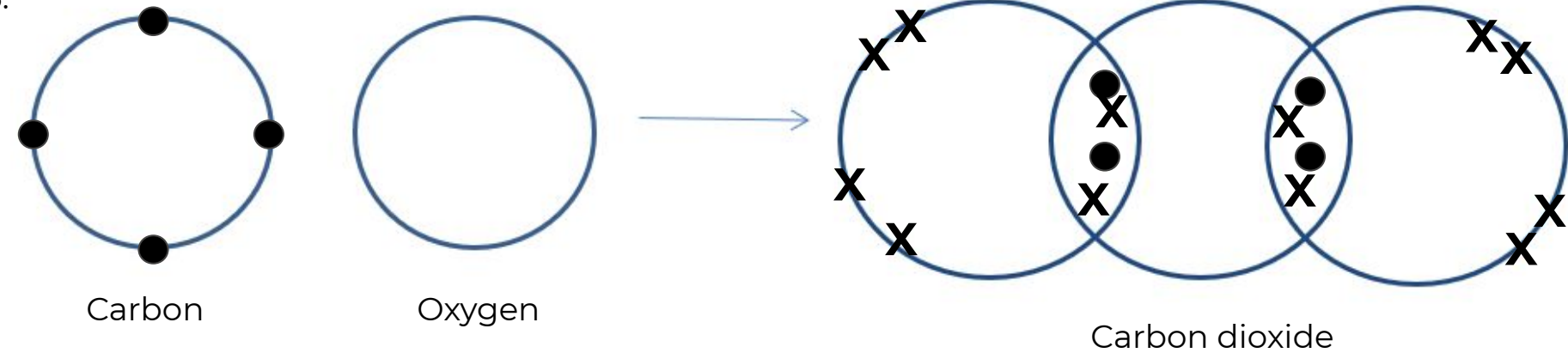
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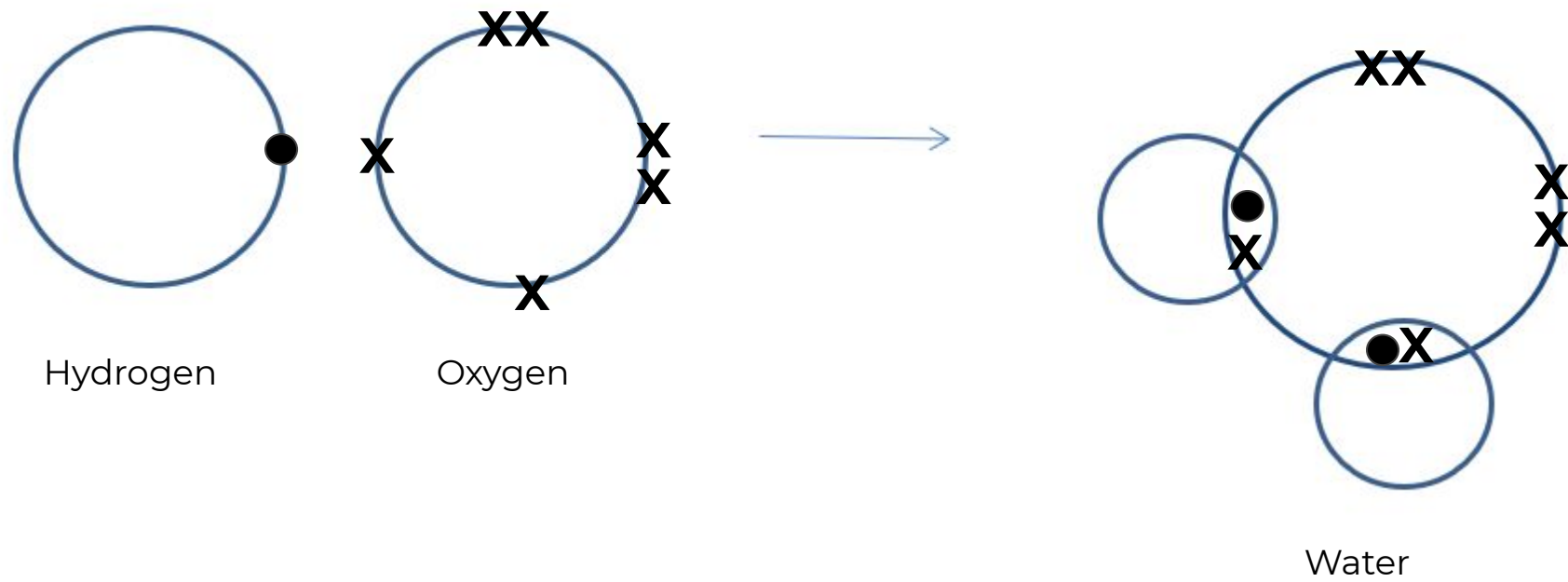
2.



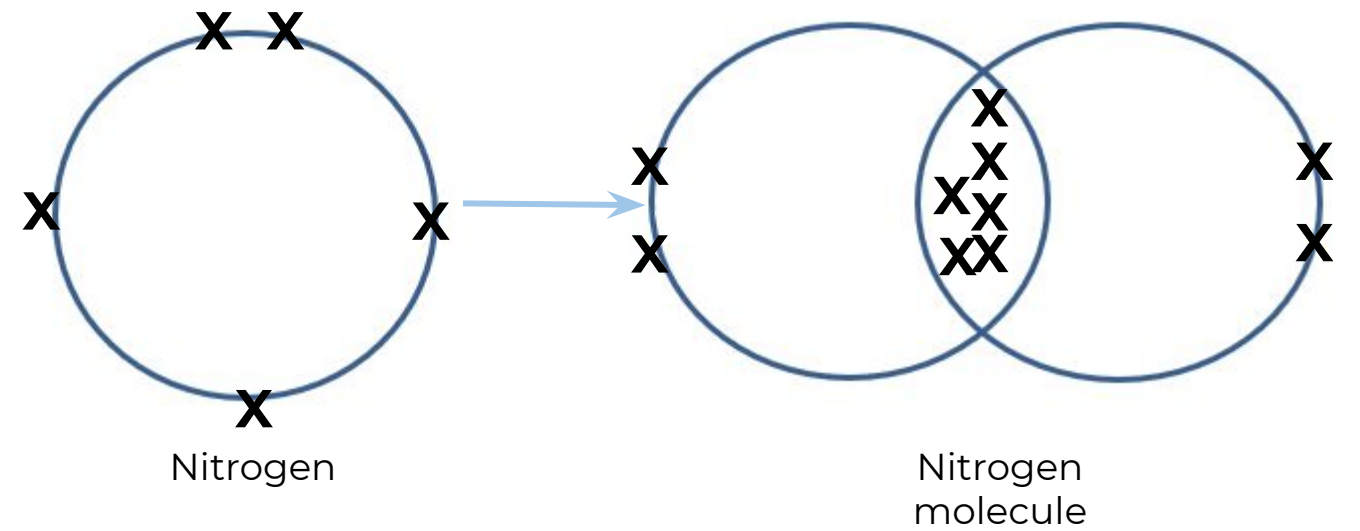
5.



3.



6.



# Independent practice

1. Draw a dot-and-cross diagram for dihydrogen sulfide ( $\text{H}_2\text{S}$ )
2. Draw a dot-and-cross diagram for oxygen ( $\text{O}_2$ )
3. Draw a dot-and-cross diagram for carbon dioxide ( $\text{CO}_2$ )
4. Draw a dot-and-cross diagram of methane ( $\text{CH}_4$ )

