*This is the **Foundation Combined** version — Higher Tier and Separate-only content removed.*

A synapse is a junction between two neurones. Signals cross it via chemical neurotransmitters rather than electrically.

- At a synapse, the two neurones do not touch — there is a tiny gap called the synaptic cleft.
- When an electrical impulse reaches the pre-synaptic neurone terminal, it triggers the release of NEUROTRANSMITTERS from vesicles.
- Neurotransmitters diffuse across the synaptic cleft.
- They bind to specific receptors on the post-synaptic membrane → triggers a new electrical impulse in the next neurone.
- Signals can only travel in ONE direction across a synapse (neurotransmitters released from pre-synaptic side only).

Key Terms

Synapse	Junction between two neurones — signal crosses via chemical neurotransmitters
Neurotransmitter	Chemical that carries signals across the synaptic cleft — e.g. acetylcholine, dopamine
Synaptic cleft	The tiny gap between the pre-synaptic and post-synaptic membranes
Pre-synaptic membrane	The membrane of the neurone sending the signal — releases neurotransmitters
Post-synaptic membrane	The membrane of the neurone receiving the signal — has neurotransmitter receptors

■ **Exam Tip:** Synapses ensure signals travel in ONE DIRECTION only — because receptors are only on the post-synaptic side and neurotransmitters are only released from the pre-synaptic side. This is often asked as "explain why signals only travel in one direction at a synapse".