

Name: _____

Date: _____

AQA A-LEVEL CHEMISTRY

Reaction Mechanisms: Understanding Curly Arrows

Learn Pack

Guided notes, worked examples and practice questions to be completed alongside the lesson.

WATCH THE LESSON

Reaction Mechanisms

Reaction mechanisms are diagrams used to show how chemical reactions involving

organic compounds occur.

They break reactions down into a series of

steps and show the movement of

electrons during the reaction.

Lesson Objectives:

- Know what reaction mechanisms are.
- Know what curly arrows represent.
- Understand how curly arrows show bond breaking and bond making.
- Know where curly arrows should start and end.

Curly Arrows

Curly arrows show the movement of electrons during a chemical reaction. The style of arrow represents how many electrons are moving:

Arrow	Arrow Type	Represents the movement of...
	Double-headed	<u>a pair of electrons</u>
	Single-headed	<u>a single electron</u>

Drawing Curly Arrows

Starting Curly Arrows

Curly arrows can only start from:

- A lone pair of electrons.
- A bond.

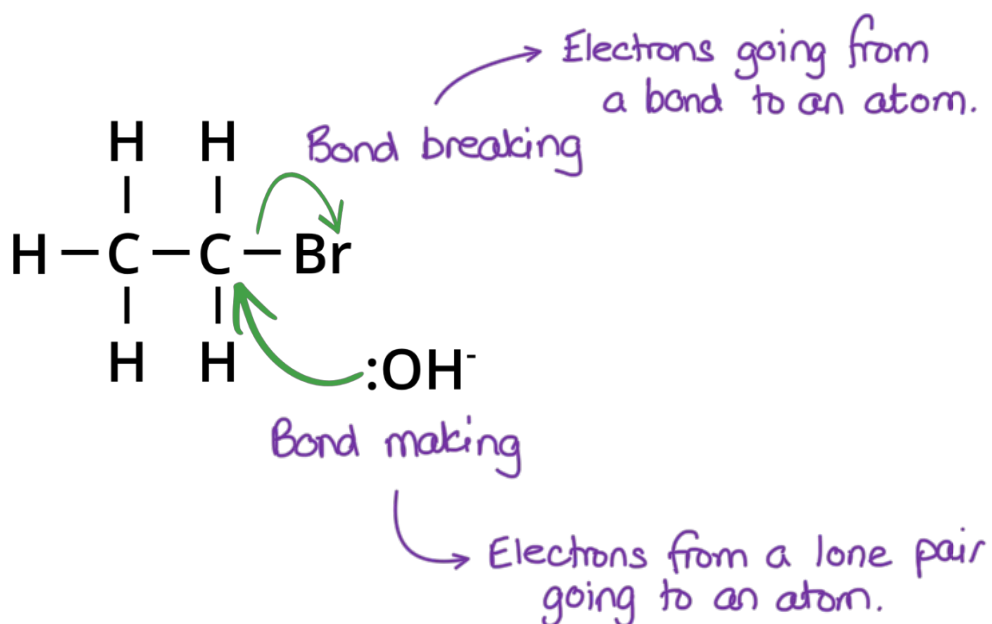
Ending Curly Arrows

Curly arrows can end pointing at:

- An atom.
- A bond.

Understanding Curly Arrows

Annotate the reaction mechanism to explain what each curly arrow represents:



Curly Arrow starts...	Curly Arrow ends...	Meaning
Lone pair of electrons	Atom	Bond making
Bond	Atom	Bond breaking
Bond	Bond	Bond breaking & making

Practise Questions – Fact Recall

1. In reaction mechanisms what do curly arrows represent?

The movement of electrons.

2. When drawing reaction mechanisms where can curly arrows start?

Either from a lone pair of electrons or a bond.

3. When drawing reaction mechanisms where can curly arrows end?

Pointing at either an atom or a bond.

Practise Questions – Application

1. Annotate the diagram below to describe what each arrow is representing:

