29 Aromatic compounds and naming – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	**Write it 3 times** (English)		
aromatic			
benzene			
functional group			
benzene ring			
electrophilic substitution			
addition–elimination			

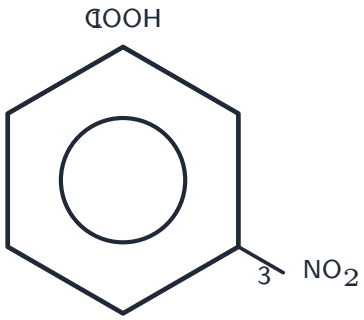
Recall

At A Level you meet **aromatic** compounds – those built on a **benzene** ring. The **functional group** still decides the properties.

New ideas

Read these first, then do the Practice.

■ 1 Naming aromatic compounds



number from the main group (C1)

Use the **benzene ring** as the parent and number the positions of the substituents, starting from the main group (carbon 1).

■ 2 Two new mechanisms

electrophilic substitution an electrophile replaces an H on a benzene ring	**addition–elimination** a molecule adds on, then a small molecule is removed

- **electrophilic substitution** – an electrophile replaces a hydrogen on a benzene ring;
- **addition–elimination** – a molecule adds on, then a small molecule is removed.

Watch out: benzene's delocalised ring is electron-rich, so it attracts *electrophiles* – and it reacts by *substitution* (keeping the stable ring intact) rather than addition.

Practice

Try these in order.

29.1 What is an *aromatic* compound built on? [1]

29.2 What do you use as the parent when naming an aromatic compound? [1]

29.3 Where do you start numbering the ring? [1]

29.4 In *electrophilic substitution*, what replaces a hydrogen? [1]

29.5 What two steps happen in *addition–elimination*? [1]

29.6 Challenge. Alkenes react with bromine by *addition*, but benzene reacts by *substitution* instead. Suggest why benzene resists addition. [2]