

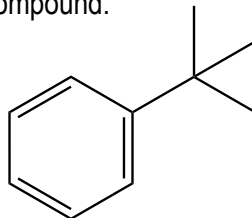
## CONCEPT: NAMING BENZENE

### Monosubstituted Benzene

- A compound where benzene is the \_\_\_\_\_ chain with only \_\_\_\_ **substituent**.
  - This is the simplest benzene to name; location of substituent is not necessary.

substituent-benzene

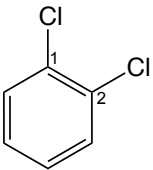
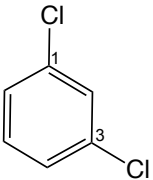
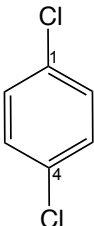
**EXAMPLE:** Give a systematic name of the following compound.



### Disubstituted Benzene

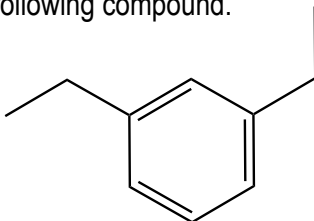
- A compound where benzene is the \_\_\_\_\_ chain with \_\_\_\_ **substituents**.
  - **Substituents** are numbered in alphabetical order.

location-substituent-benzene

Disubstituted Benzene		
ortho-	meta-	para-
		
_____-dichlorobenzene 1,2-dichlorobenzene	_____-dichlorobenzene 1,3-dichlorobenzene	_____-dichlorobenzene 1,4-dichlorobenzene

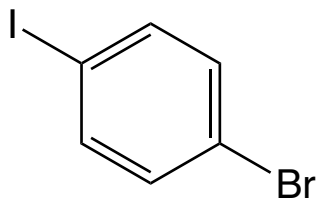
**MEMORY TOOL:** Order More Pizza.

**EXAMPLE:** Give a systematic name of the following compound.

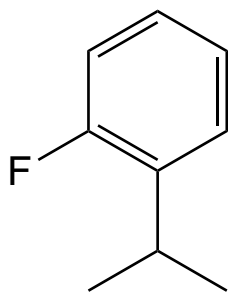


**CONCEPT: NAMING BENZENE**

**PRACTICE:** Determine the systematic name of the molecule.



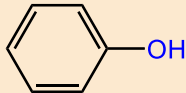
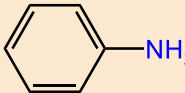
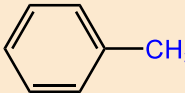
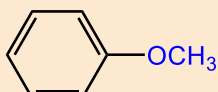
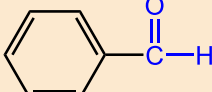
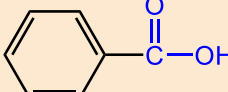
**PRACTICE:** Determine the systematic name of the molecule.



## CONCEPT: NAMING BENZENE

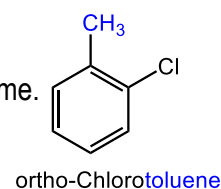
### Common Naming of Disubstituted Benzene

- Many monosubstituted benzenes have common names in addition to their \_\_\_\_\_ names.

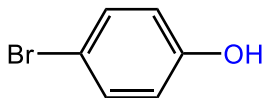
Monosubstituted Benzene Common Names		
 Phenol	 Aniline	 Toluene
 Anisole	 Benzaldehyde	 Benzoic Acid

- If a \_\_\_\_\_ benzene has one of these substituents, the common name becomes the parent name.

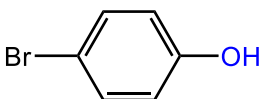
□ ortho, meta, and para prefixes denote the relative \_\_\_\_\_ of the two substituents.



**EXAMPLE:** Write a common name for the following compound.

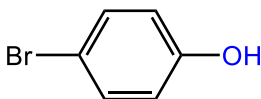


**STEP 1:** Identify the part of the structure with a common name.



**STEP 2:** Assign name to the other substituent.

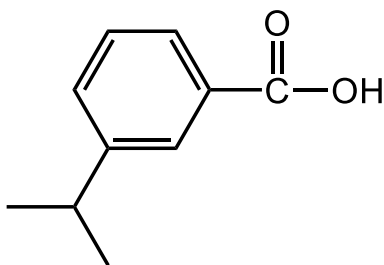
**STEP 3:** Determine the prefix to denote the relative positions of the two substituents.



**STEP 4:** Write the name of the compound without spaces.

**CONCEPT: NAMING BENZENE**

**PRACTICE:** Write a common name for the following compound.

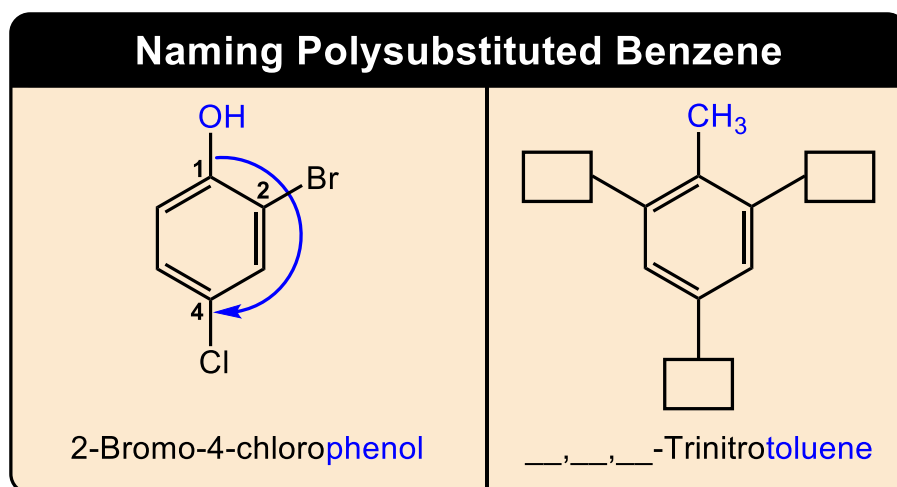


**PRACTICE:** The common name for a disubstituted benzene with two methyl groups is **xylene**. Draw a structure for *meta*-xylene.

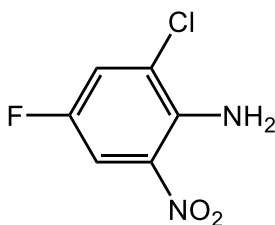
## CONCEPT: NAMING BENZENE

### Naming Polysubstituted Benzene

- Substituent locations must be denoted by \_\_\_\_\_.
  - The C atom with the substituent that makes the common name is always numbered \_\_\_\_\_.



**EXAMPLE:** Write a name for the following compound.



**STEP 1:** Identify the substituent that gives the structure a \_\_\_\_\_ name.

- The C atom with the substituent gets location 1.

**STEP 2:** Assign names to all other substituents.

**STEP 3:** Continue numbering the ring in the direction of the \_\_\_\_\_ substituent.

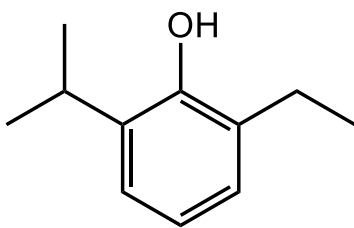
- If a tie between substituents, compare the next closest substituent.
- If still a tie, number the ring in alphabetical order.

**STEP 4-6:** Repeat steps from previous naming topic.

**STEP 7:** Write the name of the compound without spaces.

**CONCEPT: NAMING BENZENE**

**PRACTICE:** Write an IUPAC name for the following compound.



**PRACTICE:** Draw a structure for 3-chloro-2-ethyl-6-nitrotoluene.