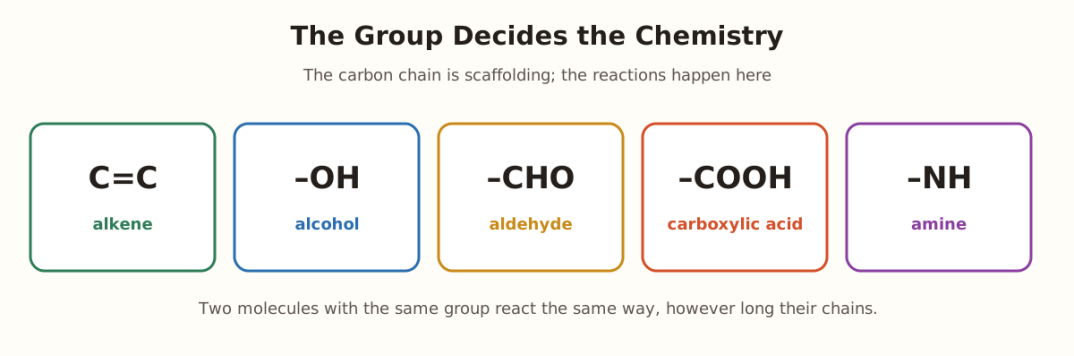
Functional Groups Worksheet

Grade 11 Chemistry · the part of the molecule that reacts

Name: Date: Score: / 24



Before you start: a functional group is the part of a molecule where the chemistry happens. The chain length changes the physical properties; the group decides the reactions.

Part A · draw or write the group, and give its ending

#	Family	Group	Name ending
1	Alkene		
2	Alkyne		
3	Alcohol		
4	Aldehyde		
5	Ketone		
6	Carboxylic acid		
7	Ester		
8	Amine		
9	Ether		
10	Haloalkane		

Part B · which group does it carry?

#	Compound	Family	Formula
11	ethanol		
12	ethanoic acid		
13	propanone		
14	ethanal		

#	Compound	Family	Formula
15	methanamine		
16	chloromethane		
17	ethene		
18	ethyne		
19	methyl ethanoate		
20	methoxymethane		

Part C · explain

21. Why does ethanol dissolve in water but ethane does not?

22. Why do carboxylic acids have higher boiling points than alcohols of similar size?

23. What do you get when a carboxylic acid reacts with an alcohol?

24. Why is a ketone called that rather than an aldehyde?

Answer Key

Functional Groups · Grade 11 Chemistry

Part A

#	Family	Group	Ending	Example
1	**Alkene**	C=C	**-ene**	C_2H_4 — ethene
2	**Alkyne**	C≡C	**-yne**	C_2H_2 — ethyne
3	**Alcohol**	–OH	**-ol**	C_2H_5OH — ethanol
4	**Aldehyde**	–CHO	**-al**	CH_3CHO — ethanal
5	**Ketone**	C=O in chain	**-one**	C_3H_6O — propanone
6	**Carboxylic acid**	–COOH	**-oic acid**	CH_3COOH — ethanoic acid
7	**Ester**	–COO–	**-oate**	CH_3COOCH_3 — methyl ethanoate
8	**Amine**	–NH_2	**-amine**	CH_3NH_2 — methanamine
9	**Ether**	–O–	**alkoxy-**	CH_3OCH_3 — methoxymethane
10	**Haloalkane**	–X	**halo-**	CH_3Cl — chloromethane

Part B

#	Compound	Family	Formula
11	ethanol	**Alcohol**	C_2H_5OH
12	ethanoic acid	**Carboxylic acid**	CH_3COOH
13	propanone	**Ketone**	C_3H_6O
14	ethanal	**Aldehyde**	CH_3CHO
15	methanamine	**Amine**	CH_3NH_2
16	chloromethane	**Haloalkane**	CH_3Cl
17	ethene	**Alkene**	C_2H_4
18	ethyne	**Alkyne**	C_2H_2
19	methyl ethanoate	**Ester**	CH_3COOCH_3

#	Compound	Family	Formula
20	methoxymethane	**Ether**	CH_3OCH_3

Part C

21. **Why does ethanol dissolve in water but ethane does not?**
    The –OH group hydrogen bonds with water. Ethane has only carbon and hydrogen, so it cannot.

22. **Why do carboxylic acids have higher boiling points than alcohols of similar size?**
    A –COOH group can form two hydrogen bonds at once, so the molecules hold together more strongly.

23. **What do you get when a carboxylic acid reacts with an alcohol?**
    An ester and water. The acid supplies the –COO– and the alcohol supplies the rest.

24. **Why is a ketone called that rather than an aldehyde?**
    Its C=O sits in the middle of the chain. An aldehyde has the C=O at the end, with a hydrogen attached.