

Exercise walk-through

Naming organic compounds ▪ 11.2

eXercise

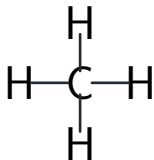
You must be able to

- use the ending to identify the family (-ane, -ene, -ol, -oic acid)
- use the stem for the number of carbons (meth-, eth-, prop-, but-)
- name simple compounds and use position numbers

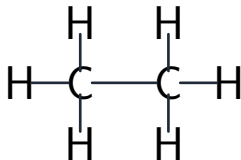
Method — Stems and endings

Ending	Family
-ane	alkane
-ene	alkene
-ol	alcohol
-oic acid	carboxylic acid

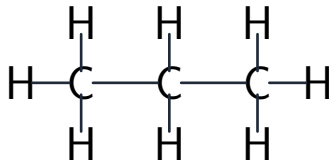
Method — Stems and endings



methane
 CH_4



ethane
 C_2H_6



propane
 C_3H_8

each step adds a CH_2 unit

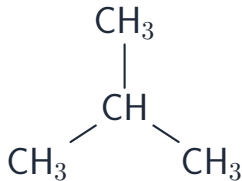
general formula $\text{C}_n\text{H}_{2n+2}$

Displayed formulae of methane, ethane, propane

Method — Stems and endings



butane (straight chain)



2-methylpropane (branched)

both have the formula C_4H_{10} : same formula,
different structure (structural isomers)

Naming distinguishes structural isomers

Practice 2.1 ■ 1 mark

State the family of a compound whose name ends in -ol.

Solution 2.1

Worked steps

an alcohol **B1**.

Practice 2.2 ■ 1 mark

State how many carbon atoms 'prop-' means.

Solution 2.2

Worked steps

three **B1**.

Exam-style 3.1 ■ 1 mark

Which compound is an alkene?

A ethane

B ethene

C ethanol

D ethanoic acid

Solution 3.1

A ethane

B ethene 

C ethanol

D ethanoic acid

Worked steps

B. The ending -ene shows ethene is an alkene.

Exam-style 3.2 ■ 3 marks

Name each compound from its description:

- (a) a 2-carbon alcohol
- (b) a 1-carbon alkane
- (c) a 2-carbon carboxylic acid

Solution 3.2

Method: Stems and endings

Worked steps

- (a) ethanol **B1**
- (b) methane **B1**
- (c) ethanoic acid **B1**.

Exam-style 3.3 ■ 2 marks

Explain why both but-1-ene and but-2-ene need a number in the name.

Solution 3.3

Worked steps

the number shows the position of the C=C double bond **M1**; the double bond can be in different places along the chain, giving different compounds **A1**.