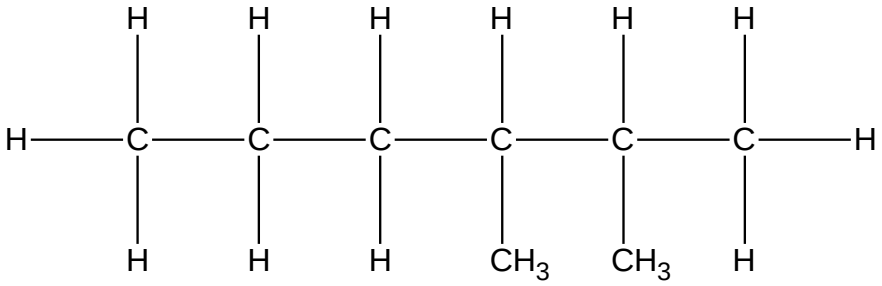
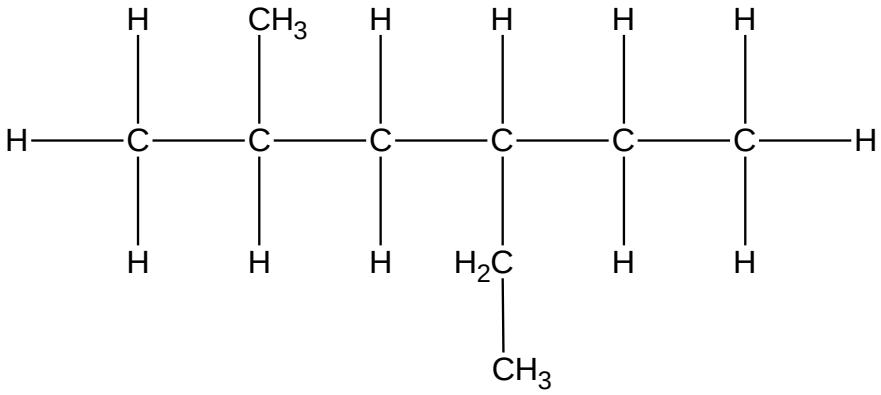
Do now:

Name the following compounds:



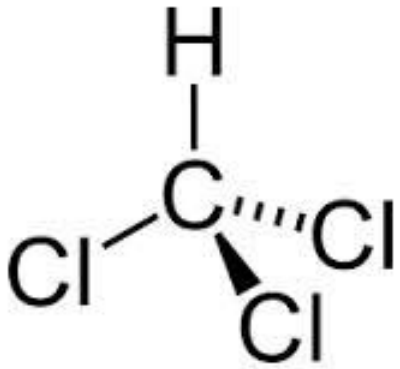


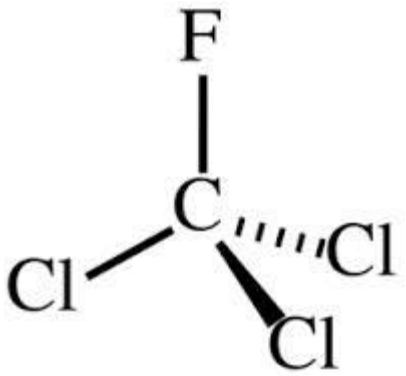
Draw the following compounds:

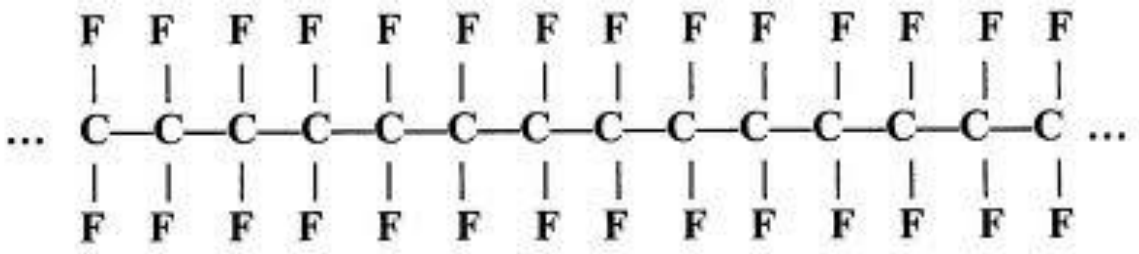
3-ethylpentane

2,4-dimethylpentane

Haloalkanes







Naming haloalkanes

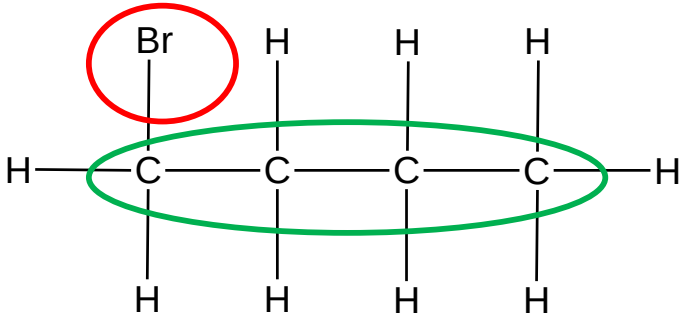
The halogen atom is treated as a 'branch' of the alkane carbon chain.

The longest chain of carbon atoms is found and named like a normal alkane, the name of the branch (the halogen) comes at the front of the name, it is named by:

- The start of the name of the atom with an –o suffix
- Its position on the chain is indicated by the number of the carbon atom it branches off (lowest number possible)

Branch name:

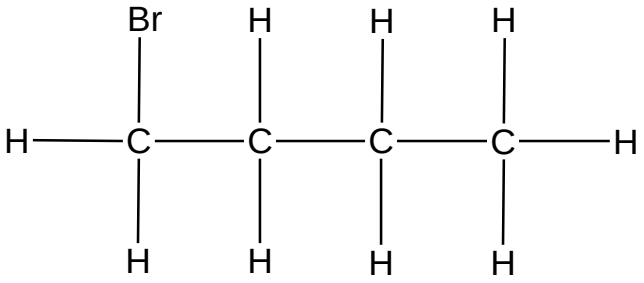
F	fluoro
Cl	chloro
Br	bromo
I	iodo

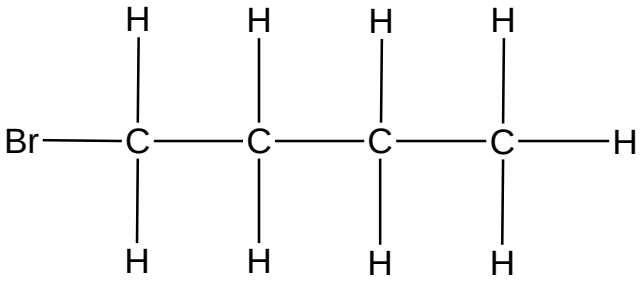


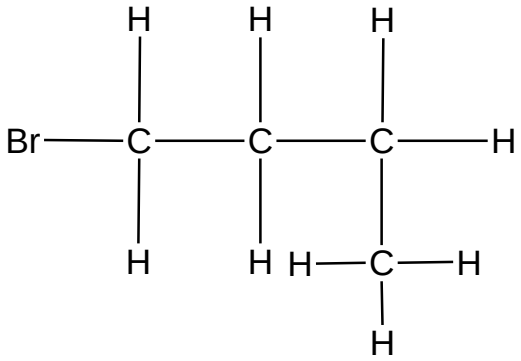
1- bromo butane

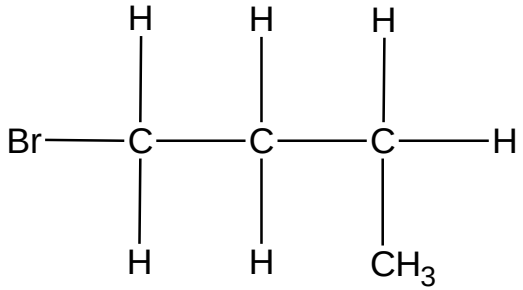
Naming haloalkanes

Don’t get tripped up by these sneaky tricks!!





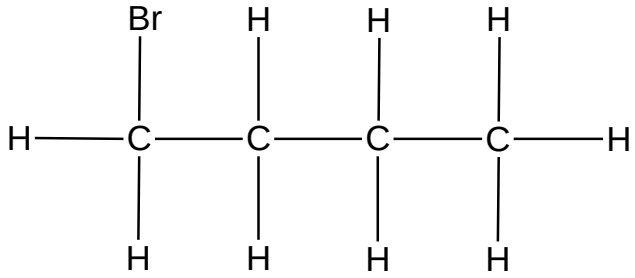




These are all correct structural formula for 1-bromobutane!!

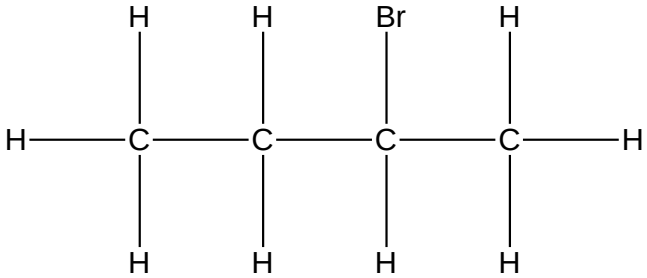
Isomers

Structural isomers have the same molecular formula but different structural formula.



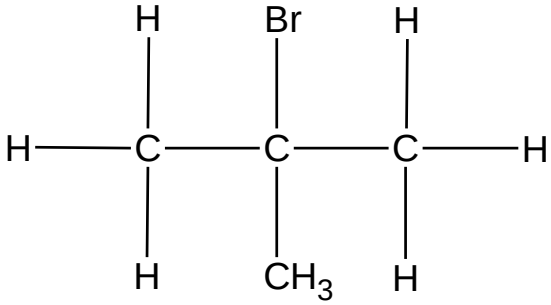
1-bromobutane

C_4H_9Br



2-bromobutane

C_4H_9Br



2-bromo-2-methylbutane

C_4H_9Br

SciPad pg 148, 149, 150, 151

Classifying haloalkanes

Using your molymods make the following haloalkanes

1-chloropropane 2-chloropropane

What is similar about these compounds?
What is different?

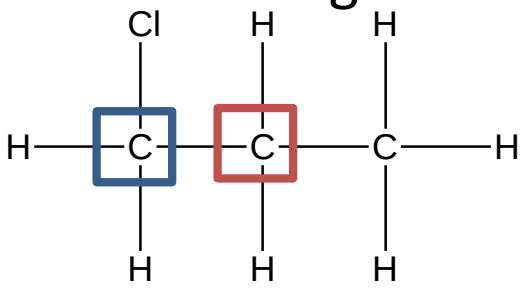
Think about: numbers and type of atoms
positioning of halogen

Now make 2-chloro-2-methylpropane and compare it to 2-chloropropane.

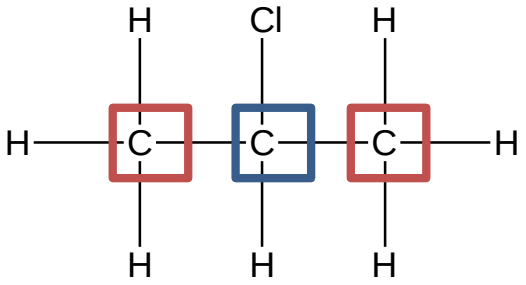
What is similar about these compounds?
What is different?

Classifying haloalkanes

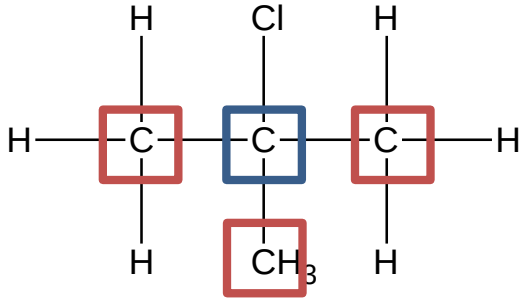
Primary haloalkanes (1°) – the carbon attached to the halogen is only attached to one other carbon atoms.
For example: 1-chloropropane



Secondary haloalkanes (2°) – the carbon attached to the halogen is attached to two other carbon atoms.
For example: 2-chloropropane

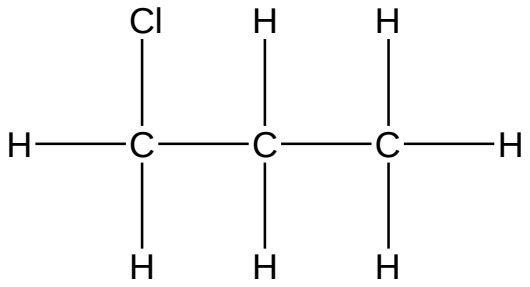


Tertiary haloalkanes (3°) – the carbon attached to the halogen is attached to three other carbon atoms.
For example: 2-chloro-2-methylpropane



Classifying haloalkanes

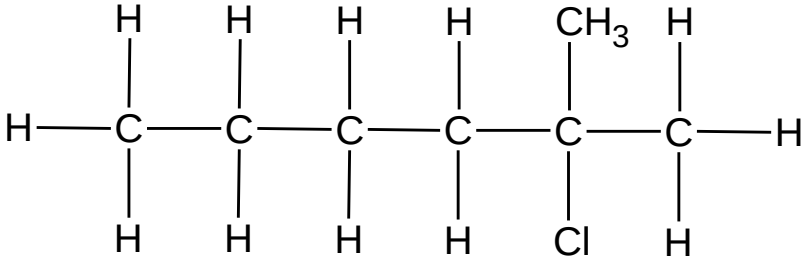
Classify these haloalkanes as primary, secondary or tertiary.



primary

1-bromopentane

primary



tertiary

3-chloropentane

secondary

SciPad pg 152

Properties of haloalkanes

We can compare the properties of haloalkanes to the hydrocarbons. The only difference is the C – X bond.

Boiling and melting point

Higher melting and boiling points. Haloalkanes are polar so there are stronger intermolecular forces than hydrocarbons.

Solubility

More soluble in water than hydrocarbons because of the polar C – X bond.