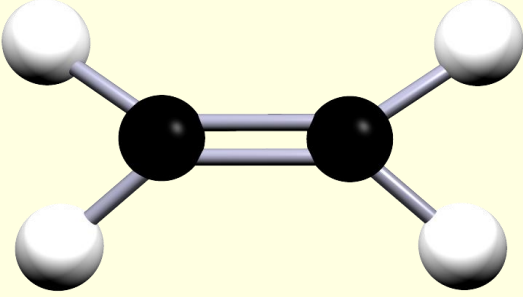


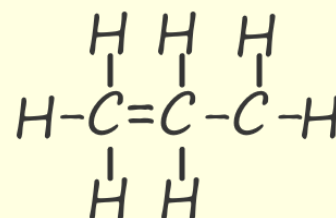
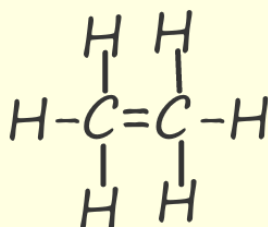
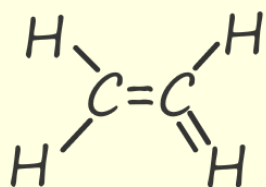
# The alkenes

Answer the questions below then check your answers.

1. What functional group is present in all alkenes?
  - a. The alkenes are all unsaturated molecules, what does this mean?
2. Complete the table below which shows the first 3 alkenes.

alkene	Molecular formula	Ball and stick model
		
propene		
	$C_4H_8$	

2. What is the general formula for the alkenes?
3. Which of the following molecules are alkenes?  
i.  $C_5H_{10}$    ii.  $C_{25}H_{52}$    iii.  $C_{10}H_{20}$    iv.  $C_{100}H_{202}$
4. How many bonds does a carbon and a hydrogen atom make?
- a. What is wrong with each of the molecules in the image below?



# The alkenes

## Answers

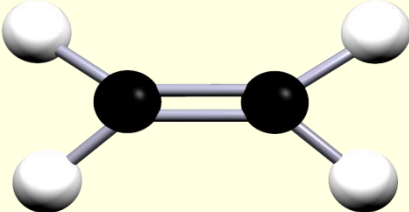
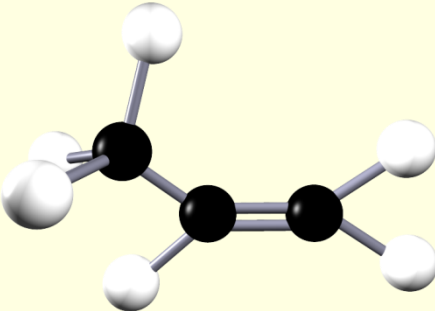
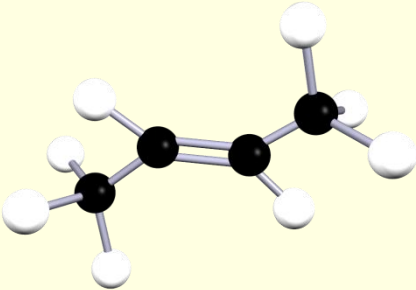
1. What functional group is present in all alkenes?

$C=C$ , carbon carbon double bond.

a. The alkenes are all unsaturated molecules, what does this mean?

They all contain  $C=C$ , carbon carbon double bond.

2. Complete the table below which shows the first 3 alkenes.

alkene	Molecular formula	Model of the alkene
ethene	$C_2H_4$	
propene	$C_3H_6$	
butene	$C_4H_8$	

2. What is the general formula for the alkenes?



3. Which of the following molecules are alkenes

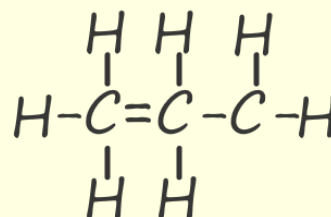
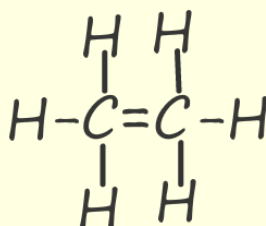
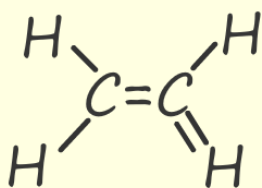
i.  $C_5H_{10}$     ii  $C_{25}H_{152}$     iii  $C_{10}H_{20}$     iv  $C_{100}H_{202}$

Molecules i and iii are unsaturated. Their formula matches the general formula of alkenes,  $C_nH_{2n}$

4. How many bonds does a carbon and a hydrogen atom make?

Carbon makes 4 bonds and hydrogen makes 1 bond.

a. What is wrong with each of the molecules in the image below?



One of the carbon atoms is making 5 bonds.

One of the hydrogen atoms is making 2 bonds.

Both the carbon atoms are making 5 bonds.

One of the carbon atoms is only making 3 bonds and one is making 5 bonds