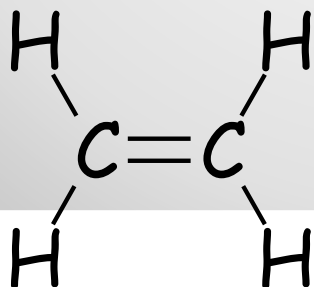


# Polymerisation

All (Grade C)	Most (Grade B)	Some (Grade A/A*)
State how polymers are made	Describe how polymers are made and be able to name them	Analyse the properties of polymers in relation to their uses

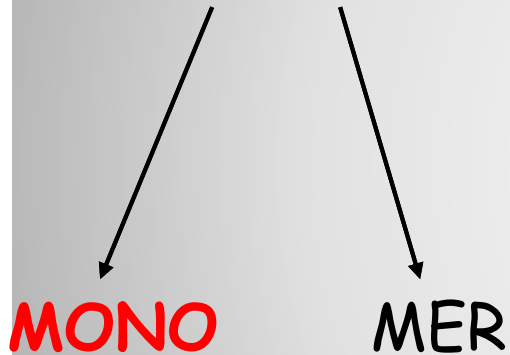
**KEYWORD: Polymer, Monomer**



Write the name of this structure and it's formula.  
What else does the diagram tell you?

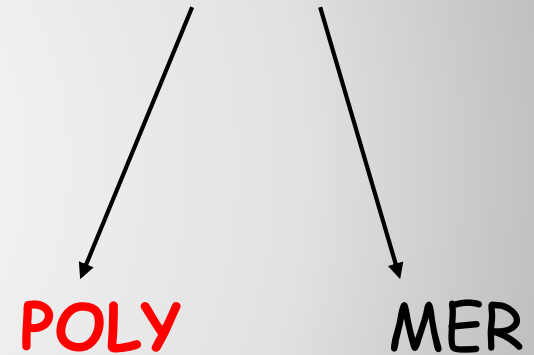
# Workout the meaning...

MONOMER



*Break up the word*

POLYMER



*Clue: 'mer' is latin for 'part'*

Define 'monomer' and 'polymer'



# Human modelling

Stand up!!!

You are now an individual MONOMER

How will you make a POLYMER?



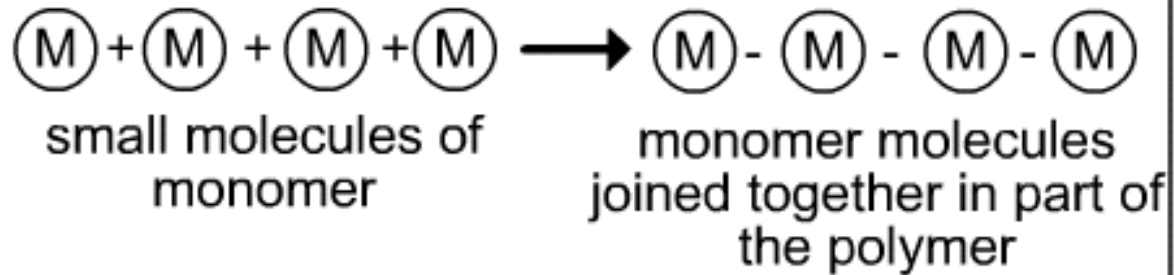


# REVIEW

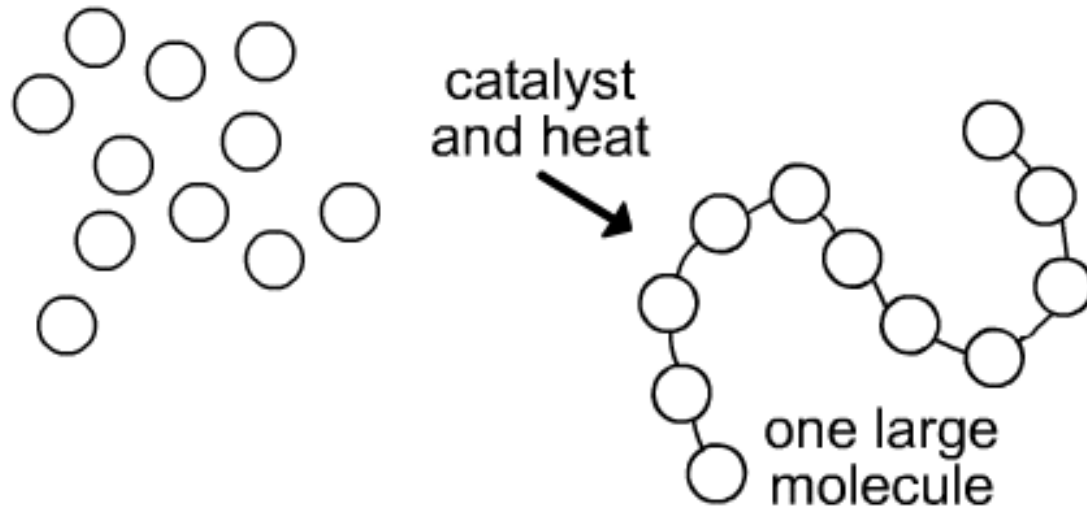
All (Grade C)	Most (Grade B)	Some (Grade A/A*)
State how polymers are made	Describe how polymers are made and be able to name them	Analyse the properties of polymers in relation to their uses



# Polymerisation



many small molecules

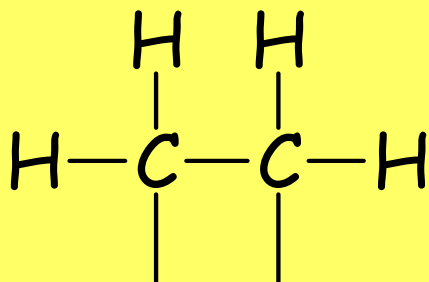
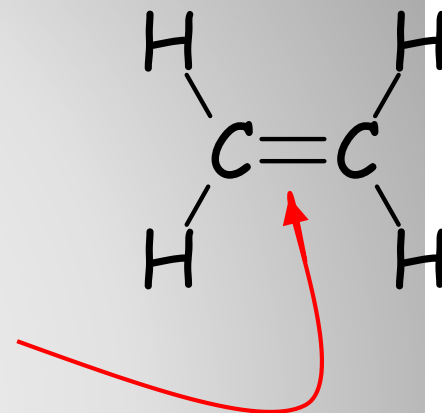


click

# The science behind it...

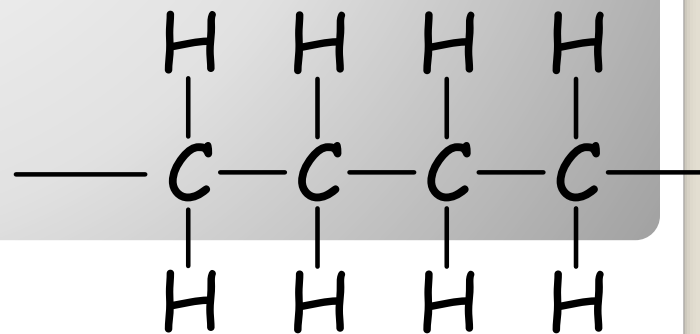
When carbon forms compounds, it forms 4 bonds to other atoms.

The double bonds in the **alkene** are easily broken.



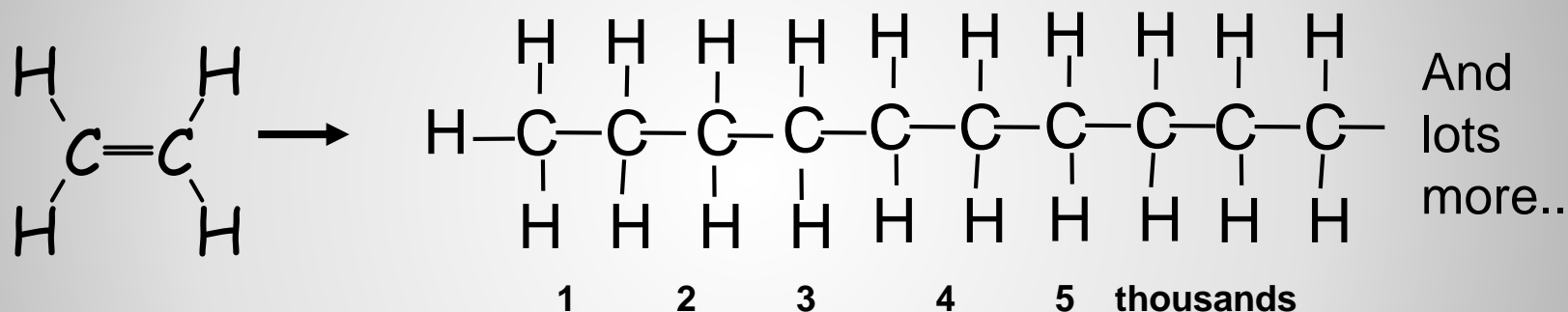
When the double bond breaks, then each carbon is free to make a new bond.

This can join to another molecule which has its double bond broken.

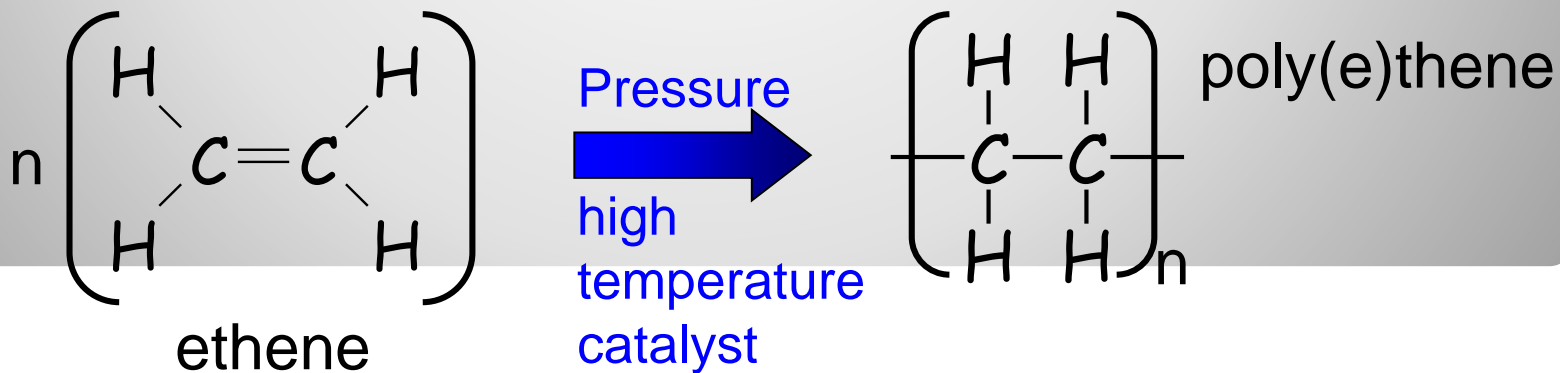


# Poly(ethene)

One important reaction of alkenes involves the joining together of alkene molecules.

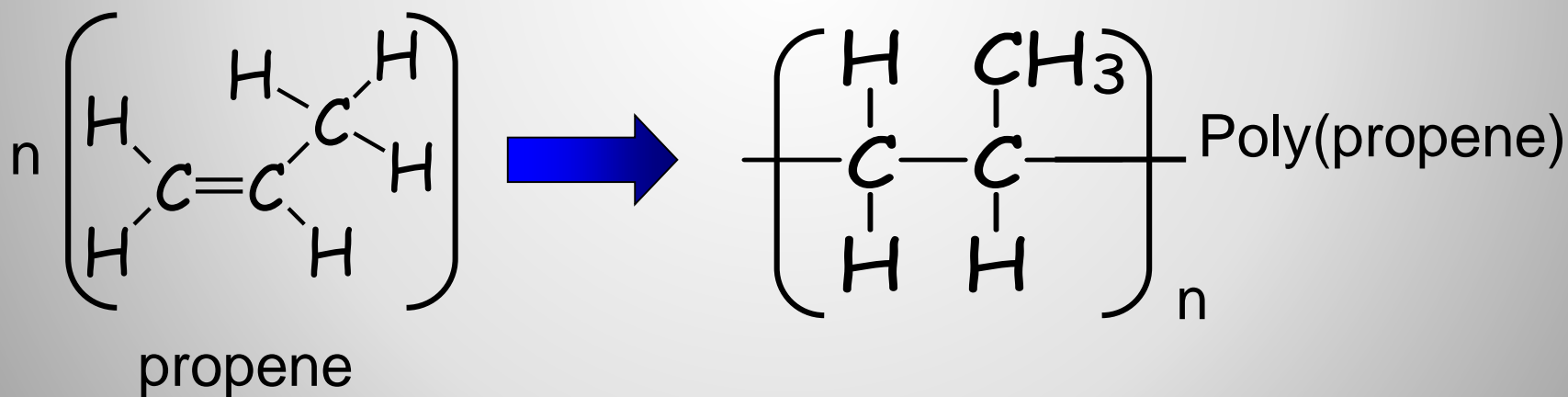


This is called **addition polymerisation** and is written as:



# Polypropene

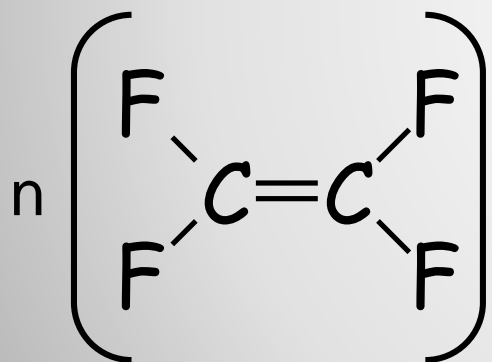
Other **unsaturated** molecules such as propene, vinyl chloride and styrene can also be polymerised to produce a range of **plastics**.



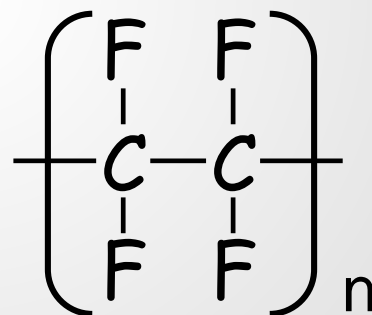


# PTFE

- Tetrafluoroethane is another alkene that is made into an important plastic used to coat non-stick pans: polytetrafluoroethane or PTFE.



tetrafluoroethene

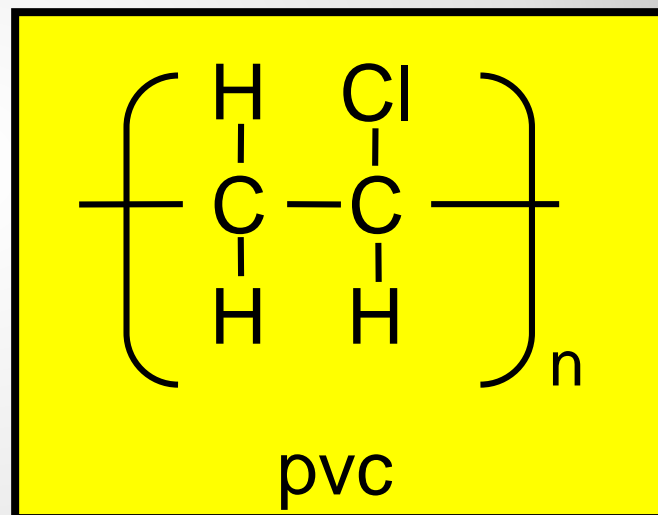
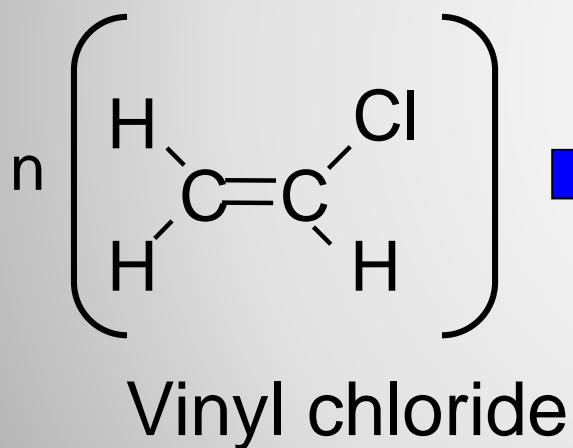


Poly(tetrafluoroethane)  
or PTFE



# PVC

Fill in the product that will be obtained from vinyl chloride





# REVIEW

All (Grade C)	Most (Grade B)	Some (Grade A/A*)
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# Properties and Uses

- Analyse the use of the polymer and **identify** what properties the polymer has that makes it suitable for its use

PTFE ( or  
Teflon®)



Poly(ethene)



PVC



Polypropene



# New Materials and their properties

Work together to  
organise the cards  
in a logical way





# REVIEW

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**Odd one out**

Protein  
Rubber  
DNA  
Polyethene

