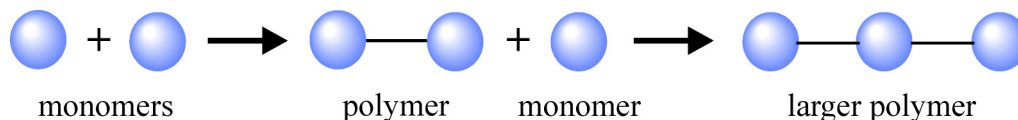


Polymerization is an addition reaction

In the last chapter, you learned that polymers are large molecules made up of repeating segments. **Polymerization**, or the formation of polymers, is a series of addition reactions taking place to produce a very large molecule. Polymers are made by joining smaller molecules called monomers.



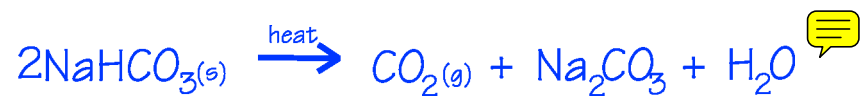
## Decomposition reactions

Compounds are broken down in decomposition reactions

A chemical reaction in which a single compound is broken down to produce two or more smaller compounds is called a **decomposition reaction**. The simplest kind of decomposition is the breakdown of a binary compound into its elements, as in the decomposition of water with electricity into hydrogen and oxygen:



Larger compounds can also decompose to produce other compounds, as in the decomposition of baking soda with heat:



The general equation for decomposition is:



AB is a compound, and A and B are elements or compounds.

polymer	products
polystyrene	foam containers
polyethylene	food packaging
polyester	clothing
polyvinyl chloride	plumbing (PVC pipes)
polyvinyl acetate	chewing gum

**Figure 21.2:** Polymers you'll find around your house.