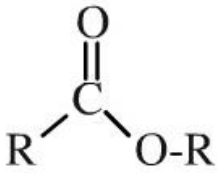
Synthetic Condensation Polymers

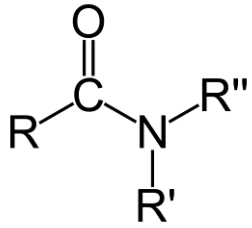
Chapter 2.4

Condensation Polymers

- A **condensation polymer** is a very long organic molecule formed by a condensation reaction between monomer units
- The two most common types of condensation polymers have either

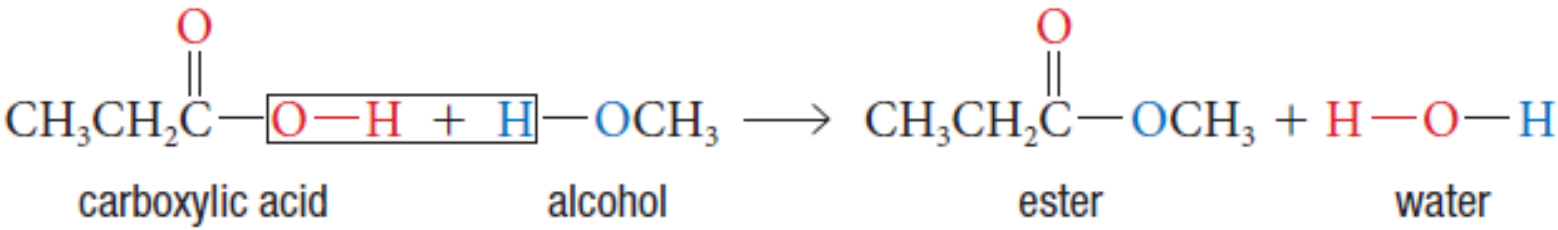
ester linkages or **amide linkages**



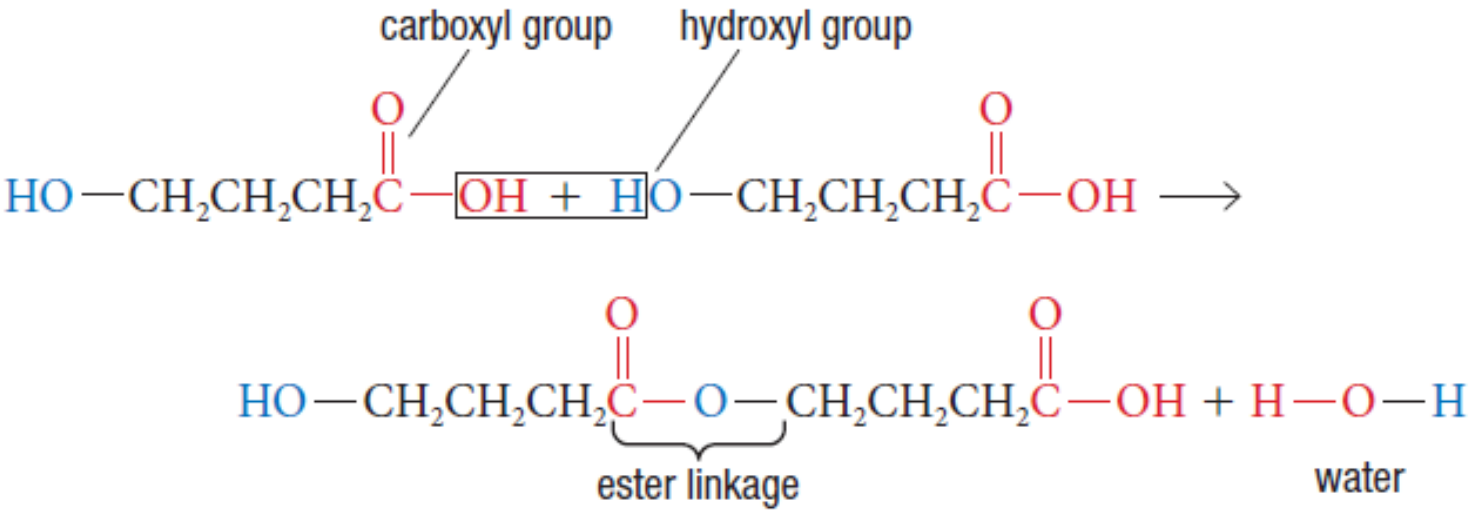


Polyesters

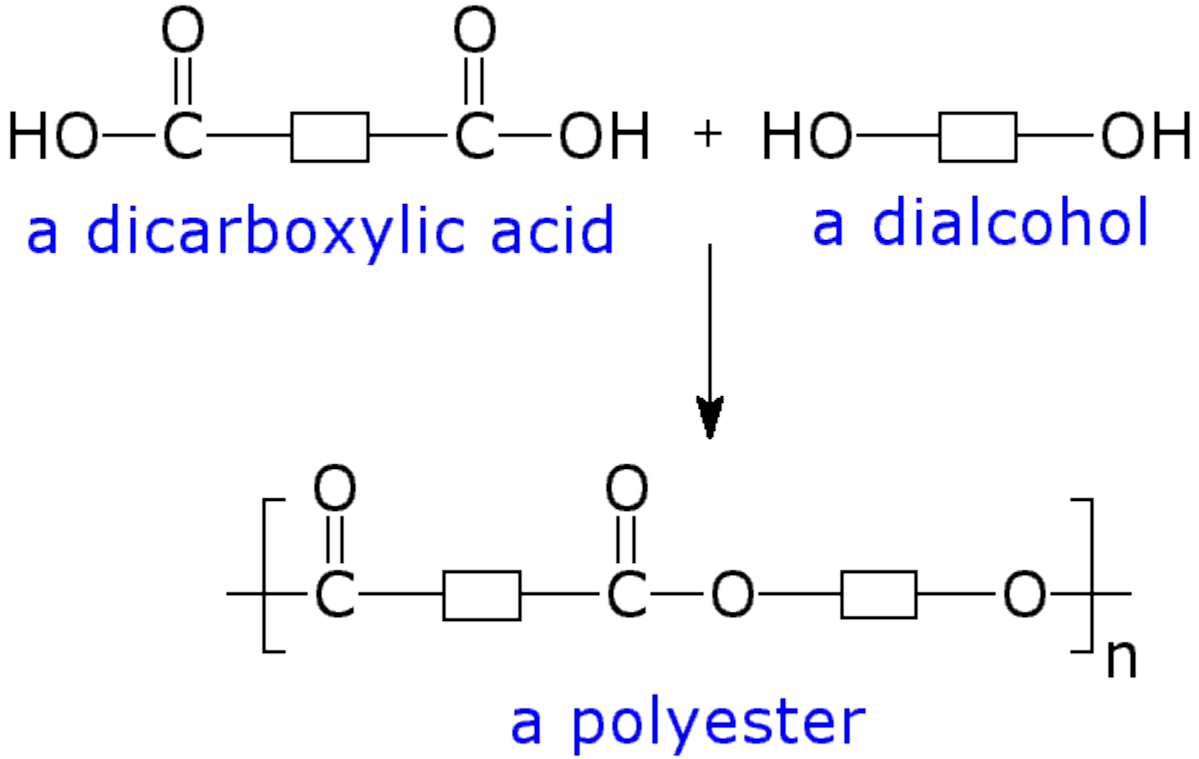
- Polyesters are polymers synthesized through an **esterification** reaction



Polyesters can be homopolymers

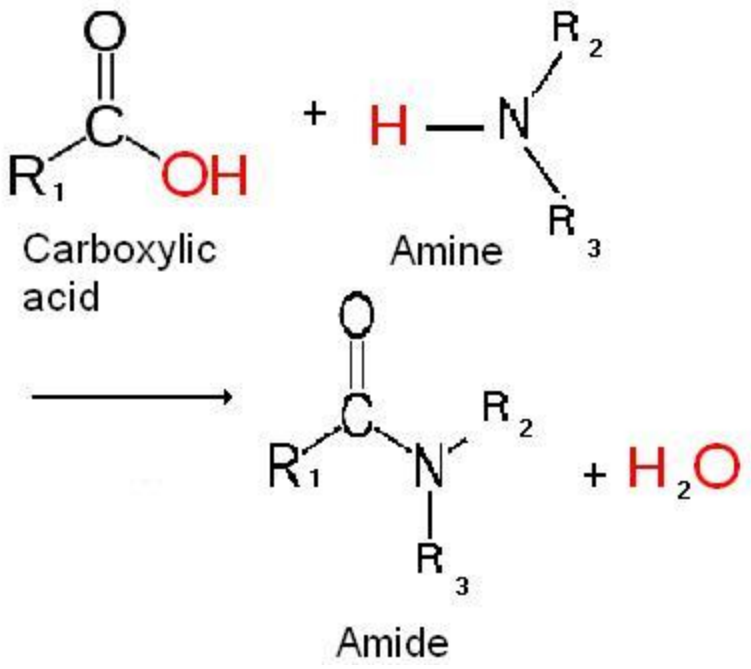


Polyesters can be copolymers

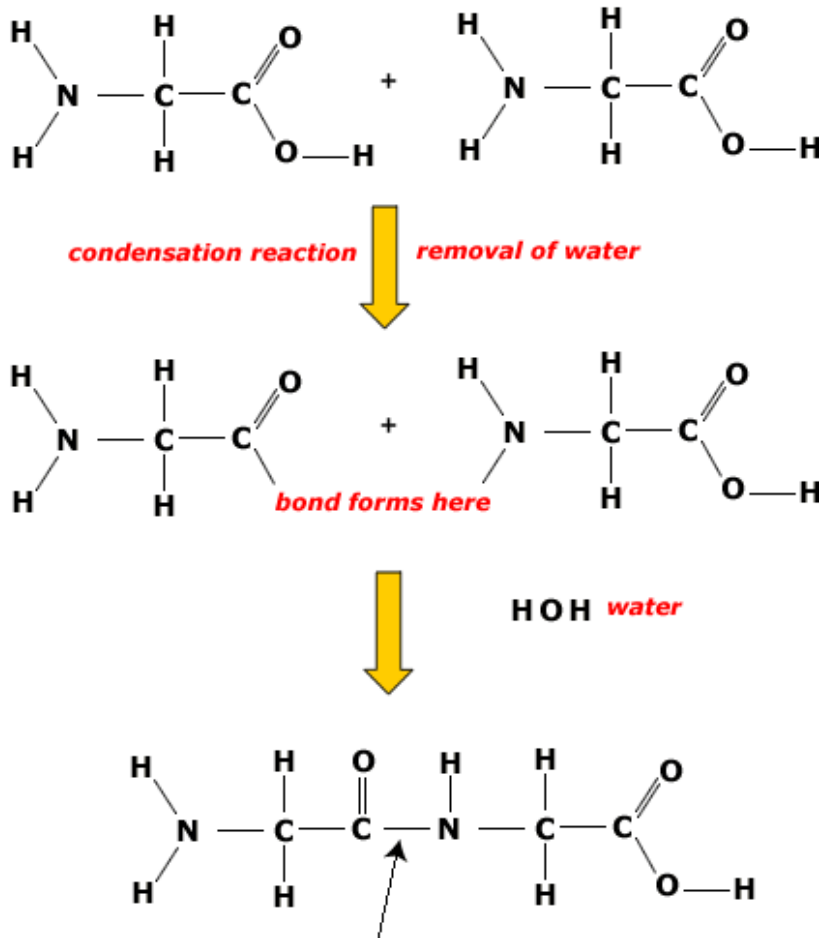


Polyamides

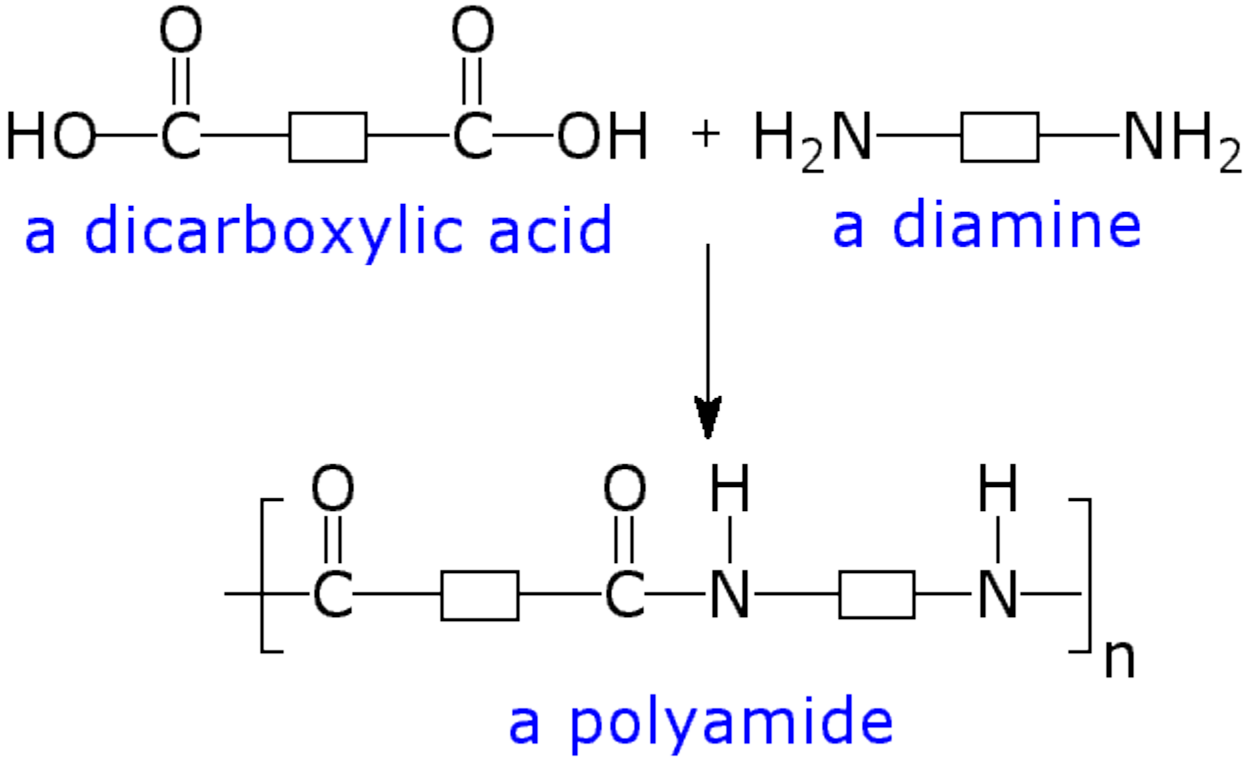
- Polyamides are polymers synthesized by the condensation reaction of carboxylic acids and amines to form amide linkages between monomers



Polyamides can be homopolymers



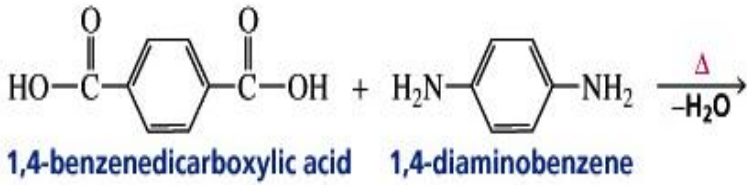
Polyamides can be copolymers



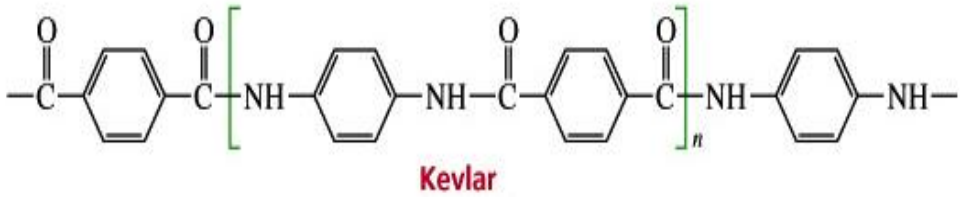
Practice

Below is the structure of Kevlar:

1. Classify it as a polyester or polyamide
2. Classify it as a homopolymer or a copolymer



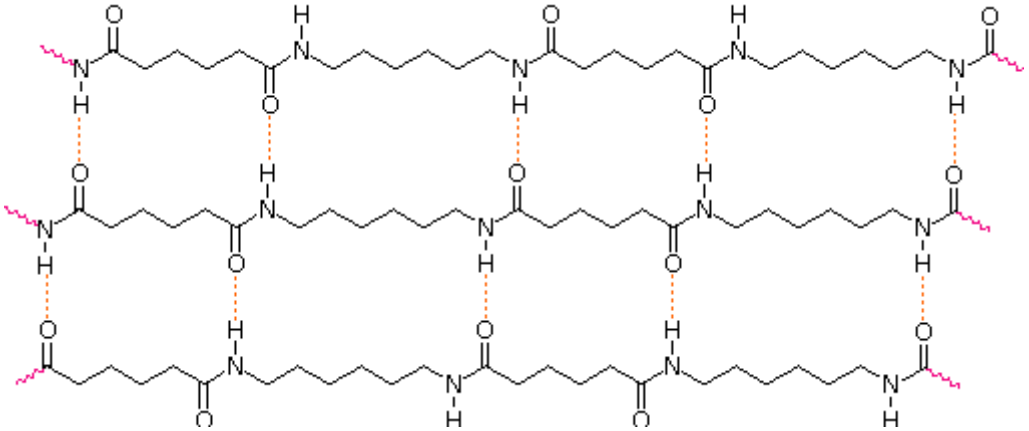
1,4-benzenedicarboxylic acid 1,4-diaminobenzene



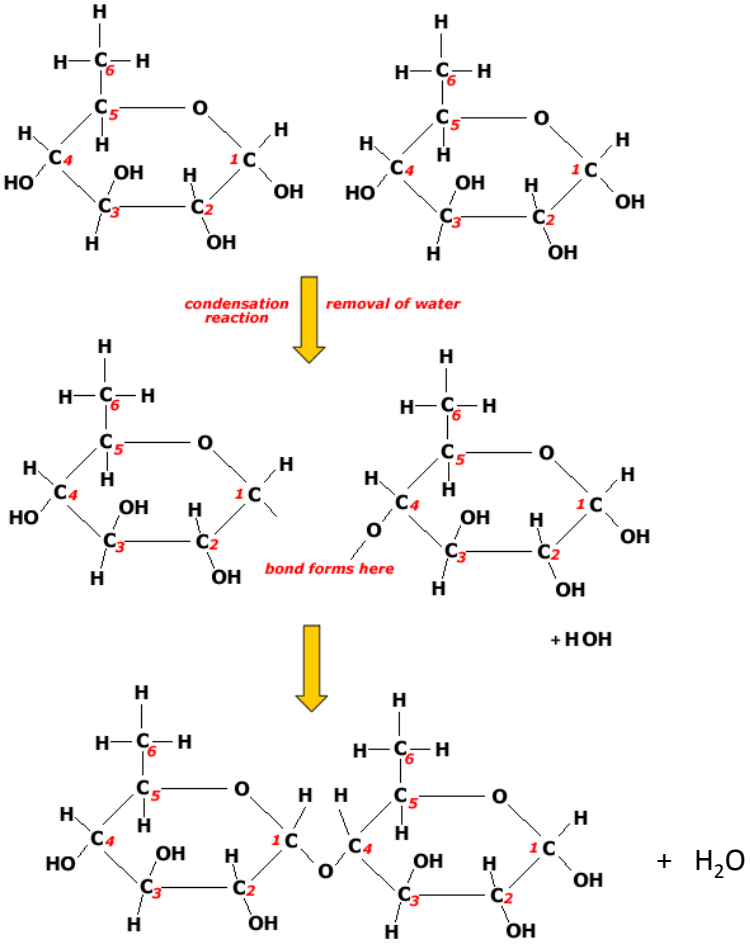
Kevlar

Practice

Draw the monomer(s) that make(s) up this polymer:



But wait!
Aren't we missing something?



HOMEWORK

Required Reading:

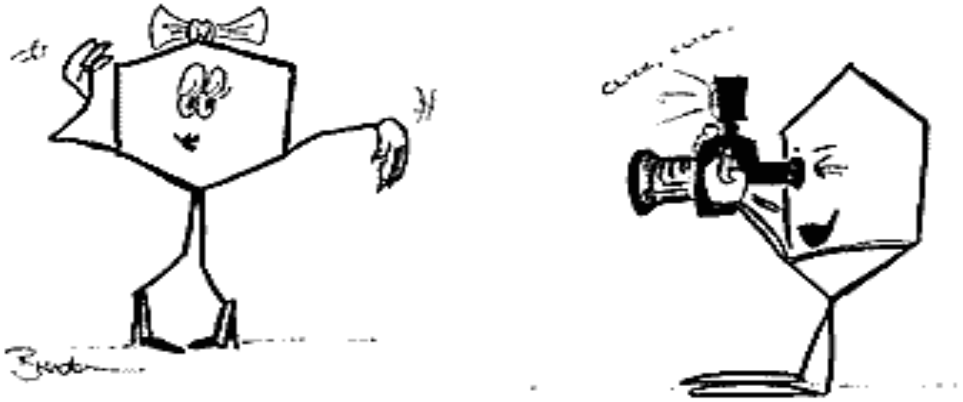
p. 95-99

(remember to supplement your notes!)

Questions:

p. 98 #1

p. 99 #1-9



Bored with her career in organic chemistry, Dolores takes up a job in molecular modeling