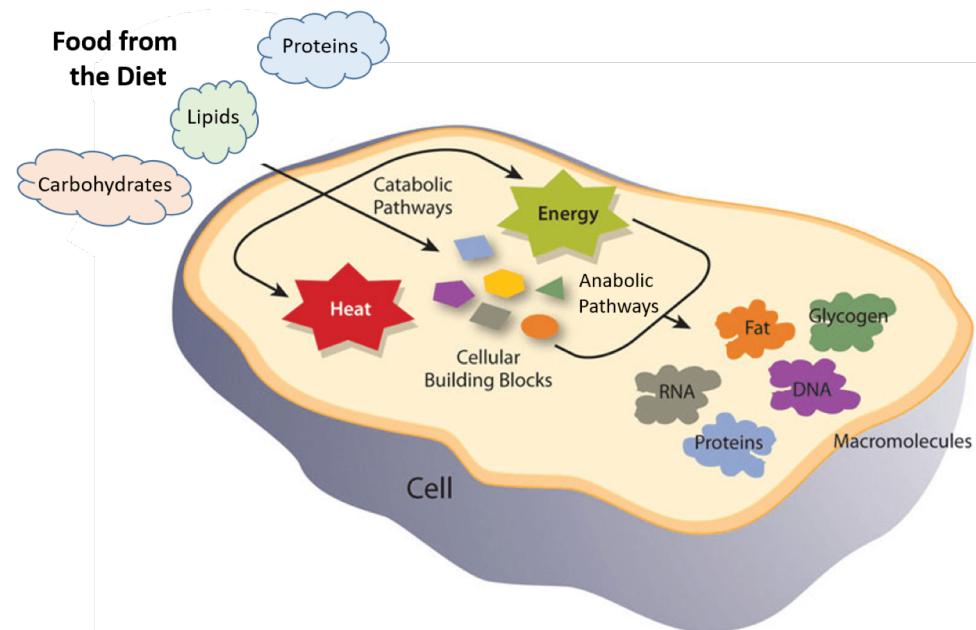


Lesson 4

Cellular Chemistry



Metabolism

- The cell is an ideal continuous chemical reactor
- The ensemble of cellular chemical reactions = **metabolism**
- **Anabolic reactions** = build up molecules (*e.g.*, condensation)

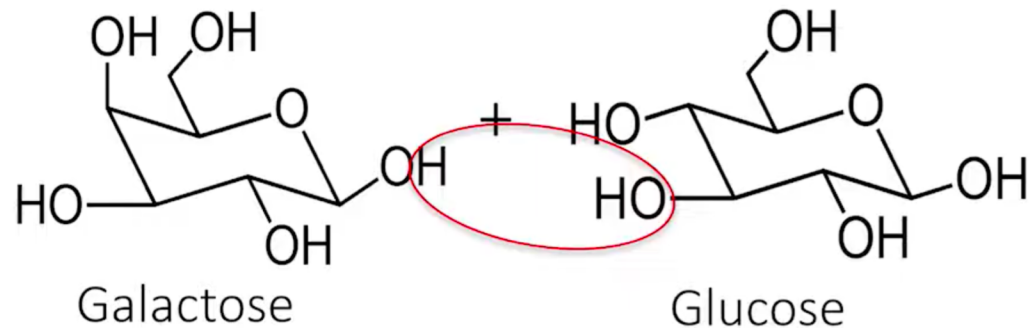


- **Catabolic reactions** = break down molecules (*e.g.*, hydrolysis)



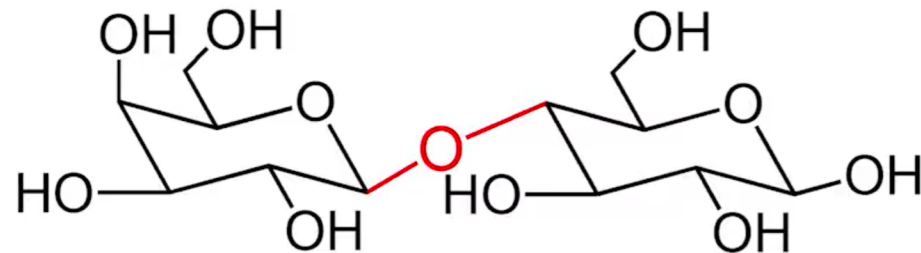
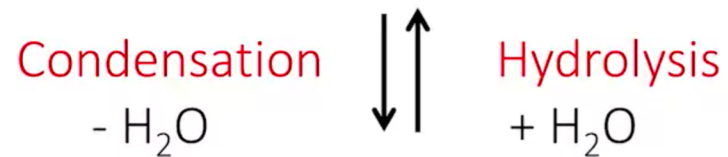
Factory, Maurice Utrillo, 1923

Condensation & hydrolysis



Condensation:

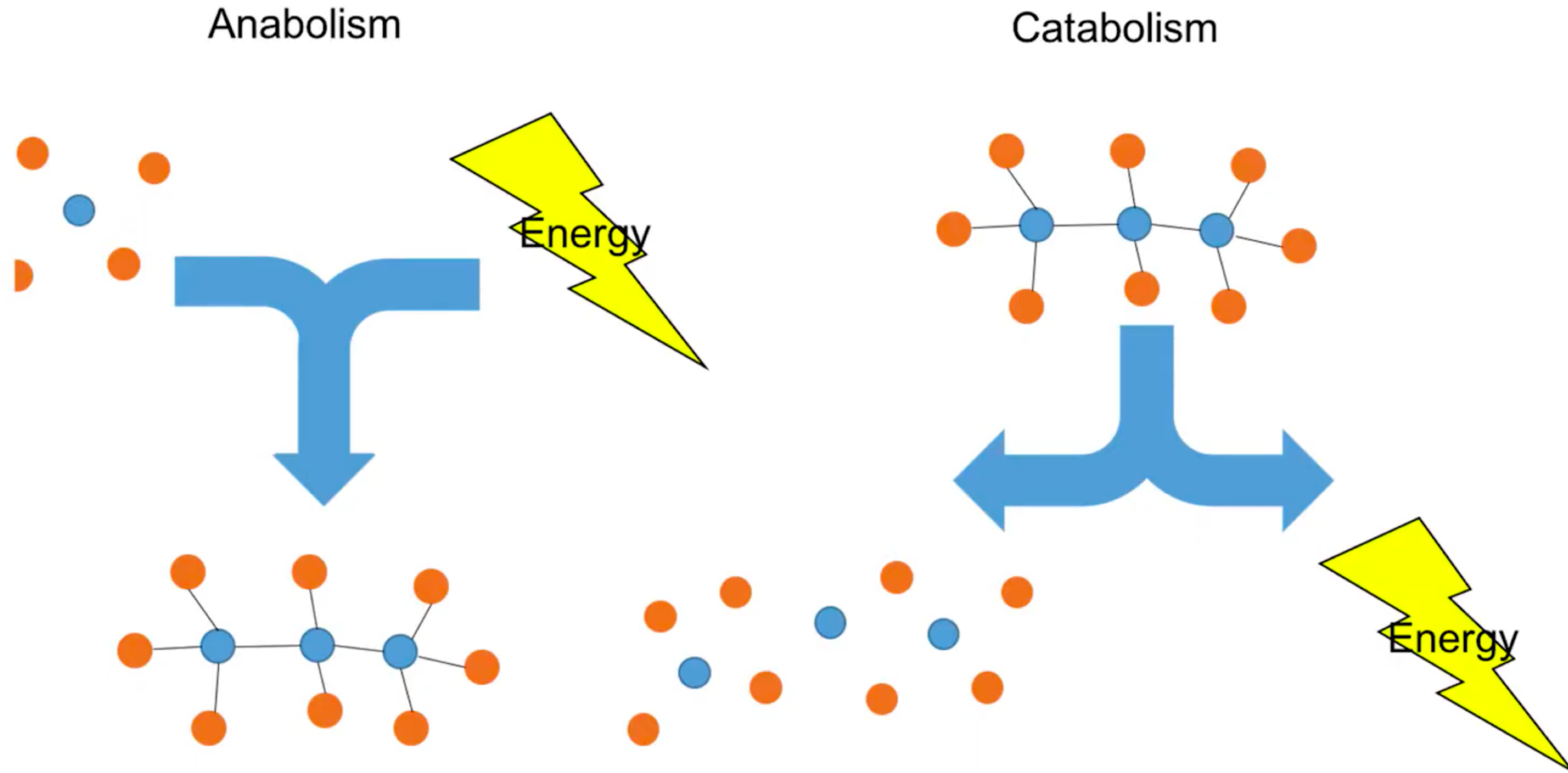
Covalent bonds form
with loss of water
Build molecules
Anabolic



Hydrolysis:

Covalent bonds break
with addition of water
Break down molecules
Catabolic

Metabolism & Energy



Cellular chemistry

- Take assignment 4: **Cellular Chemistry**