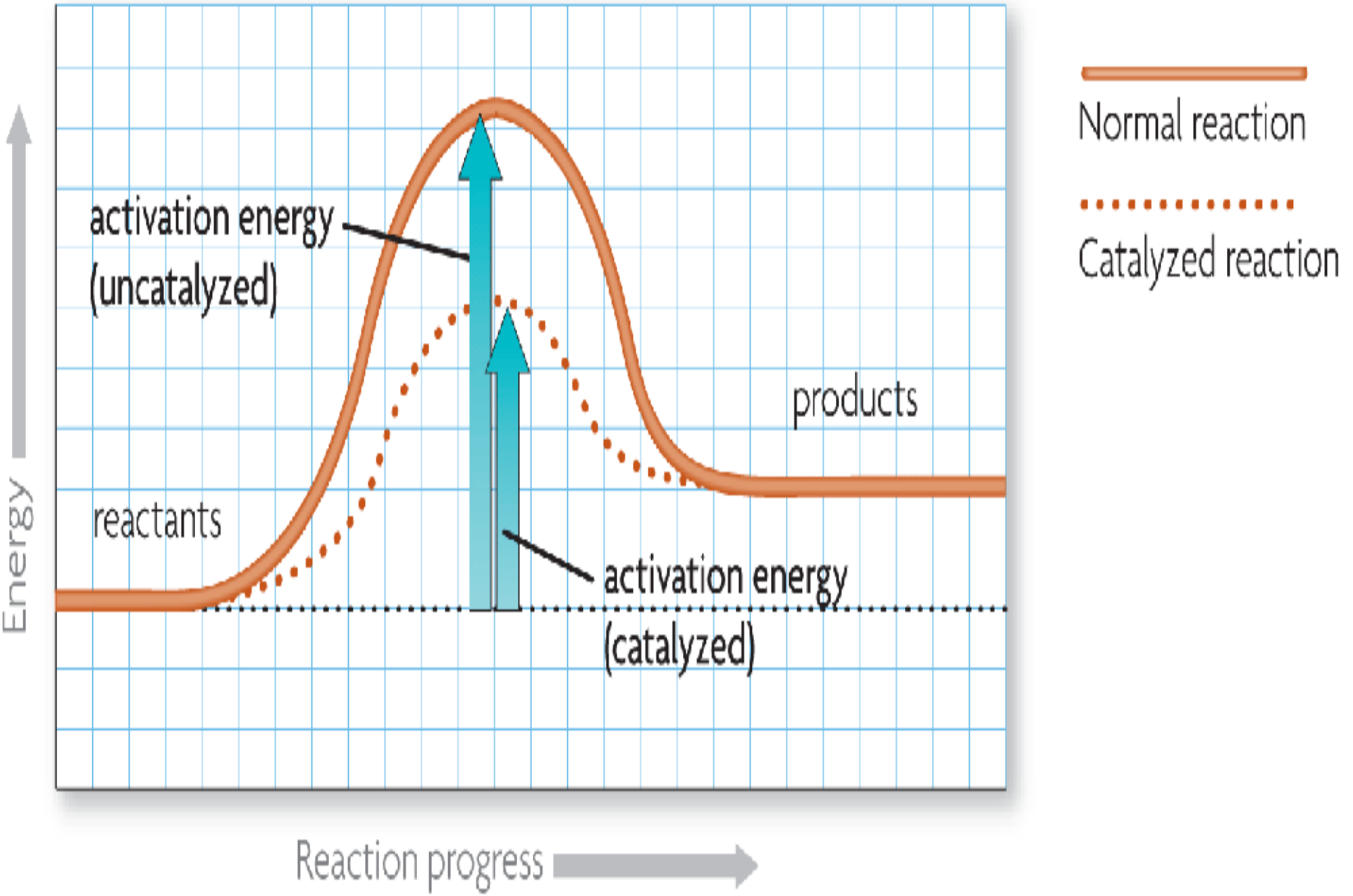
KEY CONCEPT

Enzymes are catalysts for chemical reactions in living things.

http://www.cleanvideosearch.com/media/action/yt/watch?videoId=NdMVRL4oaUo

ENZYMES are catalysts for chemical reactions.

- ***Catalyst:*** **speeds up chemical reactions.**
  - **decrease activation energy DAE**
  - **increase reaction rate IRR**
  - **Enzymes don't change or get used up**


activation energy
(uncatalyzed)
products
reactants
activation energy
(catalyzed)
Energy
Reaction progress
Normal reaction
Catalyzed reaction

2.5 Enzymes

Enzymes allow chemical reactions to occur under tightly controlled conditions.

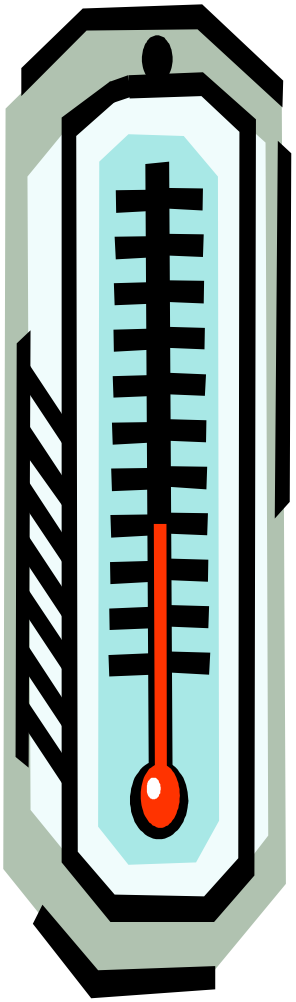
–**proteins**.

–**end in -ase**

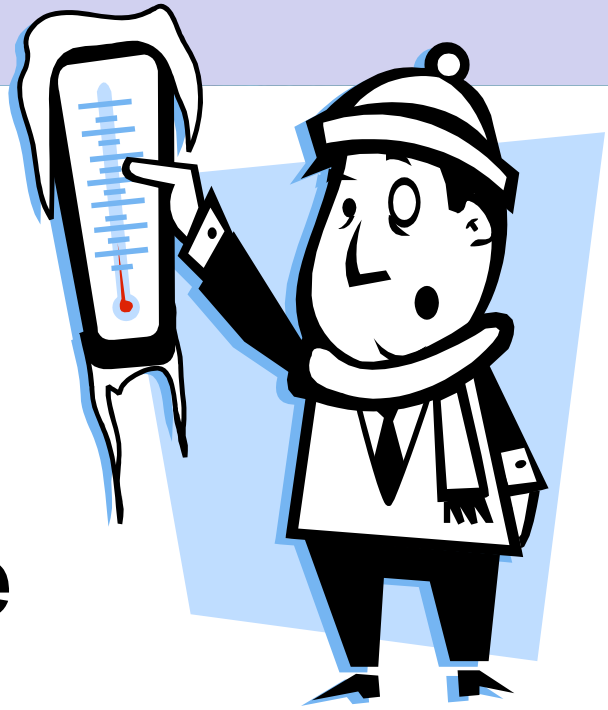
–**Lactase**
Lactose

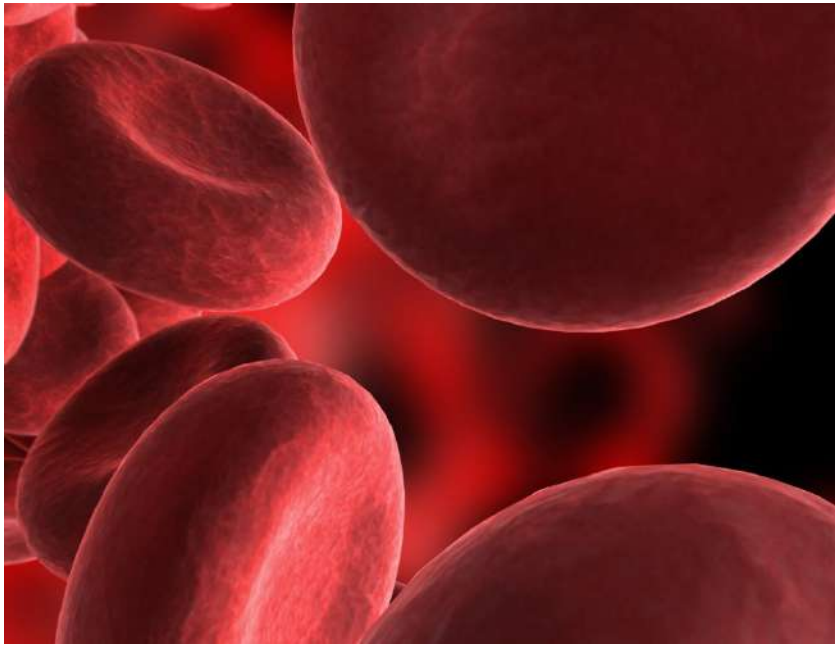
- **Disruptions in *homeostasis* can prevent enzymes from functioning.**

  - **Enzymes function best in a small range of conditions.**
  - **Changes in temperature and pH can break H+ bonds**
  - **enzyme's function depends on its structure.**

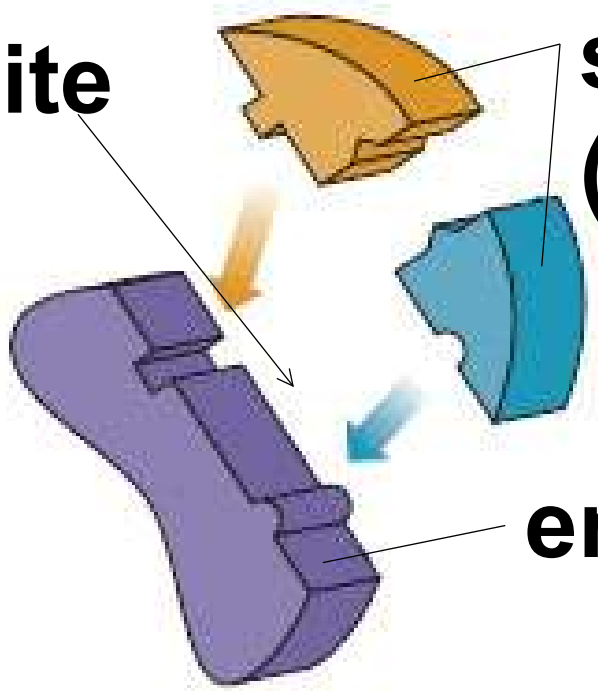


- **Enzymes Can…**
  - **Enable reactions to occur at lower temperatures**
  - **Control only 1 type of cell because of their specific shape**
  - **P. 48**





- **An enzyme's structure allows <u>only certain reactants</u> to bind to the enzyme.**



Substrates bind to an enzyme at certain places called active sites.

- The ***lock-and-key model*** helps illustrate how enzymes function.
  - –substrates together
  - –bonds weaken
  - –Product released

CATALYZED REACTION