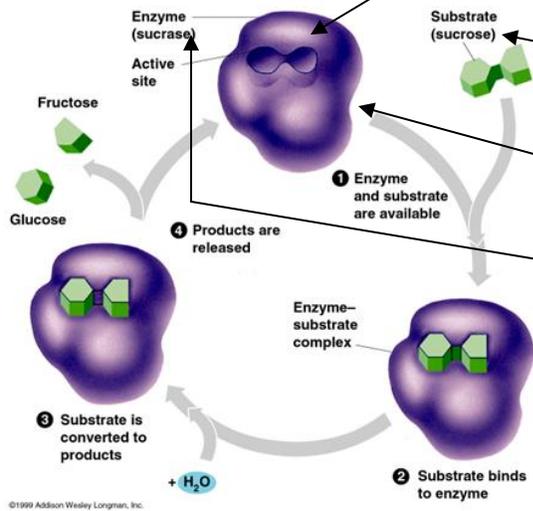


Enzyme Function:  
Lock and Key Model:



- Some things to note:
- Active site with shape for the substrate to "fit" into.
  - Enzyme prefix "matches" the substrate
  - Enzyme is not "used" up but is available for more substrate
  - Enzyme name ends in "-ase"

Some fine print: Okay, in doing your research you may have found that the lock and key model is not the most accepted model. The "induced fit" model best represents enzyme action. The big difference is that the shape of the enzyme changes while interacting with the substrate. The end result and fundamentals are the same.

Factors that affect how fast enzymes function:

-Temperature – increases in temp mean an increase in the number of collisions between atoms and molecules. The more collisions the better chance it'll be between an enzyme and its substrate. (think about why you hit the cue ball so hard when you break playing pool)  
SOOOO.....

This means, as temperature rises enzyme reaction rate rises  
UNTIL.....

The temperature at which the enzyme "melts or *denatures*.

When an enzyme denatures, the shape of its active site changes and it can no longer complex with the substrate. This is why we worry about high fevers (104 F or more). Without enzymes no metabolism and...  
....NO LIFE (Have you thanked your enzymes lately?)

pH (acidity) can do this too

-Enzyme/Substrate concentration:

As substrate concentration increases so does reaction rate until every enzyme is "busy" with a substrate molecule at all times and the *saturation point* is reached. Think about the toothpick-ase lab for this one. It works the same with increasing enzyme concentration. Once enough enzymes are present to engage every substrate molecule any extra enzymes will have "nothing to do" and therefore not help increase the reaction rate.