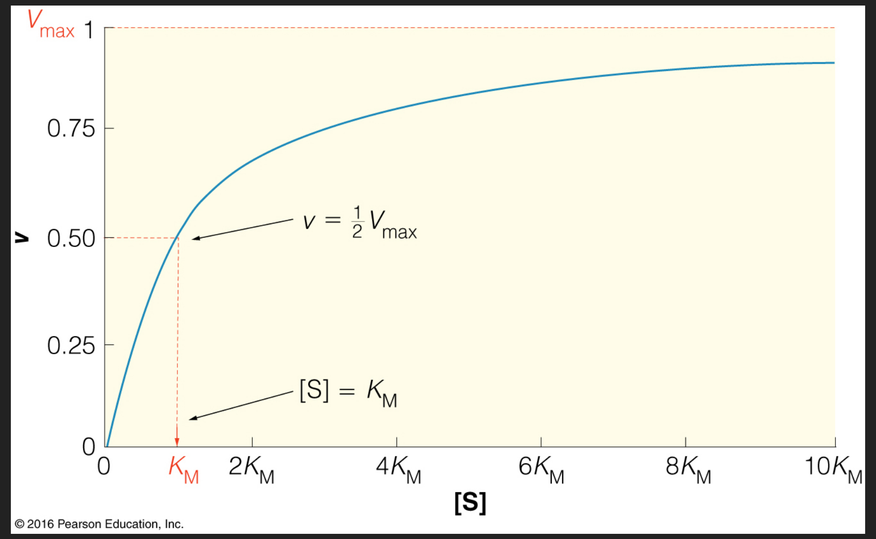
VELOCITY AND SUBSTRATE CONCENTRATIONS

- When we plot the velocity of an equation against the substrate concentration we get the following curve:



- As [S] increases , the reaction goes from 1st Order to 0th Order
- As [S] increases, we reach a maximal velocity , aka V_{max}
  - This is due to enzyme saturation

VELOCITY INITIAL (V_0)

$$V_0 = \frac{k_{cat} * [E]_{total} * [S]}{K_M + [S]}$$

- This is the Michaelis-Menten Equation!

$$V_0 = \frac{V_{max} * [S]}{K_M + [S]}$$

- This is the more well known version of the Michaelis-Menten Equation
- We let $k_{cat} = V_{max}$

- K_M = reaction dependent and will change based on the different substrates or enzymes present
- K_M has units of concentration