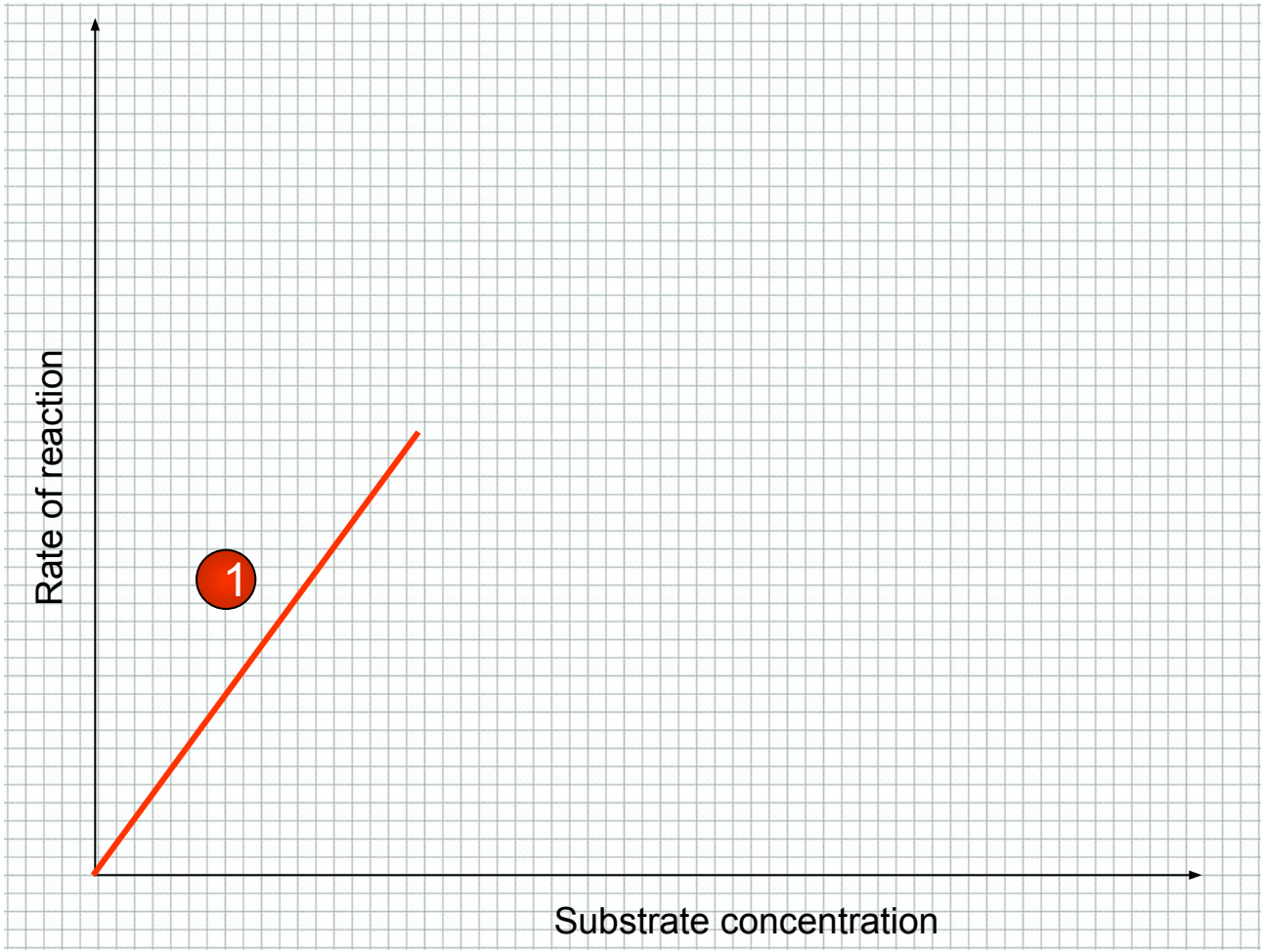
Graphs to show the effects of Inhibitors on Enzyme Action

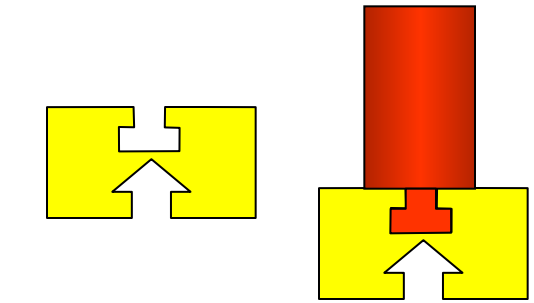
Navigate your way though all of the animations clicking on explanations each time

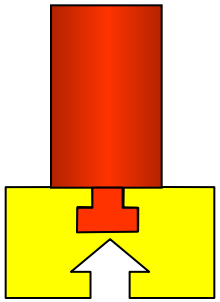
Then complete the worksheet

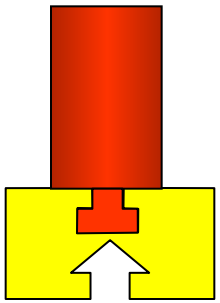
Normal enzyme reaction rate

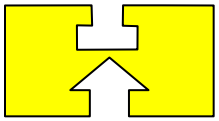


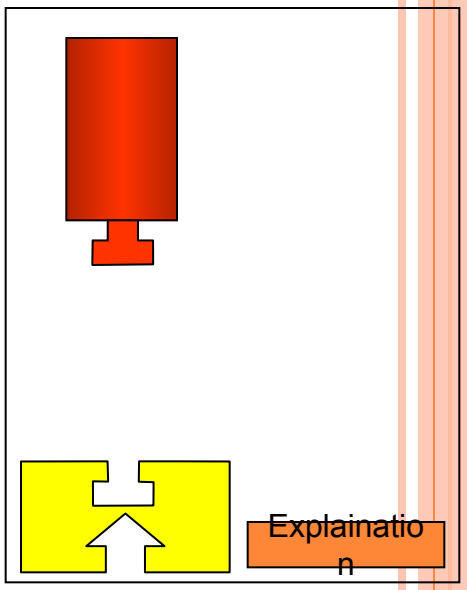
Normal enzyme reaction rate

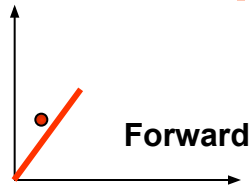












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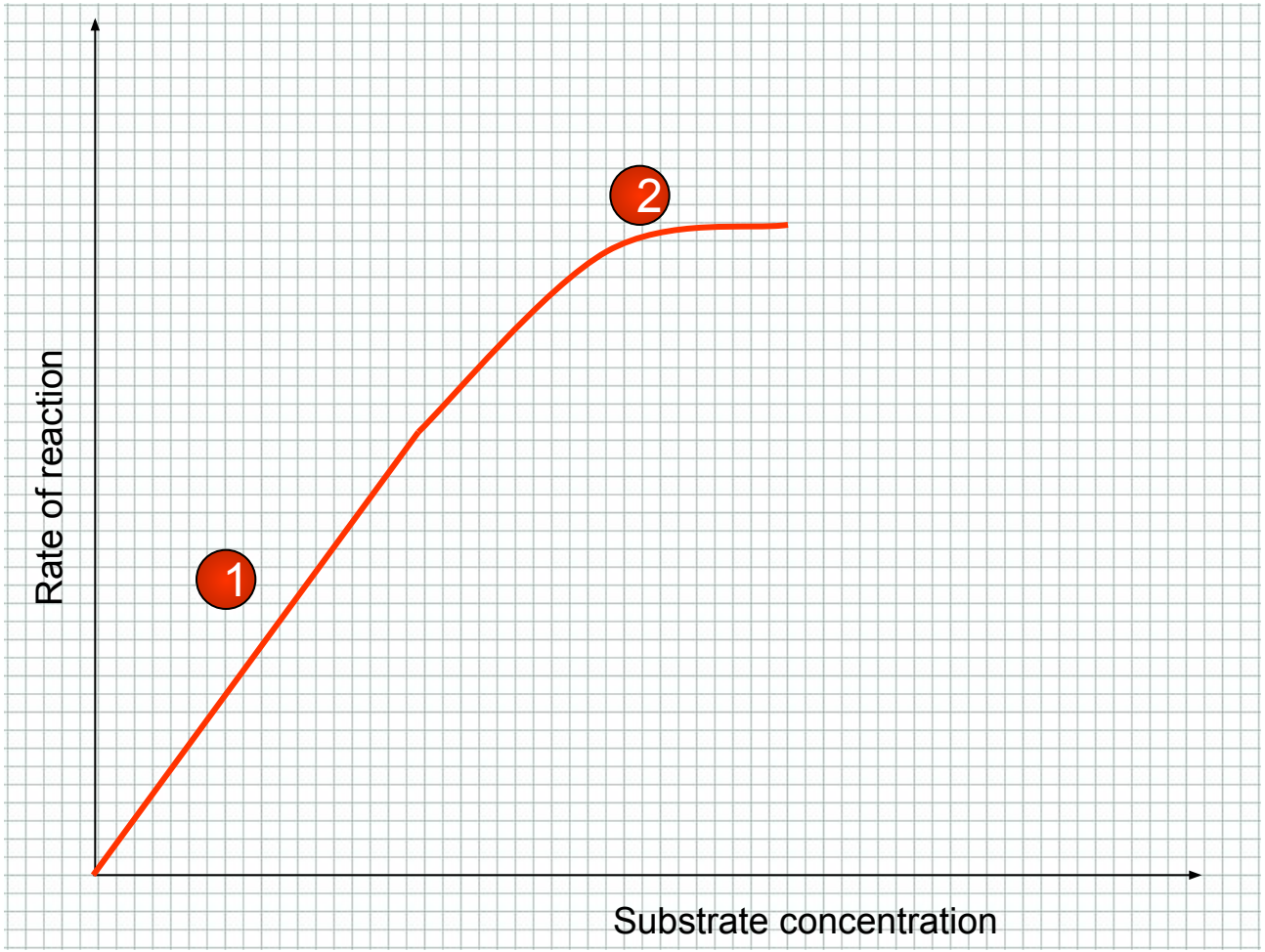

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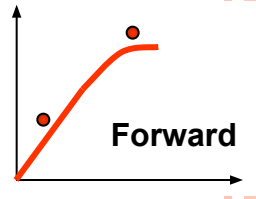
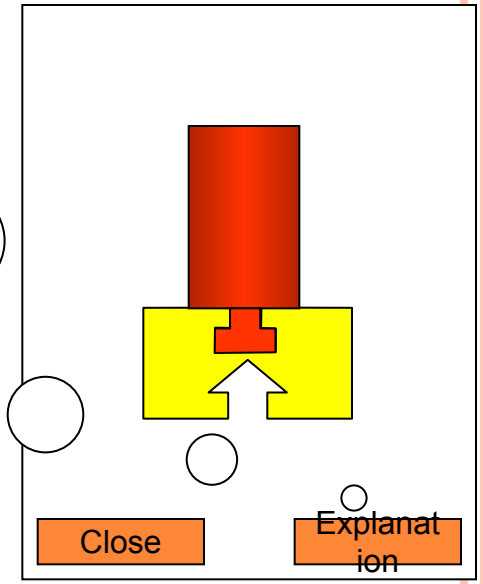
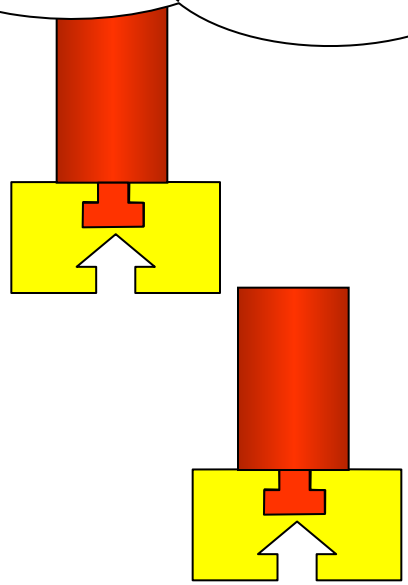
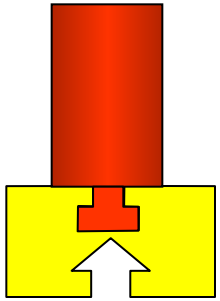


Every active site is saturated. The rate of the reaction is at its highest.







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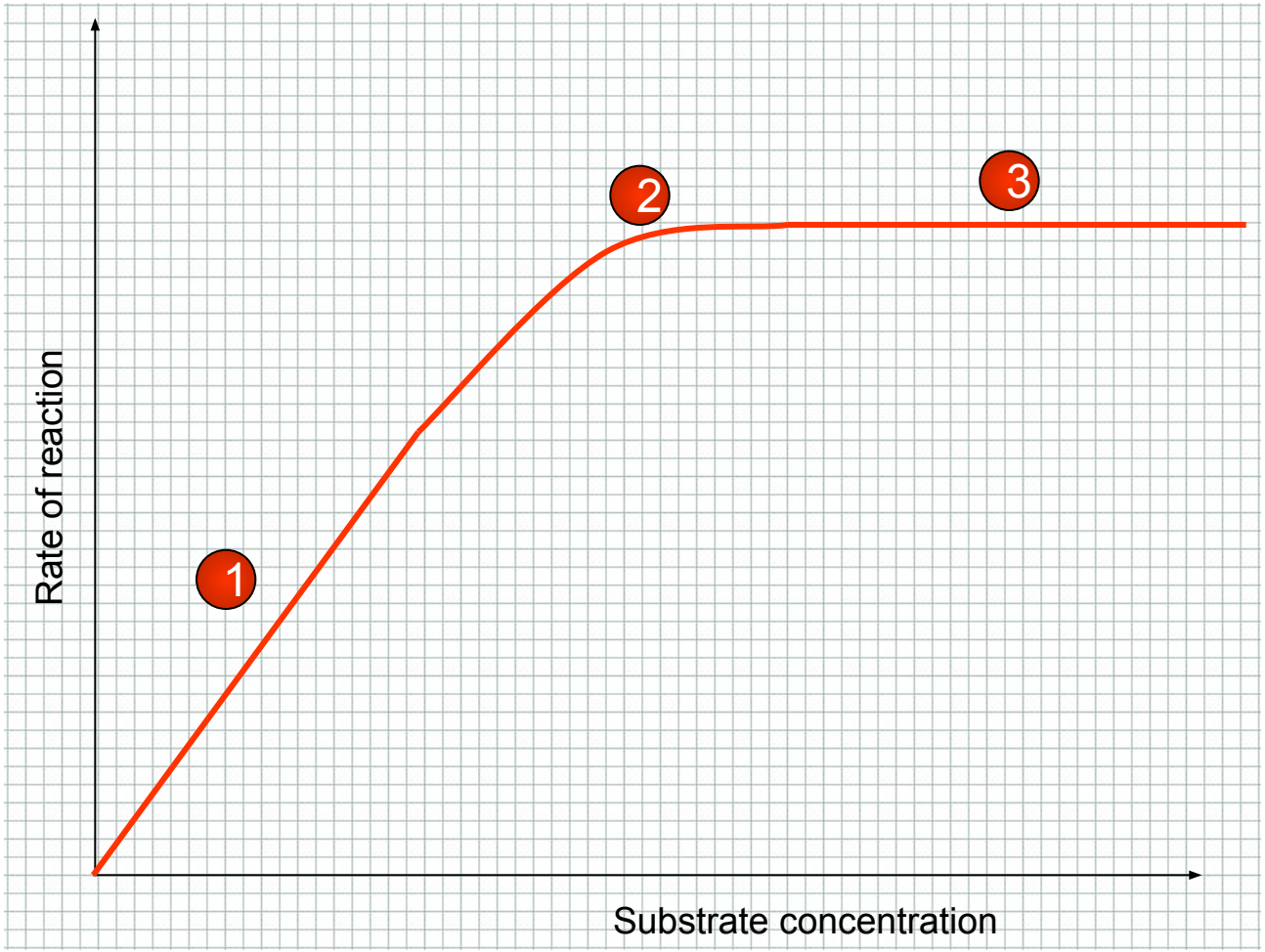

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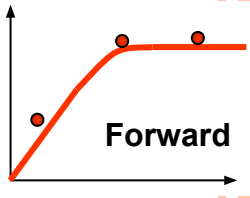

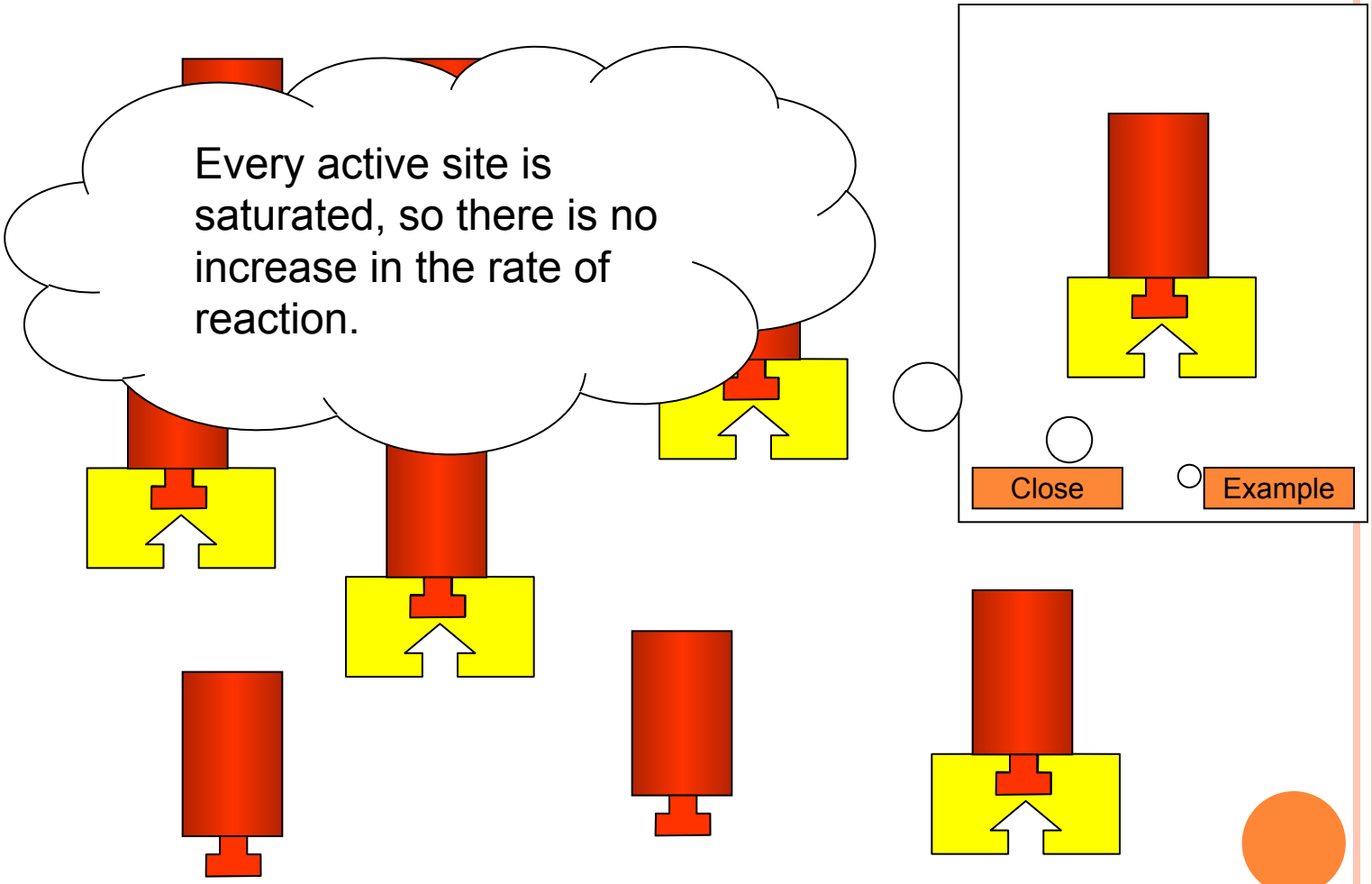

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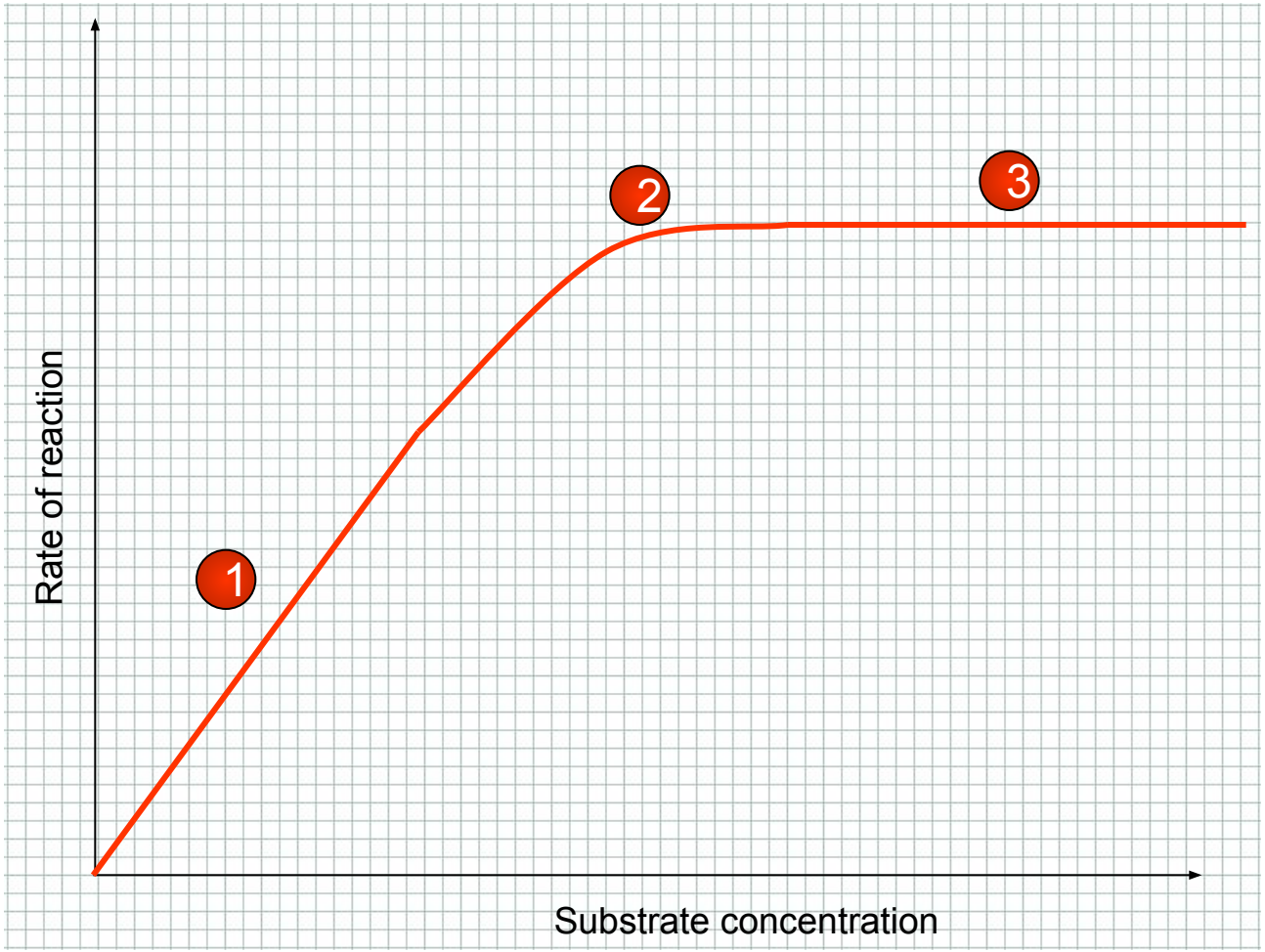
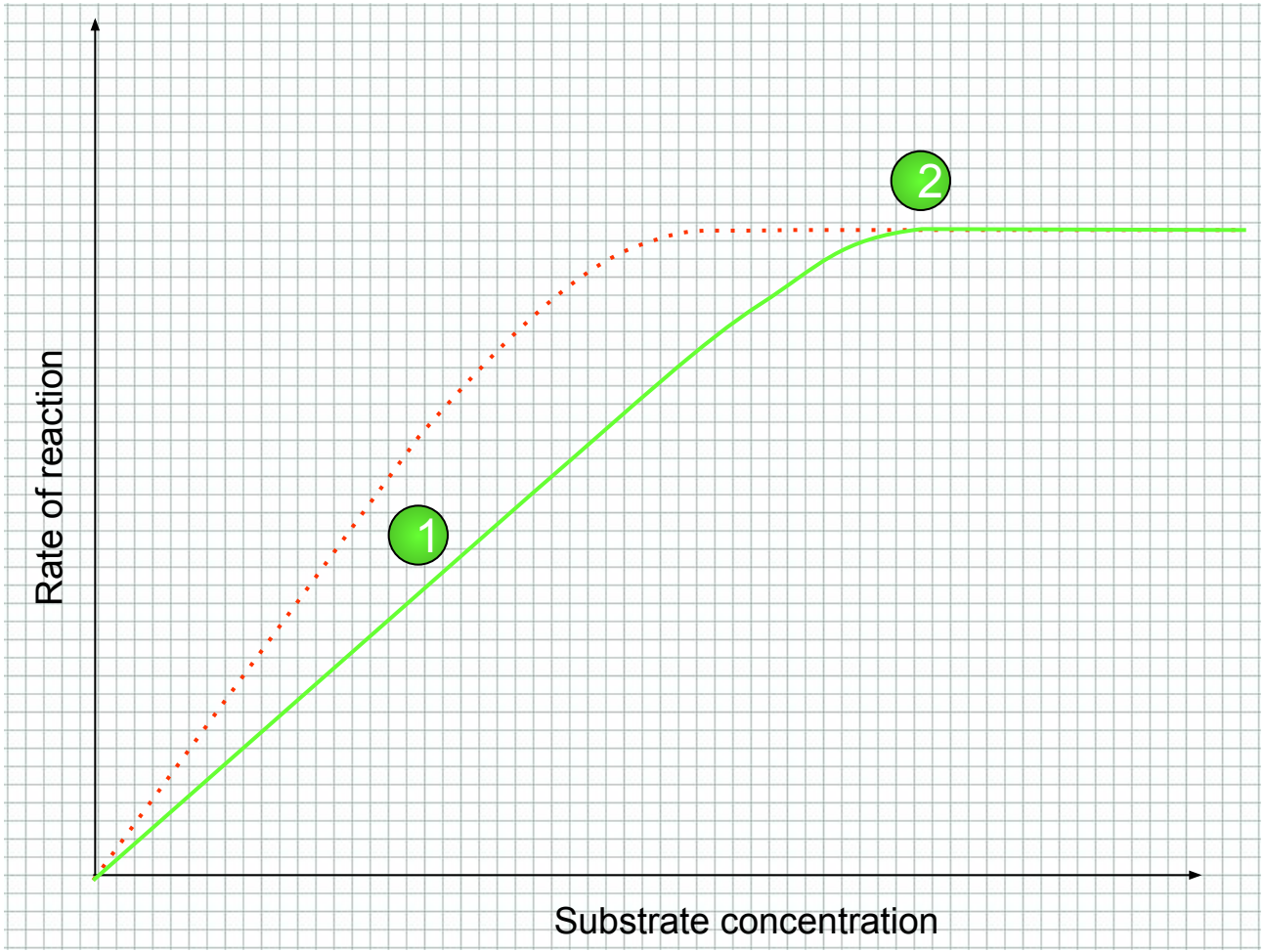


Revise

Competitive Inhibitor

Competitive inhibitor reaction rate

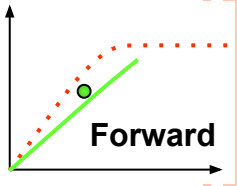


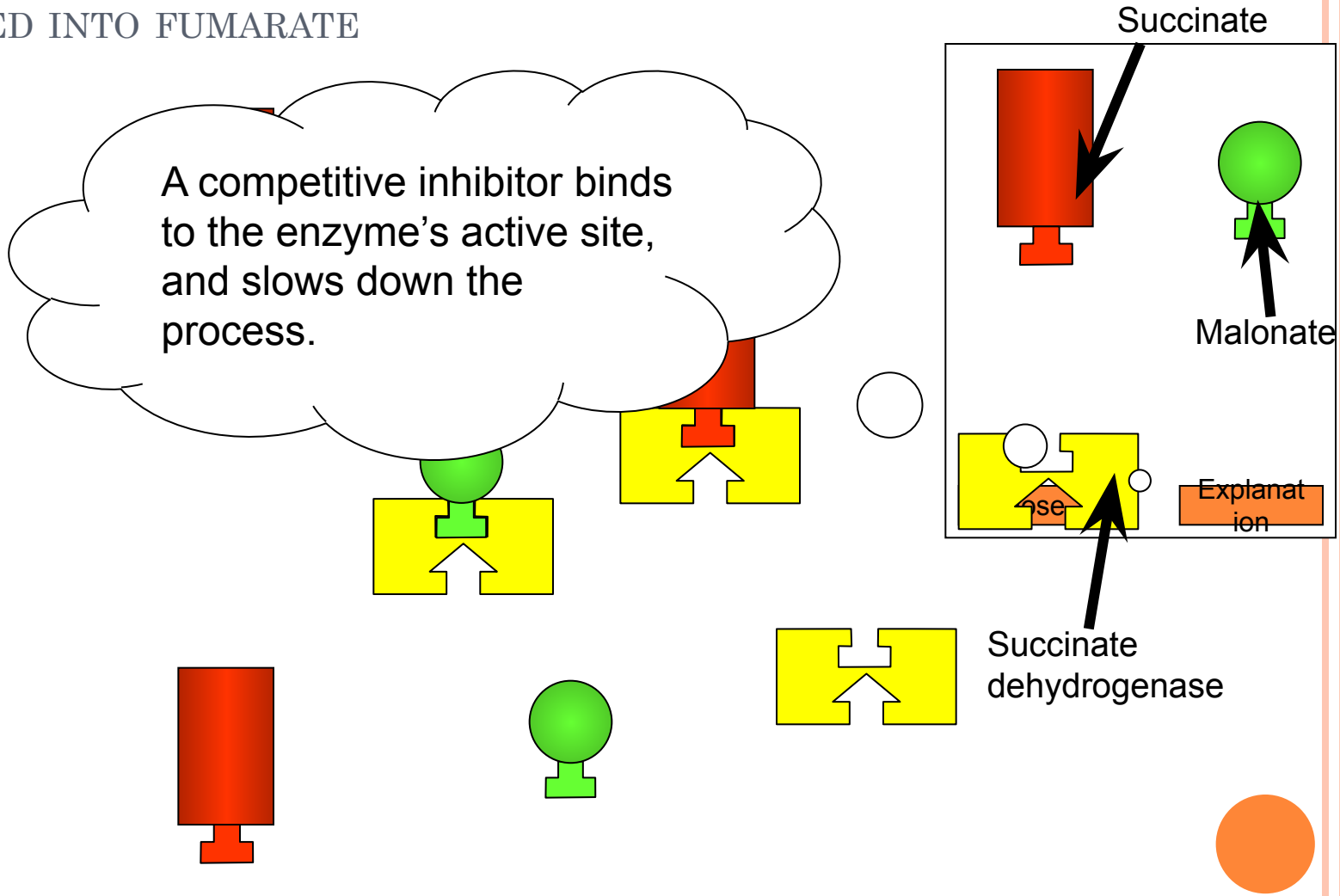
Revise

Non-competitive Inhibitor

Competitive Inhibitor example:

An important enzyme in respiration is succinate dehydrogenase. Its substrate is succinate, which is converted into fumarate





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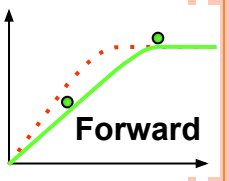
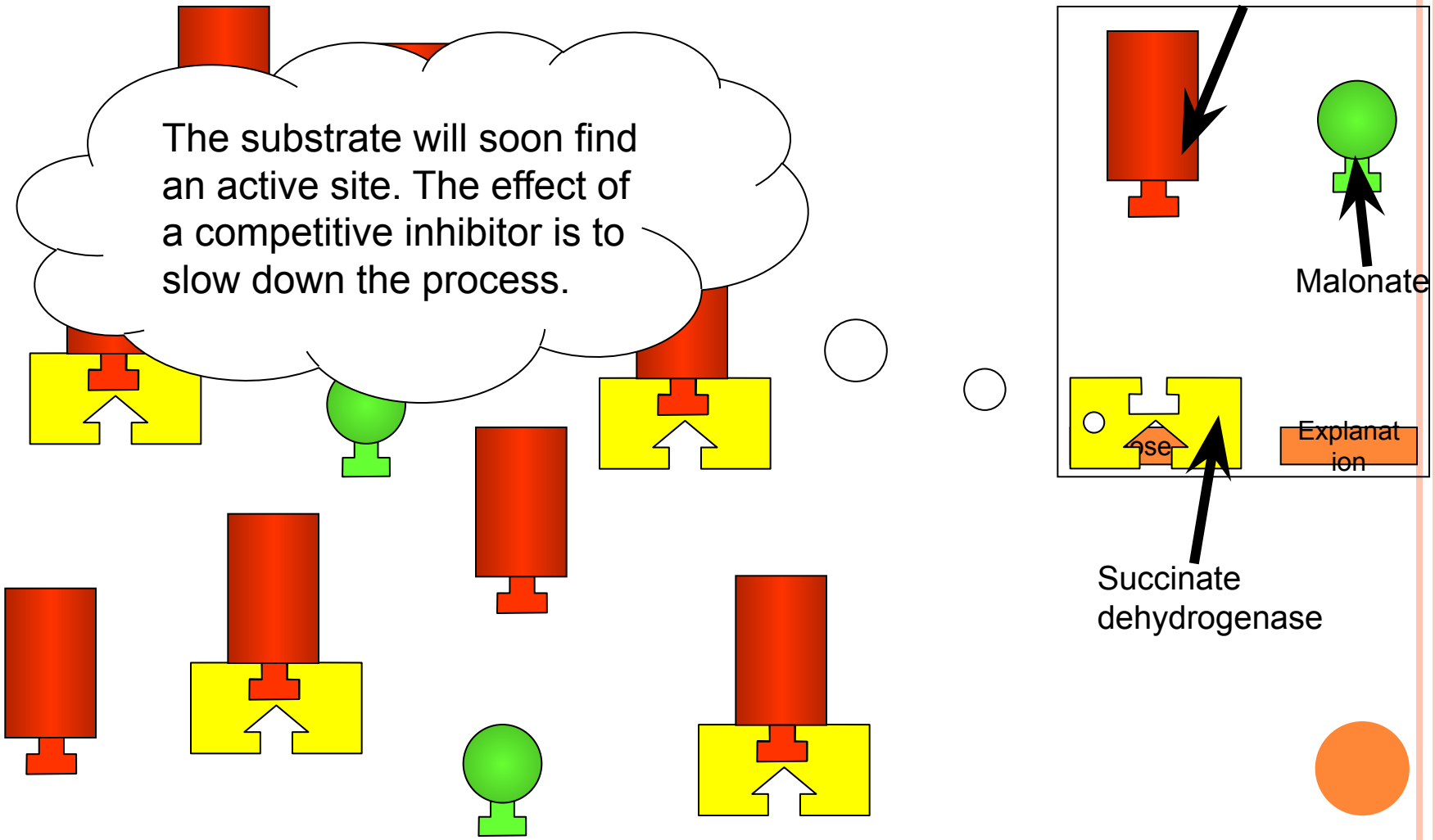
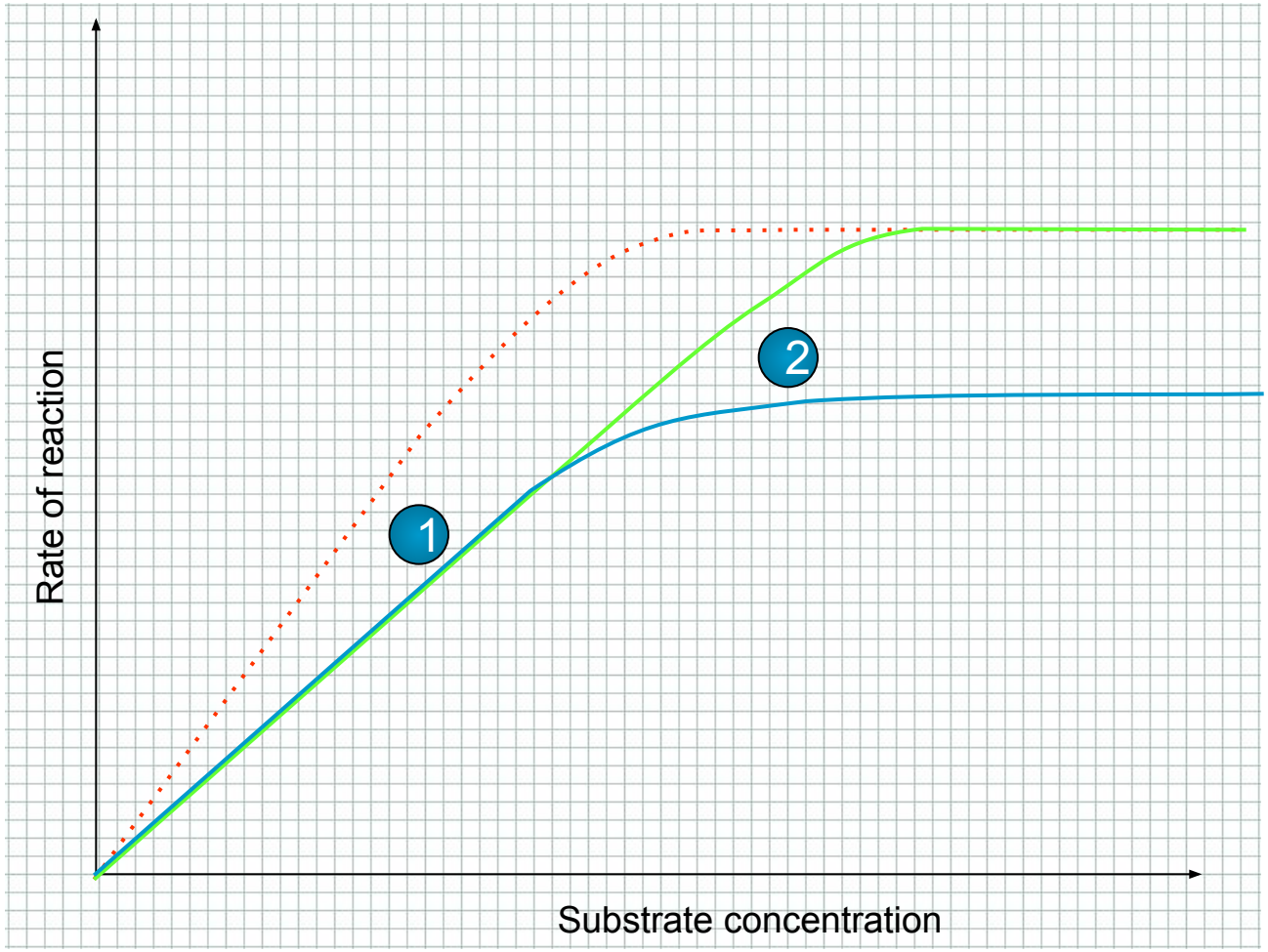




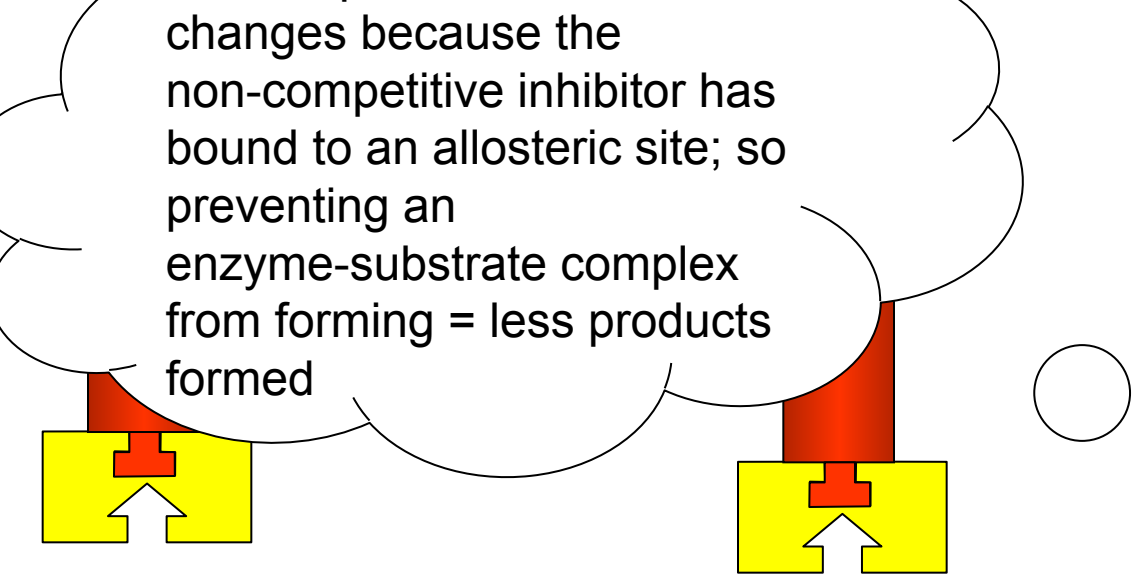
Non competitive inhibitor

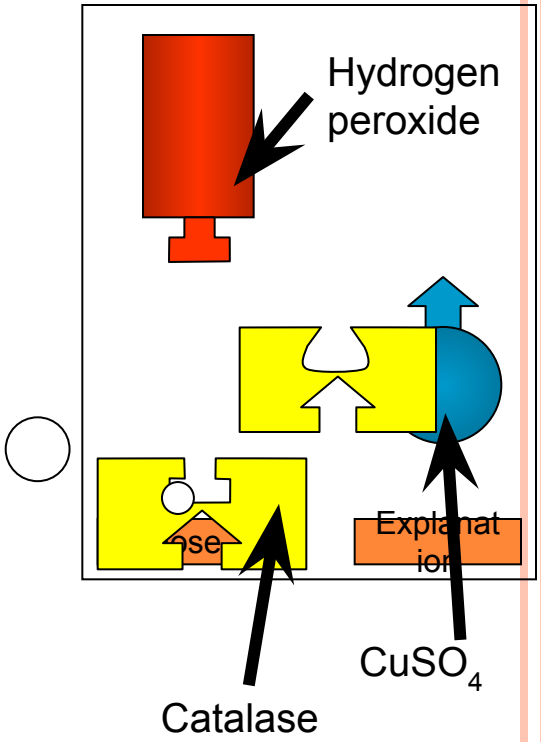


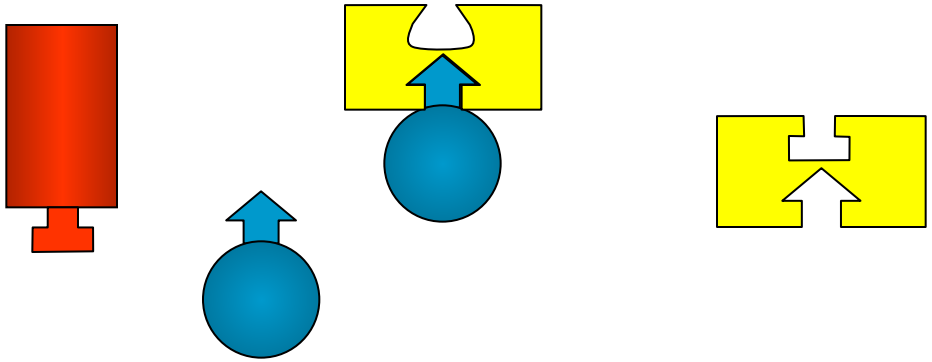
Re-Revise

Non competitive Example: Copper Sulphate and catalase

The shape of the active site changes because the non-competitive inhibitor has bound to an allosteric site; so preventing an enzyme-substrate complex from forming = less products formed







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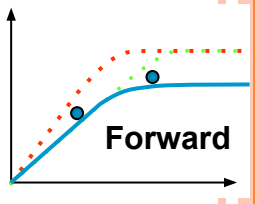

The reaction rate cannot reach the same point because the non-competitive inhibitors have changed the shape of some of the active sites.