- Provides more available reactants
- $CaCO_3(s) + 2 HCI(aq) = H_2O(I) + CO_2(g) + CaCI_2(aq)$
- Large surface area for medicine to allow them to be absorbed into bloodstream more quickly

## 5. Catalysts

- Chemicals that speed up reactions without using up themselves
- i. Reduce the amount of energy required to convert reactants to products (create new energy pathway to reduce activation energy)
- ii. Make it easier for reactant molecules to collide and reactant to form products (reactants attached to the surface of a catalyst lead to more collisions)

## 6. Enzymes

- Biological catalysts speeding up reactions inside or outside living cells
- Hold reactant molecules together until they rearrange
- Digestion uses amylase (in saliva) & others, to break down starches in complex carbohydrates

Enzymes	Function – helps digest and utilise
Cellulase	Cellulose in fruits, vegetables, grains and seeds
Lipase	Fats
Lactase	Lactose (milk sugar)

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## **Measuring Reaction Rates**

- Change in volume
- Titration analysing concentration
- Mass of a substance
- Volume of a gas (with gas syringe)
- Time between start of reaction to the for ation of a precipitate to an extent
- Gas produced collected in a syringe and volume retermined
  - i. Hydrogel as pop test

Owen gas – placing a gewice spilit in oxygen test tube and it will reignite

## **General Information**

Physical Change: