10th grade

Dynamic equilibrium

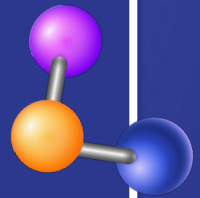
L.O: To be able to analyze the conditions required for dynamic equilibrium and evaluate effect of pressure

Starter

K: what do you know about reversible reaction?

W: lets learn about equilibrium

C:daily life: see saw , Tug of war
Physics: balanced force



Group Activity -1 : Reading comprehension

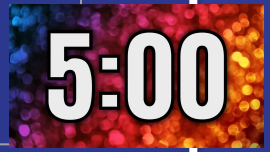
Read the given passage and answer the questions as per the group assigned :

Group A and B:

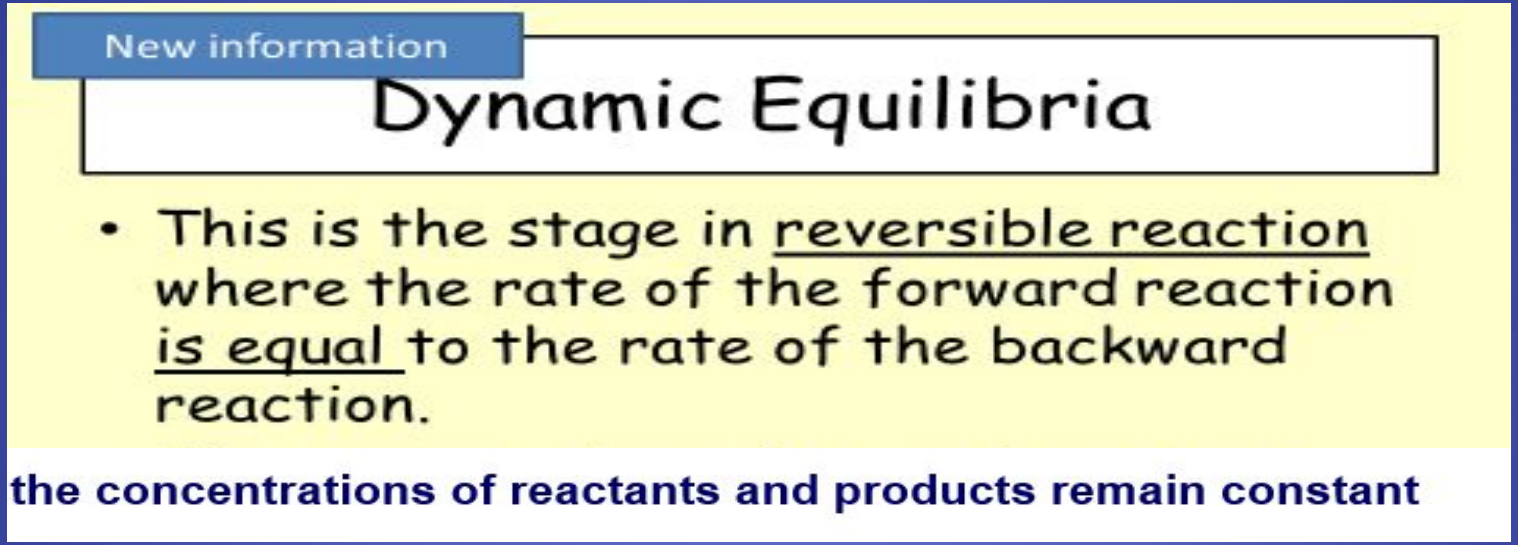
1. **Define dynamic equilibrium**
2. **Analyze the shape of the rate – time graph for the equilibrium reaction.**

GROUP C and D:

1. **Predict the conditions for dynamic equilibrium**
2. **Explain the shape of the concentration time graph**



KEY WORDS :

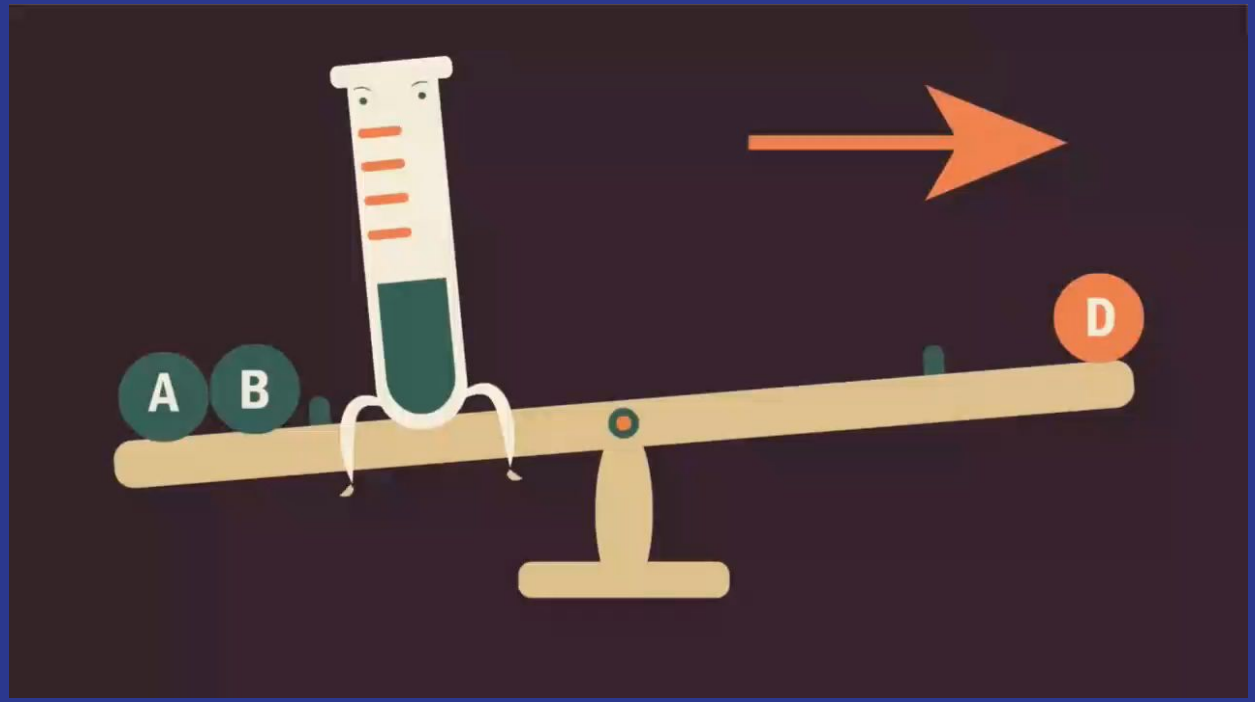


THINK AND SHARE

DO YOU THINK THE POSITION OF EQUILIBRIUM IS FIXED ?

EQUILIBRIUM ALWAYS TRIES TO MAINTAIN A BALANCE AND OPPOSE ANY CHANGE APPLIED TO IT . POSITION OF EQUILIBRIUM CAN BE CHANGED BY CHANGING PRESSURE. LET'S SEE HOW

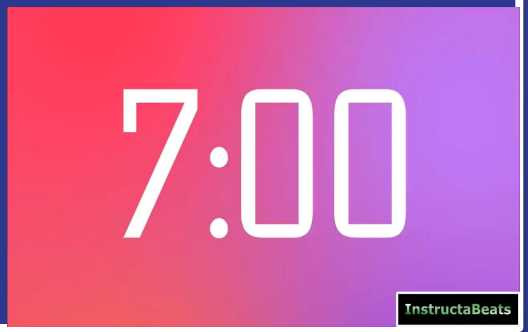
LET'S WATCH A VIDEO AND DISCUSS



Effects of pressure

CHANGE	HOW THE EQUILIBRIUM SHIFTS
INCREASE IN PRESSURE	EQUILIBRIUM SHIFTS IN THE DIRECTION THAT PRODUCES THE **SMALLER** NUMBER OF MOLECULES OF GAS TO DECREASE THE PRESSURE AGAIN
DECREASE IN PRESSURE	EQUILIBRIUM SHIFTS IN THE DIRECTION THAT PRODUCES THE **LARGER** NUMBER OF MOLECULES OF GAS TO INCREASE THE PRESSURE AGAIN

Think & Share- complete the different levels of questions given in the flash cards



Plenary

01

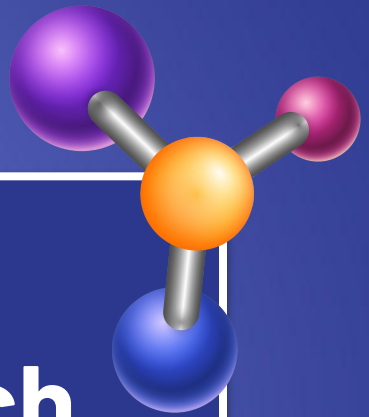
Dynamic equilibrium : a reaction in which rate of forward and backward reactions are equal and the concentration of reactant and products are constant

02

The position of equilibrium can be shifted by changing pressure . Increasing pressure shift equilibrium to side with a smaller number of moles of gases. Decreasing pressure shifts the equilibrium to side with a greater number of moles of gases

Homework: Research

Research on static equilibrium



AFL

1. Describe **two** features of an equilibrium.

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2. The plunger of the gas syringe is pushed in. The position of equilibrium does not change. The colour of the gaseous mixture turns darker purple.

The temperature remains constant.

$$2HBr(g) \rightleftharpoons H_2(g) + Br_2(g)$$

(i) Explain why the position of equilibrium does **not** change.

..... [1]

3

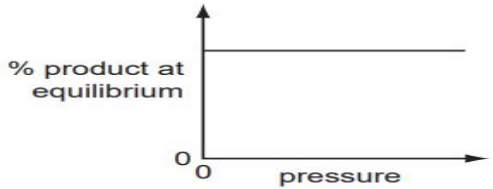
Reversible reactions can come to equilibrium. The following are three examples of types of gaseous equilibria.

$A_2(g) + B_2(g) \rightleftharpoons 2AB(g)$ **reaction 1**

$A_2(g) + 3B_2(g) \rightleftharpoons 2AB_3(g)$ **reaction 2**

$2AB_2(g) \rightleftharpoons 2AB(g) + B_2(g)$ **reaction 3**

Decide whether the percentage of products decreases, increases or stays the same when the pressure is increased, then match the graph to one of the above reactions and give a reason for your choice



effect on percentage of products .....

reaction .....

reason .....