

# Activity 2: Respiratory Gas Exchange

Biology

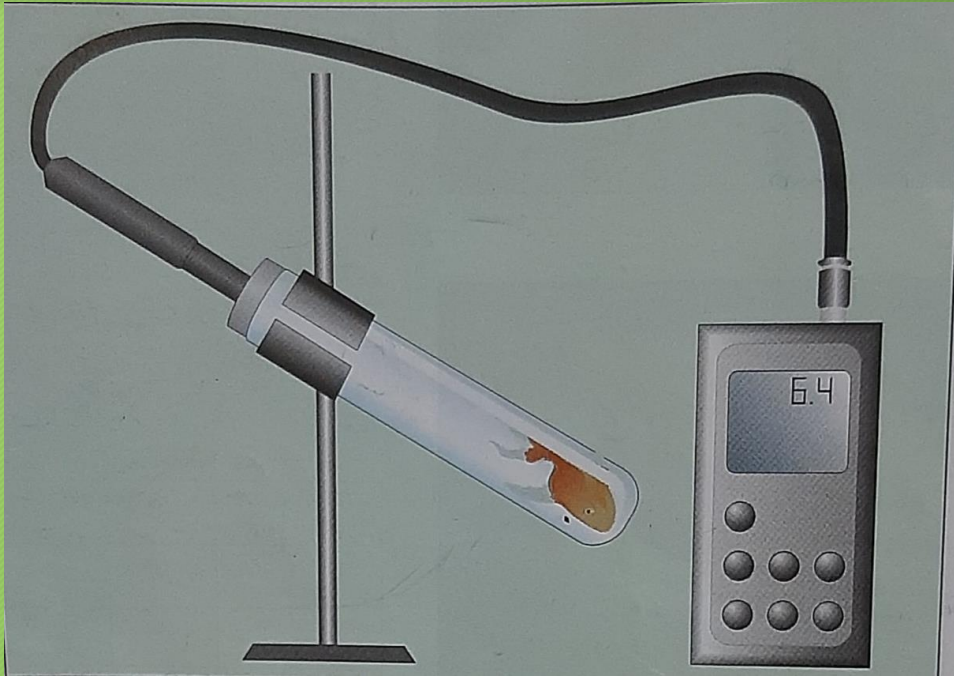
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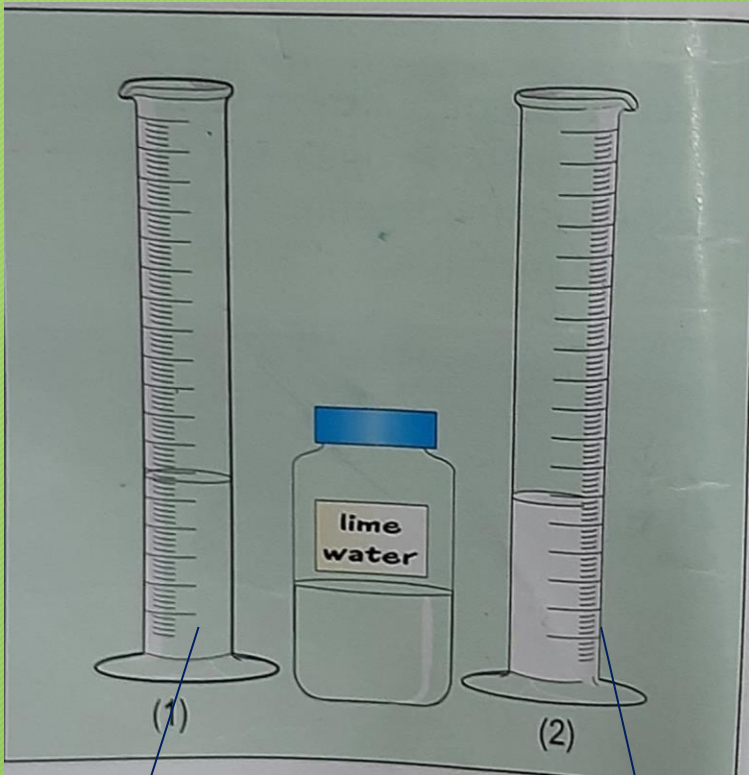
Grade Seven

# 1. Verification of respiration in a fish



## Oxymeter

To measure the quantity of oxygen consumed by a fish



At the beginning of  
the experiment  
The lime water was  
clear

At the end of the  
experiment  
The lime water  
became turbid

Lime water becomes turbid in  
the presence of carbon dioxide  
This shows that the fish  
released carbon dioxide

Time (in minutes)	0	1	2	3	4	5	6
Quantity of oxygen (in ml)	7	6.9	6.8	6.7	6.6	6.5	6.4

The variation of the quantity of oxygen in the tube which contains the fish at a temperature 19 °C

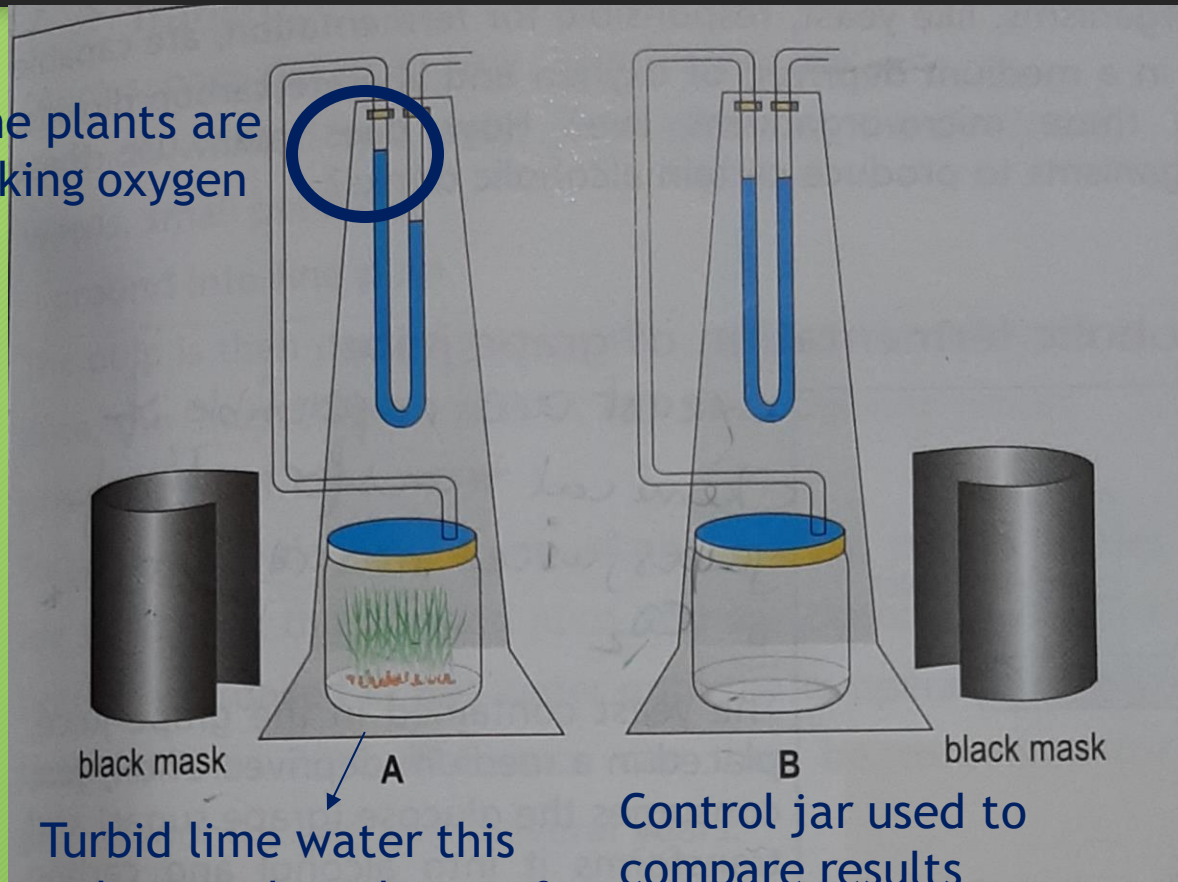
**At time 0 minutes the quantity of oxygen was 7 ml, then it started to decrease until it became 6.4 ml after 6 minutes.**

**This shows that the fish is using oxygen.**

**We conclude that the fish inhales oxygen and exhales carbon dioxide.**

## 2. Verification of respiration in plants

The plants are taking oxygen

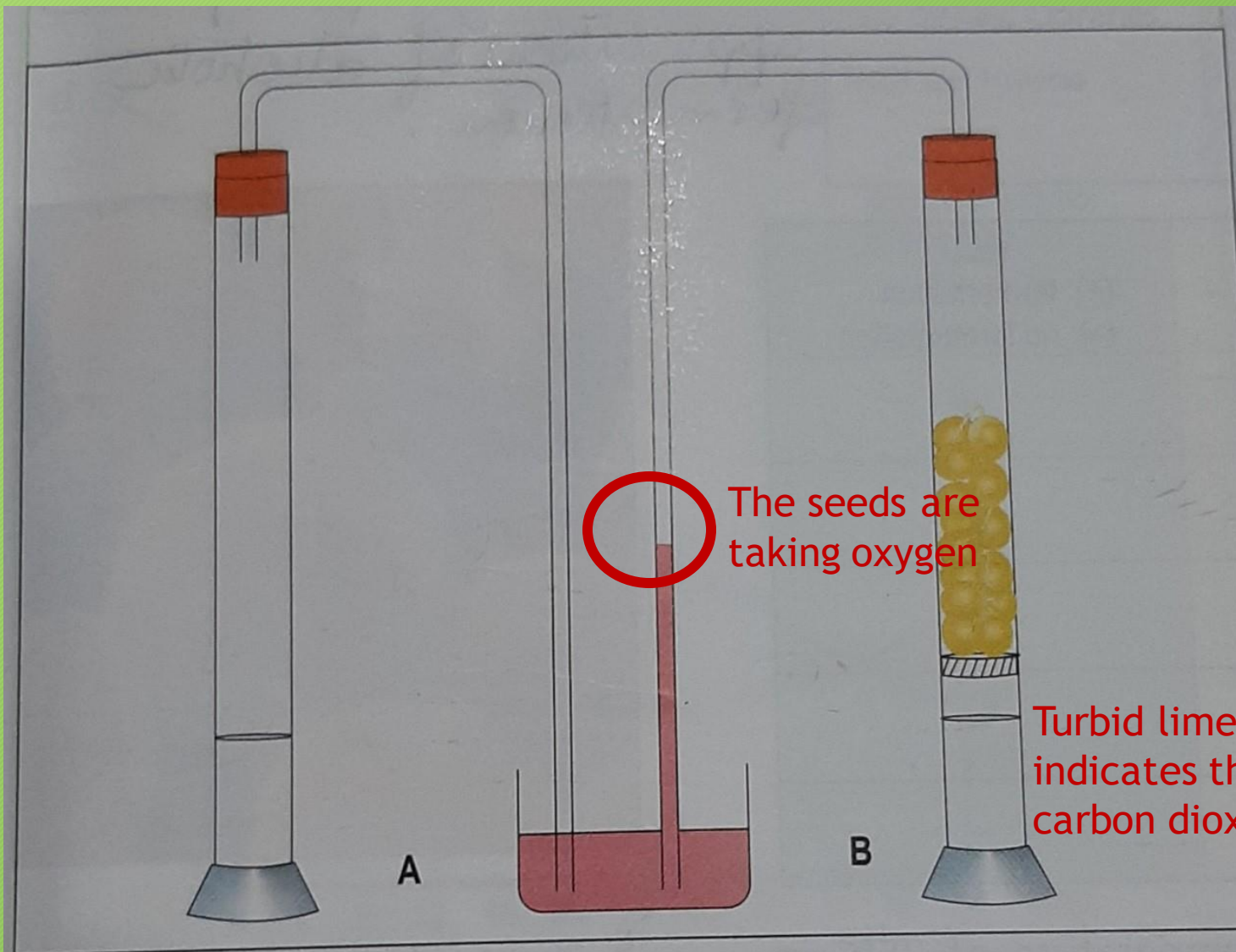


Turbid lime water this indicates the release of carbon dioxide

Control jar used to compare results

An experimental setup to verify respiratory gas exchange by young wheat plants which are placed in darkness to prevent photosynthesis. Every jar contains a little amount of lime water at its bottom.

We conclude that:  
Plants respire in light and darkness by absorbing oxygen and releasing carbon dioxide



We conclude that:  
Seeds respire by absorbing oxygen and releasing carbon dioxide

Turbid lime water this indicates the release of carbon dioxide

An experimental setup to verify respiratory gas exchange of germinating seeds. Each tube contains a little amount of lime water at its bottom.

# Homework

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