



Photosynthesis - Teacher Notes

Photosynthesis: Plants bring together carbon dioxide and water in the presence of light to produce simple sugars. They use these sugars to provide energy for their growth, reproduction and repair. The process also releases oxygen into the atmosphere.

carbon dioxide + water (in sunlight) = sugar + oxygen

Teacher demonstration or student activity

AIM To demonstrate that oxygen is a by-product of photosynthesis

Materials

- A large basin or glass pneumatic trough
- Some water plants
- Water
- A large glass test tube
- A retort stand, and clamp
- A glowing splint or taper. **A glowing splint is a pop stick, which has been set on fire .The flames are blown out to leave glowing embers. In the presence of oxygen a glowing splint ignites and bursts into flame.**
- Sunshine or a laboratory/microscope lamp

Method

1. Almost fill the basin with water
2. Add the water plants
3. Submerge the test tube then invert it without removing it from the water. The tube should be full of water.
4. Move the tube so that it is above the plant but leave its mouth still under water
5. Adjust the stand and clamps to hold the test tube in this position
6. Place the lamp so that it shines on the plant continuously.
7. Observe
8. When the test tube is almost filled with gas, keep it upside down and remove it from the water.
9. Place the glowing splint at the mouth of the test tube.
10. Observe.

Observation

Bubbles of gas were seen rising from the water plant. This was collected in the upturned test tube by displacement of water. When the glowing splint was placed at the mouth of the test tube it burst into flame.

Conclusion

Oxygen makes a glowing splint burst into flame. The plant in sunshine must have produced oxygen.