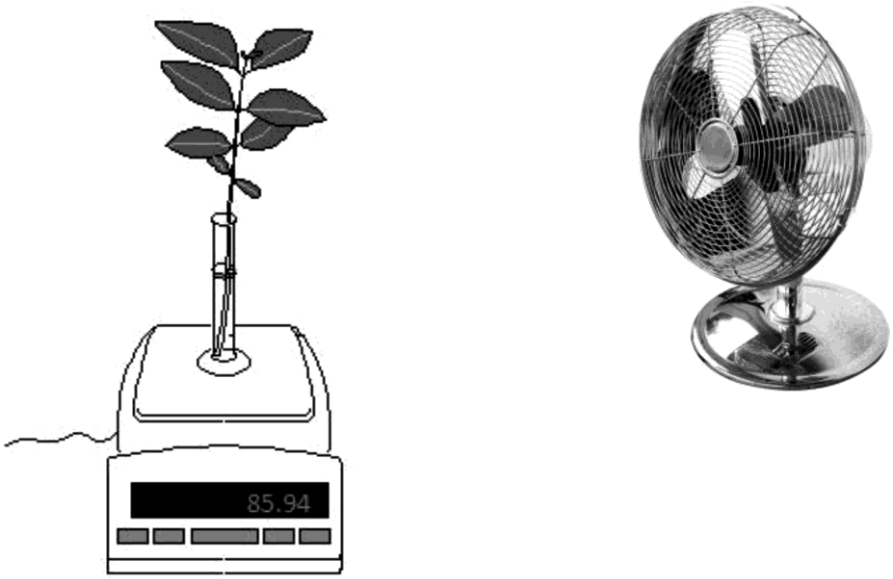
GCSE Biology A (Gateway)

J247/03 B1-B3 and B7 Higher (Higher Tier)

Question Set 3

1 A student wants to investigate the effect of air movement on transpiration. Thediagram shows how she sets up her experiment.



1. She measures the rate of transpiration by measuring the loss in mass over 3 hours.

2. She does this first with the fan switched off.

3. She repeats this but with the fan switched on.

4. She keeps all other environmental conditions the same. These are her results.

	Fan switched off	**Fan switched on**
Mass loss in 3 hour (g)	37	144

(a) Explain the difference in her results.

Air movement removes water vapour from area around the leaves so diffusion from leaves to air happens more quickly as concentration gradient increased so more mass lost with fan on as more air movement.

[2]

(b) The student kept environmental conditions like light intensity and temperature the same.

(i) Why was it important to keep the light intensity the same?

Because otherwise an increase in light intensity would open stomata increasing transpiration.

[2]

(ii) Why was it important to keep the temperature the same?

Because otherwise an increase in temperature would increase evaporation.

[1]

Total Marks for Question Set 3: 5