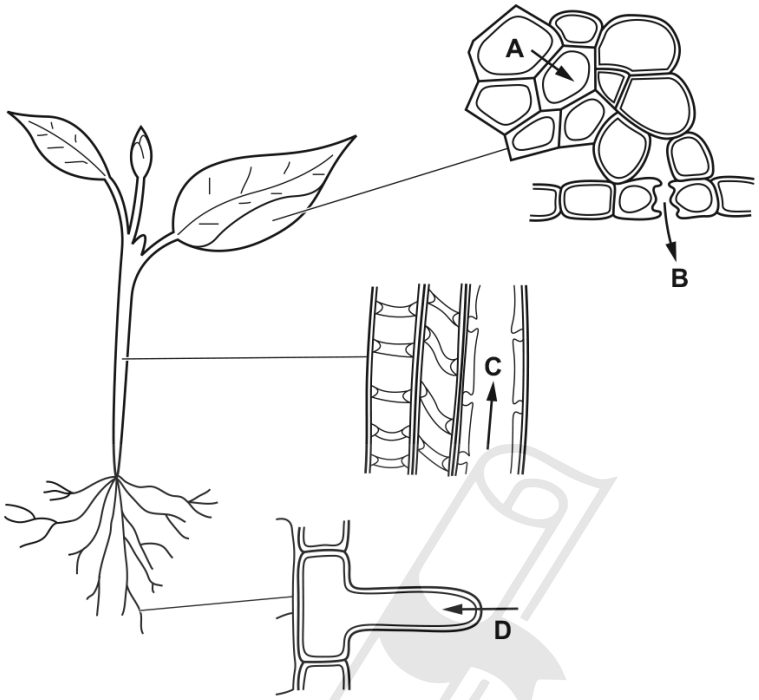
8.3 Transpiration

01. 0610_m22_qp_22 Q: 15

The diagrams show stages in the passage of water through a plant.

Which arrow shows water moving in the form of water vapour?



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02. 0610_m21_qp_22 Q: 18

What is part of the definition of transpiration?

A the loss of water vapour from plant leaves by evaporation of water at the surfaces of the mesophyll cells

B the movement of molecules into the cells of the organism where they are used

C the movement of particles through a cell membrane from a region of lower concentration to a region of higher concentration

D the transport of mineral ions from the roots into the stem and leaves

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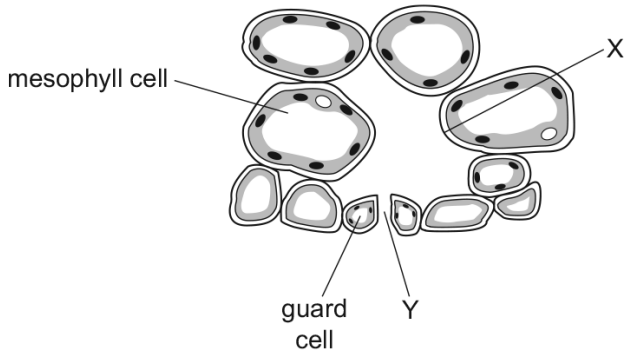
03. 0610_s21_qp_23 Q: 17

The diagram shows one of the stomata of a leaf, and some of the cells that are near it.



During transpiration, what describes the movement of water at X and at Y?

	movement of water at X	movement of water at Y
A	evaporation	diffusion
B	evaporation	osmosis
C	osmosis	diffusion
D	osmosis	osmosis

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04. 0610_w21_qp_21 Q: 17

What holds the water molecules together during the transpiration pull in the xylem?

A active transport

B cohesion

C diffusion

D turgor pressure

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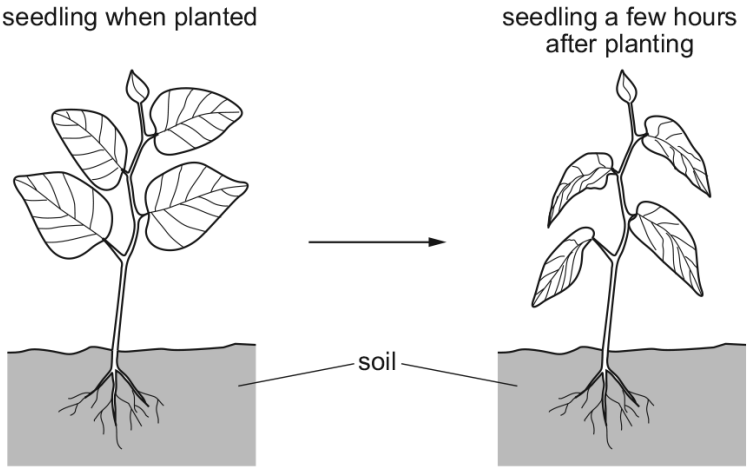
05. 0610_w21_qp_22 Q: 16

The diagram shows a newly planted seedling and the same seedling a few hours after being planted.



What is the correct explanation for the change in the appearance of the leaves?

A Transpiration is faster than water uptake by root hairs so cells have become flaccid.

B Transpiration is faster than water uptake by root hairs so cells have become turgid.

C Transpiration is slower than water uptake by root hairs so cells have become flaccid.

D Transpiration is slower than water uptake by root hairs so cells have become turgid.

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06. 0610_m20_qp_22 Q: 18

Which process releases water vapour into the atmosphere from the leaves of trees?

A active transport

B osmosis

C respiration

D transpiration

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07. 0610_p20_qp_20 Q: 13

On a dry, sunny day, how does water vapour move through the stomata of a leaf?

A into the leaf by diffusion

B into the leaf by respiration

C out of the leaf by diffusion

D out of the leaf by respiration

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08. 0610_s20_qp_21 Q: 16

What will increase the rate of transpiration in a plant?

A an increase in the humidity of the atmosphere surrounding the leaf

B an increase in the surface area of the cell surfaces inside the leaf

C a decrease in the number of stomata present on the surface of the leaf

D a decrease in the temperature of the atmosphere surrounding the leaf

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09. 0610_s20_qp_23 Q: 15

Samphire is a plant that grows in coastal areas. It has adaptations that enable it to live in areas with high salt concentration in the soil and strong winds.

Which adaptations would samphire possess to minimise water loss from root cells by osmosis and leaves by evaporation?

	salt concentration in root cells	leaf surface area
A	high	high
B	high	low
C	low	high
D	low	low

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10. 0610_s20_qp_23 Q: 16

Which row correctly states the pair of conditions that will result in the highest rate of transpiration?

	temperature	humidity
A	high	low
B	high	high
C	low	high
D	low	low

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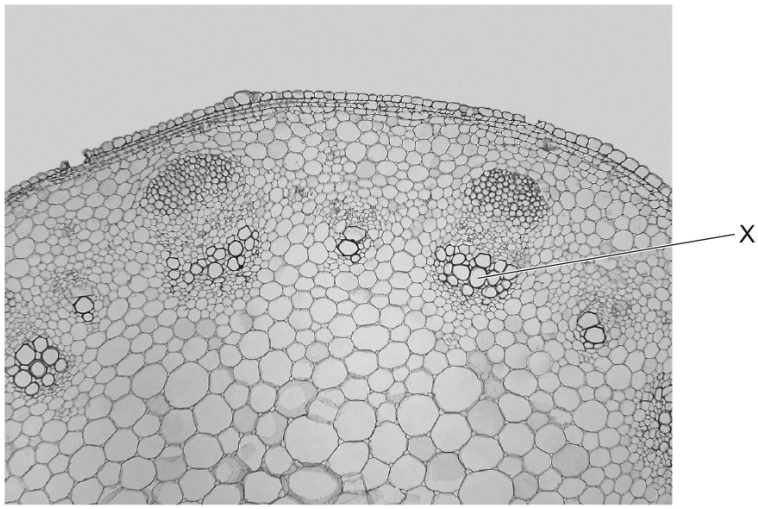
11. 0610_w20_qp_21 Q: 16

The photomicrograph shows a cross-section through a plant stem.



What is the name and function of the tissue labelled X?

	tissue	function
A	phloem	transports sugars
B	phloem	transports water and minerals
C	xylem	transports sugars
D	xylem	transports water and minerals

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12. 0610_w20_qp_22 Q: 16

What is a function of phloem?

A transports minerals to the roots

B transports starch to the roots

C transports sugar to the roots

D transports water to the roots

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13. 0610_w20_qp_23 Q: 16

A decrease in which factor normally causes the transpiration rate to increase?

A humidity

B light intensity

C number of stomata

D temperature

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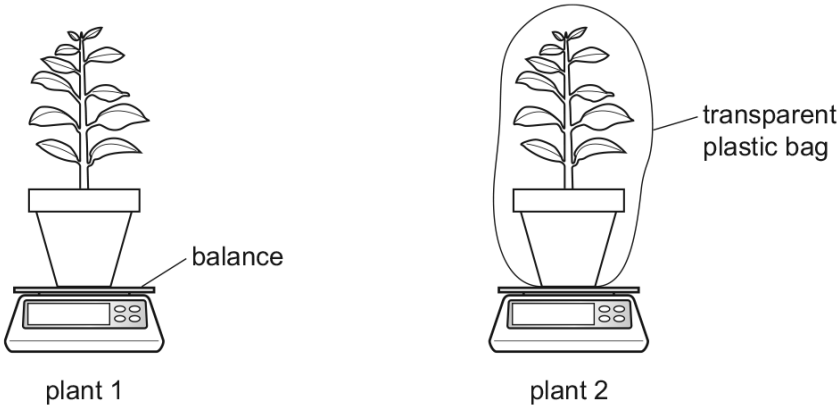
14. 0610_w19_qp_22 Q: 15

The diagram shows an experiment to investigate transpiration.



Plant 1 is not covered. Plant 2 and its pot are covered by a transparent plastic bag.

The mass of each plant and its pot is measured. The masses are measured again after two hours.

What is the result?

A The mass of both plants decreases by the same percentage.

B The mass of both plants stays the same.

C The mass of plant 1 decreases more than the mass of plant 2.

D The mass of plant 2 decreases more than the mass of plant 1.

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15. 0610_s18_qp_21 Q: 16

Petroleum jelly is waterproof and transparent.

Covering the underside of the leaves of a plant with a thin layer of petroleum jelly will slow down the rate of water loss from the plant.

Which statement explains this?

A Plants absorb nutrients from the petroleum jelly.

B Plants absorb water from the petroleum jelly.

C Stomata are blocked by the petroleum jelly.

D The petroleum jelly stops photosynthesis.

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16. 0610_s18_qp_22 Q: 16

A student is investigating the effect of temperature on the rate of transpiration.

Which environmental conditions should be kept constant during this investigation?

	humidity	light intensity	temperature	wind speed
A	✓	✓	✓	✓
B	✓	✓	✗	✓
C	✗	✓	✗	✓
D	✗	✗	✓	✗

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17. 0610_s18_qp_23 Q: 16

What will **not** affect the rate of transpiration?

A humidity of the atmosphere

B number of open stomata

C rate of respiration

D temperature

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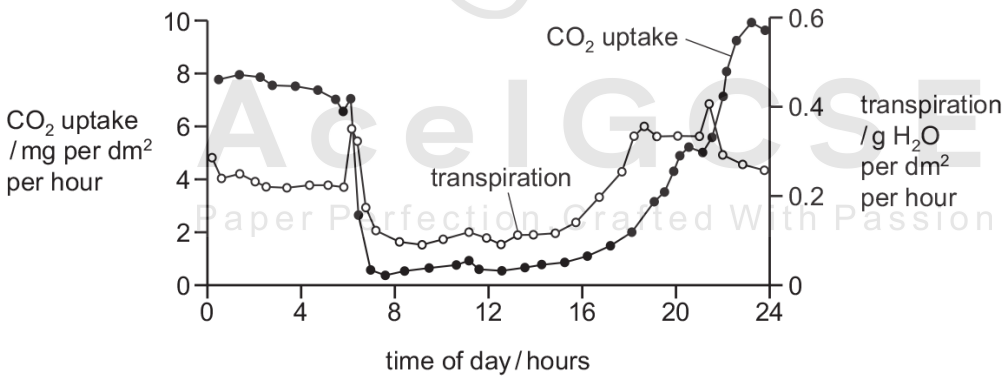
18. 0610_s17_qp_21 Q: 9

The graph shows daily carbon dioxide uptake and transpiration by the plant *Agave americana*.

The plant is adapted to live in very dry conditions.



What can be concluded from this graph?

A More stomata are closed during dark periods.

B More stomata are closed during light periods.

C There is no carbon dioxide uptake during dark periods.

D There is no water uptake during light periods.

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19. 0610_s17_qp_21 Q: 17

Which of the following increases transpiration?

A air around the leaf with high humidity

B air molecules around the leaf with less kinetic energy

C an absence of light falling on the leaf

D water molecules in the leaf with more kinetic energy

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20. 0610_s17_qp_22 Q: 17

Which process occurs during transpiration?

A evaporation of water from the xylem

B loss of water by osmosis from the guard cells

C movement of water vapour through the spongy mesophyll by active transport

D movement of water vapour through the stomata by diffusion

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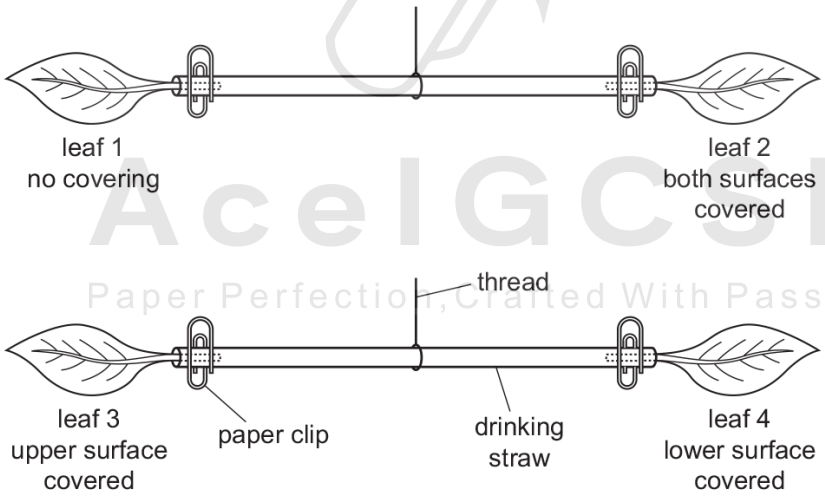
21. 0610_s17_qp_22 Q: 18

The diagrams show an experiment on transpiration.

Four leaves of the same species are balanced on two drinking straws. One or both sides of the leaves are covered in grease. Any difference in mass causes the heavier end to be lower.



At the start of the experiment the straws were positioned so that the leaves were level.

Which leaves will be lower after an hour?

A 1 and 3 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

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22. 0610_w17_qp_21 Q: 16

What is a description of transpiration?

A exchange of gases between the leaf and the atmosphere

B loss of water vapour from the leaves and stems of a plant

C movement of water from the roots to the leaves

D movement of water through the cells of the leaf

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23. 0610_p16_qp_20 Q: 13

On a dry, sunny day, how does water vapour move through the stomata of a leaf?

A into the leaf by diffusion

B into the leaf by respiration

C out of the leaf by diffusion

D out of the leaf by respiration

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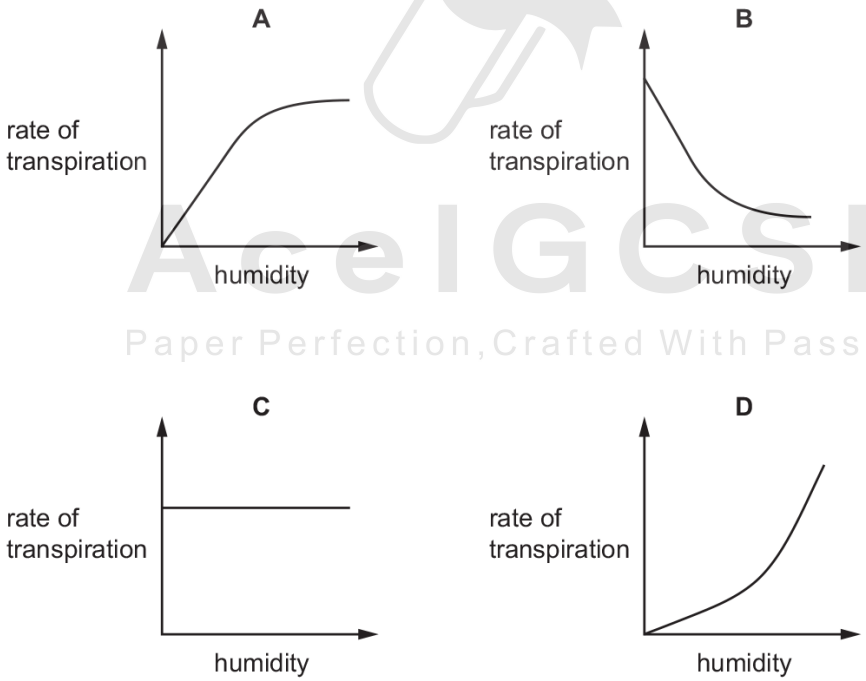
24. 0610_s16_qp_21 Q: 16

Which graph shows most clearly what will happen to the rate of transpiration as humidity increases?



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25. 0610_w16_qp_23 Q: 16

Which changes in atmospheric conditions can cause a plant to wilt?

	humidity	temperature
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

SN	Paper	Q. No.	Answer
01	0610_m22_qp_22	15	B
02	0610_m21_qp_22	18	A
03	0610_s21_qp_23	17	A
04	0610_w21_qp_21	17	B
05	0610_w21_qp_22	16	A
06	0610_m20_qp_22	18	D
07	0610_p20_qp_20	13	C
08	0610_s20_qp_21	16	B
09	0610_s20_qp_23	15	B
10	0610_s20_qp_23	16	A
11	0610_w20_qp_21	16	D
12	0610_w20_qp_22	16	C
13	0610_w20_qp_23	16	A
14	0610_w19_qp_22	15	C
15	0610_s18_qp_21	16	C
16	0610_s18_qp_22	16	B
17	0610_s18_qp_23	16	C
18	0610_s17_qp_21	9	B
19	0610_s17_qp_21	17	D
20	0610_s17_qp_22	17	D
21	0610_s17_qp_22	18	D
22	0610_w17_qp_21	16	B
23	0610_p16_qp_20	13	C
24	0610_s16_qp_21	16	B
25	0610_w16_qp_23	16	B