Candidate 1 evidence

10. (a) **Blood travels in three types of blood vessels.**

Compare the structure of two of these types of vessels. **3**

Veins carry blood to the heart but arteries carry blood away from the heart. The blood in veins is de-oxygenated but blood in arteries is oxygenated. Veins have valves but arteries don't have valves. Veins have thin walls but arteries have thick muscle walls.

Candidate 2 evidence

10. (a) Blood travels in three types of blood vessels.

Compare the structure of **two** of these types of vessels. 3

Arteries - thick walls (thicker than vein)
- big wide middle
- no valves
- take blood away

Veins - thin walls
- small middle bit
- valves
- carry blood to the heart

Candidate 3 evidence

10. (a) Blood travels in three types of blood vessels.

Compare the structure of **two** of these types of vessels. 3

Capilaries join arteries and veins together. They are really small. Arteries are the biggest. They take blood away from the heart but veins take blood to the heart.

Candidate 4 evidence

10. (a) **Blood travels in three types of blood vessels.**
Compare the structure of two of these types of vessels. **3**

CAPLARIES ARE ONLY ONE CELL THICK
CAPLARIES LET STUFF IN AND OUT OF THEM
THEY HAVE GAPS TO LET THINGS THROUGH LIKE OXYEN
VEINS ARE THE OTHER TYPE AND THEY ARE TOO BIG

Candidate 5 evidence

10. (a) Blood travels in three types of blood vessels.

Compare the structure of **two** of these types of vessels. **3**

Arteries have the thickest walls, then veins are next and capilarys are the smallest.
Arteries have got no valves same as capilarys but veins have them.
Arteries have bigger MUSSles in the wall around the blood.
Veins don't have such big MUSSles and capilarys have no MUSSles at all.

Candidate 6 evidence

10. (a) Blood travels in three types of blood vessels.

Compare the structure of two of these types of vessels. **3**

COMPARING ARTERIES AND VEINS

- ARTERIES HAVE THICKER WALLS THAN VEINS
- ARTERIES AND CAPILLARIES DON'T HAVE VALVES
- ARTERIES HAVE A SMALLER CHANNEL FOR THE BLOOD THAN VEINS BUT THE BLOOD IS UNDER HIGHER PRESSURE

Candidate 1 evidence

(ii) Describe the transfer of energy in stage 1 from light arriving at the leaf, and how the sugar produced in stage 2 can be used by the plant. 3

The energy is made into chemical energy and splits the water. The sugar is used to help the plant to grow.

Candidate 2 evidence

(ii) Describe the transfer of energy in stage 1 from light arriving at the leaf, and how the sugar produced in stage 2 can be used by the plant. 3

Light is trapped by chlorophyll in the chloroplasts in the leaf. It is used to split water. This gives hydrogen and ATP. The ATP is used in stage 2. The sugar is used to make starch and cellulose. The starch is stored in the leafs. The cellulose is used to make cell walls.

Candidate 3 evidence

(ii) Describe the transfer of energy in stage 1 from light arriving at the leaf, and how the sugar produced in stage 2 can be used by the plant. 3

The light is trapped by the chloroplasts when it hits the leafs. Its used to make ATP from ADP + Pi and to split water into hydrogen and oxygen. The ATP and Hydrogen are used to make sugar. Sugar is stored as starch and made into cellulose. It provides the plant with energy to grow.

Candidate 4 evidence

(ii) Describe the transfer of energy in stage 1 from light arriving at the leaf, and how the sugar produced in stage 2 can be used by the plant. 3

Light energy is trapped in the chlorophyll which is in the chloroplasts. It is changed into ~~ATP which is now into~~ chemical energy, which is in ATP

The sugar produced in stage 2 can be used for muscle contraction as it gives energy.

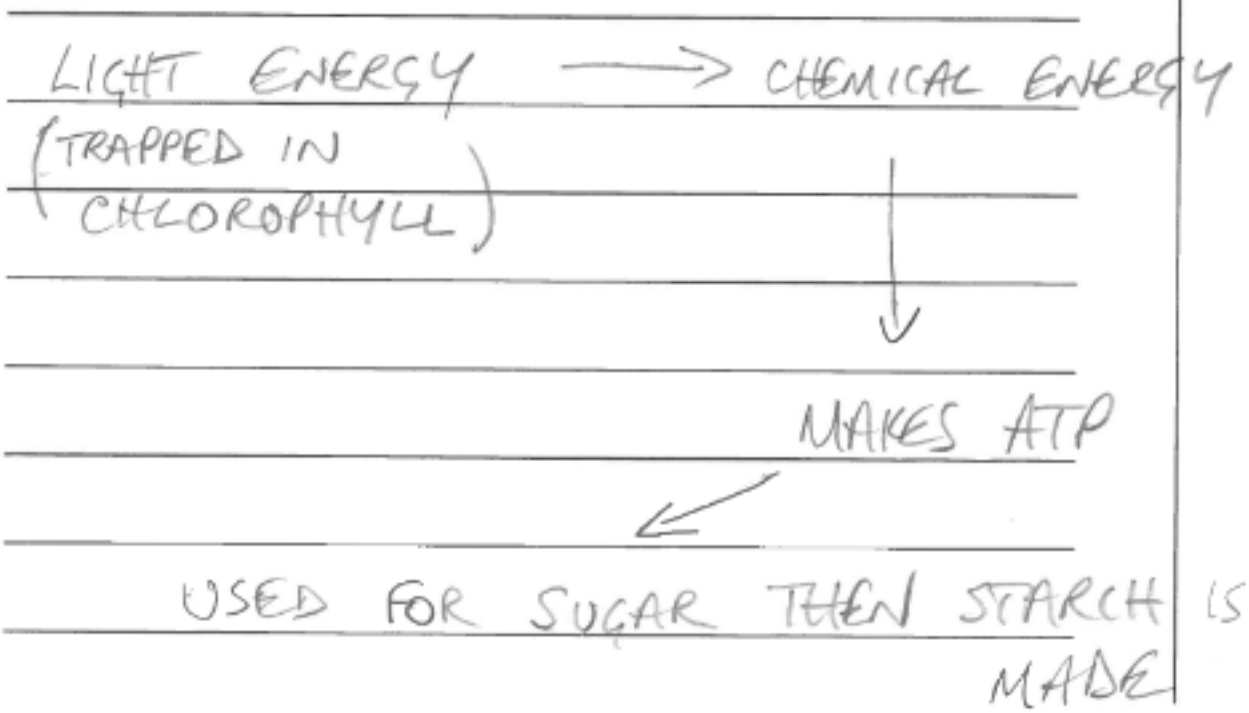
Candidate 5 evidence

(ii) Describe the transfer of energy in stage 1 from light arriving at the leaf, and how the sugar produced in stage 2 can be used by the plant. **3**

Chlorophyll traps light energy which is converted into chemical energy. The chemical energy is stored in ATP. The sugar used by the plant from stage 2 might be used for cell division

Candidate 6 evidence

(ii) Describe the transfer of energy in stage 1 from light arriving at the leaf, and how the sugar produced in stage 2 can be used by the plant. **3**



Candidate 1 evidence

13. Beetroot juice

Scientists have a theory that drinking nitrate-rich beetroot juice has an effect on both sprint performance and decision making during sports.

In a study, 16 male rugby and football players drank 140ml of a nitrate-rich beetroot juice every day for seven days.

The players then completed a sprint test on an exercise bike. This consisted of repeated sessions of two minute blocks - a 10 second sprint, 80 seconds of slow pedalling and 30 seconds of rest. At the same time, they were given thinking tasks designed to test how accurately and quickly they made decisions.

The players completed these tests again after drinking 140ml of the same juice, with the nitrate removed, every day for another seven days.

When they had taken the nitrate-rich juice, the players saw a 3·5% improvement in sprint performance and a 3% increase in their speed of their decision making.

The improvement may seem small, but it could mean the players are able to make important decisions faster and cover more ground than their opponents in the seconds when it matters most.

(a) Suggest the aim of the research described in the passage. 1

Scientists have a theory that drinking nitrate-rich beetroot juice has an effect on both sprint performance *

(b) A dependent variable is what scientists measure or observe as a result of the changes they make in their investigation.

Identify the dependent variable in this investigation. 1

The sprint test.

* and decision making.

(c) Complete the table, with suitable headings, to show the activities and timings of the two minute sprint test. 2

(An additional table, if required, can be found on *page 29*)

Sprint test	timings
10 second sprint	10
80 seconds slow pedalling	80
30 seconds of rest	30

(d) What conclusion did the scientists draw from this study? 1

when they had taken the nitrate-rich juice

The players saw a 3·5% improvement in sprint performance *

(e) Give a reason why it could be suggested that the results of the investigation might be unreliable. 1

It wasn't a fair test.

* and a 3% increase in their decision making.

Candidate 2 evidence

13. Beetroot juice

Scientists have a theory that drinking nitrate-rich beetroot juice has an effect on both sprint performance and decision making during sports.

In a study, 16 male rugby and football players drank 140ml of a nitrate-rich beetroot juice every day for seven days.

The players then completed a sprint test on an exercise bike. This consisted of repeated sessions of two minute blocks - a 10 second sprint, 80 seconds of slow pedalling and 30 seconds of rest. At the same time, they were given thinking tasks designed to test how accurately and quickly they made decisions.

The players completed these tests again after drinking 140ml of the same juice, with the nitrate removed, every day for another seven days.

When they had taken the nitrate-rich juice, the players saw a 3·5% improvement in sprint performance and a 3% increase in their speed of their decision making.

The improvement may seem small, but it could mean the players are able to make important decisions faster and cover more ground than their opponents in the seconds when it matters most.

(a) Suggest the aim of the research described in the passage. **1**

to find out if drinking beetroot juice affects sprinting and decision making performance

(b) A dependent variable is what scientists measure or observe as a result of the changes they make in their investigation.

Identify the dependent variable in this investigation. 1

The men's performance

(c) Complete the table, with suitable headings, to show the activities and timings of the two minute sprint test. 2

(An additional table, if required, can be found on *page 29*)

Activities	Timings (sec)
Sprint	10
Slow pedal	80
Rest	30

(d) What conclusion did the scientists draw from this study? 1

Drinking nitrate-rich juice improves sprinting and decision making

(e) Give a reason why it could be suggested that the results of the investigation might be unreliable. 1

Not enough people were tested - it might not be the same for everyone

Candidate 3 evidence

13. Beetroot juice

Scientists have a theory that drinking nitrate-rich beetroot juice has an effect on both sprint performance and decision making during sports.

In a study, 16 male rugby and football players drank 140ml of a nitrate-rich beetroot juice every day for seven days.

The players then completed a sprint test on an exercise bike. This consisted of repeated sessions of two minute blocks - a 10 second sprint, 80 seconds of slow pedalling and 30 seconds of rest. At the same time, they were given thinking tasks designed to test how accurately and quickly they made decisions.

The players completed these tests again after drinking 140ml of the same juice, with the nitrate removed, every day for another seven days.

When they had taken the nitrate-rich juice, the players saw a 3·5% improvement in sprint performance and a 3% increase in their speed of their decision making.

The improvement may seem small, but it could mean the players are able to make important decisions faster and cover more ground than their opponents in the seconds when it matters most.

(a) Suggest the aim of the research described in the passage. 1

To investigate if beetroot juice makes you better at sports

(b) A dependent variable is what scientists measure or observe as a result of the changes they make in their investigation.

Identify the dependent variable in this investigation. 1

140 ml of nitrate-rich juice

(c) Complete the table, with suitable headings, to show the activities and timings of the two minute sprint test. 2

(An additional table, if required, can be found on *page 29*)

Activities	2 min sprint test
Second sprint	10
Slow pedalling	80
Rest & test	30

(d) What conclusion did the scientists draw from this study? 1

Drinking nitrate juice improves sprinting 3·5% and speed of decision making by 3%

(e) Give a reason why it could be suggested that the results of the investigation might be unreliable. 1

They only tested men, not women