

Learning Intent

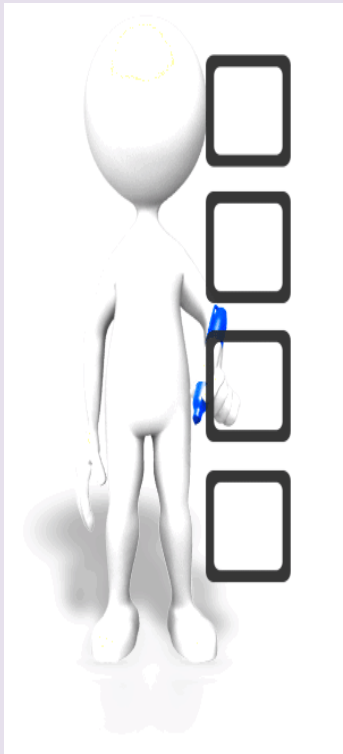
Explore how a plant uses the glucose produced from photosynthesis

Success Criteria

Identify how a plant gets the reactants for photosynthesis

Describe the uses of glucose in a plant

Explain the advantages to a plant of storing glucose as starch



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New Info



1. Stick the picture into your book.
2. Mark on the plant where it gets the reactants for photosynthesis.

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What does a plant use the glucose it gets from photosynthesis? Use the picture clue to work out one use.

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Activities



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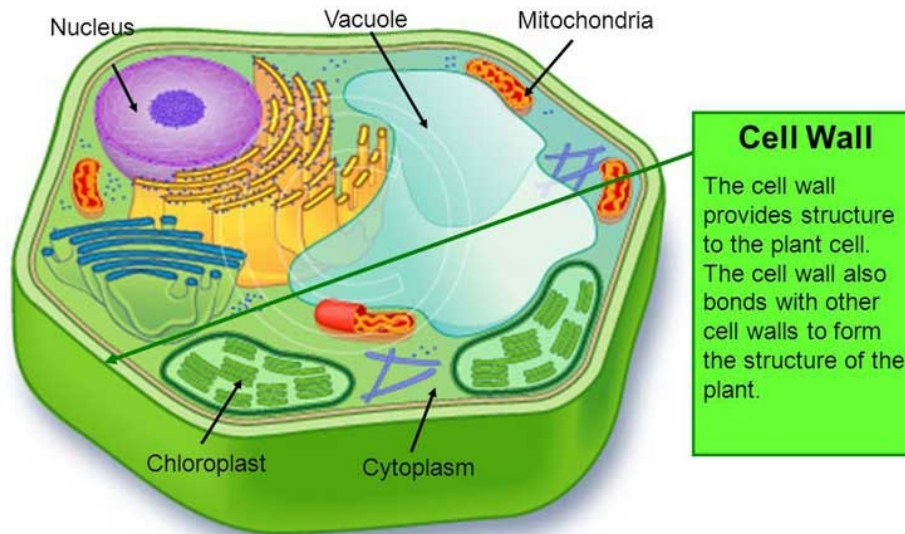
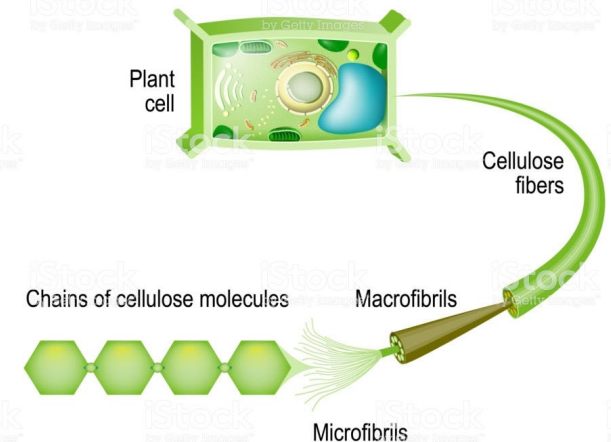


Image source: scienceillustration.org

CELLULOSE



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New Info

How could we prove that a leaf stores glucose as starch?



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New Info

Iodine added



Purple or black means there is starch

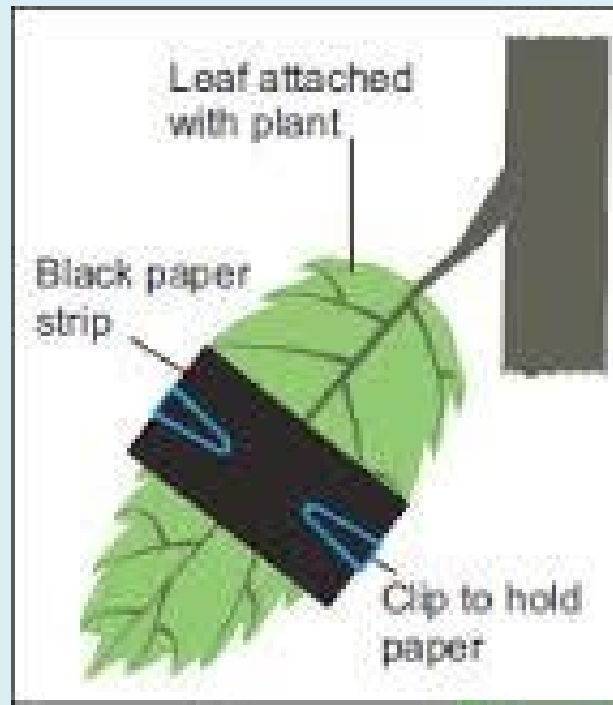
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New Info

Part of the leaf
is covered.



This prevents photosynthesis from happening - No glucose
– **No starch.**

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Activities

- **Collect your equipment:**

- 250ml beaker,
- bottle of iodine,
- boiling tube,
- tweezers,
- clear dish and
- white tile.

- ✓ Goggles on
- ✓ Chairs under
- ✓ Stand up

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Activities

1. Collect a leaf from Mr Schuller.
2. Put 200ml of kettle hot water in your beaker.
3. Place your leaf in the beaker for 2 minutes.
4. Half fill your boiling tube with ethanol.
5. Place the leaf in the boiling tube.
6. Put the test tube into the hot water.
7. Start the stopwatch. Wait 5 minutes.
8. Take the leaf out of the test tube with some tweezers. Wash it carefully in your beaker of water.
9. Put the leaf in the petri dish on top of the white tile.
10. Add one drop of iodine at a time all over the leaf. Wait a few moments.
11. Write down/draw what you see.

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Activities

1. Collect a _____.
2. Put 200ml of _____ in your beaker.
3. Place your leaf in the beaker for _____ minutes.
4. Half fill your boiling tube with _____.
5. Place the _____ in the boiling tube.
6. Put the test tube into the _____.
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8. Take the leaf out of the test tube with some tweezers. Wash it carefully in your beaker of water.
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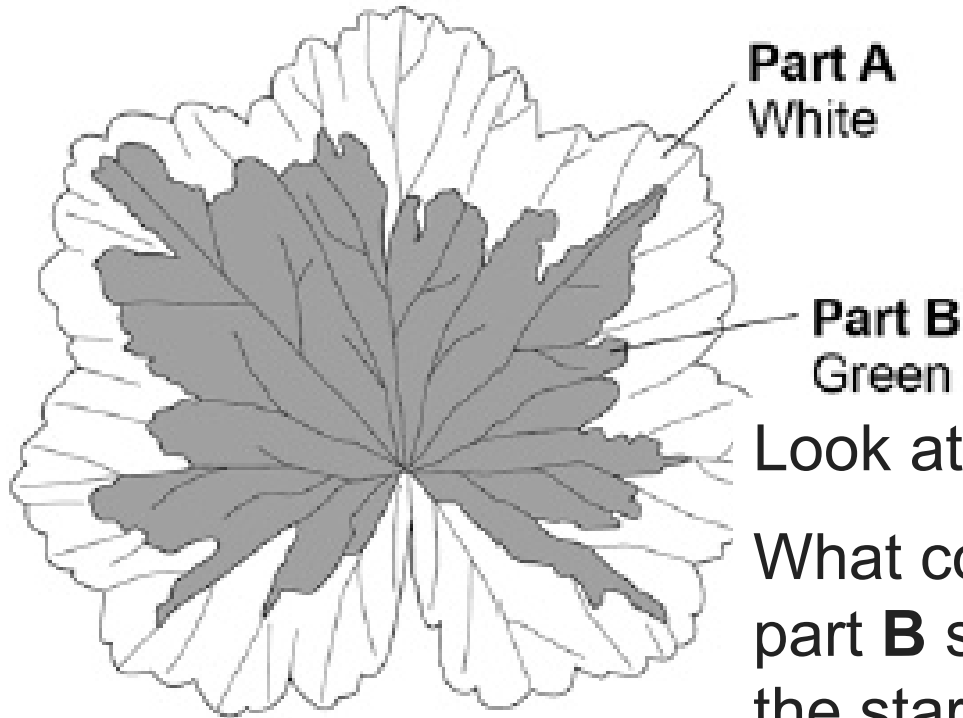
Activities



- ✓ Starch takes up less space than glucose
- ✓ Starch is insoluble in water – Glucose is
- ✓ Excess glucose is converted into starch
- ✓ Starch can be converted back to glucose when needed



A student investigated where starch was made in a leaf. She used a leaf that was part green and part white as shown in the diagram.



Look at the leaf in the diagram.

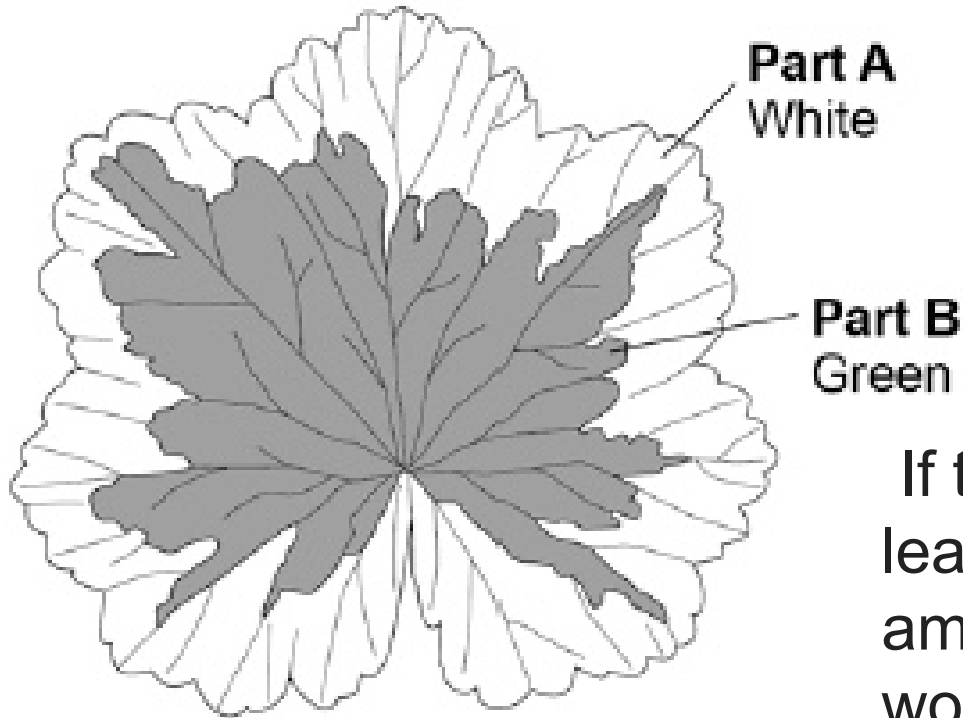
What colour would part **A** and part **B** stain with iodine solution after the starch test?

A Orange or brown

B Blue or blue or black



A student investigated where starch was made in a leaf. She used a leaf that was part green and part white as shown in the diagram.



Starch could still be broken down into glucose if reactions weren't stopped.

If the chemical reactions in the leaf were not stopped, the amount of starch in the leaf would decrease.

Give the reason why.

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