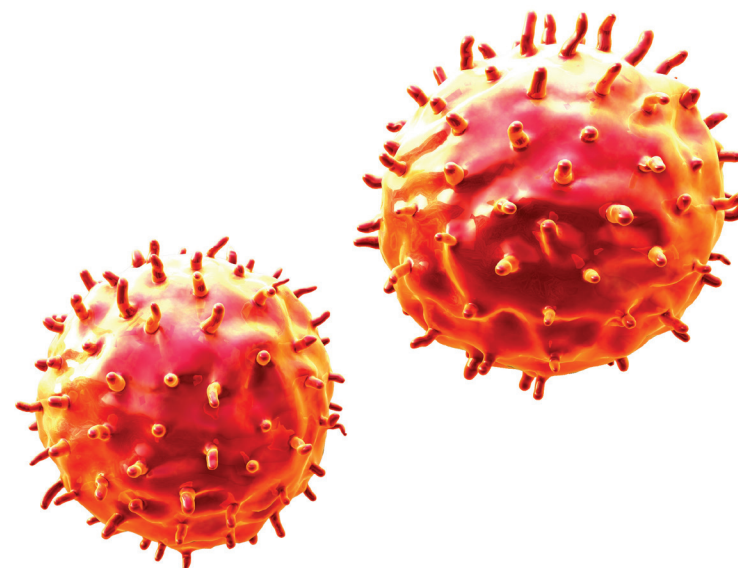


Interactive Example Candidate Responses

Paper 5 (May / June 2016), Question 1

Cambridge IGCSE™
Biology 0610



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Read through all the questions on this paper carefully before starting work.

- 1 Maize (corn) is an important food crop that produces grain. Fig. 1.1 shows a maize grain that has germinated to form a seedling.

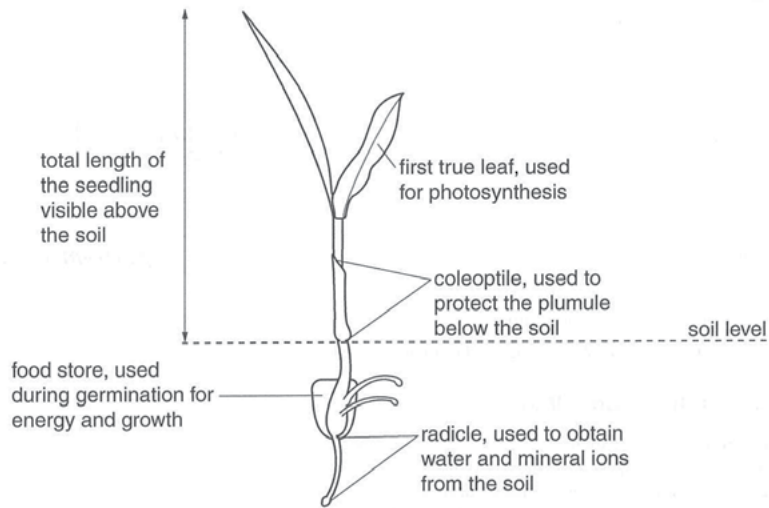


Fig. 1.1

You are going to investigate the effect of light on the germination and early growth of maize. You will measure and observe maize grown in the light and maize grown in the dark.

Three maize grains were planted in each of the two pots labelled **L** and **D**. One pot (**L**) was placed in the light and the other pot (**D**) placed in the dark. The seedlings were kept at a constant temperature.

Step 1 Observe the appearance of the seedlings carefully.

- (a) Complete Table 1.1 by recording two **visible** differences in the seedlings grown in the light and the seedlings grown in the dark.

Table 1.1

feature	seedlings grown in the light	seedlings grown in the dark
Stem	upright, firm	bending, weak, floppy
Leaves	green in colour	pale yellow in colour

[2]

Your
Mark

1(a)

1(b)(i)

1(b)(ii)

Q1 Mark scheme

(a)	any 2 of : comparisons must match																					
	<table><tr><th>feature</th><th>seedlings grown in light</th><th>seedlings grown in dark</th></tr><tr><td>height</td><td>short(er)</td><td>tall(er)</td></tr><tr><td>colour</td><td>green</td><td>yellow/light green</td></tr><tr><td>coleoptiles</td><td>green/pink/ brown/short</td><td>white/pale pink/ brown/long</td></tr><tr><td>leaves</td><td>two or three leaves/wider</td><td>one or two leaves</td></tr><tr><td>coleoptile/shoot/ stem</td><td>wide(er)</td><td>narrow(er)</td></tr><tr><td>coleoptile/shoot/ stem</td><td>almost vertical/ upright</td><td>bent/AW</td></tr></table>	feature	seedlings grown in light	seedlings grown in dark	height	short(er)	tall(er)	colour	green	yellow/light green	coleoptiles	green/pink/ brown/short	white/pale pink/ brown/long	leaves	two or three leaves/wider	one or two leaves	coleoptile/shoot/ stem	wide(er)	narrow(er)	coleoptile/shoot/ stem	almost vertical/ upright	bent/AW
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(b)(ii)	any 2 of: 1 the seeds germinate in both light and dark; 2 light is needed for the leaves become green (as chlorophyll is made/ ora ; 3 idea that seedlings grow longer (and thinner) without light (because there is no light)/ ora ; 2 marks																					

You are going to measure the length of the coleoptiles and the total length of the seedlings visible above the soil. You will measure **all** the seedlings grown in the light and **all** the seedlings grown in the dark.

(b) (i) Prepare a table to record your results.

FEATURE	SEEDLINGS GROWN IN LIGHT (L)			SEEDLINGS GROWN IN DARK (D)		
	1	2	3	1	2	3
LENGTH OF COLEOPTILES (cm)	2.0	1.5	3.0	3.0	2.5	3.5
TOTAL LENGTH OF SEEDLING (cm)	39.0	41.0	41.0	42.0	42.0	43.0

[6]

Step 2 Use a ruler to measure the length of the coleoptile and the total length of the seedling visible above the soil for each seedling.

Record the results for the seedlings grown in pot **L** and in pot **D** in your table.

(ii) Look at Table 1.1 and the results of your measurements.

State **two** conclusions that can be made about the effect of light on the germination and early growth of maize.

1. Lack of light causes the lack of photosynthesis and the lack of production of chlorophyll.
2. Lack of light causes the plant to be weaker.

[2]

Your
Mark

1(a)

1(b)(i)

1(b)(ii)

Q1 Mark scheme

(a)	any 2 of: comparisons must match		
	feature	seedlings grown in light	seedlings grown in dark
	height	short(er)	tall(er)
	colour	green	yellow/light green
	coleoptiles	green/pink/brown/short	white/pale pink/brown/long
	leaves	two or three leaves/wider	one or two leaves
	coleoptile/shoot/stem	wide(er)	narrow(er)
	coleoptile/shoot/stem	almost vertical/upright	bent/AW
2 marks			
(b)(i)	1 one table drawn with (ruled) lines; 2 column/row headings with units in the header only; 3 trials identified/numbered; 4 twelve measurements recorded in the appropriate light and dark conditions; R if measurements recorded are inconsistent with the unit heading 5 all coleoptile lengths should be shorter than the total length; 6 majority of measurements are consistent with Supervisor's range;		
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	2 marks		

Use gloves and eye protection while carrying out steps 3 to 14 of the practical work for question 1.

- Step 3 Use a marker pen to draw a line down the centre of a white tile. Label one side **L** and the other side **D**.
- Step 4 Use a spatula to carefully dig out from each pot, **two** of the seedlings grown in the light and **two** of the seedlings grown in the dark.
- Step 5 Use a scalpel or razor blade to cut the remains of the food store from each of the seedlings.
- Step 6 Use the water in the beaker labelled **water for washing** to wash each of these food stores and remove the outer covering. Put the outer covering in the beaker labelled **waste**.
- Step 7 Place the food stores from the seedlings grown in the light on the side of the tile labelled **L** and the food stores from seedlings grown in the dark on the side of the tile labelled **D**.
- Step 8 Wash the spatula in the beaker labelled **water for washing** and dry it with a paper towel. Use the spatula to crush together the two food stores from the seedlings grown in the light on the part of the tile labelled **L**.
- Separate the crushed food store into two equal parts spaced at least 2cm apart, as shown in Fig. 1.2.
- Step 9 Repeat step 8 using the two food stores from the seedlings grown in the dark on the part of the tile labelled **D**.



Fig. 1.2

- Step 10 Label two test-tubes, one with the letter **L** and the other with the letter **D**.
- Step 11 Scrape one of the food stores from the seedlings grown in the light into the test-tube labelled **L**. Add 2cm³ of water from the beaker labelled **water**, taking care to wash the crushed food store to the bottom of the test-tube.
- Step 12 Repeat step 11 using one of the food stores from the seedlings grown in the dark and the test-tube labelled **D**.
- Step 13 Carry out a Benedict's test on the contents of test-tube **L** and test-tube **D**.
- Raise your hand when you are ready for hot water to be placed in the beaker labelled **water-bath**.
- Leave the test-tubes for 5 minutes.
- During this time carry out step 14 and answer question (c)(i).
- Step 14 Add 1 drop of iodine solution to the remaining two food stores on the white tile. Record your results in Table 1.2.

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

(c)(i)	add biuret reagent to the crushed seed/crushed seed and water (and observe the colour change); R if heated 1 mark		
(c)(ii)	test reagent	results	
		seedlings grown in light	seedlings grown in dark
	biuret	purple	purple
	Benedict's	blue	blue;
	iodine	blue-black	blue-black;
	2 marks		
(c)(iii)	(maize stores) starch and protein (reducing sugar); 1 mark		
(d)(i)	any 6 of: 1 ref. to using same species/type/age of maize; 2 ref. to finding starting (dry) mass; 3 ref. to method of drying; 4 ref. to planting maize (grains) in soil/AW; 5 ref. to planting two sets of at least 100 maize/seeds; 6 ref. to keeping (both sets) in a warm room at/given °C/constant temperature; 7 one other valid detail of the method; 8 ref. to one set place in (constant) light/ref. to one set placed in (constant) dark; 9 ref to removing (10) seedlings (from each set) every two days for drying and weighing; 10 repeat and calculate the mean/average; 6 marks		
(d)(ii)	water content in, seeds/seedlings, is variable; for comparisons to be valid; 1 mark		

- (c) (i) Describe how to carry out a biuret test on a crushed food store.

Crush up the food source and place it in a test tube. Add some water and shake the test tube. Add biuret solution and if it turns purple protein is present. [1]

- (ii) The results of a biuret test are recorded in Table 1.2.
Complete step 13 by recording the results of your Benedict's tests in Table 1.2.

Table 1.2

test	seedlings grown in light	seedlings grown in dark
biuret	purple	purple
Benedict's	blue	blue
iodine	dark brown	blue black

[2]

- (iii) State the conclusion for the results shown in Table 1.2.

Plants grown in the dark contain starch, Plants grown in the light don't [1]

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

(c)(i)	add biuret reagent to the crushed seed/crushed seed and water (and observe the colour change); R if heated		1 mark														
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(d)(ii)	water content in, seeds/seedlings, is variable; for comparisons to be valid;			1 mark													

- (d) A group of students investigated the changes in dry mass during germination and growth of maize grown in the light and maize grown in the dark.

The dry mass is the total mass left after all the water has been evaporated.

Table 1.3 shows the results of the investigation for the maize seedlings grown in the light.

Table 1.3

	time / days										
	0	2	4	6	8	10	12	14	16	18	20
dry mass of 10 maize seedlings/g	22	20	17	12	10	8	11	13	14	15	17

- (i) Describe a method the students could have used to carry out this investigation.

Use the information on page 2 to help you.

Plant 10 seeds in a container with the same type of soil. Place a seed that has not been planted in the oven to remove the water and measure its dry mass. At 2 day intervals dig up one of the seeds you planted place it in the oven to dry out, and measure its dry mass by weighing it on a scale. Record your readings. For the seeds that germinate cut off the leaves, stem and roots, and only measure the dry mass of the food store.

[6]

- (ii) Suggest why the students measured the dry mass instead of the mass including water in their investigation.

To have a more accurate result in how much actual mass is produced

[Total: 21]

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

(c)(i)	add biuret reagent to the crushed seed/crushed seed and water (and observe the colour change); R if heated			1 mark														
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Read through all the questions on this paper carefully before starting work.

- 1 Maize (corn) is an important food crop that produces grain. Fig. 1.1 shows a maize grain that has germinated to form a seedling.

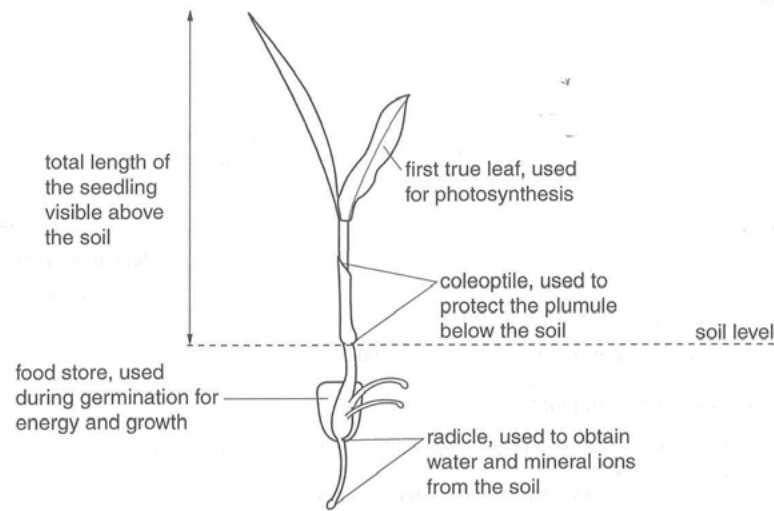


Fig. 1.1

You are going to investigate the effect of light on the germination and early growth of maize. You will measure and observe maize grown in the light and maize grown in the dark.

Three maize grains were planted in each of the two pots labelled **L** and **D**. One pot (**L**) was placed in the light and the other pot (**D**) placed in the dark. The seedlings were kept at a constant temperature.

Step 1 Observe the appearance of the seedlings carefully.

- (a) Complete Table 1.1 by recording two **visible** differences in the seedlings grown in the light and the seedlings grown in the dark.

Table 1.1

feature	seedlings grown in the light	seedlings grown in the dark
Colour of leaves	leaves are green	leaves are yellow.
Roots	Roots are below the soil	Roots are above the soil.

[2]

Your
Mark

1(a)

1(b)(i)

1(b)(ii)

Q1 Mark scheme

(a)	any 2 of : comparisons must match																					
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You are going to measure the length of the coleoptiles and the total length of the seedlings visible above the soil. You will measure **all** the seedlings grown in the light and **all** the seedlings grown in the dark.

(b) (i) Prepare a table to record your results.

	Length of coleoptiles	Total length of the seedlings visible above the soil
L 1	2 mm	120 mm
L 2	4 mm	240 mm
L 3	20 mm	250 mm
D 1	50 mm	345 mm
D 2	110 mm	320 mm
D 3	90 mm	340 mm

[6]

Step 2 Use a ruler to measure the length of the coleoptile and the total length of the seedling visible above the soil for each seedling.

Record the results for the seedlings grown in pot **L** and in pot **D** in your table.

(ii) Look at Table 1.1 and the results of your measurements.

State **two** conclusions that can be made about the effect of light on the germination and early growth of maize.

1 Seeds grown in the dark have a longer coleoptile than those grown in the light.

2 Seed grown in the light have a shorter total length than those grown in the dark.

[2]

Your
Mark

1(a)

1(b)(i)

1(b)(ii)

Q1 Mark scheme

(a)	any 2 of : comparisons must match																					
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Use gloves and eye protection while carrying out steps 3 to 14 of the practical work for question 1.

- Step 3 Use a marker pen to draw a line down the centre of a white tile. Label one side **L** and the other side **D**.
- Step 4 Use a spatula to carefully dig out from each pot, **two** of the seedlings grown in the light and **two** of the seedlings grown in the dark.
- Step 5 Use a scalpel or razor blade to cut the remains of the food store from each of the seedlings.
- Step 6 Use the water in the beaker labelled **water for washing** to wash each of these food stores and remove the outer covering. Put the outer covering in the beaker labelled **waste**.
- Step 7 Place the food stores from the seedlings grown in the light on the side of the tile labelled **L** and the food stores from seedlings grown in the dark on the side of the tile labelled **D**.
- Step 8 Wash the spatula in the beaker labelled **water for washing** and dry it with a paper towel. Use the spatula to crush together the two food stores from the seedlings grown in the light on the part of the tile labelled **L**.
- Separate the crushed food store into two equal parts spaced at least 2cm apart, as shown in Fig. 1.2.
- Step 9 Repeat step 8 using the two food stores from the seedlings grown in the dark on the part of the tile labelled **D**.

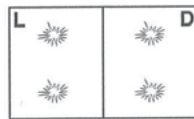


Fig. 1.2

- Step 10 Label two test-tubes, one with the letter **L** and the other with the letter **D**.
- Step 11 Scrape one of the food stores from the seedlings grown in the light into the test-tube labelled **L**. Add 2cm³ of water from the beaker labelled **water**, taking care to wash the crushed food store to the bottom of the test-tube.
- Step 12 Repeat step 11 using one of the food stores from the seedlings grown in the dark and the test-tube labelled **D**.
- Step 13 Carry out a Benedict's test on the contents of test-tube **L** and test-tube **D**.
- Raise your hand when you are ready for hot water to be placed in the beaker labelled **water-bath**.
- Leave the test-tubes for 5 minutes.
- During this time carry out step 14 and answer question (c)(i).
- Step 14 Add 1 drop of iodine solution to the remaining two food stores on the white tile. Record your results in Table 1.2.

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

(c)(i)	add biuret reagent to the crushed seed/crushed seed and water (and observe the colour change); R if heated 1 mark															
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- (c) (i) Describe how to carry out a biuret test on a crushed food store.

Crush the contents add biuret solution (sodium hydroxide and copper (II) sulfate) positive lilac [1]

- (ii) The results of a biuret test are recorded in Table 1.2.
Complete step 13 by recording the results of your Benedict's tests in Table 1.2.

Table 1.2

test	seedlings grown in light	seedlings grown in dark
biuret	purple	purple
Benedict's	orange	orange
iodine	blue / black	blue / black

[2]

- (iii) State the conclusion for the results shown in Table 1.2.

Both seedlings contain starch and reducing sugars and no proteins [1]

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

(c)(i)	add biuret reagent to the crushed seed/crushed seed and water (and observe the colour change); R if heated 1 mark															
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- (d) A group of students investigated the changes in dry mass during germination and growth of maize grown in the light and maize grown in the dark.

The dry mass is the total mass left after all the water has been evaporated.

Table 1.3 shows the results of the investigation for the maize seedlings grown in the light.

Table 1.3

	time / days										
	0	2	4	6	8	10	12	14	16	18	20
dry mass of 10 maize seedlings/g	22	20	17	12	10	8	11	13	14	15	17

- (i) Describe a method the students could have used to carry out this investigation.

Use the information on page 2 to help you.

You could use seedling approximately 10.
and calculate its mass prior to germination and
thereafter & calculate mass after germination
and the growth of maize you could grow
one maize plant in light and another in the
dark and make a comparison everyday and
note it down in a table as the one about the
dry mass changes with the days as the pass
and for the growth of maize at the end of
20 day compare the maize cobs the one in light and
the one in dark light comparing size of seeds, [6]
cob colour etc and put information in a table and
make a comparison

- (ii) Suggest why the students measured the dry mass instead of the mass including water in their investigation.

So as to know only the mass of seedlings without
water and be able to make comparison only in [1]
changes & occurred in the seed and not including water

[Total: 21]

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

(c)(i)	add biuret reagent to the crushed seed/crushed seed and water (and observe the colour change); R if heated		1 mark														
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(d)(ii)	water content in, seeds/seedlings, is variable; for comparisons to be valid;			1 mark													

Read through all the questions on this paper carefully before starting work.

- 1 Maize (corn) is an important food crop that produces grain. Fig. 1.1 shows a maize grain that has germinated to form a seedling.

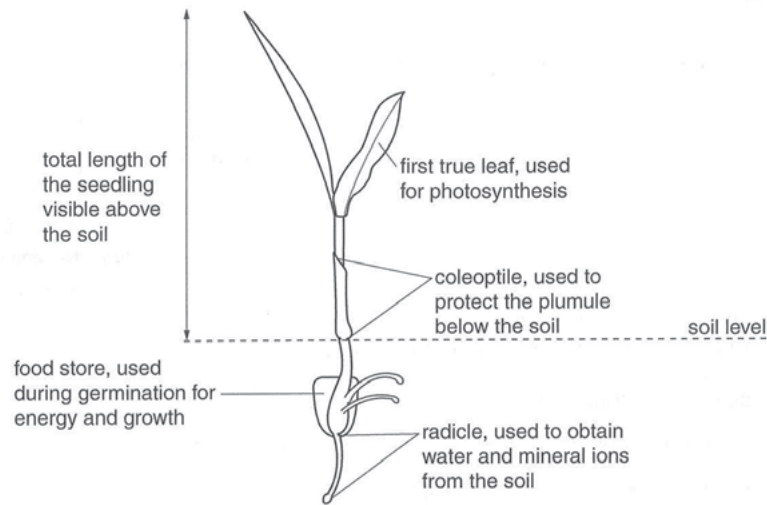


Fig. 1.1

You are going to investigate the effect of light on the germination and early growth of maize. You will measure and observe maize grown in the light and maize grown in the dark.

Three maize grains were planted in each of the two pots labelled **L** and **D**. One pot (**L**) was placed in the light and the other pot (**D**) placed in the dark. The seedlings were kept at a constant temperature.

Step 1 Observe the appearance of the seedlings carefully.

- (a) Complete Table 1.1 by recording two **visible** differences in the seedlings grown in the light and the seedlings grown in the dark.

Table 1.1

feature	seedlings grown in the light	seedlings grown in the dark
Leaves	Fresh (green)	Pale (yellowish)
Coleoptile	Green coloured	White coloured

[2]

Your
Mark

1(a)

1(b)(i)

1(b)(ii)

Q1 Mark scheme

(a)	any 2 of : comparisons must match																					
	<table><tr><th>feature</th><th>seedlings grown in light</th><th>seedlings grown in dark</th></tr><tr><td>height</td><td>short(er)</td><td>tall(er)</td></tr><tr><td>colour</td><td>green</td><td>yellow/light green</td></tr><tr><td>coleoptiles</td><td>green/pink/ brown/short</td><td>white/pale pink/ brown/long</td></tr><tr><td>leaves</td><td>two or three leaves/wider</td><td>one or two leaves</td></tr><tr><td>coleoptile/shoot/ stem</td><td>wide(er)</td><td>narrow(er)</td></tr><tr><td>coleoptile/shoot/ stem</td><td>almost vertical/ upright</td><td>bent/AW</td></tr></table>	feature	seedlings grown in light	seedlings grown in dark	height	short(er)	tall(er)	colour	green	yellow/light green	coleoptiles	green/pink/ brown/short	white/pale pink/ brown/long	leaves	two or three leaves/wider	one or two leaves	coleoptile/shoot/ stem	wide(er)	narrow(er)	coleoptile/shoot/ stem	almost vertical/ upright	bent/AW
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	2 marks																					
(b)(i)	1 one table drawn with (ruled) lines; 2 column/row headings with units in the header only; 3 trials identified/numbered; 4 twelve measurements recorded in the appropriate light and dark conditions; R if measurements recorded are inconsistent with the unit heading 5 all coleoptile lengths should be shorter than the total length; 6 majority of measurements are consistent with Supervisor's range;																					
(b)(ii)	any 2 of: 1 the seeds germinate in both light and dark; 2 light is needed for the leaves become green (as chlorophyll is made/ ora ; 3 idea that seedlings grow longer (and thinner) without light (because there is no light)/ ora ;																					
	2 marks																					

You are going to measure the length of the coleoptiles and the total length of the seedlings visible above the soil. You will measure **all** the seedlings grown in the light and **all** the seedlings grown in the dark.

(b) (i) Prepare a table to record your results.

	Seedlings grown ^(L) in the light	Seedlings grown ^(D) in the dark
length of coleoptiles (cm)	3 cm	9.5 cm
Total length of the seedlings (cm)	22.7 cm	30.8 cm

[6]

Step 2 Use a ruler to measure the length of the coleoptile and the total length of the seedling visible above the soil for each seedling.

Record the results for the seedlings grown in pot **L** and in pot **D** in your table.

(ii) Look at Table 1.1 and the results of your measurements. State **two** conclusions that can be made about the effect of light on the germination and early growth of maize.

1. If the light is where the maize grows, the coleoptile is smaller than if it is grown in the dark.

2. The growth of maize that is grown in light is more rapid/faster compared to the maize grown in the dark.

[2]

Your
Mark

1(a)

1(b)(i)

1(b)(ii)

Q1 Mark scheme

(a)	<p>any 2 of : comparisons must match</p> <table><tr><th>feature</th><th>seedlings grown in light</th><th>seedlings grown in dark</th></tr><tr><td>height</td><td>short(er)</td><td>tall(er)</td></tr><tr><td>colour</td><td>green</td><td>yellow/light green</td></tr><tr><td>coleoptiles</td><td>green/pink/ brown/short</td><td>white/pale pink/ brown/long</td></tr><tr><td>leaves</td><td>two or three leaves/wider</td><td>one or two leaves</td></tr><tr><td>coleoptile/shoot/ stem</td><td>wide(er)</td><td>narrow(er)</td></tr><tr><td>coleoptile/shoot/ stem</td><td>almost vertical/ upright</td><td>bent/AW</td></tr></table> <p>2 marks</p>	feature	seedlings grown in light	seedlings grown in dark	height	short(er)	tall(er)	colour	green	yellow/light green	coleoptiles	green/pink/ brown/short	white/pale pink/ brown/long	leaves	two or three leaves/wider	one or two leaves	coleoptile/shoot/ stem	wide(er)	narrow(er)	coleoptile/shoot/ stem	almost vertical/ upright	bent/AW
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Use gloves and eye protection while carrying out steps 3 to 14 of the practical work for question 1.

- Step 3 Use a marker pen to draw a line down the centre of a white tile. Label one side **L** and the other side **D**.
- Step 4 Use a spatula to carefully dig out from each pot, **two** of the seedlings grown in the light and **two** of the seedlings grown in the dark.
- Step 5 Use a scalpel or razor blade to cut the remains of the food store from each of the seedlings.
- Step 6 Use the water in the beaker labelled **water for washing** to wash each of these food stores and remove the outer covering. Put the outer covering in the beaker labelled **waste**.
- Step 7 Place the food stores from the seedlings grown in the light on the side of the tile labelled **L** and the food stores from seedlings grown in the dark on the side of the tile labelled **D**.
- Step 8 Wash the spatula in the beaker labelled **water for washing** and dry it with a paper towel. Use the spatula to crush together the two food stores from the seedlings grown in the light on the part of the tile labelled **L**.
- Separate the crushed food store into two equal parts spaced at least 2cm apart, as shown in Fig. 1.2.
- Step 9 Repeat step 8 using the two food stores from the seedlings grown in the dark on the part of the tile labelled **D**.



Fig. 1.2

- Step 10 Label two test-tubes, one with the letter **L** and the other with the letter **D**.
- Step 11 Scrape one of the food stores from the seedlings grown in the light into the test-tube labelled **L**. Add 2cm³ of water from the beaker labelled **water**, taking care to wash the crushed food store to the bottom of the test-tube.
- Step 12 Repeat step 11 using one of the food stores from the seedlings grown in the dark and the test-tube labelled **D**.
- Step 13 Carry out a Benedict's test on the contents of test-tube **L** and test-tube **D**.
- Raise your hand when you are ready for hot water to be placed in the beaker labelled **water-bath**.
- Leave the test-tubes for 5 minutes.
- During this time carry out step 14 and answer question (c)(i).
- Step 14 Add 1 drop of iodine solution to the remaining two food stores on the white tile. Record your results in Table 1.2.

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

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- (c) (i) Describe how to carry out a biuret test on a crushed food store.

Drop the solution into the crushed food store

[1]

- (ii) The results of a biuret test are recorded in Table 1.2.
Complete step 13 by recording the results of your Benedict's tests in Table 1.2.

Table 1.2

test	seedlings grown in light	seedlings grown in dark
biuret	purple	purple
Benedict's	yellow	yellow
iodine	Black	Black

[2]

- (iii) State the conclusion for the results shown in Table 1.2.

The starch is present in the maize

[1]

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

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- (d) A group of students investigated the changes in dry mass during germination and growth of maize grown in the light and maize grown in the dark.

The dry mass is the total mass left after all the water has been evaporated.

Table 1.3 shows the results of the investigation for the maize seedlings grown in the light.

Table 1.3

	time / days										
	0	2	4	6	8	10	12	14	16	18	20
dry mass of 10 maize seedlings/g	22	20	17	12	10	8	11	13	14	15	17

- (i) Describe a method the students could have used to carry out this investigation.

Use the information on page 2 to help you.

Students should grow the maize grown in light and maize grown in dark with the constant temperature. every 2 days, the students should measure the weight in grams and make the record.

[6]

- (ii) Suggest why the students measured the dry mass instead of the mass including water in their investigation.

If the water is counted, the result will not be specific & the weight of water may vary.

[Total: 21]

Your
Mark

1(c)(i)

1(c)(ii)

1(c)(iii)

1(d)(i)

1(d)(ii)

Q1 Mark scheme

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Cambridge Assessment International Education
The Triangle Building, Shaftesbury Road, Cambridge, CB2 8EA, United Kingdom
t: +44 1223 553554
e: info@cambridgeinternational.org www.cambridgeinternational.org

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