

# Focus on success: GCSE science

## Extended response questions

Build on your students' assessment performance using our self-guided, modular training pack

Activities  
booklet





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# Activity 1

## Command words card sort

As a group, use the command words card sort PowerPoint to match the command word to the description.

The answers can be found on page 4 of the handouts booklet.



# Activity 2

## Command words students find challenging

Read the statement that describes what the student is required to do for the command word. In pairs or small groups, look at the questions, the mark schemes and student responses. Discuss what the students are being asked to do and what common mistakes your students are likely to make when they answer this type of question.

### Describe

Students are being asked to state some facts, events or process in an accurate way. They may also be asked to describe patterns or trends in data

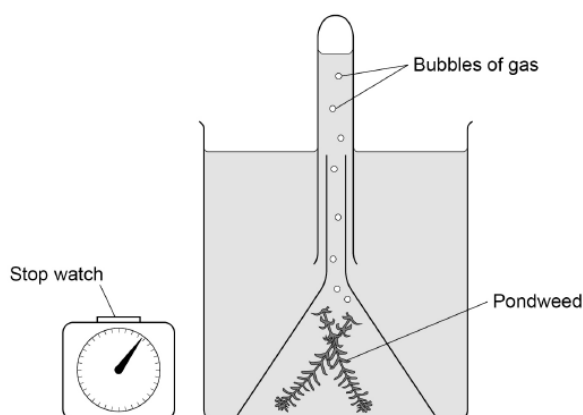
#### GCSE Combined Science (biology), Paper 1F (2019)

0 1

A student investigated the effect of light intensity on the rate of photosynthesis.

Figure 1 shows some of the apparatus used.

Figure 1



0 1 . 2

Describe **one** way the student could change the intensity of light reaching the pondweed.

[2 marks]

## Mark scheme

01.2	(use) a lamp / light (source)		1	AO1 4.4.1.2
	(and) move away and / or towards pondweed	allow use different power ratings <b>or</b> use a dimmer switch  allow change the opacity of the beaker for <b>2</b> marks	1	

## Student responses

**0 1 . 2** Describe **one** way the student could change the intensity of light reaching the pondweed. **[2 marks]**

One way is to try and create more bubbles  
and add a thermometer to check the  
temperature

**0 1 . 2** Describe **one** way the student could change the intensity of light reaching the pondweed. **[2 marks]**

The student could use a lamp or  
LED light, so the rate of ~~photosynthesis~~  
Photosynthesis increases

GCSE Combined Science (chemistry), Paper 2F (2019)

**0 6 . 2** Describe a test for pure water.

Give the result of the test if the water is pure.

**[2 marks]**

Mark scheme

<b>06.2</b>		allow boils at 100 °C for <b>2</b> marks		AO2 5.8.1.1
	boil (water)	ignore heat do <b>not</b> accept filter do <b>not</b> accept incorrect test	1	
	(boils) at 100°C	<b>alternative approach</b> freeze (water) (1)  (freezes) at 0°C (1)  if no other mark awarded, allow 1 mark for evaporate or distil water <b>and</b> no solid left	1	

Student responses

**0 6 . 2** Describe a test for pure water.

Give the result of the test if the water is pure.

**[2 marks]**

Test Heat it up  
Result if it gets hot quite  
then its fresh.

**0 6 . 2** Describe a test for pure water.

Give the result of the test if the water is pure.

**[2 marks]**

Test pH level  
Result green to show neutral.

## GCSE Combined Science (physics), Paper 2F (2019)

**0 2 . 5** The gymnast swings from one bar to the other bar several times.

Describe how the gravitational potential energy store and the kinetic energy store of the gymnast change as she moves between the bars.

**[4 marks]**

### Mark scheme

02.5	<b>Level 2:</b> Scientifically relevant facts, events or processes are identified and given in detail to form an accurate account.	3–4	AO1 6.1.1.1	E
	<b>Level 1:</b> Facts, events or processes are identified and simply stated but their relevance is not clear.	1–2		
	No relevant content.	0		
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>as height changes gravitational potential energy changes</li> <li>gravitational potential energy decreases when moving to the lower bar</li> <li>as speed changes kinetic energy changes</li> <li>kinetic energy increases when moving to the lower bar</li> <li>transfer from gravitational potential energy to kinetic energy as height decreases</li> <li>the sum of the kinetic energy and gravitational potential energy is constant</li> </ul>			

### Student responses

**0 2 . 5** The gymnast swings from one bar to the other bar several times.

Describe how the gravitational potential energy store and the kinetic energy store of the gymnast change as she moves between the bars.

**[4 marks]**

As the gymnast swings she gets higher which increases their gravitational ~~and~~ potential energy store.  
The more she swings the more kinetic energy she is getting.

**0 2 . 5** The gymnast swings from one bar to the other bar several times.

Describe how the gravitational potential energy store and the kinetic energy store of the gymnast change as she moves between the bars.

**[4 marks]**

When she is moving from one bar to another the kinetic energy increases as she is using more energy to get to the other bar so the speed will increase. When moving to the lower bar the gravitational potential energy decrease as she is swinging to a lower bar.

### Commentary

Students often do not achieve the marks as they do not know the facts or are too vague and don't use precise scientific language. There is often unqualified use of the term 'it'.

In the physics level response question the students received 2 and 3 marks respectively.

## Explain

Students need to make something clear, or state what is happening and then give a reason linking to why it is happening. Connectives 'so' and 'because' are useful here.

### GCSE Combined Science (biology), Paper 1F (2019)

**0 3 . 4** Explain how a root hair cell is specialised for its function.

**[2 marks]**

### Mark scheme

<b>03.4</b>	large surface area	allow long	1	AO1 4.1.1.3 4.2.3.2
	(so) it can absorb (a lot of) water / minerals / (mineral) ions	allow <b>1</b> mark for (many) mitochondria allow for <b>2</b> marks (many) mitochondria for active transport	1	

### Student responses

**0 3 . 4** Explain how a root hair cell is specialised for its function.

**[2 marks]**

have a large surface area

**0 3 . 4** Explain how a root hair cell is specialised for its function.

**[2 marks]**

Root hair cells are specialised for function as they are long, so they can reach further.

**Table 2** shows the boiling points of fluorine, chlorine and bromine.

**Table 2**

Element	Boiling point in °C
Fluorine	−186
Chlorine	−34
Bromine	+59

**0 4 . 3** Explain why the boiling points in **Table 2** are low.

**[2 marks]**

### Mark scheme

<b>04.3</b>	weak forces between the molecules <b>or</b> weak intermolecular forces	allow weak intermolecular bonds do <b>not</b> accept incorrect references to covalent bonds	1	AO1 AO3 5.1.2.6 5.2.2.4
	(so) little energy required to overcome / break the forces between molecules <b>or</b> (so) little energy required to overcome / break the intermolecular forces	allow (so) little energy required to separate the molecules  allow (so) little energy required to overcome / break the intermolecular bonds  ignore less energy	1	



## Student responses

0 4 . 3 Explain why the boiling points in **Table 2** are low.

[2 marks]

The elements are in group 7 which are the halogen ions ~~the~~ which means that they have 7 electrons on their outer shell meaning fairly unreactive so very low boiling points

0 4 . 3 Explain why the boiling points in **Table 2** are low.

[2 marks]

The boiling points for these elements are low because these elements ~~are in group~~ ~~are in group~~ have weak inter-molecular forces and do not have a full outer shell because they are in group 7.



## GCSE Combined Science (physics), Paper 1H (2019)

**0 2** A scientist cooled the air inside a container.

**0 2 . 1** The temperature of the air changed from 20 °C to 0 °C

The volume of the container of air stayed the same.

Explain how the motion of the air molecules caused the pressure in the container to change as the temperature decreased.

**[3 marks]**

### Mark scheme

<b>02.1</b>	pressure decreased		1	AO2.1	E
	because molecules have less (kinetic) energy	allow less speed/velocity	1	6.3.3.1	
	so fewer collisions (with the wall/container each second)	allow collide with less force	1		
		allow less force on the walls			

### Student responses

**0 2 . 1** The temperature of the air changed from 20 °C to 0 °C

The volume of the container of air stayed the same.

Explain how the motion of the air molecules caused the pressure in the container to change as the temperature decreased.

**[3 marks]**

the air molecules start to  
condense. This means that as they  
are starting to ~~freeze~~ transform to  
a liquid the molecules mass increases.

**0 2 . 1** The temperature of the air changed from 20 °C to 0 °C

The volume of the container of air stayed the same.

Explain how the motion of the air molecules caused the pressure in the container to change as the temperature decreased.

**[3 marks]**

The air molecules lost energy as the temperature decreased. Less energy means that the air molecules are unable to move as much, reducing pressure.

#### Commentary

Students are often not achieving the marks as they are giving statements that are not linked. The use of connectives should be encouraged. Students need to give a statement and then give reasons why.

## Suggest

This term is used in questions where students need to apply their knowledge and understand a new situation. There is more than one possible answer.

### GCSE Combined Science (biology), Paper 1F (2019)

**03.8** Root hair cells do **not** contain chloroplasts.

Suggest **one** reason why.

[1 mark]

### Mark scheme

<b>03.8</b>	any <b>one</b> from: (root hair cells) <ul style="list-style-type: none"><li>are not exposed to light</li><li>do not photosynthesise</li></ul>	allow are underground	1	AO2 4.1.1.2 4.1.1.3 4.2.3.2 4.4.1.1
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### Student responses

**03.8** Root hair cells do **not** contain chloroplasts.

Suggest **one** reason why.

[1 mark]

They wouldn't be able to carry the water around properly.

**03.8** Root hair cells do **not** contain chloroplasts.

Suggest **one** reason why.

[1 mark]

Root hair cells are used to absorb food or water.

GCSE Combined Science (chemistry), Paper 1F (2019)

0 2

This question is about salts and electrolysis.

A student wants to make copper chloride crystals.

The student adds excess copper oxide to some hot acid.

The student stirs the mixture.

0 2 . 2

Suggest how the student would know that excess copper oxide has been added.

[1 mark]

\_\_\_\_\_

Mark scheme

02.2	(black) solid remains (after stirring)	allow copper oxide remains allow no more copper oxide reacts	1	AO1 5.4.2.3
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Student responses

0 2 . 2

Suggest how the student would know that excess copper oxide has been added.

[1 mark]

as there would be too much

0 2 . 2

Suggest how the student would know that excess copper oxide has been added.

[1 mark]

Because he added the excess copper oxide

## GCSE Combined Science (physics), paper 2F (2019)

- 06.3** Suggest why the phone and watch being connected by a wireless system is an advantage when running. [1 mark]

### Mark scheme

<b>06.3</b>	(there are no wires) to get tangled / disconnected	allow easier to move arms allow wires are inconvenient allow easier to transfer data	1	AO3 6.6.2.4	E
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### Student responses

- 06.3** Suggest why the phone and watch being connected by a wireless system is an advantage when running. [1 mark]
- because you can listen to music whist running

- 06.3** Suggest why the phone and watch being connected by a wireless system is an advantage when running. [1 mark]
- Because it decreases my radiation.

### Commentary

The suggestions students make need to be sensible and appropriate to the question. Any reasonable answer would be considered.

## Compare

Students are required to describe the similarities and/or differences between things, not just write about one.

If there is statement saying 'use values from' then students also have to quote some figures and say something about those figures, for example, increased by 10, 3% more.

It is good practice to do this whenever they see a compare question where there is data involved.

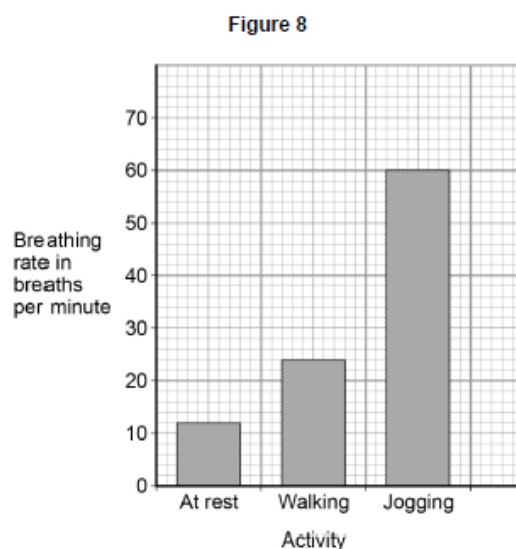
### GCSE Combined Science (biology), Paper 1H (2019)

0 4

Exercise can improve health.

A student measured her breathing rate at rest, when walking and when jogging.

Figure 8 shows her results.



0 4 . 1

Compare the breathing rates when doing the three different activities.

Use values from Figure 8 in your answer.

[3 marks]

## Mark scheme

04.1		max <b>2</b> marks if written in terms of heart rate		AO2 4.4.2.2
	breathing rate when walking is twice that at rest	allow breathing rate when walking is 12 (breaths / minute) more than at rest	1	
	breathing rate when jogging is 5 times that at rest	allow breathing rate when jogging is 48 (breaths / minute) more than at rest	1	
	breathing rate when jogging is 2.5 times that when walking	allow breathing rate when jogging is 36 (breaths / minute) more than when walking	1	
		allow for <b>1</b> mark if no other marks gained: breathing rate at rest is 12(breaths per minute), breathing rate when walking is 24 (breaths per minute) and breathing rate when jogging is 60 (breaths per minute) <b>or</b> breathing rate increases with increasing activity		



**06.4** Table 4 gives some information about disposable cups.

**Table 4**

	Coated paper cups	Poly(styrene) cups
Source of raw materials	Wood	Crude oil
Energy to make 1 cup in arbitrary units	550	200
Biodegradable	Yes	No
Recyclable	No	Yes

Compare the advantages and disadvantages of using coated paper and poly(styrene) to make disposable cups.

Use **Table 4** and your knowledge and understanding of life cycle assessments (LCAs).  
[4 marks]

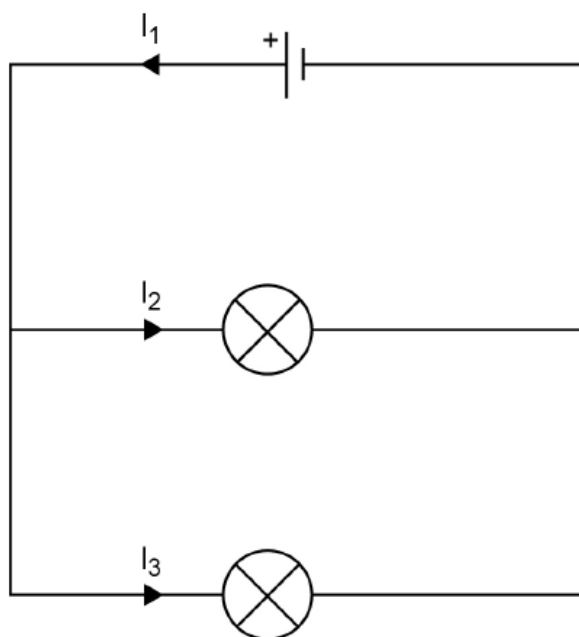
### Mark scheme

<b>06.4</b>	<b>Level 2:</b> Scientifically relevant features are identified; the way(s) in which they are similar / different is made clear and (where appropriate) the magnitude of the similarity / difference is noted.	3–4	AO3
	<b>Level 1:</b> Relevant features are identified and differences noted.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b> for coated paper cups – accept converse for poly(styrene)  <b>advantages</b> <ul style="list-style-type: none"> <li>produced from a renewable resource</li> <li>biodegradable so breaks down</li> </ul> <b>disadvantages</b> <ul style="list-style-type: none"> <li>higher energy costs</li> <li>greater use of fossil fuels and consequent pollution</li> <li>not recyclable so uses landfill</li> </ul>		4.10.1.1 4.10.2.1



**Figure 10** shows the circuit with two identical filament lamps.

**Figure 10**



**0 6 . 2** Compare the currents  $I_1$ ,  $I_2$  and  $I_3$

**[2 marks]**

### Mark scheme

06.2	<p>Any <b>two</b> from:</p> <ul style="list-style-type: none"> <li><math>I_1 = I_2 + I_3</math></li> <li><math>I_2 = I_3</math></li> <li><math>I_1 = 2I_2</math></li> <li><math>I_1 = 2I_3</math></li> </ul>	<p>allow 1 mark for each correct description given in words</p>	2	AO2 6.2.2	E
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### Commentary

Students tend to describe each feature separately and don't link the two things together. Unless they make an explicit comparison between the two, marks cannot be awarded. The examiner is looking for linking words such as 'but' and 'and'.

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## Evaluate

Students should use the information supplied, as well as their knowledge and understanding to consider evidence for and against when making a judgement.

It is good practice to encourage students to always include a judgement as this is required to access the highest level at extended response.

Discuss what is different about what students are required to do for evaluate rather than compare. What do students find challenging when structuring their answers to this command word?

### GCSE Biology, Paper 1H (2019)

**Table 4** shows the data.

**Table 4**

	Type of replacement heart valve	
	Mechanical	Biological
Number of patients given the valve	2852	1754
Number of patients who died from heart-related problems after valve replacement	180	178
Percentage of patients alive after 5 years	91	89
Percentage of patients needing a second valve replacement within 6 years	2.2	5.2
Percentage of patients who had a blood clot on the brain after surgery	5.8	0.1

0 5 . 4

Evaluate the use of mechanical replacement heart valves and biological replacement heart valves.

Use information from **Table 4** and your own knowledge.

**[6 marks]**

## Mark scheme

05.4	Level 3: A judgement, strongly linked and logically supported by a sufficient range of correct reasons, is given.	5–6	4.2.2.4 AO2 AO3
	Level 2: Some logically linked reasons are given. There may also be a simple judgement.	3–4	
	Level 1: Relevant points are made. They are not logically linked.	1–2	
	No relevant content	0	
	<p><b>Indicative content:</b></p> <p><b>mechanical valves</b></p> <ul style="list-style-type: none"> <li>longer lasting or more durable or don't wear out as easily or less likely to need replacing (within 6 years)</li> <li>blood clots (on the brain) are more likely (after surgery)</li> <li>patient has to take anti-clotting medication (for the rest of their lives)</li> <li>if medication not taken (correctly), clots can lead to blood clots on brain / heart attack</li> <li>medication can lead to excessive bleeding (after injury)</li> <li>some patients say they can hear the valves opening and closing</li> <li>survival rate at 5 years is slightly higher for mechanical valve</li> <li>lower percentage of deaths due to heart-related problems</li> </ul> <p><b>biological valves</b></p> <ul style="list-style-type: none"> <li>no additional medication required</li> <li>ethical issues surrounding use of animal tissue</li> <li>valve may harden</li> <li>more likely to need further operation or another new valve</li> <li>more likely to be rejected</li> <li>more likely to need (immuno-suppressant) medication</li> </ul> <p><b>both valves</b></p> <ul style="list-style-type: none"> <li>both are readily available</li> <li>little wait time</li> </ul> <p>a level 2 response should contain comparisons of both valves and some reference to own knowledge</p>		

## Student response

0 5 4

Evaluate the use of mechanical replacement heart valves and biological replacement heart valves.

Use information from **Table 4** and your own knowledge.

[6 marks]

Biological heart valves are cheaper and more eco-friendly as it's using pigs but ethical issues can occur as some people are vegetarians and against killing animals. Mechanical are easier to get and more people have them but cause more clotting in the brain than biological, biological are more likely to get rejected as it's living tissue the body is not use to. Mechanical heart valves kill more people with heart problems as they're critically made and they cause a lot more blood clots in brain after surgery as they can be quite powerful, and too powerful, killing people. Because biological is natural people are more likely to need a replacement as, pigs aren't suppose to live as long as humans so their heart valves don't work, also they're smaller than humans so they may not be strong enough to function properly. Long-term people with mechanical heart valves ~~live~~<sup>are</sup> more likely to live longer after 5 years than people with biological.

**Table 4** shows some properties of materials.

The materials could be used to make badminton racket frames.

**Table 4**

Material	Density in g/cm <sup>3</sup>	Relative strength	Relative stiffness
Aluminium	2.7	0.3	69
Carbon nanotube	1.5	60	1000
Wood	0.71	0.1	10

Evaluate the use of the materials to make badminton racket frames.

Use **Table 4**.

**[4 marks]**

### Mark scheme

10.2	<b>Level 2:</b> Some logically linked reasons are given. There may also be a simple judgement.	3–4	AO3 4.2.3.3 4.2.2.7
	<b>Level 1:</b> Relevant points are made. They are not logically linked.	1–2	
	No relevant content	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• wood is the least dense so lightest to use</li> <li>• aluminium is the most dense so will make the racket too heavy</li> <li>• carbon nanotube is the strongest so least likely to break</li> <li>• wood / aluminium are too weak so the racket will break more easily</li> <li>• carbon nanotube is the stiffest so least likely to bend out of shape</li> <li>• wood / aluminium are not very stiff so could bend out of shape</li> <li>• justified conclusion</li> </ul>		

## Student response

Using aluminium to make badminton racket frames would give the largest density compared to the other two materials also by using a carbon nanotube the racket ~~was~~ would have the largest relative stiffness at 1000. Where as if wood was used it would be the weakest at only 10.

## Commentary

To achieve top marks there needs to be a judgement. The judgement needs to be supported with reasons taken from the information given in the question.

Students need to give arguments for and against things (positives and negatives), not just give statements about one of the pieces of information; they need to make a comparison and a judgement.

The student response to the biology question was limited to Level 2 because they did not make a judgement and were, therefore, awarded 4 marks. If the student had added a judgement it would have achieved full marks.

The student's response to the chemistry question was assigned to Level 1 and given 2 marks as it doesn't link reasons well and just states the properties of each material.

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# Activity 3

## Applying a levels of response mark scheme process

### Template

Use the below template to create a process for applying a levels of response mark scheme. Then review it alongside the process and level descriptors on pages 6–8 of the handouts booklet.

**Step 1:**



**Step 2:**



**Step 3:**





# Activity 4

## Bringing command words and levels of response together

The student responses below all received full marks. Using the mark schemes, work in pairs or small groups to highlight the areas in the responses that have led to the students gaining full marks. Be prepared to discuss your findings with the wider group.

### Example 1 – GCSE Trilogy (biology)

Biologists have discovered a way to produce oysters that have three sets of chromosomes (triploid) instead of the usual two sets (diploid).

The triploid oysters cannot reproduce and so they grow more quickly.

Diploid oysters do not taste good in the reproductive season. Triploid oysters taste good all year.

**0 7 . 6** Oyster farmers grow the triploid oysters from young seed oysters.

The production of seed oysters involves the use of a chemical called cytochalasin B. Cytochalasin B has been shown to cause cancer in mice.

Evaluate the production of triploid oysters for supermarkets and restaurants.

**[6 marks]**

Triplet oysters grow more quickly than diploid oysters resulting in a higher yield for the farmer. Triplet oysters also taste good year round whereas diploid oysters only taste good when not in reproductive season. This <sup>means</sup> triplet oysters are good for supermarkets and restaurants as they are available all year round and are cheaper due to their quick growth time. However triplet oysters have the chance to cause cancer in humans as they carry the chemical cytochalasin B which causes cancer in mice whereas diploid oysters are safe to eat. For this reason I don't think triplet oysters should be sold in supermarkets or restaurants as the potential effect on health outweighs the good taste year round and the quick growth time.

means triplet oysters

END OF QUESTIONS



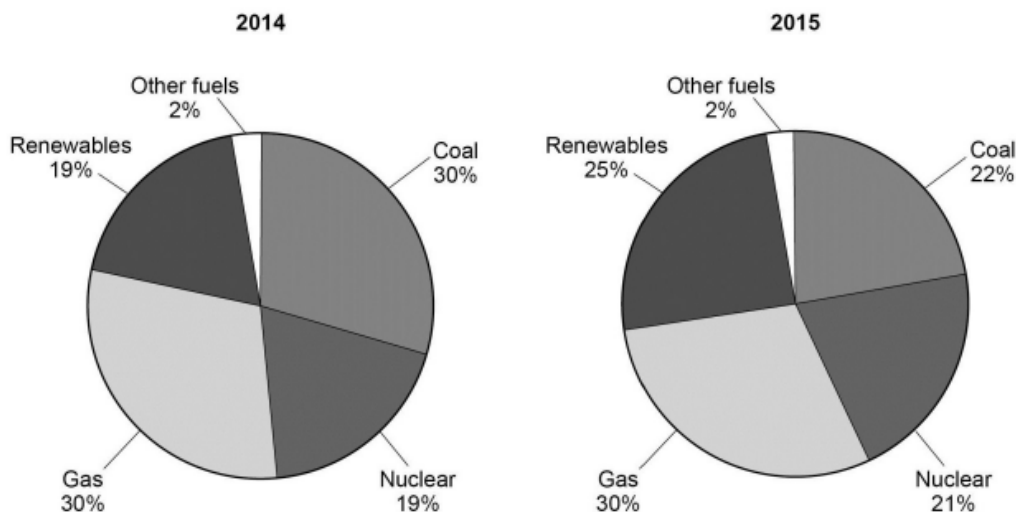
07.6	<b>Level 3:</b> A judgement strongly linked and logically supported by a sufficient range of correct reasons is given.	5–6	AO3
	<b>Level 2:</b> Some logically linked reasons are given. There also may be a simple judgement.	3–4	AO3 AO2
	<b>Level 1:</b> Relevant points are made. They are not logically linked.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b>  <b>for:</b> <ul style="list-style-type: none"> <li>oysters are available to eat all year <b>so</b> eating oysters has become very popular</li> <li>cheaper to produce <b>so</b> more food for expanding population</li> <li>oysters grow faster <b>so</b> more oysters for supermarkets / restaurants or more profit for farmers</li> <li>stocks are replenished each year <b>so</b> more sustainable fishing</li> <li>they can harvest / sell all year <b>so</b> more stable and profitable for oyster farmers</li> </ul> <b>against:</b> <ul style="list-style-type: none"> <li>carcinogen put into environment / oysters <b>so</b> may enter the food chain or cause cancer in humans</li> <li>bigger triploid oysters may outcompete the smaller native diploid oysters <b>so</b> upset balance of the ecosystem / cause extinction</li> <li>people may not buy / eat them because they have used a carcinogenic chemical <b>so</b> reduced profit for farmers / suppliers / supermarkets / restaurants</li> <li>farmers have to buy new seed oysters every time <b>so</b> more expensive</li> </ul> <b>other content:</b> <ul style="list-style-type: none"> <li>shouldn't be eating the oysters until they are thoroughly tested</li> <li>should be looking for alternative ways to get triploid oysters</li> <li>should stop using triploid oysters until the effect on the (marine) environment is known</li> <li>would replace lost oyster beds <b>but</b> could change the ecosystem</li> <li>oysters available to eat all year <b>but</b> probably do not taste the same or have the same flavour</li> </ul>		4.7.3.2 4.7.3.6 4.7.2.1 4.7.1.3 4.7.1.1

## Example 2 – GCSE Trilogy (physics)

**0 1 . 5** Figure 2 shows the electricity generated by different energy resources in the UK.

The total amount of electricity generated was the same in 2014 and in 2015

Figure 2



There are changes in the amounts of different energy resources used between 2014 and 2015

Explain the environmental impacts of the changes.

[4 marks]

The environmental impacts of the changes are that the environment is becoming less polluted, and global warming and climate change will slow down if we begin to use more renewable energy and less fossil fuels, as shown in Figure 2 where 3% more renewable energy was used, and 8% less coal was used, however, the use of nuclear energy has increased, which is not good for the environment. In addition to this, the use of gas has stayed the same so still over half the energy used was from fossil fuels, causing a lot of pollution.

01.5	<b>Level 2:</b> Relevant points (reasons / causes) are identified, given in detail and logically linked to form a clear account.	3–4	AO3 6.1.3
	<b>Level 1:</b> Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1–2	
	<b>No relevant content</b>	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• less fossil fuel burnt</li> <li>• more nuclear fuel used</li> <li>• more renewables used</li> <li>• gas remained the same</li> <li>• less carbon dioxide released</li> <li>• less greenhouse gases</li> <li>• less global warming</li> <li>• less acid rain</li> <li>• less environmental pollution</li> <li>• more hazardous waste produced (nuclear)</li> <li>• the percentage generated by coal has decreased 8%</li> <li>• the percentage generated by renewables has increased by 6%</li> <li>• the percentage generated by nuclear has increased by 2%</li> </ul>		

### Example 3 – GCSE Trilogy (chemistry)

Table 6 shows data from a life cycle assessment (LCA) for the disposal of 10 000 biodegradable plastic bags.

Table 6

	Burning and using the energy to generate electricity	Landfill
Mass of carbon dioxide produced in kg	25	15
Mass of solid residue in kg	0.050	0.070
Mass of sulfur dioxide produced in kg	0.20	0.30

0 6 . 8 Compare the **two** methods for the disposal of biodegradable plastic bags.

Use information from **Table 6**

[4 marks]

Burning ~~the energy~~ and using the energy to generate electricity produces ~~more carbon dioxide~~ 10kg more of carbon dioxide than landfill, but landfill would produce 0.1kg more of sulfur dioxide and 0.02kg more of solid residue, so burning them to generate electricity would be a better option.

06.8	<b>Level 2:</b> Scientifically relevant features are identified; the ways in which they are similar / different is made clear and the magnitude of the similarity / difference noted.	3–4	AO3
	<b>Level 1:</b> Relevant features are identified and differences noted.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• burning 10 000 bags produces 10 kg more of carbon dioxide than landfill</li> <li>• putting 10 000 bags in landfill produces 0.02 kg more of solid residue than burning.</li> <li>• putting 10 000 bags in landfill produces 50% more sulfur dioxide than burning</li> <li>• burning 10 000 bags produces 25 kg of carbon dioxide, but landfill only produces 15 kg</li> <li>• putting 10 000 bags in landfill produces 0.07 kg of solid residue but burning only produces 0.05 kg</li> <li>• landfill produces less carbon dioxide than burning</li> <li>• landfill produces more solid residue than burning</li> <li>• burning produces less sulfur dioxide than landfill</li> </ul>		5.10.2.1 5.10.2.2 5.9.2.2

# Activity 5

## Applying levels of response correctly

Using the provided mark schemes, mark a selection of the following student responses. Compare your marks with the examiner commentaries on pages 54–55.

### Compare

#### Example 1 response

**0 6 . 8** Compare the **two** methods for the disposal of biodegradable plastic bags.

Use information from **Table 6**

**[4 marks]**

By using the method landfill less mass of CO<sub>2</sub> is produced than Burning and using the energy to generate electricity. But more mass of sulfur dioxide is produced by landfill.



### Example 1 mark scheme

06.8	<b>Level 2:</b> Scientifically relevant features are identified; the ways in which they are similar / different is made clear and the magnitude of the similarity / difference noted.	3–4	AO3
	<b>Level 1:</b> Relevant features are identified and differences noted.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• burning 10 000 bags produces 10 kg more of carbon dioxide than landfill</li> <li>• putting 10 000 bags in landfill produces 0.02 kg more of solid residue than burning.</li> <li>• putting 10 000 bags in landfill produces 50% more sulfur dioxide than burning</li> <li>• burning 10 000 bags produces 25 kg of carbon dioxide, but landfill only produces 15 kg</li> <li>• putting 10 000 bags in landfill produces 0.07 kg of solid residue but burning only produces 0.05 kg</li> <li>• landfill produces less carbon dioxide than burning</li> <li>• landfill produces more solid residue than burning</li> <li>• burning produces less sulfur dioxide than landfill</li> </ul>		5.10.2.1 5.10.2.2 5.9.2.2

## Example 2 response

**0 6 . 4** Table 4 gives some information about disposable cups.

**Table 4**

	Coated paper cups	Poly(styrene) cups
Source of raw materials	Wood	Crude oil
Energy to make 1 cup in arbitrary units	550	200
Biodegradable	Yes	No
Recyclable	No	Yes

Compare the advantages and disadvantages of using coated paper and poly(styrene) to make disposable cups.

Use **Table 4** and your knowledge and understanding of life cycle assessments (LCAs).

**[4 marks]**

Coated	Poly(styrene)
+ It is made out of wood, which is renewable, so doesn't run out	- It is made out of crude oil, which is non-renewable, so does eventually run out
- It takes 350 more energy units to make, so would cost more to produce	+ Takes 350 less energy units to make, so would cost less to produce
+ It's biodegradable meaning, it won't be churned on a landfill and won't harm the earth	- It's not biodegradable, so it will pollute the earth and stay on the landfill



## Example 2 mark scheme

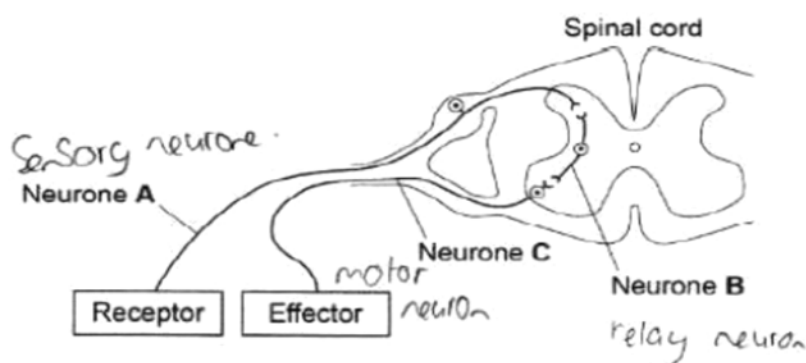
<b>06.4</b>	<b>Level 2:</b> Scientifically relevant features are identified; the way(s) in which they are similar / different is made clear and (where appropriate) the magnitude of the similarity / difference is noted.	3–4	AO3
	<b>Level 1:</b> Relevant features are identified and differences noted.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b>  for coated paper cups – accept converse for poly(styrene)  <b>advantages</b> <ul style="list-style-type: none"> <li>• produced from a renewable resource</li> <li>• biodegradable so breaks down</li> </ul> <b>disadvantages</b> <ul style="list-style-type: none"> <li>• higher energy costs</li> <li>• greater use of fossil fuels and consequent pollution</li> <li>• not recyclable so uses landfill</li> </ul>		4.10.1.1 4.10.2.1

## Describe

### Example 3 response

**0 9 5** Figure 13 shows some structures involved in the coordination of a reflex action.

Figure 13



Describe how the structures shown in Figure 13 help to coordinate a reflex action.

[6 marks]

The receptor detects a change in the environment which is potentially harmful (stimulus). An electrical impulse travels down the sensory neuron (Neurone A) until it reaches a synapse. A chemical is released to allow the electrical impulse over the synapse. Once over the synapse it is at the central nervous system. This place decides where to go. It then travels down the relay neuron to motor neuron, which takes it to the effector which is a muscle or a gland, the muscle contracts to perform an action to help, the gland secretes hormones to help such as adrenaline.

### Example 3 mark scheme

09.5	<b>Level 2:</b> Scientifically relevant facts, events or processes are identified and given in detail to form an accurate account.	4–6	AO1 4.5.2.1
	<b>Level 1:</b> Facts, events or processes are identified and simply stated but their relevance is not clear.	1–3	
	<b>No relevant content</b>	0	
	<p><b>Indicative content</b></p> <ul style="list-style-type: none"> <li>• receptor detects stimulus</li> <li>• eg receptor detects pressure</li> <li>• receptor generates impulses / electrical signals</li> <li>• neurones conduct impulses / electrical signals</li> <li>• neurone A conducts impulses to spinal cord</li> <li>• neurone A = sensory neurone</li> <li>• synapse between neurones</li> <li>• chemical (/ neurotransmitter) crosses synapse</li> <li>• chemical stimulates impulse(s) in neurone B</li> <li>• neurone B = relay neurone</li> <li>• neurone C = motor neurone</li> <li>• effector carries out response</li> <li>• eg muscles of the arm / leg contract</li> <li>• muscles contract <b>or</b> gland secretes chemicals</li> </ul> <p>to access <b>level 2</b>, candidates need to consider, in terms of the indicative content, the receptor, the neurones and the effector in the correct sequence</p>		

## Plan/Design

### Example 4 response

0 5 . 2

Plan an investigation to show how the concentration of the sodium thiosulfate solution affects the rate of the reaction with dilute hydrochloric acid.

Your plan should give valid results.

[6 marks]

- 1) add  $10\text{cm}^3$  of Hydrochloric acid (using a measuring cylinder) to a beaker. <sup>conical flask</sup>
- 2) Draw a black cross on a tile or piece of white paper under the beaker. <sup>conical flask</sup>
- 3) Add  $10\text{cm}^3$  of <sup>sodium</sup> Thiosulfate solution into the <sup>conical flask</sup> ~~beaker~~ and use a timer to measure how long it takes for the cross to no longer be visible (do this looking straight down through the glass).
- 4) Put your results into the table recording the volumes used (control variable) and the time taken (dependent variable).
- 5) repeat steps 1-4 using clean conical flask each time.
- 6) However use different concentrations of sodium thiosulfate in each test.
- 7) once you have completed multiple tests for each concentration creates an average/mean value to make your result more accurate.

#### Example 4 mark scheme

05.2	<b>Level 3:</b> The method would lead to the production of a valid outcome. All key steps are identified and logically sequenced.	5–6	AO1 4.6.1.2
	<b>Level 2:</b> The method would not necessarily lead to a valid outcome. Most steps are identified, but the method is not fully logically sequenced.	3–4	
	<b>Level 1:</b> The method would not lead to a valid outcome. Some relevant steps are identified, but links are not made clear.	1–2	
	<b>No relevant content</b>	0	
	<b>Indicative content</b>  <b>method</b> <ul style="list-style-type: none"> <li>• measure (indicated) volume of sodium thiosulfate</li> <li>• place sodium thiosulfate in (conical) flask</li> <li>• measure (indicated) volume of hydrochloric acid</li> <li>• place on cross or between light sensor</li> <li>or</li> <li>connect to a gas syringe</li> <li>or</li> <li>other suitable method for timing a change</li> <li>• add hydrochloric acid to (conical) flask</li> <li>• swirl</li> <li>• start stopclock / stopwatch</li> <li>• measure time for cross to become no longer visible</li> <li>or</li> <li>log light transmission over time</li> <li>or</li> <li>measure time for fixed volume of gas to be produced</li> <li>• repeat and find mean</li> <li>• repeat for different concentrations of sodium thiosulfate</li> <li>or change ratio of sodium thiosulfate volume : water volume</li> </ul> <b>control variables</b> <ul style="list-style-type: none"> <li>• concentration of hydrochloric acid</li> <li>• volume of hydrochloric acid</li> <li>• (total) volume of sodium thiosulfate solution</li> </ul>		



## Evaluate

### Example 5 response

**0 7 . 6** Oyster farmers grow the triploid oysters from young seed oysters.

The production of seed oysters involves the use of a chemical called cytochalasin B. Cytochalasin B has been shown to cause cancer in mice.

Evaluate the production of triploid oysters for supermarkets and restaurants.

**[6 marks]**

Triploid oysters taste good all year and ~~therefore~~ grow very big meaning they can be very useful to people wanting to eat the oysters. However the chemical used in producing it can cause cancer to mice this ~~is~~ could ~~that~~ potentially be dangerous towards humans without the proper safety precautions and could lead to people buying and eating the pod getting cancer so shops and restaurants would need to be very careful.

### Example 5 mark scheme

07.6	<b>Level 3:</b> A judgement strongly linked and logically supported by a sufficient range of correct reasons is given.	5–6	AO3
	<b>Level 2:</b> Some logically linked reasons are given. There also may be a simple judgement.	3–4	AO3 AO2
	<b>Level 1:</b> Relevant points are made. They are not logically linked.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b>  <b>for:</b> <ul style="list-style-type: none"> <li>oysters are available to eat all year <b>so</b> eating oysters has become very popular</li> <li>cheaper to produce <b>so</b> more food for expanding population</li> <li>oysters grow faster <b>so</b> more oysters for supermarkets / restaurants or more profit for farmers</li> <li>stocks are replenished each year <b>so</b> more sustainable fishing</li> <li>they can harvest / sell all year <b>so</b> more stable and profitable for oyster farmers</li> </ul> <b>against:</b> <ul style="list-style-type: none"> <li>carcinogen put into environment / oysters <b>so</b> may enter the food chain or cause cancer in humans</li> <li>bigger triploid oysters may outcompete the smaller native diploid oysters <b>so</b> upset balance of the ecosystem / cause extinction</li> <li>people may not buy / eat them because they have used a carcinogenic chemical <b>so</b> reduced profit for farmers / suppliers / supermarkets / restaurants</li> <li>farmers have to buy new seed oysters every time <b>so</b> more expensive</li> </ul> <b>other content:</b> <ul style="list-style-type: none"> <li>shouldn't be eating the oysters until they are thoroughly tested</li> <li>should be looking for alternative ways to get triploid oysters</li> <li>should stop using triploid oysters until the effect on the (marine) environment is known</li> <li>would replace lost oyster beds <b>but</b> could change the ecosystem</li> <li>oysters available to eat all year <b>but</b> probably do not taste the same or have the same flavour</li> </ul>		4.7.3.2 4.7.3.6 4.7.2.1 4.7.1.3 4.7.1.1



## Example 6 response

0 3 . 3

Table 3 shows information about three methods of contraception.

DO NOT WRITE  
outside the  
box

Table 3

	Condom	Oral contraceptive	Hormone skin patch
Percentage (%) effectiveness	98.0	99.7	99.8
How contraception is obtained	From shops or sexual health clinic	From doctor or sexual health clinic	
Possible side effects	No serious side effects	Headaches, nausea, high blood pressure	Headaches, nausea, blood clots

Evaluate the use of these contraceptive methods.

[6 marks]

The use of a condom has the lowest effectiveness rate however is easily obtained and doesn't have any side effects. Unlike the other two, the other two must be obtained from a doctor or sexual health clinic which isn't as convenient as buying from a shop. These other two methods do have a higher rate of effectiveness however but for this you may have to deal with the side effects, headaches and nausea and either high blood pressure or blood clots depending on which is used. The oral contraceptive is probably the best option if you can deal with the side effects as it isn't noticeable like the skin patch or a condom. High blood pressure may be less of a threat than blood clots depending on who you are.

9

Turn over for the next question

### Example 6 mark scheme

03.3	<b>Level 3:</b> A judgement, strongly linked and logically supported by a sufficient range of correct reasons, is given.	5–6	AO3
	<b>Level 2:</b> Some logically linked reasons are given. There may also be a simple judgement.	3–4	AO3
	<b>Level 1:</b> Relevant points are made. They are not logically linked.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b>  allow converse where applicable <ul style="list-style-type: none"> <li>• condom effectiveness is lower than oral contraceptive and patch</li> <li>• hormone patch slightly more effective than oral contraceptive</li> <li>• all are highly effective</li> <li>• condoms more easily accessible</li> <li>• condoms have no serious side effects, oral contraceptive and patch have possible side effects</li> <li>• only condoms protect against STIs / STDs or named STIs / STDs</li> <li>• side effects don't affect all women</li> <li>• could forget to take oral contraceptive, but patch is applied for long time</li> <li>• could forget to replace patch</li> <li>• patch is visible</li> </ul> ignore costs ignore how the contraceptive works		4.3.1.7 4.3.3.2

Example 7 response

Evaluate the use of each type of carrier bag.

Use data from **Table 1** and your own knowledge.

[6 marks]

The bag for life is the more popular bag but emits alot of carbon dioxide when being made. Where as the less popular disposable bag ~~is~~ emits less carbon dioxide but has a high waste percentage compared to the bag for life. Also the bag for life is more ~~expensiv~~ expensive compared to the disposable bag but lasts alot longer. Disposable bags dont last as long and aren't as strong but they are alot cheaper than a bag for life.

## Example 7 mark scheme

09.6	<b>Level 3:</b> A judgement, strongly linked and logically supported by a sufficient range of correct reasons, is given.	5–6	AO3 4.4.1.4 4.8.1.2 4.8.2.8 4.8.2.9
	<b>Level 2:</b> Some logically linked reasons are given. There may also be a simple judgement.	3–4	
	<b>Level 1:</b> Relevant points are made. They are not logically linked.	1–2	
	<b>No relevant content</b>	0	
	<b>Indicative content</b>  <b>similarities</b> <ul style="list-style-type: none"><li>• both made from crude oil</li><li>• crude oil is a finite resource</li><li>• production and transport of both cause emissions of carbon dioxide</li><li>• carbon dioxide contributes to global warming</li><li>• both can be disposed of in the same ways</li></ul> <b>disadvantages of disposable bags</b> <ul style="list-style-type: none"><li>• each disposable bag generates more waste (than one bag for life)</li><li>• each disposable bag generates approximately 2.5 times more waste <b>or</b> 0.25 g more waste (than one bag for life)</li><li>• if 6 disposable bags used they generate approximately 15 times more waste <b>or</b> 2.35 g more waste (than one bag for life)</li><li>• if 6 disposable bags used it causes more CO<sub>2</sub> to be emitted (than one bag for life)</li><li>• if 6 disposable bags used 2.7 g more CO<sub>2</sub> emitted <b>or</b> approximately 1.4 times more (than one bag for life)</li></ul> <b>advantages of disposable bags</b> <ul style="list-style-type: none"><li>• a disposable bag causes less CO<sub>2</sub> to be emitted (than one bag for life)</li><li>• a disposable bag emits 5.3 g less CO<sub>2</sub> (than one bag for life)</li><li>• if disposable bags used more than once less CO<sub>2</sub> emitted (than one bag for life)</li><li>• if bag for life is used fewer than 5 times, it results in more CO<sub>2</sub> being emitted (than one disposable bag)</li><li>• disposable bags extend less as made from HD poly(ethene)</li></ul>		

## Explain

### Example 8 response

There are changes in the amounts of different energy resources used between 2014 and 2015

Explain the environmental impacts of the changes.

[4 marks]

By using more nuclear power (from 19% to 21%) there will be a change in pollution levels (Carbon dioxide ~~po~~ levels) It will be less greenhouse gases. Also the decrease levels in coal burning (30-22%) will decrease the greenhouse gas levels.

There is a 6% difference in the use of renewables which may impact environment changes as to where they are sourced from eg use of more wood



### Example 8 mark scheme

<b>01.5</b>	<b>Level 2:</b> Relevant points (reasons / causes) are identified, given in detail and logically linked to form a clear account.	3–4	AO3 6.1.3
	<b>Level 1:</b> Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1–2	
	<b>No relevant content</b>	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• less fossil fuel burnt</li> <li>• more nuclear fuel used</li> <li>• more renewables used</li> <li>• gas remained the same</li> <li>• less carbon dioxide released</li> <li>• less greenhouse gases</li> <li>• less global warming</li> <li>• less acid rain</li> <li>• less environmental pollution</li> <li>• more hazardous waste produced (nuclear)</li> <li>• the percentage generated by coal has decreased 8%</li> <li>• the percentage generated by renewables has increased by 6%</li> <li>• the percentage generated by nuclear has increased by 2%</li> </ul>		

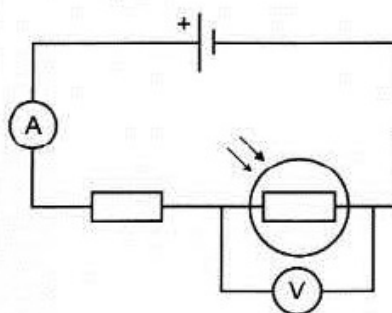


## Example 9 response

**0 6 . 4** The student builds a different circuit.

Figure 11 shows the circuit.

Figure 11



Explain how the readings on both meters change when the environmental conditions change.

[6 marks]

~~An LDR is present~~ A light dependent resistor is in the circuit. Therefore, this means that if the light intensity increases the resistance will decrease. <sup>This means</sup> Because of that the current increases therefore the readings on the voltmeter and the ammeter will also increase. If the light intensity is low then the resistance would ~~de~~ increase, this will result in a decrease in the current. Therefore the readings on the voltmeter and ammeter will also decrease.

## Example 9 mark scheme

<b>06.4</b>	<b>Level 3:</b> Relevant points (reasons / causes) are identified, given in detail and logically linked to form a clear account.	5–6	AO3
	<b>Level 2:</b> Relevant points (reasons / causes) are identified, and there are attempts at logically linking. The resulting account is not fully clear.	3–4	AO2
	<b>Level 1:</b> Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1–2	AO2
	<b>No relevant content</b>	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• resistance of LDR changes when light intensity changes</li> <li>• when light intensity increase resistance of LDR decreases</li> <li>• overall resistance of circuit decreases</li> <li>• potential difference across total resistance remains unchanged</li> <li>• current in ammeter increases</li> <li>• potential difference across fixed resistor increases</li> <li>• potential difference across LDR decreases</li> <li>• reading on the voltmeter decreases</li> <li>• potential difference is shared between the components in series</li> <li>• the lower the resistance of the LDR the smaller the share of the potential difference</li> <li>• reading on the voltmeter decreases</li> </ul>		6.2.1.1 6.2.1.4

### Example 10 response

**0 9 . 3** The sweet potatoes found underground contain starch.

Explain how starch in the sweet potato is produced from carbon dioxide in the air.

**[6 marks]**

- Carbon dioxide in the air is used for photosynthesis
- Carbon dioxide <sup>reacts</sup> ~~along~~ with water to produce glucose and oxygen
- glucose <sup>transp</sup> ~~re~~ported around the plant through the phloem tube
- glucose is used for respiration
- glucose is also <sup>stored</sup> ~~starched~~ as starch for later use

## Example 10 mark scheme

09.3	<b>Level 3:</b> Relevant points (reasons / causes) are identified, given in detail and logically linked to form a clear account.	5–6	AO2
	<b>Level 2:</b> Relevant points (reasons / causes) are identified, and there are attempts at logical linking. The resulting account is not fully clear.	3–4	AO1
	<b>Level 1:</b> Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1–2	AO1
	<b>No relevant content</b>	0	
	<b>Indicative content</b> <ul style="list-style-type: none"> <li>• carbon dioxide enters the leaf through stomata</li> <li>• glucose / sugars produced by photosynthesis (in leaves)</li> <li>• some detail of photosynthesis</li> <li>• transport / translocation (of glucose / sugars)</li> <li>• in phloem</li> <li>• glucose is converted to starch</li> <li>• (starch is a) long chain of glucose / sugar molecules</li> <li>• starch as storage (of glucose / sugars)</li> </ul>		4.2.1.5 4.2.2.5 4.2.2.7

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## Commentaries

### Example 1 commentary

Two simple statements have been made. There is no indication of the magnitude of the differences – simply stating 'less' and 'more' is not sufficient. This is not a Level 2 response.

However, there is an idea of comparison rather than simply making statements, so there is enough here to gain more than 1 mark.

**2 marks awarded**

### Example 2 commentary

This student has presented their comparison in tabular form, which is perfectly acceptable. They have identified scientifically relevant features of both types of cup, and clearly linked each feature to whether it is an advantage or disadvantage. The comparison of the features of the two types of cup is clearly shown in the tabular presentation, and there is numerical data to indicate the magnitude of the difference in cost production.

This is a top Level 2 answer and deserves full marks.

**4 marks awarded**

### Example 3 commentary

The student has given a clear and logically sequenced account of how a reflex action is carried out. They have detailed the electrical transmission from receptor and to effector, identified the neurones involved and indicated how the signal is transmitted across the synapse and the response that would occur.

There is little else this student could have included.

**6 marks awarded**

### Example 4 commentary

The student has given a detailed and logically sequenced method that would allow valid results. It is clearly a Level 3 answer. However, some of the detail is not clear – for instance, how the timing is carried out and the number of repeats so it is not a top Level 3 answer.

**5 marks awarded**

### Example 5 commentary

The student hasn't actually given a judgement so this answer is not in Level 3. They have given some relevant points; 'taste good all year', 'grow very big' (although they've extrapolated this from the fact that they grow rapidly which is not necessarily correct), 'the chemical used in production can cause cancer'. They have linked their statements simply to a reason for and against the use of these oysters; 'can be useful to people wanting to eat the oysters (although they haven't indicated how)', 'could lead to people...eating the food getting cancer' so this is more than a Level 1 response.

Since there are only the two simple statements and the links are simple and not entirely clear, this is a low Level 2 answer.

**3 marks awarded**

### Example 6 commentary

The student gives a judgement (line 11), and a number of linked reasons for and against the use of each type of contraceptive. The level of detail given is sufficient for a top Level 3 mark.

**6 marks awarded**

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### Example 7 commentary

There is no judgement here, so this student is not working in Level 3. They have made an attempt at linking some reasons for and against the use of each type of bag with information given in the table (although no figures are quoted) and using their own knowledge. This answer is just sufficient to reach Level 2.

**3 marks awarded**

### Example 8 commentary

Relevant points have been identified – increase in nuclear power, decrease in coal and a note about a difference in use of renewables (although have not stated whether this is an increase or decrease). Some further detail is given (quoting numbers from the charts), links have been made to changes in pollution and greenhouse gases, and the student has speculated on possible use of renewables (if it's wood based). The link between nuclear fuel and CO<sub>2</sub> pollution is incorrect, but it does not contradict the correct statement about burning coal and can be ignored. This is clearly a Level 2 answer.

They have simply quoted numbers from the charts rather than go a little further with the numbers, and the links are quite simple, so this is not enough for a top Level 2 answer.

**3 marks awarded**

### Example 9 commentary

This student correctly identifies the component as an LDR and states that a high light intensity will cause a decreased resistance of the LDR. Unfortunately, the student writes that both the ammeter and the voltmeter readings will increase with high light intensity. If the student had sense checked this by remembering  $R=V/I$ , they might have realised this mistake.

There is correct reference to current changing, but this has been combined with incorrect statements about potential difference in two places in the response. There is no reference to components being in series or parallel, so no explanation why the voltmeter reading changes. The student has attempted to write in a logical order and there are some relevant statements made, but there are also some incorrect statements that mean the response is limited to Level 2.

**3 marks awarded**

### Example 10 commentary

This answer is given as a clear sequence of relevant bullet points, which link to give a clear account of what happens in the plant. The level of detail given is sufficient for Level 3 and this student gains full marks.

**6 marks awarded**



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# Notes

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# Notes

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# Notes



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