

## Delegate Booklet

Course Title: Understanding assessment and  
improving delivery in International GCSE Biology  
4BI1-20IF1

## About this event

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**Course Title:** Understanding assessment and improving delivery in International GCSE Biology

**Course Code:** 4BI1-20IF1

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## Aims and Objectives of the event

1. Be introduced to the idea of assessment objectives: what are they and why they are used when writing examination papers,
2. Analyse recent question papers and learn which types of question match the different assessment objectives,
3. Investigate different assessment objectives, considering how questions in these areas have been answered by looking at feedback from previous exam series,
4. Discuss strategies for teaching to try and make sure students can access questions targeting different assessment objectives,
5. Review the support Pearson offers for the qualification,
6. Network, discuss best practice and share ideas with other teachers.

## Agenda

Time	Item
4 pm	Welcome Tea and coffee
	Agenda & Introductions
	International GCSE features / Introduction to the new Edexcel International GCSE in Biology
4.30 pm	Assessment Objectives What are they? Using assessment grids
	Break
5 pm	Looking at student responses AO1 How to improve AO1 skills
5.45 pm	Lessons from the examinations
6 pm	Final questions



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## Activity 1 – How were 2019 papers different from previous ones?

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### Purpose:

- Review the impact of assessment and specification changes on centres and candidates

### Task 1

1. Consider how the reformed papers were different from those from the previous specification.
2. Write down four observations from your centre or from your students.
3. Compare your observations with other delegates on your table.



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## Activity 2 – Looking at Assessment Objective Grids

### Purpose:

- Look at how papers are designed to examine the assessment objectives
- Look at how papers are designed to examine the specification content
- Look at how papers are designed to examine across the grade range
- Assign assessment objectives, specification content and target grade to items

### Task 1

1. Look at the June 2019 paper 1B.
2. Now for all items in Questions 2, 3, 4 and 5 classify these in terms of:
  - Content or specification reference
  - Assessment Objective
  - Target grade
  - Question type
  - Compare your answers to those of other delegates

Biology Paper 1B													
Q	Total marks (110)	Spec ref	AO1 (44±2)	AO2 (44±2)	AO3 (22±1)	Grade 1-3 (30)	Grade 4-6 (40)	Grade 7-9 (40)	Maths skill ref	Maths (11)	Recall (16)	MCQ/Objective (6 to 10)	Question Type
1 b i	1	2.4	1			1							
1 b ii	3	2.21	3			1	2						
1 c	2	2.3	2				2						
2 a													
2 b													
2 c i													
2 c ii													
2 d													
3 a													
3 b													
3 c													
4 a													
4 b													
5 a													
5 b i													
5 b ii													
5 b iii													
5 c i													
5 c ii													



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## Activity 3 – Assessment Objective 1 Looking at student responses

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### Purpose:

- Look at student responses to AO1 items from June 2019 paper 1B
- See how assessment objective is examined
- Appreciate how differences in candidate responses result in different marks
- Understand how mark scheme is applied

### Task 1

1. Look at Question 3b.
2. Without reference to published mark scheme rank order samples A–D.
3. Compare your order with other delegates.
4. Now use published mark scheme to mark samples A–D.
5. Compare your marks with those of other delegates.

### Question 3b

#### Sample A

(b) Explain why the energy in the mud worms is not all transferred to the organisms that eat them.

(4)

Some energy is lost in heat as the organisms may heat up their surrounding. Some energy is used in kinetic energy as the energy used to eat the organisms is being lost also.



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## Sample B

(b) Explain why the energy in the mud worms is not all transferred to the organisms that eat them.

(4)

There are several reasons, firstly, ~~when you eat~~ some of the energy is used for respiration, some is lost ~~through~~ through excretion and mostly, egestion, meaning the energy is not being used, finally, some is used in the body for life processes such as growth. Moreover, some of the energy is used ~~the~~ lost in egestion and excretion because the body cannot convert it and growth and movement require energy to happen.

## Sample C

(b) Explain why the energy in the mud worms is not all transferred to the organisms that eat them.

(4)

As they may not eat all of the mudworm, they also may egest some of it in their faeces. Also they may use some of the energy ~~to respire~~ ~~to~~ to move around, or lose it keeping themselves warm. Finally they may also use the energy for metabolic processes such as digestion.



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## Sample D

(b) Explain why the energy in the mud worms is not all transferred to the organisms that eat them.

(4)

they loose ~~energy~~ energy through respiration, they  
eject and excrete a lot of what they eat, the organisms  
eating them may not eat all of them therefore not getting  
as much energy from them and they will not be able to obtain  
all the energy they can whilst digesting the mud worm. Because  
of this only about 10% of the energy will be transferred to  
the next trophic level.





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## Activity 4 – Assessment Objective 1 Looking at student responses

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### Purpose:

- Look at student responses to AO1 items from June 2019 paper 1B
- See how assessment objective is examined
- Appreciate how differences in candidate responses result in different marks
- Understand how mark scheme is applied

### Task 1

1. Look at Question 9b.
2. Without reference to published mark scheme rank order samples A–D.
3. Compare your order with other delegates.
4. Now use published mark scheme to mark samples A–D.
5. Compare your marks with those of other delegates.



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## Question 9b

### Sample A

(b) Water pollution can occur if sewage enters a river.

Explain the biological consequences of sewage pollution on a river ecosystem.

(6)

when  
Sewage pollution releases toxic waste  
into rivers the wildlife fish and  
inhabitants of the water get sick because  
of all bacteria. sewage pollution also  
damages the under water plants as there  
will be less oxygen in the river. However  
some sewage pollution can be used as  
a fertilizer for the plants and help it  
grow. Also the bacteria in the sewage  
pollution will eat on the plant and  
animals. Also the nutrients in the  
sewage enter the river and Eutrophication  
happens.



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## Sample B

(b) Water pollution can occur if sewage enters a river.

Explain the biological consequences of sewage pollution on a river ecosystem.

(6)

A river being contaminated by sewage can lead to eutrophication and problems throughout a river ecosystem. Sewage contains human waste such as faeces and urine. These contain bacteria and can lead to disease affecting organisms in a river's ecosystem. The sewage could kill organisms by them eating it or getting ill (animals) or by the sewage blocking sunlight from the river meaning that the plants can't photosynthesise and die as they can't survive without food (glucose). This would also mean that fish could die as all of the oxygen has been used by the plants so there's none left for the animals to use in respiration. However the sewage may also contain nutrients which could be used by algae (for example) to grow again leading to it to block out the sun resulting in the death of organisms and an unbalanced food chain.

(Total for Question 9 = 9 marks)



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## Sample C

(b) Water pollution can occur if sewage enters a river.

Explain the biological consequences of sewage pollution on a river ecosystem.

(6)

- Sewage pollution on a river causes eutrophication.
- The sewage carries excess phosphates and nitrates into the water, increasing the number of bacteria.
- This increases algae growth.
- Algal bloom forms, which reduces the light penetration for other larger plants, meaning they can't photosynthesise so they die.
- The death of these plants increases the build up of detritus, as well as removing food sources for fish.
- The detritus build up causes an increase in the number of ~~anaerobic~~ aerobic bacteria.
- These bacteria reduce the oxygen availability for other organisms, meaning the organisms can't respire, therefore killing them.
- Eventually, the water becomes anoxic, and no other organisms can live there, so species diversity decreases.



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## PERSONAL LEARNING

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### Things to do:

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### Things to avoid

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### Your ideas: