

T Level Technical Qualification in Animal Care and Management:

Animal Management and Science Occupational Specialism (Level 3)

Synoptic Assignment SAMPLE Assessor Pack

September 2024 v1.1

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Version and Date	Change detail	Section
v1.0 May 2024	Approved version	
V1.1 Sep 2024	Word counts and timings	Assignment brief, General task guidance, Task 4, 6

1. Assessment

This assessment for the occupational specialism consists of a synoptic assignment that includes an assignment brief and then a number of tasks for the candidate to complete. The tasks have been set to reflect the performance outcomes in the qualification specification. They are designed to allow judgement of the candidate to be made across different categories of performance.

This assessment for the occupational specialism has been allocated a set number of marks against each task, based on weightings recommended by stakeholders of the qualification. This mark allocation remains the same for all versions of the assessments, ensuring consistency across assessment versions and over time.

Performance outcomes

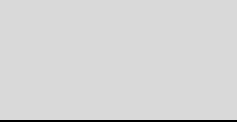
The weighting for this assessment will remain the same for every version of the synoptic assignment. This ensures the appropriate depth and breadth of knowledge and skills for each specialism can be reliably assessed in every version and meets the needs of the industry while keeping comparability between each assessment over time. The synoptic assignment marks contribute 40% towards the overall occupational specialism grade and the following performance outcomes are covered within this assessment.

Performance outcome	Typical knowledge and skills
PO2 Observe the behaviour, security and breeding practices of animals	<p>Develop the knowledge and skills to plan for, monitor and care for breeding animals in accordance with relevant legislation.</p> <p>Develop the knowledge needed for planning population management with reference to conservation and breeding requirements of the animals.</p> <p>Apply skills relevant to population management with reference to conservation and evolution.</p>
PO3 Plan for and manage the good health and welfare of animals	<p>Develop the knowledge and skills to plan for and maintain the health and welfare of animals in accordance with relevant legislation.</p> <p>Develop the knowledge needed to adapt care of animals as necessary to match the life stage of an animal.</p> <p>Apply skills relevant to maintaining the health and welfare of an animal to include physical and visual health checking, monitoring and record keeping and feeding of an animal.</p>
PO4 Carry out safe animal handling practices	<p>Develop the knowledge and skills to handle, restrain and move animals considering animal health and welfare and in accordance with relevant legislation.</p> <p>Develop the knowledge needed to adapt accommodation and handling requirements as necessary to match the life stage of an animal.</p> <p>Apply skills relevant to handling, restraining and moving animals considering health and safety of the handler and the animal and animal welfare.</p>
PO5 Plan, perform, record and communicate findings of scientific investigations in animal science	<p>Develop the knowledge and skills needed to work in a laboratory setting and undertake scientific investigations safely and in accordance with relevant legislation.</p> <p>Develop the knowledge needed to plan, risk assess and conduct a scientific investigation and to present and evaluate the results effectively.</p> <p>Apply skills relevant to undertaking scientific investigations in animal science to include microbiology, microscopy and titrations.</p>

Assessment Overview

Candidates will be assessed against a number of tasks. This synoptic assignment has a total of 78 marks. The table below shows the weighting of the marks for each of the tasks. Candidates will be assessed against these tasks which align to the performance outcomes.

Task	Marks per task	Task weightings	Performance outcomes (PO)
1 Health, accommodation and feeding plan	15	19.1%	PO2 Observe the behaviour, security and breeding practices of animals <hr/> PO3 Plan for and manage the good health and welfare of animals <hr/> PO4 Carry out safe animal handling practices
2 Health assessment	15	19.1%	PO2 Observe the behaviour, security and breeding practices of animals <hr/> PO3 Plan for and manage the good health and welfare of animals <hr/> PO4 Carry out safe animal handling practices
3 Population management report	9	12.1%	PO2 Observe the behaviour, security and breeding practices of animals <hr/> PO3 Plan for and manage the good health and welfare of animals <hr/> PO4 Carry out safe animal handling practices
4 Plan an investigation	12	15.3%	PO3 Plan for and manage the good health and welfare of animals <hr/> PO5 Plan, perform, record and communicate findings of scientific investigations in animal science
5 Carry out an investigation	15	19.1%	PO3 Plan for and manage the good health and welfare of animals <hr/> PO5 Plan, perform, record and communicate findings of scientific investigations in animal science
6 Present your findings	12	15.3%	PO3 Plan for and manage the good health and welfare of animals

			PO5 Plan, perform, record and communicate findings of scientific investigations in animal science
Totals	78	100%	

2. Assignment brief

You are working as an animal scientist at a large animal centre called Guilds Animal Science Centre. At the centre, animals are bred for research and education purposes, with a focus on genetics and evolution. There is also a laboratory on site for the purpose of genetic research and animal science. The centre contains a range of mammalian, reptilian and avian species and all species at the centre have a full husbandry plan created. These animals are kept in an area away from the laboratory so do not fall under The Animal (Scientific Procedures) Act 1986.

Guilds Animal Science Centre has six staff including yourself. As part of your role, you are responsible for the mammal section, creating health, accommodation and feeding plans for individual animals that will become pregnant, as well as the care plans for offspring when they arrive.

Your day-to-day tasks include completing risk assessments, health assessments and scientific investigation of disease outbreak. You will also work with the birds and reptiles to cover for other staff members as necessary. You are also expected to report on the population management of different species at the centre with reference to evolution and conservation.

The laboratory on site can perform testing to help with identification of disease and the best cleaning solutions, treatments and antibiotics to use for the animal. The laboratory technician supports the animal scientists with investigations by providing the equipment that is asked for, and managing any incubation or sterilisation needed. The enclosures are regularly swabbed and bacteria cultured to identify possible pathogen risks at the centre.

Your assignment contains **six** tasks in total and has a total time of **31 hours**. Your assessor will release the tasks to you at the start of each supervised session; they will also provide you with your permitted resources for that task. You will not be permitted any additional notes, such as printed resources and textbooks, or access to the internet, unless otherwise stated in the conditions for assessment.

3. Tasks (guidance for centres)

General task guidance

Please read **all** information carefully before starting the assessment.

Ensure you have read the following guidance before you undertake the assessment of candidates:

- *T level technical qualifications – marking*
- *T level technical qualifications – moderation (updated annually)*
- *T level technical qualifications – teaching, learning and assessment*
- *Technical qualification guides on marking and moderation*
- *Assessor Observation forms*
- *Marking grids following the tasks below*
- *Feedback guidance for assessors.*

All work carried out should be to industry standards, undertaken in a safe manner and compliant with relevant regulations. If a candidate fails to carry out the activities in a safe manner, the assessment should be stopped. Further guidance for assessors can be found in the centre guidance section under health and safety.

Photos and videos must be used to support the qualitative statements captured on the Assessor Observation form and must be taken by the assessor. Details of specific photo/video requirements are outlined in the task information below. Photos/videos must have the date, the candidate's name and their candidate number attached so that they can be differentiated. The candidate does not need to be in the photo/video, the purpose of the photo/video is to demonstrate the quality and standard of work of the specific activities and of the work throughout various stages of the assignment.

All work submitted must be securely saved in an appropriate format as dictated by the evidence requirements. It is important that assessors can access copies of submitted materials to provide to candidates in subsequent tasks as instructed in the task specific guidance.

Time

The time allocated for the completion of the tasks and production of evidence for this assessment is 31 hours. Timings for completion of specific tasks are outlined below.

- Task 1 – 7 hours
- Task 2 – 2.5 hours
- Task 3 – 7 hours
- Task 4 – 3 hours
- Task 5 – 6 hours
- Task 6 – 5.5 hours

There may be sub-tasks within each of the above tasks. Assessors should ensure that the duration for each sub-task is adhered to.

There may be additional resources that are required for a task/sub-task. These will be provided by the assessor and listed within the task instructions within the candidate pack and task specific

guidance. These resources must only be administered to the candidate as per the task specific guidance.

Scheduling assessment sessions

It is the centre's responsibility to arrange how time is managed to fit with timetables and meet the times allocated for each task during the assessment window. Assessment windows are specified in the key date schedule.

The tasks/sub-tasks must be issued by centres in the order specified in the task specific guidance, one at a time to candidates and within in the scheduled assessment times. Candidates are able refer to the brief during all of the scheduled assessment time. Candidates are not permitted to return to tasks/sub-tasks after the assessment time for the task has ended and the next task/sub-task has begun. Candidates must not move on to the next task/sub-task within the assessment session until instructed to do so by the assessor. It is the assessor's responsibility to ensure that all evidence for a task/sub-task has been submitted before administering the next task/sub-task. Candidates are not required to have formal reading time for the scenario and brief, this is included within the duration for Task 1.

When working under supervised conditions for longer sessions, breaks can be facilitated outside of the controlled conditions, ensuring the room is locked and all candidates have vacated once the break begins. All materials must be kept securely during the break.

Centres should aim to schedule tasks in the fewest amount of assessment sessions but ensure that the durations dictated for each task/sub-task are covered. However, to aid deliverability and manageability of assessment, sessions can be split where there is a requirement – for example where timetabling of an appropriate location for six hours is not possible e.g. where a centre's access to computer resources is limited, or where candidates are not available for six consecutive hours (e.g. due to work placement commitments). Where this is necessary, sessions must be timetabled over consecutive days and in as few sessions as possible. All assessment evidence must be stored securely and access to assessment materials and their work only given to candidates during the formal assessment times. All candidates are required to complete a declaration of authenticity along with their evidence submission, and the arrangements must support the assessor in being confident in confirming authenticity.

Where assessments need to be completed in a number of assessment sessions or over consecutive days all practical work areas and any evidence produced must be kept secure and must only be accessed by the assessor. Information and notices should be used to inform other users of the facility that no access will be granted when assessment sessions are in progress. Practical work areas, tools, equipment and systems for the assessment must not be reset until a candidate has completed the full assessment.

Internet access

Where internet access is allowed as part of a task (e.g. for research purposes) candidates must be advised that this is the case and reminded of the importance of submitting their own work and the seriousness of plagiarism, malpractice and collusion. Candidates should be advised that their browser history can be monitored and checked. Depending on the type of task candidates may be requested to submit their internet search history to be considered as part of the submission of evidence, in order to confirm the authenticity of submitted evidence.

Where candidates are allowed the use of computer equipment, but not the use of the internet for a task, equipment should be provided with internet capability disabled (Wi-Fi disabled and machine disconnected from network).

Resources

Candidates must have access to a suitable range of resources as outlined in the task specific guidance to carry out the tasks and, where appropriate, to have the opportunity to choose materials, tools and equipment that demonstrate their ability to select from a range of appropriate resources.

Where candidates need access to evidence that has been submitted as part of a previous task, this will be provided as a copy of the original evidence and will be given at the start of the relevant task.

Layout and file naming requirements

Candidates must present all written work in size 12, Arial font with standard line spacing and borders. Pages should be numbered, and the footer should include the name and enrolment number of the candidate.

Files should be saved securely with a clear file name to support the marking process that allows candidate work to be identified. Evidence must have a file name that clearly indicates the content of the document, including City & Guilds enrolment number/candidate name/qualification number/task/type of evidence. We strongly recommend the following file name convention style:

- XYZ1234_Firstname_Surname_8717-409_Task_1b_Husbandry_plan
- XYZ1234_Firstname_Surname_8717-409_Task_1c_Care_plan

Task specific guidance

Tasks/sub-tasks must be issued in order to the candidates. Candidates can have access to the previous sub-tasks when completing further tasks.

Templates to support this version of the assessment can be found in sections 11 and 12 of this assessor pack.

Templates must be provided in printed and digital format; candidates must complete templates digitally unless otherwise specified. The printed format is for reference only.

Assessors must ensure that all candidate evidence submitted must be saved securely and accessible to the assessor to provide copies to candidates as may be instructed to in this specific task guidance.

Assessors should familiarise themselves with the tasks as well as this guidance for centres.

Task 1 – Health, accommodation and feeding plan

Task 1a – Research notes

Assessor Guidance:

- The time allocated to this task is 1.5 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to have access to internet for this task only
- when allocating the mammal to the candidates, this must be the same mammal that they will be using for Task 2 and must be able to be handled
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Additional Evidence:

- Research notes (one side of A4)
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered
- list of references (this does not form part of their research notes and can be separate)
- file saved securely (to be handed in).

Resources:

- Digital equipment with internet access.

Task 1b – Health, accommodation and feeding plan

Assessor Guidance:

- The time allocated to this task is 4 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates must use the research notes from Task 1a
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A

Candidate Evidence:

- Completed health, accommodation and feeding plan for the pregnant mammal (typically 2000 words).

Resources:

- Digital equipment with **no** internet access.

Task 1c – Care plan

Assessor Guidance:

- The time allocated to this task is 1.5 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates must use the information collated in Task 1a and Task 1b
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate Evidence:

- Completed care plan for the offspring (typically 750 words).

Resources:

- Digital equipment with **no** internet access.

Task 2 – Health check

Task 2a – Risk assessment

Assessor Guidance:

- The time allocated to this task is 1 hour
- all candidates must carry out the task on their own, under **controlled conditions**
- one risk assessment form should be completed for the mammal
- the mammal allocated to the candidate for health checking must be able to be handled – this is the same mammal as allocated in Task 1a
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate Evidence:

- Completed risk assessment.

Resources:

- Risk assessment template (Figure 1)
- digital equipment with **no** internet access.

Task 2b – Handle, restrain and move

Assessor Guidance:

- The time allocated to this task is 10 minutes
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates must handle, restrain and move mammal to a suitable area for a health assessment
- any time needed to walk across fields or get to the animal for larger species is not included in the time allowed for the task and the timing is for the handling and restraint alone
- ratio of candidates to assessor – 1:1.

Assessor Evidence:

- Assessor observation: Yes
- photographic evidence: a minimum of two photos should be included as evidence to show the restraint of the mammal from the front and from the side. The candidate's face must be visible in at least one of the photos. The whole mammal must be in the photos.
- video evidence: N/A
- question and answer session: N/A.

Resources:

- Allocated mammal
- range of movement and restraint equipment to choose from

- suitable area to perform the health check.

Task 2c – Health assessment

Assessor Guidance:

- The time allocated to this task is 20 minutes
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates must carry out a physical health assessment on their allocated mammal and return it to its enclosure
- ratio of candidates to assessor – 1:1.

Assessor Evidence:

- Assessor observation: Yes
- photographic evidence: N/A
- video evidence: a video of the health assessment of the head of the animal must be included as evidence (maximum 10 minutes). The video should show the candidate's face at the start but can then zoom in to the animal, in order to show the thoroughness of health checking. The whole animal must remain in the video to show the handling of the animal whilst the health assessment is taking place.

Resources:

- Allocated mammal
- range of health checking equipment to choose from
- suitable area to perform the health check
- a pen and paper for notes.

Task 2d – Health check recording form

Assessor Guidance:

- The time allocated to this task is 1 hour
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to complete provided health check form (Figure 3)
- candidates to complete a report to include the following:
 - how to adapt the handling of the mammal if it was a pregnant female
 - how to adapt the handling of the mammal if it was a breeding male
 - steps to take if the candidate discovered a congenital issue when health checking a juvenile.
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate evidence:

- Completed health check form (Figure 3)

- report (typically 500 words)
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered.

Resources:

- Health check form template (Figure 3)
- digital equipment with **no** internet access.

Task 3 – Population management report

Task 3a – Research notes

Assessor Guidance:

- The time allocated to this task is 3 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to have access to internet for this task only
- candidates to carry out research and produce notes
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A

Additional Evidence:

- Research notes (up to two sides of A4 – additional pages will not be accepted)
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered
- list of references
- file saved securely (to be handed in).

Resources:

- Digital equipment with internet access.

Task 3b – Population management report

Assessor Guidance:

- The time allocated to this task is 4 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to use research notes collated in Task 3a
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate evidence:

- Population management report on the Galapagos Tortoise (typically 2000 words).

Resources:

- Digital equipment with **no** internet access.

Task 4 – Plan an investigation**Task 4a – Plan****Assessor Guidance:**

- The time allocated to this task is 1.5 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- the candidate must not be told which bacteria species they are being given, but all candidates must receive the same unknown bacteria for this Task and Task 5
- suggested bacteria for the centre to provide for this task are: *Staphylococcus aureus*, *Streptococcus bovis*, *Clostridioides difficile*, *Salmonella sp.*, *Escherichia coli*
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate evidence:

- Completed plan for the investigation (typically 750 words).

Resources:

- Digital equipment with **no** internet access.

Task 4b – Equipment list**Assessor Guidance:**

- The time allocated to this task is 30 minutes
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to complete equipment list template for the investigation
- the centre's own equipment list proforma can be used for this task, but it is important that it is not targeted towards the investigation the candidates are carrying out and contains

equipment the candidate may not need. The proforma should give enough room to state the numbers of each piece of equipment the candidate would need according to their plan

- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate Evidence:

- Completed equipment list template.

Resources:

- Equipment list template
- digital equipment with **no** internet access.

Task 4c – Risk assessment

Assessor Guidance:

- The time allocated to this Task is 1 hour
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to complete risk assessment template (Figure 2) for the investigation
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate evidence:

- Completed risk assessment template (Figure 2).

Resources:

- Digital equipment with **no** internet access
- risk assessment template (Figure 2).

Task 5 – Carry out the investigation

Task 5a – Bacterial identification

Assessor Guidance:

- The time allocated to this task is 3 hours – this is suggested to be split as 2 hours before incubation and 1 hour after incubation

- all candidates must carry out the task on their own, under **controlled conditions**
- a bacterial identification sheet must be provided to the candidate which has an identification tree for gram staining and bacterial shape to help identify the bacteria for this task; it is recommended that the relevant pages from Bergey's Manual* are used for this.
- incubation times and temperatures of the bacteria for the candidates' investigations must match the candidates' plans as far as possible but where these are unsuitable or unsafe, the centre should choose the incubation times; the centre can choose between incubation at 37 degrees for 24 hours, or at room temperature for 48-72 hours; this is not included in the candidates' time allowed
- using the equipment list produced by the candidate in Task 4b, a Provider's laboratory technician may lay out the equipment requested for the experiment
- laboratory technicians may help to video candidates but cannot otherwise be involved in the investigation
- ratio of candidates to assessor – 1:5.

*Bergey's Manual of Systematics of Archaea and Bacteria (2015)

Assessor Evidence:

- Assessor observation: Yes
- photographic evidence: N/A
- video evidence: a video of the candidate producing one streak plate must be included for evidence (approx. 10-15 minutes). The video should include the candidates face at the start but may then move down toward the work station in order to show the technique more clearly. The whole work station should be in view in order to show working practices and techniques.
- question and answer session: N/A.

Resources:

- Completed plan form Task 4a
- equipment from the equipment list produced in Task 4b
- bacteria identification sheet
- unidentified bacteria
- pen, pencil, paper.

Task 5b – Antibiotic investigation

Assessor Guidance:

- The time allocated to this task is 3 hours – this is suggested to be split as 2 hours before incubation and 1 hour after incubation
- all candidates must carry out the task on their own, under **controlled conditions**
- the antibiotic discs supplied to the candidate must be clearly labelled with at least one antibiotic known to be effective against the bacteria supplied, and one that is known to be less effective. The candidate should receive a choice of between 3 and 6 discs, but can choose as many as they like for their investigation within this range
- incubation of bacteria for the candidates' investigations must remain the same across all candidates
- the centre can choose between incubation at 37 degrees for 24 hours or at room temperature for 48-72 hours. This is not included in the candidates' time allowed

- ratio of candidates to assessor – 1:5.

Assessor Evidence:

- Assessor observation: Yes
- photographic evidence: a minimum of 2 photos should be included as evidence to show the agar plates from above and below. The candidate's labelling of the agar plate (including their name) must be visible in one of the photos. The placement of the antibiotic discs on the agar must be visible in at least one of the photos.
- video evidence: N/A
- question and answer session: N/A.

Resources:

- Completed plan form Task 4a
- equipment from the equipment list produced in Task 4b
- identified bacteria from task 5a
- antibiotic discs
- pen, pencil, paper.

Task 6 – Present your findings

Task 6a – Research notes

Assessor Guidance:

- The time allocated to this task is 3 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to have access to their results from Task 5a and Task 5b
- candidates to have access to internet for this task only
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Additional Evidence:

- Research notes (one side of A4)
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered
- list of references
- file saved securely (to be handed in).

Resources:

- Digital equipment with internet access
- plan from Task 4a

- results from Task 5a and Task 5b.

Task 6b – Scientific report

Assessor Guidance:

- The time allocated to this task is 2.5 hours
- all candidates must carry out the task on their own, under **controlled conditions**
- candidates to have access to their results from Task 5a and Task 5b
- ratio of candidates to assessor – group invigilation.

Assessor Evidence:

- Assessor observation: N/A
- photographic evidence: N/A
- video evidence: N/A
- question and answer session: N/A.

Candidate evidence:

- Scientific report (typically 1250 words).

Resources:

- Digital equipment with **no** internet access
- results from Task 5a and 5b.

4. Tasks

Task 1 Health, accommodation and feeding plan

Guilds Animal Science Centre is planning for the pregnancy of a mammal. The mammal already has a full husbandry plan and is a completely healthy individual. Parts of the husbandry plan must be adapted for when the mammal becomes pregnant and for the offspring. You will provide the candidates with the species of mammal they are going to be working with.

Candidates must:

- a) Carry out research and produce notes (one side of A4) for their allocated mammal. Their research should include:
 - health, accommodation and feeding requirements for the mother and offspring to include:
 - pregnancy and lactation requirements for the mother
 - requirements of the offspring in the first 0-48 hours
 - a list of references.

- b) Using their research notes from Task 1a, create a health, accommodation and feeding plan for the mammal during pregnancy and lactation.

Their plan should include justification of their choices and consequences of not following the health, accommodation and feeding plan.

- c) Using their research notes from Task 1a, create a care plan for the first 0-48 hours of the offspring's life, which includes the extra considerations needed for the offspring in addition to what they have already considered for the pregnant mammal in Task 1b.

Their plan should include justification of their choices and consequences of not following the care plan.

Resources

Task 1a:

- digital equipment with internet access.

Task 1b:

- digital equipment with **no** internet access.

Task 1c:

- digital equipment with **no** internet access.

Conditions of assessment:

- The time allocated for this assessment is **7 hours**.
 - Task 1a – 1.5 hours
 - Task 1b - 4 hours
 - Task 1c - 1.5 hours
- candidates must carry out the task on their own, under **controlled conditions**.

Controlled conditions:

- Candidates must only work on tasks in the allocated times
- use of the internet is permitted for Task 1a only

- assessment evidence must be handed in at the end of each session for secure storage
- candidates are not permitted to bring any additional materials into the assessment session
- candidates must not share or discuss their work with other candidates.

What must be produced for marking:

Task 1b:

- The candidate's completed health, accommodation and feeding plan for their allocated pregnant mammal (typically 2000 words).

Task 1c:

- The candidate's completed care plan for the offspring (typically 750 words).

Additional evidence for this task:

- N/A

What must be submitted:

Task 1a:

- Up to 1 side of A4 research notes. Additional pages will not be accepted.
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered
 - file saved securely to be handed in.
- A list of references (these are additional to the notes and are not counted in the page limit of one side of A4).

Task 2 Health assessment

As part of the management of the Guilds Animal Science Centre, all animals have a regular, physical health assessment. You will provide the candidates with the mammal they will be working with.

The candidate must:

- a) Complete a risk assessment for the handling, restraint, movement and health assessment of their allocated mammal. You must provide the candidates with a template for the risk assessment.
- b) Using appropriate handling and restraint, move their allocated mammal to a suitable place where a health assessment can take place.
- c) Carry out a physical health assessment on their allocated mammal. Once completed, replace the mammal in its enclosure.
 - they may take handwritten notes during the health assessment to aid them with Task 2d.
- d) Using any notes captured in Task 2c, fill in the health check form provided, discussing their findings in terms of overall health and welfare of the mammal.
- e) Following the completion of the health check form, they will now produce a written report to include:
 - how they would adapt the handling of the mammal if it was a pregnant female
 - how they would adapt the handling of the mammal if it was a breeding male
 - the steps they would take if you discovered a congenital issue when health assessing a juvenile.

Resources:

Task 2a:

- risk assessment template (Figure 1)
- digital equipment with **no** internet access.

Task 2b:

- their allocated mammal
- a range of movement and restraint equipment to choose from
- a suitable area to perform the health assessment.

Task 2c:

- their allocated mammal
- a range of health checking equipment to choose from
- a suitable area to perform the health assessment
- a pen and paper for notes.

Task 2d:

- health check form template (Figure 3)
- digital equipment with **no** internet access
- any handwritten notes that they took in Task 2c.

Conditions of assessment:

- The time allocated for this assessment is **2.5 hours**.
 - Task 2a - 1 hour
 - Task 2b - 10 minutes
 - Task 2c - 20 minutes
 - Task 2d - 1 hour
- candidates must carry out the task on your own, under **controlled conditions**.

Controlled conditions:

- Candidates must only work on their tasks in the allocated times
- use of the internet is not permitted
- assessment evidence must be handed in at the end of each session for secure storage
- candidates are not permitted to bring any additional materials into the assessment session
- candidates must not share or discuss their work with other candidates.

What must be produced for marking:**Task 2a:**

- their completed risk assessment.

Task 2d:

- their completed health check form
- their written report (typically 500 words).

Additional evidence for this task:**Task 2b:**

- practical observation form from the assessor
- photographic evidence of the restraint of the mammal.

Task 2c:

- practical observation form from the assessor
- video evidence of the health checking of the head of the mammal.

Task 3 Population management report

The Guilds Animal Science Centre regularly reviews the population management of each species held on site and considers their evolution and conservation.

The candidates must:

- a) Carry out research and produce notes (two sides of A4) for the Galapagos Tortoise (*Chelonoidis niger*). Their research should include:
 - evolution of the Galapagos Tortoise over the last 200 years
 - conservation of the Galapagos Tortoise
 - management of the Galapagos Tortoise
 - ethical and legal considerations for conservation and management of the Galapagos Tortoise
 - a list of references.

- b) Using their research from Task 3a, produce a written report, discussing the population management of a Galapagos Tortoise in a captive environment. Their report should include:
 - the evolution of the Galapagos Tortoise
 - conservation for the Galapagos Tortoise including the ethical and legal considerations for the tortoise
 - the management strategies needed for keeping and breeding the Galapagos Tortoise including the ethical and legal considerations for the tortoise.

Resources

Task 3a:

- digital equipment with internet access

Task 3b:

- digital equipment with **no** internet access.

Conditions of assessment:

- The time allocated for this assessment is **7 hours**.
 - Task 3a - 3 hours
 - Task 3b - 4 hours
- Candidates must carry out the task on your own, under **controlled conditions**.

Controlled conditions:

- Candidates must only work on their tasks in the allocated times
- use of the internet is permitted for Task 3a only
- assessment evidence must be handed in at the end of each session for secure storage
- candidates are not permitted to bring any additional materials into the assessment session
- candidates must not share or discuss their work with other candidates.

What must be produced for marking:

Task 3b:

- Population management report on the Galapagos Tortoise (typically 2000 words).

Additional evidence for this task:

- N/A

What must be submitted:

Task 3a:

- Up to 2 sides of A4 research notes. Additional pages will not be accepted.
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered
 - file saved securely to be handed in.
- A list of references (these are additional to the notes and are not counted in the page limit of one side of A4).

Task 4 Plan an investigation

One of the enclosures at the Guilds Animal Science Centre has been linked to animals showing signs of illness, including diarrhoea and lethargy. The cause of this illness needs to be identified in order to treat the animals effectively and prevent further reoccurrence. The enclosure has been swabbed for bacteria and you have been tasked with identifying the cause of the illness.

Candidates must:

- a) Create a scientific plan with appropriate structure, in readiness for conducting an investigation, to determine the identity of the bacteria that has been found in the enclosure. They will be given 6 hours in total for the investigation (not including incubation time). This plan should include:
 - justifications of the methodology chosen for identifying the bacteria, including aseptic technique
 - a method of investigation for recommending the best antibiotic to treat this individual bacteria.
- b) Produce a list of equipment that they will need to carry out their investigation. You should provide the candidates with a template for their equipment list.
- c) Complete a risk assessment for carrying out their investigation. You should provide the candidates with a template for the risk assessment.

You should provide the candidate with an unidentified bacteria, a bacteria identification sheet and antibiotic discs in the following task.

Resources

Task 4a:

- digital equipment with **no** internet access.

Task 4b:

- equipment list template (provided by your assessor)
- digital equipment with **no** internet access.

Task 4c:

- digital equipment with **no** internet access
- risk assessment template (Figure 2).

Conditions of assessment:

- The time allocated for this assessment is **3 hours**.
 - Task 4a - 1.5 hours
 - Task 4b - 30 minutes
 - Task 4c - 1 hour
- candidates must carry out the task on their own, under **controlled conditions**.

Controlled conditions:

- Candidates must only work on their tasks in the allocated times
- use of the internet is not permitted
- assessment evidence must be handed in at the end of each session for secure storage
- candidates are not permitted to bring any additional materials into the assessment session

- candidates must not share or discuss their work with other candidates.

What must be produced for marking:

Task 4a:

- completed scientific plan for the investigation (typically 750 words).

Task 4b:

- completed equipment list.

Task 4c:

- completed risk assessment.

Additional evidence for this task:

- N/A

Task 5 Carry out the investigation

The candidates are now required to carry out their investigation to determine the bacteria present in the enclosure. They will also need to determine which antibiotic is the most suitable to use for the bacteria you have been given.

Candidates must:

- a) Using their plan from Task 4a, and the bacteria identification sheet and bacteria provided by the assessor, carry out their investigation to determine which bacteria is present in the enclosure.

Record the results of the investigation – these may be handwritten and then scanned into a PDF document for use in subsequent tasks.

- b) Using their plan from Task 4a and their bacteria identified in Task 5a, carry out an investigation to determine which antibiotic would be the best for the bacteria.

Record the results of the investigation – these may be handwritten and then scanned into a PDF document by the assessor for use in subsequent tasks.

Resources

Task 5a:

- their completed plan from Task 4a
- their equipment from the equipment list produced in Task 4b
- bacteria identification sheet
- unidentified bacteria
- pen, pencil, paper.

Task 5b:

- their completed plan from Task 4a
- their equipment from the equipment list produced in Task 4b
- their identified bacteria from Task 5a
- antibiotic discs
- pen, pencil, paper.

Conditions of assessment:

- The time allocated for this assessment is **6 hours** (this does not include time needed for incubation).
 - Task 5a - 3 hours (suggested 2hrs before incubation and 1 hour after incubation)
 - Task 5b - 3 hours (suggested 2hrs before incubation and 1 hour after incubation)
- candidates must carry out the task on their own, under **controlled conditions**.

Controlled conditions:

- Candidates must only work on their tasks in the allocated times
- assessment evidence must be handed in at the end of each session for secure storage
- candidates are not permitted to bring any additional materials into the assessment session
- candidates must not share or discuss their work with other candidates.

What must be produced for marking:

- Results from the investigations in Task 5a and Task 5b
 - these can be handwritten and then scanned onto a PDF document for safe storage and use in subsequent tasks
 - these may include any photographs of the final results that they have taken.

Additional evidence for this task:

Task 5a:

- video of aseptic technique/streak plate
- practical observation form from the assessor.

Task 5b:

- photographic evidence of their plate(s) with the antibiotic discs
- practical observation form from the assessor.

Task 6 Present your findings

Candidates are now required to produce a scientific report based on their investigations. The report will be shared with their colleagues from the Guilds Animal Science Centre.

Candidates must:

- a) Carry out research and produce notes (two sides of A4) for the bacteria and antibiotics that they investigated in Task 5. Their research should include:
 - how the identified bacteria is affected by the antibiotics
 - any antibiotic resistance for the antibiotics used in task 5 and how this may affect their efficacy.

- b) Produce a scientific written report which:
 - analyses their findings from the investigation using their results from Task 5c
 - discusses the implications of antibiotic resistance on the Guilds Animal Science Centre
 - evaluates their laboratory skills and the techniques used for the investigation in Task 5a and Task 5b.

Resources:

Task 6a:

- digital equipment with internet access
- their plan from Task 4a
- their results from Task 5a and Task 5b.

Task 6b:

- digital equipment with **no** internet access
- their results from Task 5a and Task 5b
- their research notes from Task 6a.

Conditions of assessment:

- The time allocated for this assessment is **5.5 hours**.
 - Task 6a - 3 hours
 - Task 6b - 2.5 hours
- candidates must carry out the task on their own, under **controlled conditions**.

Controlled conditions:

- Candidates must only work on their tasks in the allocated times
- use of the internet is permitted for Task 6a only
- assessment evidence must be handed in at the end of each session for secure storage
- candidates are not permitted to bring any additional materials into the assessment session
- candidates must not share or discuss their work with other candidates.

What must be produced for marking:

Task 6b:

- scientific report (typically 1250 words).

Additional evidence for this task:

- N/A

What must be submitted:

Task 6a:

- Up to two sides of A4 research notes. Additional pages will not be accepted.
 - text to be Arial font, size 12
 - standard line spacing and borders
 - page numbered
 - file saved securely to be handed in.
- A list of references (these are additional to the notes and are not counted in the page limit of one side of A4).

5. Centre guidance

Guidance provided in this document supports the administration of this assessment.

The following documents, available on the City & Guilds website, provide essential generic guidance for centres delivering T Level technical qualifications and **must** be referred to alongside this guidance:

- *T level technical qualifications – marking*
- *T level technical qualifications – moderation (updated annually)*
- *T level technical qualifications – teaching, learning and assessment.*

This assessment is designed to require the candidate to make use of their core knowledge, understanding and the practical skills they have built up over the course of their learning to tackle tasks/problems/challenges.

This approach to assessment emphasises to candidates the importance and applicability of the full range of their learning to practise in their industry area and supports them in learning to take responsibility for transferring their knowledge, understanding and skills to the practical situation, fostering independence, autonomy and confidence.

Candidates are provided with an assignment brief. They then have to draw on their knowledge and skills and independently select the correct processes, tools, equipment, materials and approaches to take, to complete the brief.

During the learning programme, it is expected that tutors will have taken the opportunity to set shorter, formative tasks that allow candidates to be supported to independently use the learning they have so far covered, drawing this together in a similar way, so they are familiar with the format, conditions and expectations of the assessment.

Candidates should not be entered for the assessment until the end of the course of learning for the qualification, so they are in a position to complete the assignment successfully.

Health and safety

Candidates must not be entered for assessment without being clear of the importance of working safely and ethically and having attended sufficient practical training to be able to work safely and ethically. The assessor must immediately stop an assessment if a candidate works unsafely or unethically. At the discretion of the assessor, depending on the severity of the incident, the candidate may be given a warning. If they continue to work unsafely or unethically, risking the safety of themselves or others, their assessment must be ended for that specific task. Candidates are permitted to progress to the other tasks/sub-tasks in the assessment. The candidates will only be awarded marks based on the evidence they produced within the task. If a candidate does not gain enough marks from other tasks, then the candidate will have the opportunity to retake another version of the OS assessment in a future series. Any warnings issued to a candidate must be considered as part of the marking process and recorded on the candidate record form (CRF). Any actions that have led to that warning must be detailed on the CRF so they can be considered along with the other evidence when applying the descriptors in the mark scheme.

Compliance with timings

Due to the nature of this assessment, the maximum time allowances provided must be adhered to. They refer directly to assessment time, not any additional setting up times the centre needs to create an appropriate assessment environment.

It is the centre's responsibility to plan sufficient assessment sessions as stated in each of the tasks, under the appropriate conditions, within the assignment window, to allow candidates the opportunity to complete the assessment tasks.

Where candidates are required to plan their work, they should have their plans confirmed for appropriateness in relation to the time allocated for each task, to ensure their planning has not left them with too short a time to complete the tasks safely. Any planning that is not appropriate must be recorded on the candidate record form (CRF) as part of the marking process.

Candidates should be allowed sufficient time to fully demonstrate the range of their skills, however this also needs to be reasonable and practicable. Candidates should be allowed to overrun their own planned timings in order for evidence of a range of their skills to be captured. If, however, the time required exceeds the maximum time allowance for the task, the centre must stop the assessment and base the marking on the evidence up to that point.

Any guidance or feedback relating to timings/planning should follow the guidance provided in the section *Guidance and feedback* below.

Word counts

Typical word counts/page lengths of evidence are provided within the requirements of each task. Where word counts/page lengths have been provided, these are given as an indicative guide only to support the candidate to understand the type of response that is expected from you. The candidate will not be penalised as part of the marking if their response is below or above the indicative word count provided, however they should consider the clarity and succinctness of their response if it goes above the word count/page length.

The number of pages indicated for the research notes is a mandatory requirement. The candidate should add page numbers to their research notes and the assessor should only submit the indicated number of pages of research notes for marking. Additional research pages of notes will not be accepted.

Assessor candidate ratios

The number of candidates an assessor will be able to observe at one time is indicated in the task specific guidance section for each task.

Observation evidence

Observation notes form part of the candidate's evidence and must capture evidence of candidate performance during the practical tasks describing how well the activity has been carried out, rather than stating the steps/actions, the candidate has taken. The notes must be very descriptive and focus on the quality of the performance in relation to the quality indicators in the marking grid. They must provide sufficient, appropriate evidence that can be used by the assessor (and moderator) to mark the performance using the marking grid. These descriptions will be used, along with photo and/or video evidence to choose the relevant marking band and mark within the band so that candidates can be reliably and validly differentiated based on their performance. Evidence captured in the observation form must give the necessary information to enable the final assessment of the task at a later date. This is to allow a holistic judgement to be carried out after all evidence for the

task is available, at which point full consideration of how the candidate has applied both their skills and their knowledge during the practical can be given.

Identifying what it is about the performances that is different between candidates can clarify the qualities that are important to record. Each candidate is likely to carry out the same steps, so a checklist of this information would not help differentiate between them. However, qualitative comments on how well they do it, and quantitative records of accuracy and tolerances would.

The assessor should refer to the marking grid to ensure appropriate aspects of performance are recorded. These notes will be used for marking and moderation purposes and so must be detailed, accurate and differentiating.

Assessors should refer to The *T Level technical qualifications guides on marking and moderation* and the *Guide Standard Exemplification Materials* to support with the collection of evidence through observation.

Assessors should ensure that any required additional supporting evidence including e.g. photos or video can be easily matched to the correct candidate, are clear, well-lit and show the areas of particular interest in sufficient detail and clarity for assessment (i.e. taken at appropriate points in production, showing accuracy of measurements where appropriate).

Assessor marking and justification is completed on a separate form (CRF) to differentiate this evidence from the judgement.

As far as possible candidates must not be distracted, or their performance affected by the process of observation and evidence collection.

The T Level technical qualifications guides on marking and moderation are essential guidance documents and are available on the City & Guilds website. These provide further information on preparing for assessment, evidence gathering, standardisation, marking and moderation, and must be referred to when planning and carrying out assessment.

Video and photo evidence in T Level Technical qualifications

The assessment materials for each assignment identify the minimum candidate and assessor evidence requirements to support marking and moderation. Where ephemeral evidence (e.g. areas of candidate performance that may be hard to capture with photos and assessor notes alone) plays a significant part of the practical assessment, City & Guilds will prescribe the type/capture where the use of video is necessary for practical assessment components (e.g. specifying exactly which elements of the practical must be videoed, or photographed), and any technical specifications for these forms of evidence (e.g. length of videos, maximum file sizes etc) will also be supplied. Photo and video evidence will be submitted along with the written candidate evidence and assessor evidence (AO forms) as described in the additional evidence section of the task.

If this is the case then the video evidence must meet these minimum requirements, in order to be considered by moderators:

- as per the guidance in section 2.3.2 of the *Marking and Moderation Guide for Centres*, assessors must ensure that this evidence can be easily matched to the correct candidate and task, is clearly shot, well-lit and shows the areas of particular interest in sufficient detail and clarity for assessment (i.e. filmed at appropriate points in production, showing accuracy of measurements where appropriate)
 - the qualitative written evidence provided by assessors must

- clearly identify the parts of the video that are being referred to, when used as supporting evidence. Using a timecode for this is recommended
- include their judgement on the performance being demonstrated.
- Section 6.5 of the *Centre Manual* also contains general information about the requirements for video evidence submission.

Please note that centres must ensure that video evidence is clear and meets the minimum requirements. The ability of the moderators to take this evidence into account may be impaired and delay the moderation process if the requirements are not met.

Minimum evidence requirements for marking and moderation

The sections in the assignment:

- **What must be produced for marking, and**
- **Additional evidence for this task.**

These list the minimum requirements of evidence to be submitted for marking and the moderation sample.

Evidence produced during assessment above and beyond this may be submitted, as long as it provides useful information for marking and moderation and has been produced under appropriate conditions.

While technological methods that support the capturing or creating of evidence can be helpful e.g. pin board style websites for creating mood boards, the final evidence must be converted to a suitable format for marking and moderation which cannot be lost/deleted or amended after the end of the assessment period (e.g. screen prints, pdf files). Considerations around tracking authenticity and potential loss of material hosted on such platforms during assessment is the centre's responsibility.

Note: combining candidates' individual pieces of evidence into single files or zip files may make evidence management during internal marking more efficient and will greatly simplify the uploading of the moderation sample.

Where the minimum requirements have not been submitted for the moderation sample by the final moderation deadline, or the quality of evidence is insufficient to make a judgement, the moderation, and therefore any subsequent adjustment, will be based on the evidence that has been submitted. Where this is insufficient to provide a mark on moderation, a mark of zero must be given.

Preparation of candidates

Candidates should be aware of which aspects of their performance will give them good marks in assessment. This is best carried out through routinely pointing out good or poor performance during the learning period, and through formative assessment. Although candidates will not have access to the marking grids during the assessment, candidates should be made aware of what they need to do to achieve a pass or distinction by referring to and being formatively assessed against grade descriptors as part of their formal learning programme.

During the learning programme, direct tutor instruction in how to approach tasks through modelling, support, guidance and feedback are critical. However, gradual removal of this support is necessary in preparation for summative assessment. This supported approach is not valid for summative assessment.

The purpose of summative assessment is to confirm the standard the candidate has reached as a result of participating in the learning process. Candidates should be encouraged to do the best they can and be made aware of the difference between these summative assessments and any formative assessments they have been subject to. Candidates will not have access to the marking grids. Refer to the *T Level Technical qualifications – teaching, learning and assessment* centre guidance document, available on the City & Guilds website for further information on preparing candidates for Technical qualification assessment.

Guidance on assessment conditions

The assessment conditions that are in place for this assignment are to:

- ensure the rigour of the assessment process
- provide fairness for candidates
- give confidence in the outcome.

They can be thought of as the rules that ensure that all candidates who take an assessment are being treated fairly, equally and in a manner that ensures their result reflects their true ability.

Conditions outlined within the tasks in this assignment do not affect any formative assessment work that takes place, although it is advised that candidates are prepared for the conditions they will need to work under during summative assessment.

The evidence for the tasks that make up this assignment must be completed under the specified conditions. This is to ensure authenticity and prevent malpractice as well as to assess and record candidate performance for assessment in the practical tasks. It is the centre's responsibility to ensure that local administration and oversight gives the assessor sufficient confidence to be able to confirm the authenticity of the candidate's work.

Security and authentication of candidate work

Candidate evidence must be kept secure to prevent unsupervised access by the candidate or others. Where evidence is produced over a number of sessions, the assessor must ensure learners and others cannot access the evidence without supervision. This might include storing written work or artefacts in locked cupboards and collecting memory sticks of evidence produced electronically at the end of each session.

Candidates are required to sign declarations of authenticity, as is the assessor. The relevant form is included in this assignment pack and must be signed after the production of all evidence.

Where the candidate or assessor is unable to or does not confirm authenticity through signing the declaration form, the work will not be accepted at moderation and a mark of zero will be given. If any question of authenticity arises e.g. at moderation, the centre may be contacted for justification of authentication.

Accessibility and fairness

Where a candidate has special requirements, assessors should refer to the *Access arrangements and reasonable adjustments* section of the City & Guilds website.

Assessors can support access where necessary by providing clarification to any candidate on the requirements or timings of any aspect of this assignment. Assessors should not provide more guidance than the candidate needs as this may impact on the candidate's grade, see the guidance and feedback section below.

All candidates must be provided with an environment, time frame and resources that allows them reasonable access to the full range of marks available.

Where candidates have worked in groups to complete one or more tasks for this assessment, the assessor must ensure that no candidate is disadvantaged as a result of the performance of any other team member. If a team member is distracting or preventing another team member from fully demonstrating their skills or knowledge, the assessor must intervene.

Guidance and feedback

Guidance must only support access to the assignment brief and must not provide feedback for improvement. The level and frequency of clarification and guidance must be

- recorded fully on the candidate record form (CRF)
- taken into account along with the candidate's final evidence during marking
- made available for moderation.

Assessors must not provide feedback on the quality of the performance or how the quality of evidence can be improved. This would be classed as malpractice. However, this does not apply if the assessor asks questions as part of the assessment process. Such requirements will be specifically stated within task centre guidance.

Assessors should however provide general reminders to candidates throughout the assessment period to check their work thoroughly before submitting it, and to be sure that they are happy with their final evidence as it may not be worked on further after submission.

Candidates can rework any evidence that has been produced for each task during the time allowed.

Assessors should check and be aware of the candidates' plans to ensure management of time and resources is appropriate, and so any allowed intervention can take place at an appropriate time.

The information on the guidance given and captured on the CRF is part of the evidence that must be taken into account along with the other evidence for the task when marking. It is up to the assessor to decide if the guidance the candidate has required suggests they are lacking in any performance outcome and consider the severity of the issue when applying the marking criteria. The assessor must record where and how guidance has had an impact on the marks given, so this is available should queries arise at moderation or appeal.

What is, and is not, an appropriate level of guidance

- The assessor should intervene with caution if a candidate has taken a course of action that will result in them not being able to submit the full range of evidence for assessment. However, this should only take place once the assessor has prompted the candidate to check that they have covered all the requirements. Where the assessor has to be explicit as to what the issue is, this is likely to demonstrate a lack of understanding on the part of the candidate rather than a simple error, and full details should be recorded on the CRF.
- The assessor should not provide guidance if the candidate is thought to be able to correct the issue without it, and a prompt would suffice. In other words, only the minimum support the candidate actually needs should be given, since the more assessor guidance provided, the less of the candidate's own performance is being demonstrated and therefore the larger the impact on the marks awarded.
- The assessor must not provide guidance that the candidate's work is not at the required standard or how to improve their work. In this way, candidates are given the chance to identify and correct any errors on their own, providing valid evidence of knowledge and skills that will be credited during marking.
- The assessor must not produce any templates, pro-formas, work logs etc. If templates are provided by City & Guilds as part of the assignment, these should not be adapted but can be provided to candidates either electronically or on paper. Compliance with this requirement will be checked at moderation.

All specific prompts and details of the nature of any further guidance must be recorded on the relevant form and reviewed during marking and moderation.

6. Marking

Guidance on marking

Please refer to the *T Level Technical qualifications – marking and moderation* centre guidance documents for further information on gathering evidence suitable for marking and moderation, and on using the marking grid and forms.

The Candidate Record Form (CRF) is used to record:

- details of any guidance or the level of prompting the candidate has received during the assessment period
- rough notes bringing together relevant evidence from across tasks during marking
- summary justifications when holistically coming to an overall judgement of the mark for each assessment objective and overall
- if an assessment has to be stopped on the grounds of Health and Safety or if a candidate has been working in an unsafe manner.

The Assessor Observation form is used to record:

- descriptive information and evidence of candidate performance during an observation.

Carrying out marking using task marking

The process of marking each task is iterative and should follow the process below which will become more embedded over time as the descriptors become familiar. It is recommended to refer back to these frequently however, so the standard does not unintentionally drift over the marking period.

The indicative content gives an indication of the expected content parameters the responses are likely to cover, and which aspects of the evidence are relevant. It is not exhaustive, and an acceptable answer may concentrate more on depth rather than fully cover the range indicated or deviate into relevant topics not listed.

The specific task evidence listed within the assessor pack and marking grid must be used to make a judgement on candidate performance.

The assessment tasks guide the production of valid evidence under appropriate conditions for assessment and each task should be treated as a single package of evidence for the purposes of marking.

Should the candidate make an error that is further compounded through the inter-dependent nature of the tasks and carry through that error, the assessor would penalise the candidate only once.

Timing of marking

Assessors can start marking against a task once all contributing evidence has been collected.

Also, it is possible to begin recording the notes that will justify the marking for some tasks as evidence is produced, with the final mark only being decided once the complete array of evidence is available. This is particularly the case if later evidence is more confirmatory, and the earlier evidence is sufficiently informative for the qualities being assessed to make this a useful exercise.

Through planning, it should be possible to identify any evidence that can start being reviewed earlier, and the tasks that could be scheduled for earlier completion of marking e.g. while observation evidence is fresh in the mind should this be helpful. Care must of course be taken to ensure any evidence required by candidates to progress with another task are available for that task to take place. In addition, a sense check must take place across marking for each task, and across assessors, at the end to ensure marking has not drifted during the period. This may take the form of comparing candidate work to check that the ranking of quality of evidence matches the ranking of marks – where there are discrepancies marking should be checked for accuracy. These checks should be the responsibility of the Internal Quality Assurer and undertaken as part of the centre's Internal Quality Assurance strategy.

Process for each task:

- Select the range of evidence relevant for making the judgement – this is indicated in the mark scheme for each task.
- Scan/read the candidate evidence, any notes on the CRF e.g. regarding level of support/guidance recorded, evidence captured by the assessor and the indicative content and band descriptors in the mark scheme.
 - Note: for any warnings given during the assessment, the actions that have led to that warning must be detailed on the CRF so they can be considered along with the other evidence when applying the descriptors in the mark scheme.
 - Note: the evidence contained on the CRF must be considered and a judgement made on the level of performance the candidate has independently demonstrated – this will vary depending on the level of support detailed on the CRF – i.e. consider all relevant evidence and then judge the appropriate mark following the process below.
- Make an initial assessment of the required evidence as a whole (acknowledging uneven performance across evidence), considering each band in turn and considering the level of performance described in the context of the knowledge and skills in the indicative content to make a balanced judgement of the best band to use as a starting point.
- Read the evidence and review it against the band descriptor in more detail,
 - deciding if the response is securely sitting within the band i.e. all quality characteristics described by the band descriptor are seen, and strongly meets the level of performance described by the descriptor holistically (i.e. across the range of relevant evidence):
 - check the descriptor for the level above
 - if the evidence clearly shows some of the characteristics of the higher band, select a suitable mark at the bottom of that band
 - if *not* showing characteristics of the higher band revert to the original band, select a mark at the higher end of that mark range.
 - If the response is not securely in the band, but *is partially* showing the characteristics of the band,
 - check the descriptor of the level below
 - decide on a suitable mark either at the bottom of the original band as some characteristics shown, or top of the lower band if it better describes the quality of the characteristics being shown.
 - If the response is largely meeting the band, with only a few concerns, and is not showing characteristics aligning with the higher or lower bands, the appropriate mark is likely to be in the middle range.
 - If there is no alignment with the descriptor, reassess the starting band, and begin again.
- Based on the level of alignment with the descriptor, confirm the final mark within the band, bearing in mind that the available marks form an *evenly distributed scale*:

- if the quality of response fully aligns with the performance described by the descriptor – assign a high mark within the band
- if the quality of the response partially aligns with the performance described by the descriptor – assign a low to medium mark within the band
- consider the quality compared to a range of similar responses (e.g. relevant annotated training material exemplars, responses reviewed during standardisation, and through experience) choose a mark on the point on the scale that would give an appropriate ranking for the assessed piece of evidence in relation to this information and in comparison with that of the rest of the cohort for that task.

7. Marking grids

There is a marking grid for each assessment task that must be assessed within this occupational specialism synoptic assignment.

Task 1 – Health, accommodation and feeding plan

Guidance for markers

The following **evidence** must be used to assess performance against each task:

- Task 1b
 - completed health, accommodation and feeding plan for the pregnant mammal.
- Task 1c
 - completed care plan for the offspring.

Note: where there is insufficient evidence to award a mark, a zero mark may be given.

Indicative content

Task 1b – health, accommodation and feeding plan for when the mammal is pregnant.

As part of the health, accommodation and feeding plan, candidates may discuss general health requirements with justifications to include:

- Routine health checks (frequency and recording).
 - protection from pain, injury, suffering and disease' and 'exhibit normal behaviour' - link to Animal Welfare Act 2006
 - adapt handling for situations as they occur, pregnancy, whelping, lactation
 - physical and behavioural changes due to pregnancy, whelping and lactation
 - normal parameters to include all body parts, temperature, pulse and respiration (TPR) and why they may change or to recognise when they are abnormal. May change health considerations (change in body temperature, behaviour, presentation of genitalia when health checking).
- Common diseases (specific to species allocated).
 - signs and symptoms (what to look for, monitoring seriousness of symptoms, recording of symptoms)
 - prevention (biosecurity controls between animals and people, vaccination – core and non-core for species, consideration of notifiable or zoonotic diseases)
 - diagnosis (veterinary intervention, physical observation and monitoring, including other health testing mechanisms e.g. faecal tests, urine analysis, blood tests, genital swabs, diagnostic imaging)

- treatment (only a vet can prescribe under the veterinary surgeons act 1966, record keeping of treatment and administration, training for staff to be able to administer if required)
- transmission (direct, indirect, fomites, vectors, how it relates to accommodation and cleaning protocols).
- Procedure if illness detected:
 - isolation (to prevent spread)
 - veterinary care (to diagnose and treat)
 - barrier nursing (to prevent spread).
- Results of stress/poor welfare on dam and foetus:
 - absorption or abortion due to lack of nutrients, energy used in fighting disease, stress of incorrect handling, cortisol production).
- Preventative care:
 - vaccination/timing (core and non-core vaccines and when to give)
 - parasite control (how and when to give, consideration of safety for pregnant mammals)
 - foot care (nail trimming, hoof trimming, relevant to species)
 - grooming (when and how, frequency, how it might affect the pregnant mammal and when to stop prior to parturition and when to restart after weaning).

As part of the health, accommodation and feeding plan, candidates may discuss general accommodation requirements with justifications to include:

- 'Suitable environment' and 'housed with and apart from other animals' for species and changes required for pregnancy and offspring (link to Animal Welfare Act 2006) – may include annotated plan of accommodation
- sizes of accommodation (increased space allowance for pregnancy and offspring) and links to codes of practice
- materials and structure of accommodation (safe and secure, ease of cleaning, ventilation, lighting, heating provision, ease of viewing mother without disruption, different zones within the accommodation e.g. sleeping areas with heated areas and other non-heated areas)
- cleaning protocol before, during and after pregnancy (frequency, method, use of chemicals, reducing disruption to nesting mother, record keeping)
- bedding and substrate suitability for mother and offspring
- safety and security (regular checks, record keeping of checks, ensure suitable for all inhabitants).

As part of the health, accommodation and feeding plan, candidates may discuss general feeding requirements with justifications to include:

- 'Suitable diet' – link to Animal Welfare Act 2006
- standard nutritional requirements (what they are currently fed, a weekly feeding plan, supplements)
- brief overview of digestive system (type according to species and how the feed given relates to the digestion)

- when to feed more (3rd trimester and lactation, without overfeeding, specific species exceptions e.g. cats fed extra from day 1 of pregnancy confirmation)
- specific nutritional needs during pregnancy and lactation (high protein, high calcium)
- species specific essential nutrients (e.g. taurine in cats)
- effects of inappropriate diet (poor birth weight, poor colostrum quality, dam weight loss/gain, eclampsia, depressed immune system, insufficient energy/issues at parturition)
- calculating the ration (basal metabolic rate (BMR)).

As part of the health, accommodation and feeding plan candidates may relate their work to relevant legislation and regulation with justifications to include:

- Animal Welfare Act 2006
- Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018
- APHA/DEFRA Codes of Practice
- Veterinary Surgeons Act 1966
- Species specific legislation.

As part of the health, accommodation and feeding plan justifications, candidates may link to specific areas of breeding and pregnancy to explain how it relates to husbandry plan to include:

- pregnancy confirmation and monitoring (scans, blood samples, urine samples, rectal exam, ultrasound, behavioural change, x-ray) – may change health considerations (recording, health checking presentation of weight and genitalia). Accuracy of monitoring important for animal welfare (feeding requirements, space requirements, companionship requirements), and cost/staffing considerations for centre (training of staff, veterinary fees, increased staffing, increased medical demands)
- welfare during gestation and knowledge of developmental stages at each trimester – may affect health (signs to look out for when health checking, vet treatments, medication), accommodation requirements (space allowance, substrate, frequency of cleaning, provision of nesting area, safety requirements e.g. pig rails) and feeding changes (when and how much to increase feed, additional nutritional requirements, palatability of feed)
- parturition, problems and associated hormones (oxytocin, prolactin) – will affect health (dangers of parturition including injury, exhaustion, dystocia and behavioural changes during the process, when to intervene), accommodation (secure and safe for parturition to occur), cleaning (when/frequency to clean, restrictions on chemicals, importance of hygiene) and feeding requirements (nutritional changes, energy demand, supporting lactation, supplements for preventing ill health e.g. calcium to prevent eclampsia)
- associated health issues (mastitis, metritis, retained placenta, eclampsia, uterine prolapse) – affects health planning (ongoing monitoring of the animal, medications, veterinary treatment, increase of staff training to recognise)
- weaning process (species specific) – feeding requirements (when to reduce feed for the mother), when and how to start the weaning process and how this affects accommodation requirements.

As part of the task, candidates may discuss the consequences of not following their plan to include:

- poor animal welfare – consequences of not following legislation e.g. fines, prosecution, imprisonment, barred from owning animals, stress
- poor animal health – increased cost of veterinary care, low yields of offspring due to premature death or abortion, increased disease risk to mother and offspring
- poor nutrition – sickly offspring due to not enough nutrition *in utero*, lack of energy for parturition, affecting immune system
- poor accommodation – poor biosecurity leading to disease, lack of heating may affect health, incorrect size may affect mother's ability to care for offspring (e.g. squashed infants), conditions related to poor hygiene (e.g. mastitis)
- failing to comply with legislation and regulation.

Task 1c – care plan for the first 0-48 hours of offsprings life

As part of the care plan, the candidate may include information with justifications on:

Parental care and how it impacts the care off the offspring:

- maternal/paternal/biparental (do both parents need to be present, will affect accommodation size)
- alloparental (do they need to remain as part of the social group – will affect accommodation requirements)
- imprinting (reduction of human interference).

Immediate care:

- airway (enable breathing, do you need to get involved or is mother doing it themselves)
- umbilicus (disinfect, check severed safely, hernia risk, when to get involved)
- minimal disturbance (to give mammal space to give birth without interference)
- congenital defects (cleft palate, how and when to check, steps to take if found).

Consequences of not bonding/feeding:

- rejection (reasons, e.g. human interference or poor health of the offspring, steps to take to mitigate, when to get involved, when to remove from parent)
- malnutrition (importance of colostrum and timing, has mother got enough milk supply, are there enough teats for offspring e.g. triplet lambs)
- precocial/altricial and how this affects care (additional nutrition from day 1 e.g. guinea pigs and greens/vegetables, not touching the offspring to avoid human scent where possible)
- standing/movement (how soon the offspring should be getting up and moving around, when to intervene, visual health assessment of gait and movement)
- innate behaviours (feeding/finding the teat, standing, flight animal response).

Health assessment:

- disease (anything that may be passed from mother to offspring, prevention of external sources of disease/hygiene protocols)
- congenital defects (species likelihood of defects, when and how to check, next steps)
- vet care (initial check, ongoing care/monitoring)
- weight checking (when to weigh, monitoring and recording weights)
- record keeping (health checks, vet care, weights, birth times).

Feeding:

- timing and importance (production of milk from mother, ability to feed if there is competition e.g. large litters, ensuring weight gain)
- gut permeability to antibodies (importance of getting nutrition in first 48 hours before gut closes to larger protein molecules such as antibodies)
- latching (physical ability to latch, enough teats to go around).

Accommodation:

- environmental temperature (cannot self-regulate, need additional heat source, no draughts)
- hygiene (disease prevention, when and how to clean, frequency of cleaning, chemical use).

Consequences of not following the plan:

- infant death (due to poor nutrition, health or post-parturition accident)
- poor health (due to poor nutrition, lack of colostrum, unclean environment)
- failing to comply with legislation and regulation.

Performance Outcome	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks
Marks per band	1-5	6-10	11-15	15
	Plans have basic structure and clarity, with minimal consideration of animal health and welfare requirements, resulting in minimally functional plans.	Plans have good structure and clarity, with moderate consideration of animal health and welfare requirements, resulting in reasonably functional plans.	Plans have excellent structure and clarity, with thorough consideration of animal health and welfare requirements, resulting in highly functional plans.	
	The plans include some accurate information in terms of different husbandry needs to maximise the animals' health and welfare with limited detail throughout.	The plans include mostly accurate information in terms of different husbandry needs to maximise the animals' health and welfare with moderate detail throughout.	The plans include highly accurate information in terms of different husbandry needs to maximise the animals' health and welfare with excellent detail throughout.	
	Basic justifications for plans, with limited use of reasoning to make connections to the requirements of the animals. Limited understanding of the consequences to the animal if the plans are not followed.	Moderate justifications for plans, with some use of reasoning to make connections to the requirements of the animals. Reasonable understanding of the consequences to the animal if the plans are not followed.	Excellent justifications for plans, with thorough use of reasoning to make connections to the requirements of the animals. Excellent understanding of the consequences to the animal if the plans are not followed.	

Task 2 – Health assessment

Guidance for markers

The following **evidence** must be used to assess performance against each task:

- Task 2a
 - A risk assessment for the handling, restraint, movement and health assessment of the allocated mammal.
- Task 2b
 - Practical observation form from the assessor
 - Photographic evidence of the movement of the mammal.
- Task 2c
 - Video evidence of the health check of the head of the mammal
 - Practical observation form from the assessor.
- Task 2d
 - Health check form and report.

Note: where there is insufficient evidence to award a mark, a zero mark may be given.

Indicative content

Task 2a – completed risk assessment.

As part of the risk assessment the candidate should consider the scenario and location that they are risk assessing. Identify hazards and risks with adequate control measures (training, PPE, equipment use, cleaning up) and who may be harmed (candidate, assessor, others). The candidate should rate (high/med/low) the level of the risks identified as part of the health assessment tasks and identify the control measures to prevent or minimise the risks to the individual. Hazards may include:

- human related (incorrect PPE, incorrect technique, manual handling, equipment use)
- animal related (bite, scratch, crush, zoonoses, behaviour)
- environmental related (slip, trip, fall, fire, natural disaster, distance from amenities, distance and route).

Task 2b – practical observation form for the handling/restraint/movement.

As part of the handling, restraint and movement of the mammal the candidate may:

- consider the method of handling and restraint of the mammal. Consideration could include: safe, secure and welfare friendly handling, minimal stress, efficient, effective

- use appropriate handling and restraining equipment (PPE and species-specific equipment e.g. carry cage, crate, collar, lead, basket, harness) and techniques (welfare friendly, positioning of handler, appropriate method to the mammal, consistent and welfare friendly handling and restraint)
- consider the restraint method on removal of the mammal from enclosure to the health assessment examination table/area
- adapt and modify the handling and restraint technique during the movement of the mammal to reduce stress and maintain wellbeing (e.g. if a rabbit is flighty or jumpy then use of an appropriate sized towel and wrapping the animal may be considered).

Task 2c – practical observation form of the health assessment and video of the candidate performing the health assessment.

As part of the health assessment the candidate may:

- consider the method of handling and restraint of the mammal during the health assessment. Consideration could include: safe, secure and welfare friendly handling, least stressful, efficient, effective
- adapt and modify the handling and restraint technique to reduce animal stress and improve wellbeing (e.g. if a rabbit is flighty or jumpy then use of an appropriately sized towel and wrapping the animal may be considered)
- consider the order and techniques with which they carry out the health assessment – starting at the eyes to avoid cross contamination from dirtier areas of the mammal
- check each body part and make notes on their findings (good and bad signs of health)
- carry out the health assessment within the time frame given (candidates may rush or take their time and this should be taken into consideration for the welfare of the animal and thoroughness of the assessment).

Task 2d – filled in health check form and report.

As part of filling in the health check form the candidate may:

- give descriptions of the good and bad health of each parameter checked
- give explanations of what an indication of poor health may be a sign of (e.g. purulent discharge from the nose may be a sign of influenza).

As part of the report the candidate may discuss:

- Adaptations of the handling of the mammal if it was a pregnant female:
 - limited handling to prevent stress and physical injury to the mammal
 - visual health assessments more often to reduce need for physical health assessments
 - prevent stress as stress causes cortisol production which can affect the pregnancy hormones causing abortion/absorption of the foetus.
- Adaptations of the handling of the mammal if it was a breeding male:
 - check area for security prior to handling in case of escape as behaviour is likely to be more erratic

- no proximity to breeding females – testosterone-fueled behaviour may mean escape is more likely
- consider the extra strength of the male compared to a female animal which may require more skilled handling.
- Steps to take if a congenital issue is found in the juvenile:
 - vet check to diagnose and treat the congenital defect if required (e.g. a cleft palate may need an operation to ensure anatomy allows for correct eating/drinking)
 - monitor for behaviours and weight change to ensure getting correct nutrients and any defects are not preventing normal growth and development
 - record any issues found in the animal's records.

Performance Outcome	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks
Marks per band	1-5	6-10	11-15	15
	Risk assessment is complete and covers a limited range of hazards, risks and control measures for the handling, restraint and health assessment.	Risk assessment is complete and covers a good range of hazards, risks and control measures for the handling, restraint and health assessment.	Risk assessment is complete and covers an excellent range of hazards, risks and control measures for the handling, restraint and health assessment.	
	Basic practical and dexterity skills with limited consideration of the welfare of the animal and safe working practices, resulting in a health assessment that minimally meets the health and welfare needs of the animal.	Good practical and dexterity skills with some consideration of the welfare of the animal and safe working practices, resulting in a health assessment that mostly meets the health and welfare needs of the animal.	Excellent practical and dexterity skills with comprehensive consideration of the welfare of the animal and safe working practices, resulting in a health assessment that thoroughly meets the health and welfare needs of the animal.	
	Selection and use of tools, equipment and materials are minimally appropriate to the task.	Selection and use of tools, equipment and materials are mostly appropriate to the task.	Selection and use of tools, equipment and materials are always appropriate to the task.	
	The health check form is complete with some inaccuracies . The accompanying report includes limited information and technical accuracy.	The health check form is complete and is mostly accurate . The accompanying report includes moderate information and technical accuracy.	The health check form is complete and is consistently accurate . The accompanying report includes thorough information and technical accuracy.	

Task 3 – Population management report

Guidance for markers

The following **evidence** must be used to assess performance against each task:

- Task 3b
 - Population management report.

Note: where there is insufficient evidence to award a mark, a zero mark may be given.

Indicative content

Task 3b – a population management report.

As part of the evolution of the Galapagos tortoise, candidates may include:

- description of the species and evolution with adaptive radiation and adaptations to environment
- alterations to the species/subspecies over the past 200 years (shell shape, neck length)
- reference to Charles Darwin and his work (1835).

As part of the conservation and legal and ethical considerations of the Galapagos tortoise candidates may include:

- Convention on International Trade in Endangered Species (CITES) (threatened) and International Union for Conservation of Nature (IUCN) red list
- reasons for conservation strategies, linking to eild populations and the impact on the environment
- concern with illegal trade (exotic species) – explanation of implications and specific issues associated such as illegal import/smuggling of the tortoise and its products
- knowledge of population and risks associated (human risks, environmental risks, predatory risks, climate risks)
- methods suitable to maintain/preserve the population/current conservation activities (*in situ* conservation activities such as creation of reserves, limited visitor numbers, breeding programmes, habitat conservation, effectiveness and areas for improvement of each)
- organisations involved in conservation:
 - British and Irish Association of Zoos and Aquariums (BIAZA) – *ex situ* conservation
 - European Association of Zoos and Aquariums (EAZA) – *ex situ* conservation
 - Worldwide Association of Zoos and Aquariums (WAZA) – *ex situ* conservation
 - World Wide Fund for Nature (WWF) – additional funding for the reduction of human impact on endangered species
 - International Union for Conservation of Nature (IUCN) – monitor wild population levels.
- ethical and legal considerations of conservation:

- ethical theories and how they may relate to the tortoise
- welfare and education in conservation
- human-animal interaction during conservation
- Convention on International Trade in Endangered Species (CITES).

As part of the management strategies for keeping and breeding the Galapagos Tortoise candidates may include:

- risks associated with keeping the adults and juvenile tortoises with justification (public interest, lack of knowledge in staff, veterinary knowledge and skills, health and safety)
- details of the breeding patterns of the tortoise (how often do they mate, how long are they gravid, care of eggs, incubation)
- strategies for keeping the tortoise in a captive environment – accommodation/environmental needs, health needs, space needs, identification and prevention of stress
- ethical and legal considerations of keeping and breeding the Galapagos tortoise:
 - ethics of breeding (should it be managed or kept natural, can it be done artificially, are eggs taken away to be incubated)
 - concerns of the public and mitigation of those concerns
 - Animal Welfare Act 2006 – any kept vertebrate falls under the act
 - Zoo Licensing Act 1981 – can only be kept with a license.

Performance Outcome	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks
Marks per band	1-3	4-6	7-9	9
	Understanding of the evolution of the species is limited and the conservation of the species has been discussed with basic detail.	Understanding of the evolution of the species is good and the conservation of the species has been discussed with moderate detail.	Understanding of the evolution of the species is excellent and the conservation of the species has been discussed with comprehensive detail.	
	Depth and breadth of population management knowledge of the species is limited , and the report contains some inaccuracies .	Depth and breadth of population management knowledge of the species is moderate , and the report is mostly accurate .	Depth and breadth of population management knowledge of the species is excellent , and the report is highly accurate .	
	The report includes minimal references to the ethical and legal considerations, demonstrating a limited understanding of their effects on conservation and population management.	The report includes good references to the ethical and legal considerations, demonstrating a moderate understanding of their effects on conservation and population management.	The report includes excellent references to the ethical and legal considerations, demonstrating a thorough understanding of their effects on conservation and population management.	

Task 4 – Plan an investigation

Guidance for markers

The following **evidence** must be used to assess performance against each task:

- Task 4a
 - Plan for the investigation.
- Task 4b
 - Equipment list.
- Task 4c
 - Risk assessment.

Note: where there is insufficient evidence to award a mark, a zero mark may be given.

Indicative content

Task 4a

As part of the scientific plan, candidates should structure the plan to include:

- Title
- Aims/objectives (what they will achieve during the investigation)
- Introduction – purpose of investigation and link to brief, why it is important to check antibiotic sensitivities prior to use
- Resources – what is needed to complete the investigation and link to equipment list
- Methodology – step by step of how to carry out the investigation with justifications
 - wear the correct PPE and work safely
 - establish work station with equipment and resources close to hand
 - label all agar plates prior to starting
 - streak plate for bacteria using aseptic technique, loop inoculation, working with flames, fume cupboards, justification of agar type
 - incubate for specified time – justification of time and temperature
 - identify the bacteria – microscope, gram staining, using bacteria identification sheet
 - streak plate with antibiotic discs – possible repeats (sterilisation of loop)
 - incubate for specified time – justification of time and temperature
 - measure inhibition zones
 - record results in a table.

Task 4b

Use of a provided proforma to identify numbers of equipment needed in preparation for the investigation – numbers will reflect the candidate's plan and include repeat equipment if this has identified in their plan.

Task 4c

As part of the risk assessment the candidate should consider the scenario and location that they are risk assessing (e.g. the centre's set up/table/floor). Identify hazards and risks with adequate control measures (training, PPE, equipment use, cleaning up) and who may be harmed (candidate, assessor, others). The candidate should RAG (high/medium/low) rate the level of the risks identified as part of the health assessment tasks and identify the control measures to prevent or minimise the risks to the individual. Hazards may include:

- human related (incorrect PPE, incorrect technique, manual handling, equipment use)
- laboratory related (chemicals, glassware, fumes, microorganisms)
- environmental related (slip, trip, fall, fire, natural disaster, distance from amenities, distance and route).

Performance Outcome	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks
Marks per band	1-4	5-8	9-12	12
	The plan has an adequate structure and order and has been presented with minimal attention to detail resulting in a minimally functional scientific plan.	The plan has a good structure and order and has been presented with some attention to detail resulting in a moderately functional scientific plan.	The plan has an excellent structure and order and has been presented with thorough attention to detail resulting in a thoroughly functional scientific plan.	
	Basic justifications of methodology, with limited use of reasoned arguments to make minimally relevant connections to the scientific investigation.	Some justifications of methodology, with moderate use of reasoned arguments to make mostly relevant connections to the scientific investigation.	Thorough justifications of methodology, with excellent use of reasoned arguments to make highly relevant connections to the scientific investigation.	
	Risk assessment is complete and covers a limited range of hazards, risks and control measures.	Risk assessment is complete and covers a good range of hazards, risks and control measures.	Risk assessment is complete and covers an excellent range of hazards, risks and control measures.	

Task 5 – Carry out the investigation

Guidance for markers

The following **evidence** must be used to assess performance against each task:

- Task 5a
 - Practical observation form from the assessor
 - Video of aseptic technique/streak plate
 - Results.
- Task 5b
 - Practical observation form from the assessor
 - Photo of plate with antibiotic discs
 - Results.

Note: where there is insufficient evidence to award a mark, a zero mark may be given.

Indicative content

As part of both investigations, the candidate should demonstrate:

- wear the correct PPE and work safely (e.g. lab coats and glasses, fume cupboards)
- establish work station with equipment and resources close to hand (e.g. prepare the area before starting)
- label all agar plates prior to starting
- work with dexterity and efficiency (e.g. fluidity of movement and ability to handle equipment).

Task 5a

As part of the bacterial identification investigation, candidates may:

- create a lawn of bacteria using aseptic technique, loop inoculation, working with flames, fume cupboards
- repeat investigations for fairness
- incubation of plates – preparation and labelling (e.g. securing with elastic band, upside down, labelling)
- identify the bacteria using a variety of techniques– microscope, gram staining, using bacteria identification sheet.

Task 5b

As part of the antibiotic investigation, candidates may:

- lawn new streak plates with antibiotic discs using aseptic technique, loop inoculation, working with flames, fume cupboards
- repeat investigations for fairness

- select antibiotic discs and their presentation and spacing on the agar plates
- undertake incubation of plates – preparation and labelling (e.g. securing with elastic band, upside down, labelling)
- measure inhibition zones from the plates directly or from scans – accuracy of measurement.

Performance Outcome	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks
Marks per band	1-5	6-10	11-15	15
	Basic practical and dexterity skills with limited consideration of the laboratory safe working practices, resulting in a minimally fair and valid scientific investigation.	Moderate practical and dexterity skills with good consideration of the laboratory safe working practices, resulting in a moderately fair and valid scientific investigation.	Excellent practical and dexterity skills with thorough consideration of the laboratory safe working practices, resulting in a highly fair and valid scientific investigation.	
	Measurements and techniques used have some inaccuracies resulting in a minimally fair and valid scientific investigation with adequate recording of results.	Measurements and techniques used are mostly accurate resulting in a moderately fair and valid scientific investigation with moderate recording of results.	Measurements and techniques used are highly accurate resulting in a highly fair and valid scientific investigation with excellent recording of results.	
	The methodology from the plan has been used with minimal consistency to inform decision making throughout the investigation.	The methodology from the plan has been used with moderate consistency to inform decision making throughout the investigation.	The methodology from the plan has been used with high consistency to inform decision making throughout the investigation.	

Task 6 – Present your findings

Guidance for markers

The following **evidence** must be used to assess performance against each task:

- Task 6b
 - Scientific report.

Note: where there is insufficient evidence to award a mark, a zero mark may be given.

Indicative content

Task 6b – scientific report in suitable layout.

As part of the scientific report, candidates should structure the report to include:

- Title
- Aims/objectives (what they hoped to achieve during the investigation)
- Analysis of results – how the bacteria was identified and the inhibition zones of the antibiotics, display of results in a table or graph, which was the most suitable antibiotic and why
- Discussion – how the bacteria has been affected by the antibiotics and any antibiotic resistance considerations for the antibiotics and bacteria used (what is antibiotic resistance, short and long term affects to animals, centre, bacteria, staff, nosocomial transmission)
- Conclusion – how the investigation went and self-evaluation of the candidate's laboratory skills and techniques, how antibiotic resistance will affect the Guilds Animal Science Centre.

Performance Outcome	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks
Marks per band	1-4	5-8	9-12	12
	The report has an adequate structure and order and has been presented with minimal attention to detail resulting in a minimally informative scientific report.	The report has good structure and order and has been presented with some attention to detail resulting in a moderately informative scientific report.	The report has an excellent structure and order and has been presented with thorough attention to detail resulting in a highly informative scientific report.	
	Basic analysis of the results of the scientific investigation with limited links to the scenario in the brief.	Good analysis of the results of the scientific investigation with some links to the scenario in the brief.	Comprehensive analysis of the results of the scientific investigation with excellent links to the scenario in the brief.	
	Basic evaluation of the skills and techniques used for the investigation. Reasoning is minimally clear and technically accurate.	Good evaluation of the skills and techniques used for the investigation. Reasoning is mostly clear and technically accurate.	Thorough evaluation of the skills and techniques used for the investigation. Reasoning is consistently clear and technically accurate.	

8. Links to Maths, English and Digital Skills

The table below indicates where each of the General Maths, English and Digital Competencies have been integrated into the assignment tasks.

Task	Skills
1 Health, accommodation and feeding plan	CSA, CSB, CSC, CSD, EC1, EC2, EC3, EC4, EC5, MC1, MC2, DC1, DC2, DC3, DC4, DC5, DC6
2 Health check	CSA, CSB, CSC, CSD, EC1, EC2, EC3, EC4, EC5, MC1, DC1, DC2, DC3, DC4
3 Population management report	CSA, CSB, CSC, CSD, EC1, EC2, EC3, EC4, EC5, DC1, DC2, DC3, DC4, DC5, DC6
4 Plan an investigation	CSA, CSB, CSC, CSD, EC1, EC2, EC3, EC4, EC5, MC1, MC2, MC4, DC1, DC2, DC3, DC4, DC5, DC6
5 Carry out an investigation	CSA, CSB, CSC, CSD, EC1, EC2, EC3, EC4, EC5, MC1, MC2, MC4
6 Present your findings	CSA, CSB, CSC, CSD, EC1, EC2, EC3, EC4, EC5, MC1, MC2, MC4, DC1, DC2, DC3, DC4, DC5, DC6

9. Declaration of authenticity

Assessment ID	Qualification number
Candidate name	Candidate number
Centre name	Centre number

Additional Support

Has the candidate received any additional support in the production of this work?

No **Yes** (Please tick appropriate)

If yes, give details below (and on a separate sheet if necessary).

--

Candidate:

I confirm that all work submitted is my own, and that I have acknowledged all sources I have used.

Candidate signature	Date

Assessor:

I confirm that all work was conducted under conditions designed to assure the authenticity of the candidate's work, and am satisfied that, to the best of my knowledge, the work produced is solely that of the candidate.

Assessor signature	Date

Note: Where the candidate and/or assessor is unable to or does not confirm authenticity through signing this declaration form, the work will be returned to the centre and this will delay the moderation process. If any question of authenticity arises, the assessor may be contacted for justification of authentication.

10. Candidate Record Form (CRF)

(T level Technical Qualification – Animal Management and Science Occupational Specialism)

Candidate name	Candidate number
Centre name	Centre number

Marker Notes – Please always refer to the relevant marking grid for guidance on allocating marks and make notes which describe the quality of the evidence and justification of marks.

Please record any guidance, intervention (including Health and Safety) or feedback that is given to a candidate.

Expand boxes as required.

1 Health, accommodation and feeding plan															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mark	Notes and justification														
2 Health check															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mark	Notes and justification														
3 Population management report															
	1	2	3	4	5	6	7	8	9						
Mark	Notes and justification														
4 Plan an investigation															

	1	2	3	4	5	6	7	8	9	10	11	12			
Mark	Notes and justification														
5 Carry out an investigation															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mark	Notes and justification														
6 Present your findings															
	1	2	3	4	5	6	7	8	9	10	11	12			
Mark	Notes and justification														

Internal assessor signature	Date

Total

11. Assessor observation forms

Assessor Observation Form Task 2 – Health check

Task	Assessment component number
Task 2 – Health check b) Handle, restrain and move c) Physical health check	
Candidate name	Candidate number
Centre name	Assessor

Complete the table below referring to the relevant marking grid, found in the assessment pack. Do not allocate marks at this stage.

Assessor observation	Notes – detailed, accurate and differentiating notes which identify areas of strength and weakness are necessary to distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.
b) Handle, restrain and move	

Assessor observation	Notes – <i>detailed, accurate and differentiating notes which identify areas of strength and weakness are necessary to distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.</i>
c) Physical health check	

Assessor signature	Date

Assessor Observation Form Task 5 – Carry out the investigation

Task	Assessment component number
Task 5 – Carry out the investigation a) Identify the bacteria b) Best antibiotic	
Candidate name	Candidate number
Centre name	Assessor

Complete the table below referring to the relevant marking grid, found in the assessment pack. Do not allocate marks at this stage.

Assessor observation	Notes – detailed, accurate and differentiating notes which identify areas of strength and weakness are necessary to distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.
a) Identify the bacteria	

Assessor observation	Notes – <i>detailed, accurate and differentiating notes which identify areas of strength and weakness are necessary to distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.</i>
b) Best antibiotic	

Assessor signature	Date

12. Annex

Risk Assessment (Figure 1)

To be issued to the candidate with Task 2a.

Risk Assessment (Figures 2)

To be issued to the candidate with Task 4c.

Health Check Sheet (Figure 3)

To be issued to the candidate with Task 2d

Figure 1 - Candidate evidence - Risk assessment

This template may be modified by adding items/rows only.

Candidate's name	_____	Enrolment number	_____
Task / Activity	Task 2a	Location	_____
Assessor's name	_____	Date	_____

Item no.	What are the hazards?	Who might be harmed and how?	What control measures are already in place?	Risk rating (high/medium/low)	What further action is necessary?	Action by who and when?	Residual risk rating (high/medium/low/trivial)
1							
2							
3							
4							
5							

6							
7							
8							
9							
10							

Date:	Risk assessment carried out by:
-------	---------------------------------

Figure 2 - Candidate evidence - Risk assessment

This template may be modified by adding items/rows only.

Candidate's name		Enrolment number	
Task / Activity	Task 4c	Location	
Assessor's name		Date	

Item no.	What are the hazards?	Who might be harmed and how?	What control measures are already in place?	Risk rating (high/medium/low)	What further action is necessary?	Action by who and when?	Residual risk rating (High / Medium / Low / Trivial)
1							
2							
3							
4							
5							
6							

7							
8							
9							
10							

Date:	Risk assessment carried out by:
-------	---------------------------------

Figure 3 - Candidate evidence – Health check form

This template may be modified by adding items/rows only.

Candidate's name		Enrolment number	
Task / Activity	Task 2d	Location	
Assessor's name		Date	

Health check parameter	Findings	Comments

Date:	Health check carried out by:
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