

## Pearson BTEC Level 3 Nationals Extended Diploma

# June 2019

Paper Reference **31644H**

## Animal Management

**Unit 1: Animal Breeding and Genetics**

**Part A**

**You do not need any other materials.**

### Instructions

- **Part A** contains material for the completion of the preparatory work for the set task.
- **Part A** may be given to learners as soon as it is received so that learners can start the preparatory period in advance of the supervised assessment session.
- **Part A** is specific to each series and this material must only be issued to learners who have been entered to undertake the task in the relevant series.
- **Part B** materials for the set task will be issued prior to the start of the supervised assessment period according to the guidance in the specification.

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## Instructions to Teachers/Tutors

Centres should refer to the BTEC Nationals Instructions for Conducting External Assessments (ICEA) document for full information on the correct conduct of monitored and formally supervised assessment. See Pearson website for details.

This set task has a preparatory period. **Part A** sets out how learners should prepare for the completion of the task under supervised conditions.

**Part B** contains unseen material and is issued to learners at the start of the formal supervised assessment session specified by Pearson.

For **Part A**, learners should be monitored over **three hours** provided by the centre, to read **Part A**, carry out research and compile notes. During this time they may only have access to research materials including books, journals, the internet and notes from prior learning. Learners must work independently and must not be given guidance or feedback on the completion of the preparatory work. Learners must not prepare potential responses, and only notes produced in monitored sessions may be used during the formal assessment. Learners may produce up to **two sides** of A4 notes, which should be handwritten or typed in a 12pt font. Notes should be short, bullet-point style information, and cannot contain long narrative pieces of text.

Learner notes produced under monitored conditions must be checked by teachers/tutors to ensure that they comply with the limitations.

Learner notes should be retained by the centre between the monitored sessions and the formal supervised assessment.

Learner notes should be retained by the centre after the completion of the assessment and may be requested by Pearson.

## Instructions for Learners

Read the set task information carefully.

**Part A** contains the information you need to prepare for the **Part B** set task.

You will be given **three hours** of monitored preparation. Your tutor will advise you of the scheduled sessions for this work.

During these sessions you will prepare summary notes to support you during the supervised assessment. Your notes should:

- be individually and independently prepared by you
- contain a maximum of two sides of A4, either handwritten or typed in a 12pt font
- use short, bullet-point style information, and cannot contain long narrative pieces of text.

Your notes will be checked by your centre and retained after the completion of the formal supervised assessment.

You must work independently and must not share your work with other learners.

Your teacher/tutor cannot give you feedback during the preparation period.

### Set Task Brief

You are required to carry out research into the standards and practice of breeding:

- **Rabbits**

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Please check the examination details below before entering your candidate information

Candidate surname					Other names					
Pearson BTEC Level 3 Nationals Extended Diploma	Centre Number					Learner Registration Number				
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<b>Window for supervised period: Monday 13 May 2019 – Friday 17 May 2019</b>										
Supervised hours: 2 hours					Paper Reference <b>31644H</b>					
<b>Animal Management</b>										<b>Part B</b>
<b>Unit 1: Animal Breeding and Genetics</b>										
<b>You do not need any other materials.</b>										Total Marks

### Instructions

- **Part A** will need to have been used in preparation for completion of **Part B**.
- **Part B** contains material for the completion of the set task under supervised conditions.
- **Part B** should be undertaken in one session timetabled by Pearson.
- **Part B** is specific to each series and this material must only be issued to learners who have been entered to undertake the task in that series.
- **Part B** should be kept securely until the start of the supervised assessment periods.
- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Complete **all** activities.
- Answer the activities in the spaces provided  
– *there may be more space than you need.*

### Information

- The total mark for this paper is 80.
- The marks for **each** activity are shown in brackets  
– *use this as a guide as to how much time to spend on each activity.*

### Advice

- Read each activity carefully before you start to answer it.
- Try to answer every activity .
- Check your answers if you have time at the end.

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## Instructions to Teachers/Tutors and/or Invigilators

This set task is a formal external assessment and must be conducted with reference to the instructions in this task and answer booklet and the BTEC Nationals Instructions for Conducting External Assessments (ICEA) document, to ensure that the supervised period is conducted correctly and that learners have the opportunity to carry out the required activities independently.

**Part B** set task is undertaken under formal supervision in a single session of **two hours** timetabled by Pearson.

**Part B** materials must be issued to learners for the specified session. Work should be completed in this task and answer booklet.

**Part B** set task requires learners to apply understanding gained through familiarisation with the context. Learners should bring in notes as defined in **Part A**.

The teacher/tutor needs to ensure that the notes comply with the requirements.

All learner work must be completed independently and authenticated by the teacher/tutor and/or invigilator before being submitted to Pearson.

Learners must not bring anything into the supervised environment or take anything out without teacher/tutor and/or invigilator approval.

Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the supervised environment.

### Maintaining security

- The assessment areas must only be accessible to the individual learners and to named members of staff.
- Learners can only access their work under supervision.
- Any work learners produce under supervision must be kept securely.
- Only permitted materials for the set task can be brought into the supervised assessment.
- During any permitted break and at the end of the session, materials must be kept securely and no items removed from the supervised assessment.
- Learners are not permitted to have access to the internet or other resources during the supervised assessment period.

### Outcomes for submission

A completed task and answer booklet.

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### Instructions for Learners

Read the set task information carefully.

This session is of **two hours**. Plan your time carefully.

You have prepared for the set task given in this **Part B** booklet. Use your notes prepared during **Part A** if relevant. Attempt all of **Part B**.

Your notes must be your own work and will be retained by your centre until results are issued.

You will complete this set task under supervision and your work will be kept securely during any breaks taken.

You must work independently throughout the supervised assessment period and must not share your work with other learners.

#### Outcomes for submission

A completed task and answer booklet.

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## Set Task

**You must complete ALL the activities in this task and answer booklet.**

The activities in this task booklet relate to **Rabbits**.

### Part A Set Task Information

Rabbits

### Part B Set Task Information

Gemma has decided to start a small business breeding rabbits. She is intending to sell the rabbits through a local pet shop and through the internet. Gemma has asked you for your help to decide which factors need to be considered when choosing the appropriate breed.

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Answer ALL questions. Write your answers in the spaces provided.

1 (a) State **two** reasons why you should provide breeding females with a nesting box.

(2)

1 .....

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2 .....

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(b) Describe the correct handling technique for lifting a rabbit.

(2)

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(c) Explain **two** reasons why you should always take the female to the male when mating rabbits.

(4)

1 .....

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2 .....

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(Total for Question 1 = 8 marks)



2 (a) Give **four** characteristics you would consider when choosing rabbits to breed from.

(4)

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Gemma has identified a business she would like to set up. She intends to sell rabbits through a pet shop and 'online'. Gemma has asked you for help in deciding what factors need to be considered before purchasing the rabbits

**You will need to take account of the following information.**

The business is based in a small garden where there is room for several small hutches. There is also a garden shed that could be used.

There are close neighbours on both sides.

The intention is that the rabbits will be sold as pets as Gemma does not agree with keeping animals for showing.

The rabbits should be able to cope with the disruption of being sold through a pet shop.

- (b) Discuss factors and options Gemma should consider to achieve her aims, taking into account the desirable characteristics of the chosen breed.

Use your research notes to help you make a recommendation.

(12)

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**(Total for Question 2 = 16 marks)**

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3 When Gemma is looking at the different breeds of rabbits she realises that the same breed of rabbit can come in various colours and sizes.

Colour and size are controlled by the rabbit's genetics.

The gene for colour has two alleles.

The allele for black colouring is B and is dominant.  
The allele for brown colouring is b and is recessive.

The gene for size has two alleles.

D is for dwarfism and shows incomplete dominance, which means that a rabbit with:

dd is homozygous recessive and is normal sized.  
Dd is heterozygous and is dwarf sized.  
DD is homozygous dominant and is a 'peanut', these are stillborn.

Gemma mates a male dwarf brown rabbit with a female dwarf black rabbit, she knows the dwarf black rabbit is heterozygous for coat colour.

(a) Calculate the phenotypic probabilities of the offspring using the dihybrid template.

(8)


Phenotypic probability



(b) Explain **one** way record keeping is used when running a breeding programme.

(4)

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**(Total for Question 3 = 12 marks)**

**4** (a) Describe **three** problems that may arise during pregnancy and birth in rabbits.

(6)

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Gemma wants to maintain high standards of husbandry for her newborn rabbits.

(b) Explain **three** actions Gemma should take.

(6)

1

2

3

(c) Explain **one** thing you would have to include in your care plan when hand rearing a rabbit.

(2)

**(Total for Question 4 = 14 marks)**



5 (a) Explain **two** reproductive technologies that can be used to improve breeding success.

(4)

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(b) Describe the effects of genetic mutations on variation in a species.

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(c) Describe **two** ways genes may interact.

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(Total for Question 5 = 12 marks)

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6 (a) Discuss the use of inbreeding when constructing a mating scheme.

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When breeders select animals such as rabbits for a breeding programme they choose the animals with 'desirable characteristics'

- (b) Discuss the ethical issues of breeding for 'desirable characteristics' in animals, such as rabbits.

(12)

Area with horizontal dotted lines for writing the answer to question (b).

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(Total for Question 6 = 18 marks)

**TOTAL FOR TASK = 80 MARKS**

