Write your name here

Surname	Other names

Pearson BTEC Level 3 Nationals Extended Certificate

Applied Science

Unit 3: Science Investigation Skills

Part A

June 2017	Paper Reference **31619H**

Instructions

- **Part A** contains material for the completion of the preparatory work for the set task.
- **Part A** should be undertaken over approximately 3 hours across a period of 2 weeks (term time) as timetabled by Pearson.
- **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.
- This taskbook should not be returned to Pearson.

Turn over ▶

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Instructions for Teachers/Tutors

This paper must be read in conjunction with the teacher/technician notes and guidance, the unit information in the specification and the BTEC Nationals Instructions for Conducting External Assessments (ICEA) document. See the Pearson website for details.

This taskbook contains the instructions for learners and the set task brief and should be issued to learners at the start of the practical investigation. This taskbook must not be taken out of the classroom.

The practical investigation outlined in the set task brief must be undertaken by learners over approximately three hours during the first section of the assessment period. The practical investigation must be undertaken in supervised conditions.

Centres are free to arrange the supervised assessment period how they wish provided the three hours for completing the practical investigation are under the level of supervision specified, and in accordance with the conduct procedures.

Learners will be expected to conduct a practical investigation and record their results/observations in this taskbook.

Teachers/Tutors cannot give any support to learners during the practical investigation and recording of results/observations.

Learners can work in pairs for the practical investigation, however they must record their own results and observations independently.

Once the practical investigation is completed and learners have recorded their results/observations in the spaces provided, teacher/tutors must keep the taskbooks secure until the start of **Part B**.

Any assessment materials not required by learners for submission must be collected and held securely by the Exams Office until the EAR deadline at which point they may be recycled or destroyed.

Refer carefully to the instructions in this taskbook and the Instructions for Conducting External Assessments (ICEA) document to ensure that the preparatory period is conducted correctly and that learners have the opportunity to carry out the required activities independently.

Instructions for Learners

Read the set task information carefully.

This contains **Part A** of the information you need to prepare for the set task. You will carry out a practical investigation over a period of up to three hours.

You may work in pairs, however you must record your set of results/observations independently in the spaces provided.

Your teacher/tutor may give guidance on when you can complete the practical investigation.

Your teacher/tutor cannot give you feedback during the practical investigation.

You must not take this taskbook out of the classroom at any time and you must hand it in to your teacher/tutor on completion of the practical investigation and write up of any results/observations.

You will use your results/observations recorded in this taskbook, and they will be given back to you when you begin the set task in **Part B**.

Set Task Brief

Please read the following brief carefully before completing the practical investigation.

You must observe safe practice when carrying out the practical investigation.

You are an assistant groundskeeper for a small, inner city nature reserve.

You have been asked to investigate how pH affects plant growth.

You have been given six module trays, labelled A-F.

Each module tray contains soil taken from different areas of the nature reserve.

Each module tray was sown with ten seeds that were left to grow.

Safety information

You may have allergies to plants. Take necessary precautions and make sure you wash your hands after carrying out the investigation.

You will measure and record:

1. the height of the plants
2. the pH of the soil
3. any relevant observations.

Method for measuring the height of the plants

1. Cut each plant off at soil level.
2. Measure the height of each plant using a 30 cm ruler.

Method for measuring the pH of the soil

1. Fill a boiling tube to a depth of 2 cm with soil from module tray A.
2. Add distilled water to the boiling tube until it is two thirds full.
3. Place a bung in the boiling tube and shake ten times.
4. Place a pH probe in the boiling tube and record the pH.
5. Rinse the pH probe with distilled water.
6. Repeat steps 1-5 with soil from module trays B-F, using a clean boiling tube each time.

Record your results/observations in the space provided.