Appendix 1

Junior Certificate Science

Sample pro forma booklet for the assessment of coursework (Set investigations)

Notice to examination candidates

1. Candidates are required to submit this completed pro forma booklet and to certify that all submitted material is their own individual work by signing the register of practical coursework. Failure to comply fully with these requirements will result in the loss of some or all of the marks associated with the assessment of their coursework.
2. In respect of Coursework A activities, candidates should enter in the appropriate checklists the completion dates for the mandatory investigations/experiments and the associated reports. Where a candidate did not complete all of the mandatory activities, alternative syllabus experiments or investigations that have been completed—and for which a record has been maintained—may be indicated on the relevant checklist. This provision is limited to a maximum of two alternatives in each section.

Candidate's examination number

Examination centre number

Record of marks – For official use only

Junior Certificate Science

Coursework A

Biology		
Reference	**Mandatory investigations and experiments**	**Date completed**
OB3	Carry out qualitative food tests for starch, reducing sugar, protein and fat.	
OB5	Investigate the conversion of chemical energy in food to heat energy.	
OB8	Investigate the action of amylase on starch; identify the substrate, product and enzyme.	
OB11	Carry out qualitative tests to compare the carbon dioxide levels of inhaled and exhaled air.	
OB39	Investigate the variety of living things by direct observation of animals and plants in their environment; classify living organisms as plants or animals, and animals as vertebrates or invertebrates.	
OB44	Prepare a slide from plant tissue and sketch the cells under magnification.	
OB49	Show that starch is produced by a photosynthesising plant.	
OB58	Investigate the conditions necessary for germination.	
OB59	Study a local habitat, using appropriate instruments and simple keys to show the variety and distribution of named organisms.	
OB65	Investigate the presence of micro-organisms in air and soil.	
Ref. code		
Ref. code		
	Number of completed biology items	

Junior Certificate Science

Coursework A

Chemistry		
Reference	**Mandatory investigations and experiments**	**Date completed**
OC2	Separate mixtures using a variety of techniques: filtration, evaporation, distillation and paper chromatography.	
OC17	Grow crystals using alum or copper sulfate.	
OC19	Investigate the pH of a variety of materials using the pH scale.	
OC22	Show that approximately one fifth of the air is oxygen; show that there is CO_2 and water vapour in air.	
OC24	Prepare a sample of oxygen by decomposing H_2O_2 using MnO_2 as a catalyst.	
OC27	Prepare carbon dioxide and show that it does not support combustion.	
OC30	Conduct a qualitative experiment to detect the presence of dissolved solids in water samples, and test water for hardness (soap test).	
OC38	Titrate HCl against NaOH, and prepare a sample of NaCl.	
OC46	Carry out an experiment to demonstrate that oxygen and water are necessary for rusting.	
OC51	Investigate the reaction between zinc and HCl, and test for hydrogen.	
Ref. code		
Ref. code		
	Number of completed chemistry items	

Junior Certificate Science

Coursework A

Physics		
Reference	**Mandatory investigations and experiments**	**Date completed**
OP2	Measure the mass and volume of a variety of solids and liquids and hence determine their densities.	
OP6	Investigate the relationship between the extension of a spring and the applied force.	
OP20	Identify different forms of energy and carry out simple experiments to show the following energy conversions: (a) chemical energy to electrical energy to heat energy (b) electrical energy to magnetic energy to kinetic energy (c) light energy to electrical energy to kinetic energy.	
OP23	Investigate and describe the expansion of solids, liquids and gases when heated, and contraction when cooled.	
OP31	Carry out simple experiments to show the transfer of heat energy by conduction, convection and radiation; investigate conduction and convection in water.	
OP34	Show that light travels in straight lines.	
OP38	Investigate the reflection of light by plane mirrors, and illustrate this using ray diagrams; demonstrate and explain the operation of a simple periscope.	
OP46	Plot the magnetic field of a bar magnet.	
OP49	Test electrical conduction in a variety of materials, and classify each material as a conductor or insulator.	
OP50	Set up simple electric circuits; use appropriate instruments to measure current, potential difference (voltage) and resistance, and establish the relationship between them.	
Ref. code		
Ref. code		
	Total number of completed physics items	

Junior Certificate Science

Coursework B

Reporting on the investigations

(Set by the State Examinations Commission)

Notice to candidates

Candidates should use the following pages to present their reports on two of the three Coursework B investigations set by the State Examinations Commission.

A separate pro forma booklet is provided for candidates who have undertaken an investigation of their own choice in place of these set investigations.

Selected Investigation 1

Junior Certificate Science

Report on Coursework B – Investigation 1

My interest in carrying out this investigation

Period in which the investigation was carried out

Introduction to the investigation (including background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information)

Junior Certificate Science

Report on Coursework B – Investigation 1

Preparation and planning

(i) List of the equipment needed for the investigation

(ii) List of tasks to be carried out during the investigation

(iii) Particular safety precautions required by this investigation

The following pages should be used to describe the procedure followed in conducting the investigation. Each page allows the inclusion of a labelled diagram, showing the apparatus or equipment used where appropriate.

Junior Certificate Science

Report on Coursework B – Investigation 1

Labelled diagram (where appropriate)

Procedure followed in the investigation

Junior Certificate Science

Report on Coursework B – Investigation 1

Labelled diagram (where appropriate)

Procedure followed in the investigation

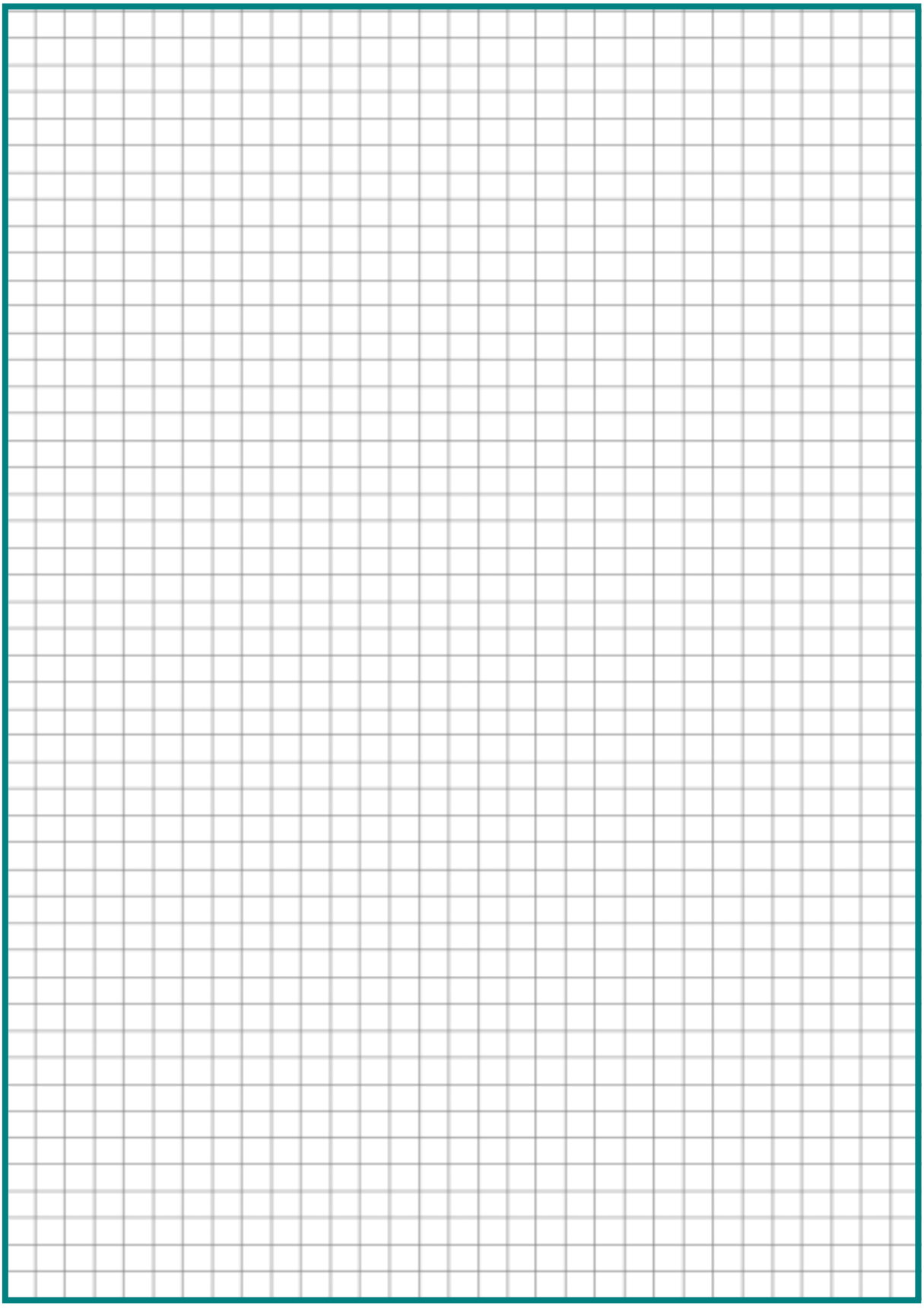
Junior Certificate Science

Report on Coursework B – Investigation 1

Recorded data / observations

Junior Certificate Science

Report on Coursework B – Investigation 1



Junior Certificate Science

Report on Coursework B – Investigation 1

Calculations / Data analysis

Conclusions and Evaluation

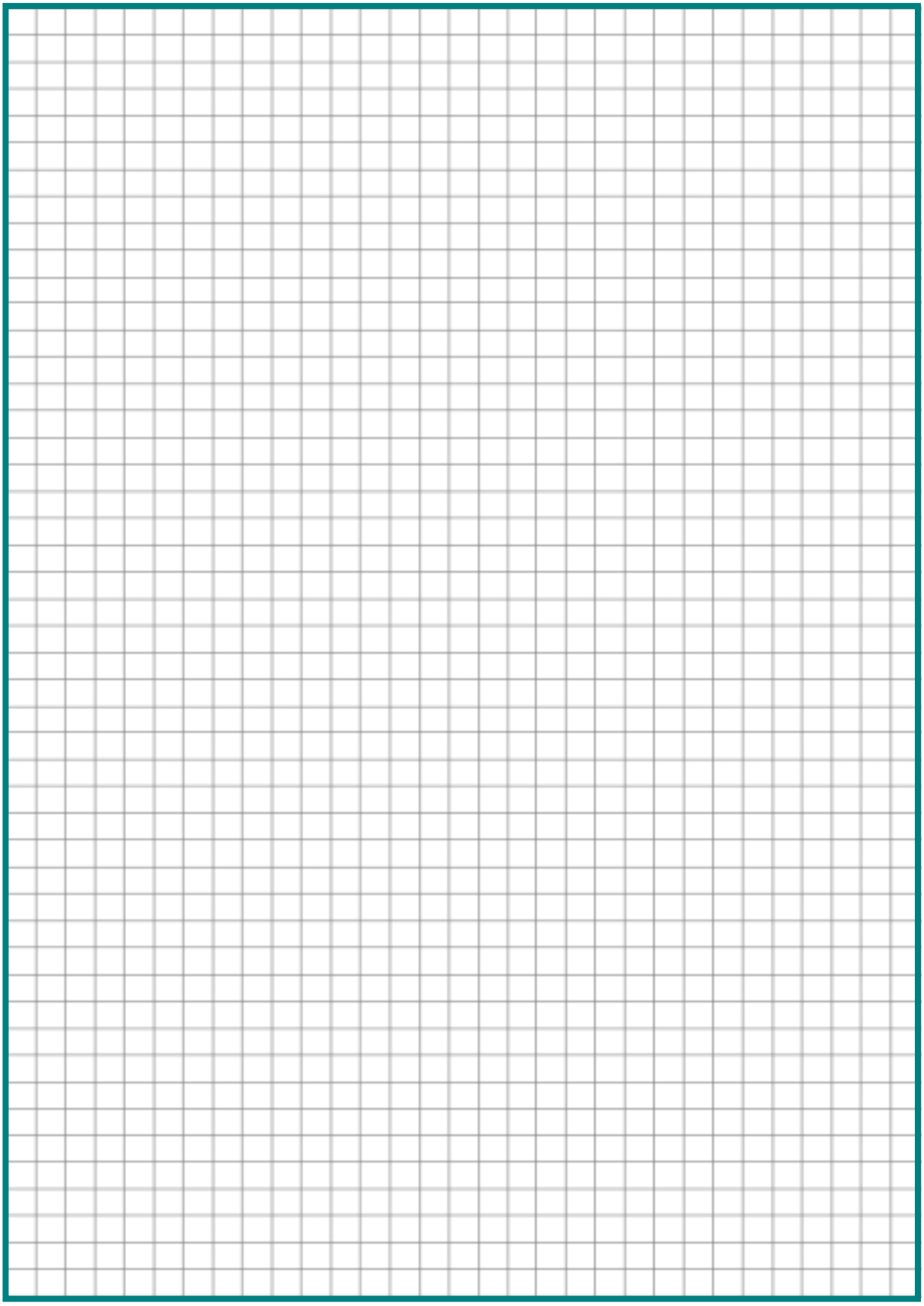
Junior Certificate Science

Investigation 1 Procedure (continuation from page B5)

Where necessary, use this additional page to complete your description of the procedure followed in Investigation 1.

Junior Certificate Science – Investigation 1

(Use this page as a continuation from page B7, if required)



Junior Certificate Science

Coursework B

Selected Investigation 2

Junior Certificate Science

Report on Coursework B – Investigation 2

My interest in carrying out this investigation

Period in which the investigation was carried out

Introduction to the investigation (including background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information)

Junior Certificate Science

Report on Coursework B – Investigation 2

Preparation and planning

(i) List of the equipment needed for the investigation

(ii) List of tasks to be carried out during the investigation

(iii) Particular safety precautions required by this investigation

The following pages should be used to describe the procedure followed in conducting the investigation. Each page allows the inclusion of a labelled diagram, showing the apparatus or equipment used where appropriate.

Junior Certificate Science

Report on Coursework B – Investigation 2

Labelled diagram (where appropriate)

Procedure followed in the investigation

Junior Certificate Science

Report on Coursework B – Investigation 2

Labelled diagram (where appropriate)

Procedure followed in the investigation

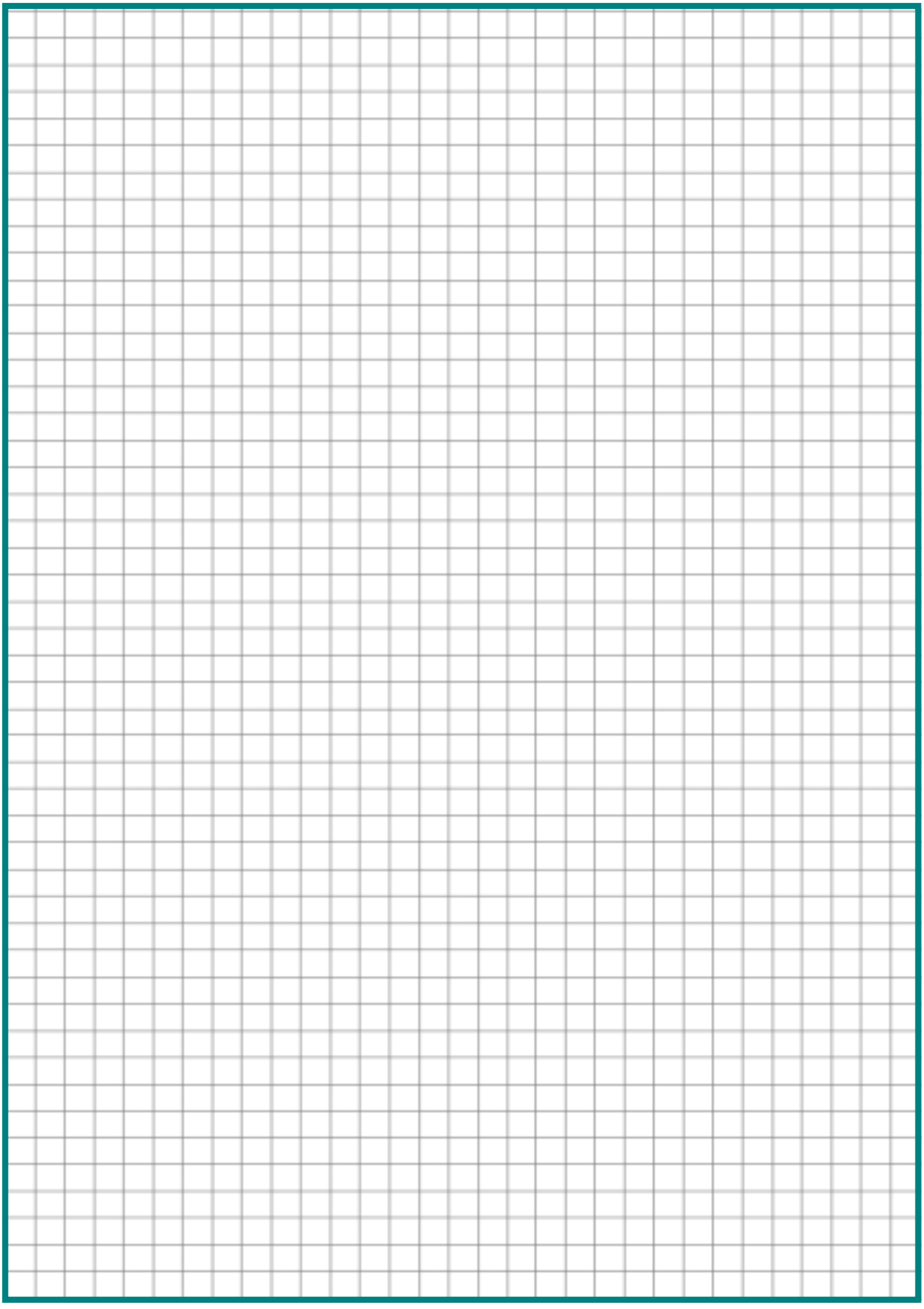
Junior Certificate Science

Report on Coursework B – Investigation 2

Recorded data / observations

Junior Certificate Science

Report on Coursework B – Investigation 2



Junior Certificate Science

Report on Coursework B – Investigation 2

Calculations / Data analysis

Conclusions and Evaluation

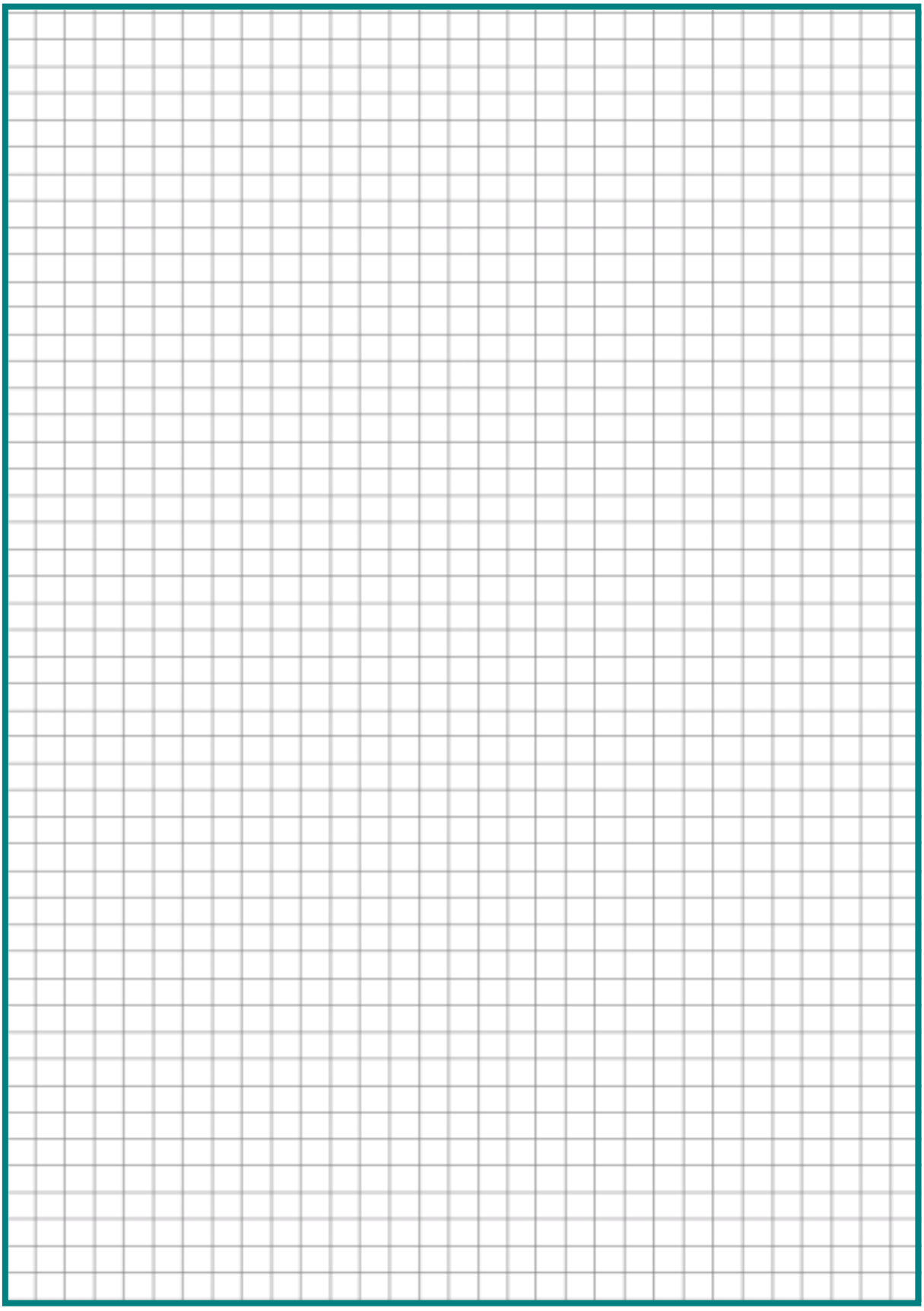
Junior Certificate Science

Investigation 2 Procedure (continuation from page B15)

Where necessary, use this additional page to complete your description of the procedure followed in Investigation 2.

Junior Certificate Science – Investigation 2

Use this page as a continuation from page B17 if required.



Junior Certificate Science

Sample pro forma booklet for the assessment of coursework (Investigation chosen by the candidate)

Notice to examination candidates

3. Candidates are required to submit this completed pro forma booklet and to certify that all submitted material is their own individual work by signing the register of practical coursework. Failure to comply fully with these requirements will result in the loss of some or all of the marks associated with the assessment of their coursework.
4. In respect of Coursework A activities, candidates should enter in the appropriate checklists the completion dates for the mandatory investigations/experiments and the associated reports. Where a candidate did not complete all of the mandatory activities, alternative syllabus experiments or investigations that have been completed—and for which a record has been maintained—may be indicated on the relevant checklist. This provision is limited to a maximum of two alternatives in each section.

Candidate's examination number

Examination centre number

Record of marks – for official use only

Junior Certificate Science
Coursework A

Biology		
Reference	**Mandatory investigations and experiments**	**Date completed**
OB3	Carry out qualitative food tests for starch, reducing sugar, protein and fat.	
OB5	Investigate the conversion of chemical energy in food to heat energy.	
OB8	Investigate the action of amylase on starch; identify the substrate, product and enzyme.	
OB11	Carry out qualitative tests to compare the carbon dioxide levels of inhaled and exhaled air.	
OB39	Investigate the variety of living things by direct observation of animals and plants in their environment; classify living organisms as plants or animals, and animals as vertebrates or invertebrates.	
OB44	Prepare a slide from plant tissue and sketch the cells under magnification.	
OB49	Show that starch is produced by a photosynthesising plant.	
OB58	Investigate the conditions necessary for germination.	
OB59	Study a local habitat, using appropriate instruments and simple keys to show the variety and distribution of named organisms.	
OB65	Investigate the presence of micro-organisms in air and soil.	
Ref. code		
Ref. code		
	Total number of completed biology items	

Junior Certificate Science
Coursework A

Chemistry		
Reference	**Mandatory investigations and experiments**	**Date completed**
OC2	Separate mixtures using a variety of techniques: filtration, evaporation, distillation and paper chromatography.	
OC17	Grow crystals using alum or copper sulfate.	
OC19	Investigate the pH of a variety of materials using the pH scale.	
OC22	Show that approximately one fifth of the air is oxygen; show that there is CO_2 and water vapour in air.	
OC24	Prepare a sample of oxygen by decomposing H_2O_2 using MnO_2 as a catalyst.	
OC27	Prepare carbon dioxide and show that it does not support combustion.	
OC30	Conduct a qualitative experiment to detect the presence of dissolved solids in water samples, and test water for hardness (soap test).	
OC38	Titrate HCl against NaOH, and prepare a sample of NaCl.	
OC46	Carry out an experiment to demonstrate that oxygen and water are necessary for rusting.	
OC51	Investigate the reaction between zinc and HCl, and test for hydrogen.	
Ref. code		
Ref. code		
	Total number of completed chemistry items	

Junior Certificate Science
Coursework A

Physics		
Reference	**Mandatory investigations and experiments**	**Date completed**
OP2	Measure the mass and volume of a variety of solids and liquids and hence determine their densities.	
OP6	Investigate the relationship between the extension of a spring and the applied force.	
OP20	Identify different forms of energy and carry out simple experiments to show the following energy conversions: (a) chemical energy to electrical energy to heat energy (b) electrical energy to magnetic energy to kinetic energy (c) light energy to electrical energy to kinetic energy.	
OP23	Investigate and describe the expansion of solids, liquids and gases when heated, and contraction when cooled.	
OP31	Carry out simple experiments to show the transfer of heat energy by conduction, convection and radiation; investigate conduction and convection in water.	
OP34	Show that light travels in straight lines.	
OP38	Investigate the reflection of light by plane mirrors, and illustrate this using ray diagrams; demonstrate and explain the operation of a simple periscope.	
OP46	Plot the magnetic field of a bar magnet.	
OP49	Test electrical conduction in a variety of materials, and classify each material as a conductor or insulator.	
OP50	Set up simple electric circuits; use appropriate instruments to measure current, potential difference (voltage) and resistance, and establish the relationship between them.	
Ref. code		
Ref. code		
	Total number of completed physics items	

Junior Certificate Science
Coursework B

Reporting on the investigation

(Candidate's own choice)

Notice to candidates

1. Candidates who have undertaken an investigation of their own choice in place of those set by the State Examinations Commission should use the following pages to present their report on the investigation under the headings provided.
2. The investigation should be linked to their study of Junior Certificate Science. It may be based on one syllabus section only, or involve a topic that spans two or more sections of the syllabus.
3. Depending on its nature, the time period for this investigation may vary from that recommended for the completion of Coursework B.

Title of the investigation

_____

_____

_____

Period in which the investigation was conducted

_____

_____

_____

Junior Certificate Science
Coursework B Investigation

Introduction to the investigation

(a) Aim of my investigation

(b) Statement of the identified task/problem

(c) My interest in carrying out this investigation

Preparation and planning (background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information)

Junior Certificate Science
Coursework B Investigation

Preparation and planning

(i) List of the equipment needed for the investigation

(ii) List of tasks to be carried out during the investigation

(iii) Particular safety precautions required by this investigation

Pages B4, B5 and B6 should be used to describe the procedure followed in conducting the investigation. Each page allows the inclusion of a labelled diagram, showing the apparatus or equipment used where appropriate.

Junior Certificate Science
Coursework B Investigation

Labelled diagram (where appropriate)

Procedure followed in the investigation

Junior Certificate Science
Coursework B Investigation

Labelled diagram (where appropriate)

Procedure followed in the investigation (continued)

Junior Certificate Science
Coursework B Investigation

Labelled diagram (where appropriate)

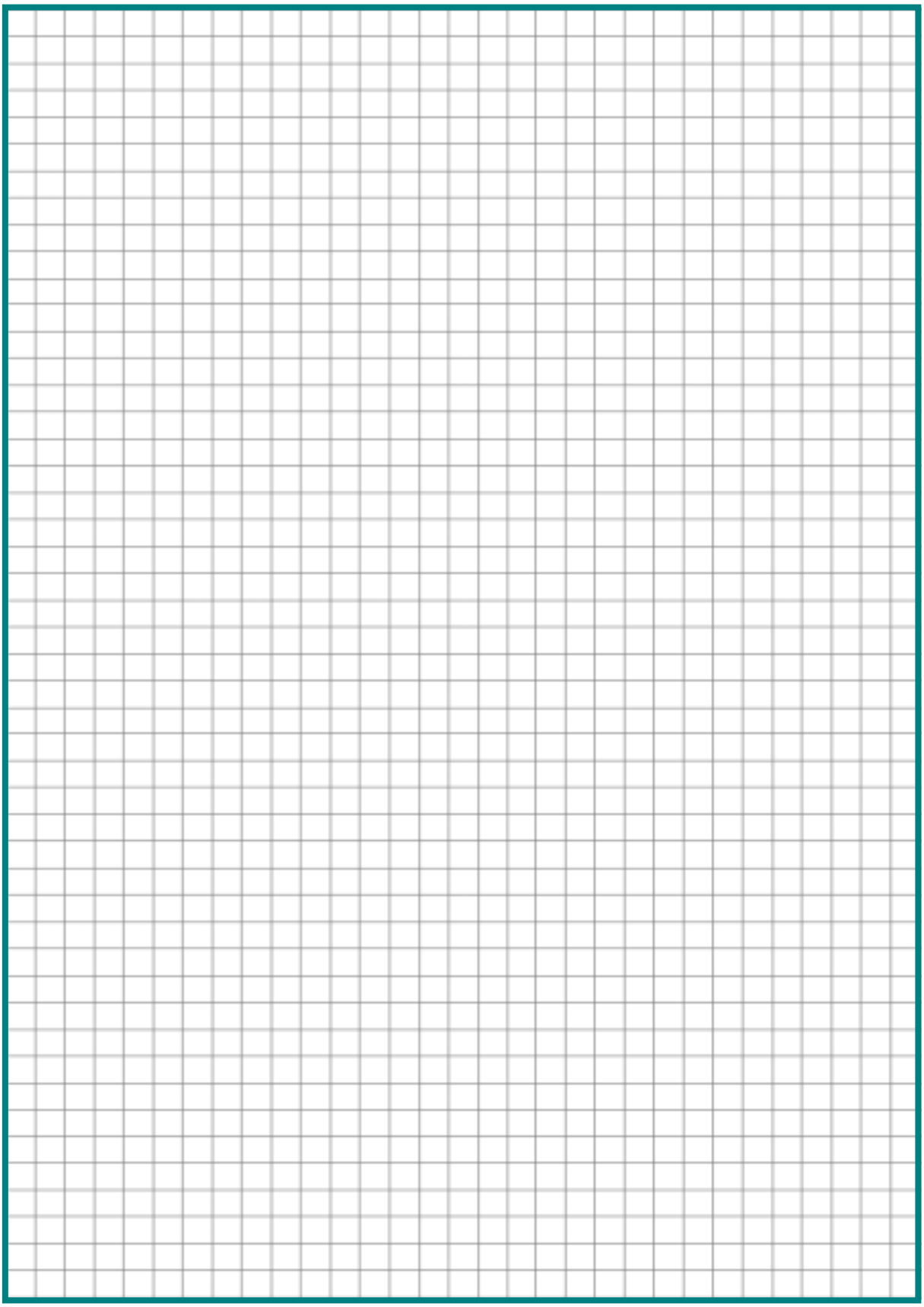
Procedure followed in the investigation (continued)

Junior Certificate Science
Coursework B Investigation

Recorded data / Observations

Calculations / Data analysis

Junior Certificate Science
Coursework B Investigation



Junior Certificate Science
Coursework B Investigation

Conclusions and Evaluation

Use this space for additional reporting or as a continuation of previous pages

Use this page as a continuation from page B9 if required.