Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examinations
Scrúduithe an Teastais Shóisearaigh

Reporting Booklet for the
Assessment of Science Coursework
(Set investigations)

Leabhrán Tuarascála
i gcomhair Measúnú Obair Chúrsa san Eolaíocht
(Fiosrúcháin Shonraithe)

Year **Bliain**

Examination Number **Scrúduimhir**

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Record of Marks – For examiner use only
Taifead na Marcanna – Don Scrúdaitheoir amháin

Coursework A Obair Chúrsa A	
Section Roinn	**Number of investigations completed** Líon na bhfiosrúchán curtha i gcrích
Biology Bitheolaíocht	
Chemistry Ceimic	
Physics Fisic	
Total Coursework A Mark Marc Iomlán Obair Chúrsa A	

Coursework B Obair Chúrsa B			
Section Roinn	**Mark available** Marc ar Fáil	**Mark awarded** Marc Bronnta	**Mark awarded** Marc Bronnta
Introduction Réamhrá	**5**		
Prep. & Planning Ullmh. & Pleanáil	**20**		
Procedure Nós Imeachta	**20**		
Analysis Anailís	**20**		
Comment Tuairim	**10**		
Mark per investigation Marc *per* fiosrúchán			
Total Coursework B Mark Marc Iomlán Obair Chúrsa B			

Notice to examination candidates

1 Candidates are required to submit this completed reporting 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 are required to complete pages **6 to 8** of this booklet. Candidates must enter a tick (✓) in the appropriate checklists in the case of each mandatory investigation/experiment and associated report that has been completed. Where a candidate has not completed a mandatory investigation/experiment and the associated report no tick or mark should be entered opposite that item in the checklist. Where a candidate has not completed 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.

Failure to complete pages 6 to 8 of this booklet may result in loss of marks in respect of Coursework A.

3 Candidates must submit their completed Science Investigation Reports to their school authorities by the specified date.

4 The report - based on the selected investigation topics - must be completed in the Reporting Booklet, using the prescribed structure.

5 The written element of your Report on each investigation should not exceed a total length of 1000 words. You may in addition, of course, also draw graphs or diagrams in the appropriate spaces. **Do not insert or affix any extra material – paper or otherwise**. Examiners will mark only what is presented on the pages of the booklet itself.

6 The Investigations and Report must be completed under the supervision of a teacher. If the coursework is not completed under a teacher's supervision, she/he will not be able to validate the work as being your own individual work when requested by the State Examinations Commission to do so.

7 All secondary sources used [books, journals, web-sites, etc] must be duly acknowledged.

8 It is recognised that in some instances investigations may have to be undertaken in small groups. However, the report must in every case be the individual's own work. Direct copying of material from secondary sources – other than essential references, e.g. definitions - is not permitted. Where there is evidence of collaboration or copying in the reporting of any aspect of an investigation, the report presented will be deemed invalid.

9 In instances where a report cannot be authenticated as a candidate's own work, the State Examinations Commission will take appropriate action. This often results in the work presented being deemed invalid and marks awarded in respect of it being discounted when determining the overall examination result.

10 Any incidence of suspected copying, improper assistance from another party, plagiarism or procurement of work prepared by another party will be thoroughly investigated. Candidates are liable to having penalties imposed as provided for in the *Rules and Programme for Secondary Schools*. The penalties include loss of the subject, loss of the entire examination in all subjects, or being debarred from the Certificate Examinations in subsequent years. There may be serious consequences for any other party involved in improperly assisting a candidate, as the Education Act 1998 provides for certain criminal offences in relation to the conduct of the examinations. Teachers and the authorities of schools are familiar with the detailed requirements to ensure that practical

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work is valid for examination purposes. Candidates should comply fully with all requests which are made and which are designed to enable authentication of their work.

11 Remember: responsibility for complying with the examination requirements rests with you, the candidate. If the requirements are not followed, your teacher and the school authority will have no choice but to bring this to the attention of the State Examinations Commission.

Report Structure and Assessment Weighting (per investigation)

Stage	Assessment Weighting
Introduction	**5**
Preparation & Planning	**20**
Procedure	**20**
Analysis & Conclusions	**20**
Comment	**10**

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Fógra d’iarrthóirí sna scrúduithe

1 Ní mór d’iarrthóirí an leabhrán tuarascála seo a chur isteach agus é comhlánaithe, agus clár na hoibre cúrsa praiticiúla a shíniú lena dheimhniú gurb í obair indibhidiúil an iarrthóra féin atá san ábhar ar fad atá á cur isteach. Mura gcloítear ar fad leis na riachtanais seo caillfear cuid de na marcanna nó an t-iomlán díobh a bhaineann leis measúnú na hoibre cúrsa.

2 Maidir le gníomhaíochtaí Obair Chúrsa A, ní mór d’iarrthóirí na leathanaigh **6 go dtí 8** den leabhrán seo a chomhlánú. Is cóir d’iarrthóirí tic (✓) a chur sna seicliostaí cuí i gcás gach ceann de na fiosrúcháin/turgnaimh éigeantacha, chomh maith leis an tuarascáil a ghabhann leo, a chuirtear i gcrích. I gcás nach bhfuil fiosrúchán/turgnamh éigeantach, mar aon leis an tuarascáil a ghabhann leis, déanta ag iarrthóir, níor choir tic ná marc ar bith a chur isteach os comhair na míre sin ar an seicliosta. I gcás nach bhfuil na gníomhaíochtaí riachtanacha ar fad curtha i gcrích ag iarrthóir is féidir turgnaimh nó fiosrúcháin sa siollabas atá curtha i gcrích de rogha orthu sin – agus a bhfuil taifead coinnithe orthu – a chur in iúl ar an seicliosta a bhaineann leo. Tá an fhoráil seo teoranta do dhá rogha ar a mhéid i ngach roinn.

Mura gcomhlánaíonn na hiarrthóirí na leathanaigh 6 go dtí 8 den leabhrán tuarascála, d’fhéadfadh sé go gcaillfidh siad na marcanna atá le fáil ar Obair Chúrsa A.

3 Ní mór d’iarrthóirí an Tuarascáil ar an bhFiosrúchán Eolaíochta a chur i gcrích agus a thabhairt ar láimh do na húdaráis scoile acu faoin dáta a luaifear.

4 Ní mór an tuarascáil – bunaithe ar na topaicí fiosrúcháin roghnaithe – a chur i gcrích sa Leabhrán Tuarascála, agus leas á bhaint as an struchtúr atá leagtha síos.

5 Níor chóir níos mó ná 1000 focal san iomlán a bheith sa ghné scríofa den tuarascáil ar gach fiosrúchán. Tá cead agat de bhreis air sin, ar ndóigh, graif nó léaráidí a tharraingt sna spásanna cuí. **Ná cuir isteach aon ábhar breise – páipéar ná eile – agus ná greamaigh aon ábhar breise den leabhrán.** Ní mharcálfaidh na scrúdaitheoirí ach an méid a chuirtear i láthair ar na leathanaigh den leabhrán féin.

6 Ní mór na Fiosrúcháin agus an Tuarascáil a chur i gcrích faoi mhaoirseacht múinteora. Mura gcuirtear an obair chúrsa i gcrích faoi mhaoirseacht múinteora, ní bheidh ar chumas an mhúinteora a dhearbhú gurb í do chuid oibre féin í nuair a iarrfaidh Coimisiún na Scrúduithe Stáit air/uirthi sin a dhéanamh.

7 Ní mór na foinsí tánaisteacha ar fad a úsáidtear [leabhair, irisí, láithreáin ghréasáin, etc.] a admháil mar is cuí.

8 Aithnítear go mb’fhéidir go gcaithfeadh iarrthóirí fiosrúcháin a dhéanamh ina ngrúpaí beaga i gcásanna áirithe. Obair an iarrthóra féin a chaithfidh a bheith sa tuarascáil i ngach cás, áfach. Ní cheadaítear ábhar a chóipeáil go díreach as foinsí tánaisteacha – seachas tagairtí riachtanacha, e.g. sainmhínithe. Áireofar go mbeidh tuarascáil neamhbhailí má tá fianaise ann ar chomhobair nó ar chóipeáil dhíreach i gcás aon ghné den fhiosrúchán.

9 I gcásanna nach féidir a dhearbhú gurb í obair indibhidiúil an iarrthóra féin atá i dtuarascáil, gníomhóidh Coimisiún na Scrúduithe Stáit mar atá leagtha síos. Is é a bhíonn de thoradh air sin go minic ná go n-áirítear an obair a chuirtear i láthair a bheith neamhbhailí agus go ndícheadaítear na marcanna a bronnadh ina leith agus toradh iomlán an scrúdaithe á dheimhniú.

10 Déanfar fiosrúchán iomlán i gcás ar bith ina bhfuil amhras maidir le cóipeáil, cúnamh míchuí ó pháirtí eile, bradaíl, nó soláthar píosaí a d’ullmhaigh páirtí eile. Is féidir pionós a ghearradh ar iarrthóirí de réir *Rialacha agus Clár do Mheánscoileanna*. Is féidir go gcaillfeadh iarrthóirí an t-ábhar, go gcaillfidís an scrúdú iomlán i ngach ábhar, nó go gcrosfaí orthu na Scrúduithe Teistiméireachta a dhéanamh sna blianta amach anseo. D’fhéadfadh iarmhairtí tromchúiseacha a bheith ann d’aon tríú páirtí a thugann cúnamh míchuí d’iarrthóir, ós rud go ndéanann an tAcht Oideachais 1998 foráil do chionta coiriúla áirithe maidir le reáchtáil na scrúduithe. Tá múinteoirí agus údaráis na scoileanna ar an eolas maidir leis na riachtanais shonracha chun a dheimhniú go mbeidh an obair phraiticiúil bailí chun críche an

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scrúdaithe. Ní mór d'iarrthóirí cloí go docht le gach iarratas a dhéantar orthu mar is mar mhaithe le deimhniú a gcuid oibre a dhéantar é.

11 Cuimhnigh air gur ort féin, an t-iarrthóir, atá an fhreagracht cloí le riachtanais an scrúdaithe. Mura gcloíonn tú leis na riachtanais sin, ní bheidh de rogha ag do mhúinteoir ná ag údaráis na scoile ach an scéal a chur faoi bhráid Choimisiún na Scrúduithe Stáit.

Struchtúr na Tuarascála agus Ualú an Mheasúnaithe (*per* fiosrúchán)

Céim	Ualú an Mheasúnaithe
Réamhrá	5
Ullmhúchán & Pleanáil	20
Nós Imeachta	20
Anailís & Conclúidí	20
Tuairim	10

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Junior Certificate Science – Coursework A	Eolaíocht an Teastais Shóisearaigh – Obair Chúrsa A
Failure to complete this section may result in loss of marks of this component.	D'fhéadfadh sé go gcaillfí na marcanna ar an gcomhpháirt seo mura gcomhlánaítear an rannóg seo.

Biology		An Bhitheolaíocht	
Reference (Tagairt)	**Mandatory investigations and experiments**	**Fiosrúcháin agus turgnaimh éigeantacha**	**Tick ✓ Tic ✓**
OB3 (TB3)	Carry out qualitative food tests for starch, reducing sugar, protein and fat.	Tástálacha cineáil a dhéanamh ar bhia le haghaidh stáirse, siúcra dí-ocsaídiúcháin, próitéine agus saille.	
OB5 (TB5)	Investigate the conversion of chemical energy in food to heat energy.	Imscrúdú a dhéanamh ar thiontú fuinneamh ceimiceach i mbia ina fhuinneamh teasa.	
OB8 (TB8)	Investigate the action of amylase on starch; identify the <u>substrate,</u> product and enzyme.	Imscrúdú a dhéanamh ar ghníomhaíocht amaláise ar stáirse; <u>an tsubstráit</u>, an táirge agus an einsím a aithint.	
OB11 (TB11)	Carry out qualitative tests to compare the carbon dioxide levels of inhaled and exhaled air.	Tástálacha cineáil a dhéanamh chun comparáid a dhéanamh idir leibhéal na dé-ocsaíde carbóin in aer ionanálaithe agus in aer easanálaithe.	
OB39 (TB39)	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.	Imscrúdú a dhéanamh ar éagsúlacht nithe beo trí ainmhithe agus plandaí a dhearbhbhreathnú ina dtimpeallacht; orgánaigh bheo a aicmiú mar phlandaí nó mar ainmhithe, agus ainmhithe a aicmiú mar veirteabraigh nó mar inveirteabraigh.	
OB44 (TB44)	Prepare a slide from plant tissue and sketch the cells under magnification.	Sleamhnán a ullmhú as fíochán planda agus na cealla a sceitseáil faoi fhormhéadú.	
OB49 (TB49)	Show that starch is produced by a photosynthesising plant.	A thaispeáint go soláthraíonn planda fótaisintéisithe stáirse.	
OB58 (TB58)	Investigate the conditions necessary for germination.	Imscrúdú a dhéanamh ar na coinníollacha atá riachtanach don phéacadh.	
OB59 (TB59)	Study a local habitat, using appropriate instruments and simple keys to show the variety and distribution of named organisms.	Staidéar a dhéanamh ar ghnáthóg áitiúil, agus tú ag baint úsáide as ionstraimí oiriúnacha agus as eochracha simplí chun éagsúlacht agus dáileadh orgánach ainmnithe a thaispeáint.	
OB65 (TB65)	Investigate the presence of micro-organisms in air and soil.	Imscrúdú a dhéanamh féachaint a bhfuil miocrorgánaigh in aer agus in ithir.	
Ref. code Cód Tag.			
Ref. code Cód Tag.			

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Chemistry		An Cheimic	
Reference (Tagairt)	**Mandatory investigations and experiments**	**Fiosrúcháin agus turgnaimh éigeantacha**	**Tick ✓ Tic ✓**
OC2 (TC2)	Separate mixtures using a variety of techniques: filtration, evaporation, distillation and paper chromatography.	Meascáin a dheighilt le teicnící éagsúla: scagachán, galú, driogadh agus crómatagrafaíocht pháipéir.	
OC17 (TC17)	Grow crystals using alum or copper sulphate.	Criostail a fhás agus alúm nó sulfáit chopair á n-úsáid.	
OC19 (TC19)	Investigate the pH of a variety of materials using the pH scale.	Imscrúdú a dhéanamh ar an pH d'ábhair éagsúla agus tú ag úsáid an scála pH.	
OC22 (TC22)	Show that approximately one fifth of the air is oxygen; show that there is CO_2 and water vapour in air.	A thaispeáint gur ocsaigin atá i dtimpeall an cúigiú cuid den aer; a thaispeáint go bhfuil CO_2 agus gal uisce in aer.	
OC24 (TC24)	Prepare a sample of oxygen by decomposing H_2O_2 using MnO_2 as a catalyst.	Sampla d'ocsaigin a ullmhú trí H_2O_2 a dhianscaoileadh agus MnO_2 in úsáid mar chatalaíoch.	
OC27 (TC27)	Prepare carbon dioxide and show that it does not support combustion.	Dé-ocsaíd charbóin a ullmhú, agus a thaispeáint nach dtacaíonn sí leis an dó.	
OC30 (TC30)	Conduct a qualitative experiment to detect the presence of dissolved solids in water samples, and test water for hardness (soap test).	Turgnamh cineáil a dhéanamh chun solaid thuaslagtha i samplaí uisce a bhrath, agus uisce a thástáil le haghaidh cruais (tástáil gallúnaí).	
OC38 (TC38)	Titrate HCl against NaOH, and prepare a sample of NaCl.	HCl a thoirtmheascadh in aghaidh NaOH, agus sampla de NaCl a ullmhú.	
OC46 (TC46)	Carry out an experiment to demonstrate that oxygen and water are necessary for rusting.	Turgnamh a dhéanamh chun a thaispeáint go bhfuil an ocsaigin agus an t-uisce riachtanach don mheirgiú.	
OC51 (TC51)	Investigate the reaction between zinc and HCl, and test for hydrogen.	Imscrúdú a dhéanamh ar an imoibriú idir sinc agus HCl, agus tástáil a dhéanamh le haghaidh hidrigine.	
Ref. code Cód tag.			
Ref. code Cód tag.			

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Physics		An Fhisic	
Reference (Tagairt)	**Mandatory investigations and experiments**	**Fiosrúcháin agus turgnaimh éigeantacha**	**Tick ✓ Tic ✓**
OP2 (TF2)	Measure the mass and volume of a variety of solids and liquids and hence determine their densities.	Mais agus toirt solad agus leachtanna éagsúla a thomhas agus a ndlús a aimsiú uaidh sin.	
OP6 (TF6)	Investigate the relationship between the extension of a spring and the applied force.	Imscrúdú a dhéanamh ar an gcoibhneas idir síneadh lingeáin agus an fórsa a fheidhmítear air.	
OP20 (TF20)	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.	Foirmeacha difriúla fuinnimh a aithint agus turgnaimh shimplí a dhéanamh chun na tiontuithe fuinnimh seo a leanas a thaispeáint: (a) fuinneamh ceimiceach ina fhuinneamh leictreach ina fhuinneamh teasa (b) fuinneamh leictreach ina fhuinneamh maighnéadach ina fhuinneamh cinéiteach (c) fuinneamh solais ina fhuinneamh leictreach ina fhuinneamh cinéiteach.	
OP23 (TF23)	Investigate and describe the expansion of solids, liquids and gases when heated, and contraction when cooled.	Imscrúdú agus cur síos a dhéanamh ar fhorbairt solad, leachtanna agus gás nuair a théitear iad, agus ar an gcrapadh nuair a fhuaraítear iad.	
OP31 (TF31)	Carry out simple experiments to show the transfer of heat energy by conduction, convection and radiation; investigate conduction and convection in water.	Turgnaimh shimplí a dhéanamh chun traschur fuinneamh teasa leis an seoladh, leis an gcomhiompar agus leis an radaíocht a thaispeáint; imscrúdú a dhéanamh ar an seoladh agus ar an gcomhiompar in uisce.	
OP34 (TF34)	Show that light travels in straight lines.	A thaispeáint go ngluaiseann solas i línte díreacha.	
OP38 (TF38)	Investigate the reflection of light by plane mirrors and illustrate this using ray diagrams; demonstrate and explain the operation of a simple periscope.	Imscrúdú a dhéanamh ar fhrithchaitheamh solais ag scátháin phlánacha, agus ga-léaráidí a úsáid chun é sin a léiriú; oibriú peireascóip shimplí a thaispeáint agus a mhíniú.	
OP46 (TF46)	Plot the magnetic field of a bar magnet.	Réimse maighnéadach bharra-mhaighnéid a bhreacadh.	
OP49 (TF49)	Test electrical conduction in a variety of materials, and classify each material as a conductor or insulator.	Seoladh leictreachais in ábhair éagsúla a thástáil, agus gach ábhar díobh a aicmiú mar sheoltóir nó mar inslitheoir.	
OP50 (TF50)	Set up simple electric circuits; use appropriate instruments to measure current, potential difference (voltage) and resistance, and establish the relationship between them.	Ciorcad simplí leictreach a bhunú, ionstraimí oiriúnacha a úsáid chun sruth, difríocht poitéinsil (voltas) agus friotaíocht a thomhas, agus an coibhneas eatarthu a chruthú.	
Ref. code Cód tag.			
Ref. code Cód tag.			

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Report Structure and Assessment Weighting (per investigation)

Stage	Assessment Weighting
Introduction	5
Preparation & Planning	20
Procedure	20
Analysis & Conclusions	20
Comment	10

Struchtúr na Tuarascála agus Ualú an Mheasúnaithe (*per* fiosrúchán)

Céim	Ualú an Mheasúnaithe
Réamhrá	5
Ullmhúchán & Pleanáil	20
Nós Imeachta	20
Anailís & Conclúidí	20
Tuairim	10

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Junior Certificate Science Coursework B Reporting on the investigations (Set by the State Examinations Commission)	Eolaíocht an Teastais Shóisearaigh Obair Chúrsa B Tuarascáil ar fhiosrúcháin (Sonraithe ag Coimisiún na Scrúduithe Stáit)
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 reporting booklet is provided for candidates who have undertaken an investigation of their own choice in place of these set investigations.	**Fógra d'iarrthóirí** Is cóir d'iarrthóirí na leathanaigh seo a leanas a úsáid chun a dtuarascáil a chur i láthair ar dhá cheann de na trí fhiosrúchán ar Obair Chúrsa B atá sonraithe ag Coimisiún na Scrúduithe Stáit. Tá leabhrán tuarascála ar leith ar fáil d'iarrthóirí a rinne fiosrúchán dá rogha féin in áit na bhfiosrúchán sonraithe seo.

Selected Investigation 1	**Fiosrúchán Roghnaithe 1**
State the section of the syllabus (e.g. Biology)	Luaigh an mhír den siollabas (e.g. Bitheolaíocht)

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Selected Investigation 2	**Fiosrúchán Roghnaithe 2**
State the section of the syllabus (e.g. Physics)	Luaigh an mhír den siollabas (e.g. Fisic)

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Selected Investigation 1	Fiosrúchán Roghnaithe 1
Period in which the investigation was carried out	**An tréimhse ina ndearnadh an fiosrúchán**

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1	2

1 Introduction to the investigation (including a clear statement/ identification of the problem/topic to be investigated, background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information)	Réamhrá leis an bhfiosrúchán (ar a airítear ráiteas soiléir maidir le roghnú na faidhbe / an topaic le fiosrú; cúlra na taighde a rinneadh mar ullmhúchán don fhiosrúchán: daoine, leabhair, suímh ghréasáin, etc. a bhí mar fhoinsí faisnéise san ábhar)
(i) Statement/identification of the problem/topic to be investigated	Ráiteas soiléir maidir le roghnú na faidhbe / an topaic le fiosrú

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(ii) Background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information	Cúlra na taighde a rinneadh mar ullmhúchán don fhiosrúchán: daoine, leabhair, suímh ghréasáin, etc. a bhí mar fhoinsí faisnéise san ábhar

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2 Preparation and planning	Ullmhúchán agus pleanáil
(i) Identify any relevant variables and necessary controls.	Sonraigh aon athróga agus aon chóimheastóirí riachtanacha a bhaineann le hábhar.

(ii) List of the equipment needed for the investigation	Liosta den trealamh ba ghá don fhiosrúchán

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(iii) List of tasks to be carried out during the investigation	Liosta na dtascanna le cur i gcrích le linn an fhiosrúcháin

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1	2

3 Procedure, Apparatus, Safety, Data Collection/Observations

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.

Nós Imeachta, Gaireas, Sábháilteacht, Bailiú Sonraí / Breathnúcháin

Is cóir na leathanaigh seo a leanas a úsáid chun cur síos a dhéanamh ar an nós imeachta a leanadh i mbun an fhiosrúcháin. Tá slí ar gach leathanach chun léaráid lipéadaithe a chur isteach, a thaispeánfaidh an gaireas nó an trealamh a úsáideadh nuair is cuí.

(i) Particular safety precautions required by this investigation

Réamhchúraimí sábháilteachta ar leith is gá don fhiosrúchán seo

(ii) Procedure followed in the investigation

An nós imeachta a leanadh san fhiosrúchán

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Labelled diagram (where appropriate)

Léaráid lipéadaithe (nuair is cuí)

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1	**2**

(iii) Procedure followed in the investigation	An nós imeachta a leanadh san fhiosrúchán

Labelled diagram (where appropriate)	Léaráid lipéadaithe (nuair is cuí)

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1	2

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(iv) Recorded Data / Observations | Sonraí Taifeadta / Breathnúcháin

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1	2

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1	2

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1	2

4 Analysis | Anailís

(i) Calculations / Data Analysis | Ríomh / Anailís Sonraí

(ii) Conclusion(s) and Evaluation of Result(s) | Conclúid(í) agus Luacháil an Toraidh/ na dTorthaí

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5 Comments (e.g. refinements, extensions, sources of error etc.) | Tuairimí (e.g. scagadh breise, fiosrú breise, foinsí earráidí, etc.)

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Use this space where additional space is required to complete your report on any aspect of the investigation. | Úsáid an spás seo nuair is gá breis spáis chun do thuarascáil ar aon ghné den fhiosrúchán a chríochnú.

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Use this page if additional graph paper is required for investigation 1

Úsáid an leathanach seo más gá breis grafpháipéir le haghaidh fhiosrúchán 1

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Selected Investigation 2	Fiosrúchán Roghnaithe 2
Period in which the investigation was carried out	**An tréimhse ina ndearnadh an fiosrúchán**

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1 Introduction to the investigation (including a clear statement/identification of the problem/topic to be investigated, background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information)

Réamhrá leis an bhfiosrúchán (ar a airítear ráiteas soiléir maidir le roghnú na faidhbe / an topaic le fiosrú; cúlra na taighde a rinneadh mar ullmhúchán don fhiosrúchán: daoine, leabhair, suímh ghréasáin, etc. a bhí mar fhoinsí faisnéise san ábhar)

(i) Statement/identification of the problem/topic to be investigated

Ráiteas soiléir maidir le roghnú na faidhbe / an topaic le fiosrú

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(ii) Background research undertaken in preparation for the investigation: people, books, websites, etc. as sources of relevant information

Cúlra na taighde a rinneadh mar ullmhúchán don fhiosrúchán: daoine, leabhair, suímh ghréasáin, etc. a bhí mar fhoinsí faisnéise san ábhar

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2 Preparation and planning	Ullmhúchán agus pleanáil
(i) Identify any relevant variables and necessary controls.	Sonraigh aon athróga agus aon chóimheastóirí riachtanacha a bhaineann le hábhar.

(ii) List of the equipment needed for the investigation	Liosta den trealamh ba ghá don fhiosrúchán

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(iii) List of tasks to be carried out during the investigation	Liosta na dtascanna le cur i gcrích le linn an fhiosrúcháin

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3 Procedure, Apparatus, Safety, Data Collection/Observations

Nós Imeachta, Gaireas, Sábháilteacht, Bailiú Sonraí / Breathnúcháin

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.

Is cóir na leathanaigh seo a leanas a úsáid chun cur síos a dhéanamh ar an nós imeachta a leanadh i mbun an fhiosrúcháin. Tá slí ar gach leathanach chun léaráid lipéadaithe a chur isteach, a thaispeánfaidh an gaireas nó an trealamh a úsáideadh nuair is cuí.

(i) Particular safety precautions required by this investigation

Réamhchúraimí sábháilteachta ar leith is gá don fhiosrúchán seo

(ii) Procedure followed in the investigation

An nós imeachta a leanadh san fhiosrúchán

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Labelled diagram (where appropriate)

Léaráid lipéadaithe (nuair is cuí)

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(iii) Procedure followed in the investigation | An nós imeachta a leanadh san fhiosrúchán

Labelled diagram (where appropriate) | Léaráid lipéadaithe (nuair is cuí)

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(iv) Recorded Data / Observations | Sonraí Taifeadta / Breathnúcháin

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Úsáid an leathanach seo más gá breis grafpháipéir le haghaidh fhiosrúchán 2

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