

HANGARAU

TECHNOLOGY



TE2011

DESIGN IT YOURSELF – BOOKLET 1

NCEA LEVEL 2



TECHNOLOGY

NCEA LEVEL 2

Expected time to complete work

The work in this booklet will take you about 20 hours to complete. This booklet is part of a four booklet series.

All work will be completed on the worksheets provided. Each booklet contains a number of worksheets. All the completed worksheets will make up your portfolio.

As you complete each booklet send your worksheets to your teacher for assessment. This will allow you to obtain ongoing feedback from your teacher.

Once all the booklets and worksheets are completed to an acceptable standard you will be able to submit your portfolio to your teacher so that it can be assessed.

You will work towards the following standard:

Achievement Standard 91354 (Version 1) Generic Technology 2.1

Undertake brief development to address an issue

Level 2, Internal

4 credits

In this booklet you will focus on these learning outcomes:

- exploring the context to select an issue
- establishing an initial brief that contains the conceptual statement.

CONTENTS

- 1 Context
- 2 Initial brief

HOW TO DO THE WORK

When you see:



Complete the activity.



Contact your teacher.



Complete the worksheet.

You will need:

- a digital camera
- computer/Internet access
- library access.

Resource overview

As you work through the technological process you will look at opportunities and use the design process to create design concepts, and model, develop and test solutions.

When you have completed your work:

- post it in using the cover sheet.

Or:

- scan and email it to your teacher (remember to also scan and send the cover sheet).

Remember to include your student ID number and the booklet code in the subject line of your email.

PROJECT INTRODUCTION

You must read this before starting.

In this project you will look for opportunities to create and innovate within the home environment. Producing a high quality, fit for purpose outcome will be an essential part of your work. It is recommended that you consider the skills you already have and those skills you would like to develop.

The main areas of technology are hard materials, food technology and soft materials.

This topic has been designed and written so that you can work in an area that interests you.

The Smith family example that runs through the topic incorporates both hard and soft materials but the activities also relate to food outcomes.

The example is only a guide and you are encouraged to develop your own technological practice in ways that will enable you to design, make, justify, test and evaluate your own successful outcome.

1 CONTEXT

LEARNING OUTCOME

Explore the context to select an issue.

LEARNING INTENTION

In this lesson you will learn how to:

- find a suitable opportunity related to your home.

INTRODUCTION

What is an opportunity in technology?

It is when you:

- grab the chance to explore and design a better outcome
- see a problem that needs solving
- create a desirable outcome from a wish list.

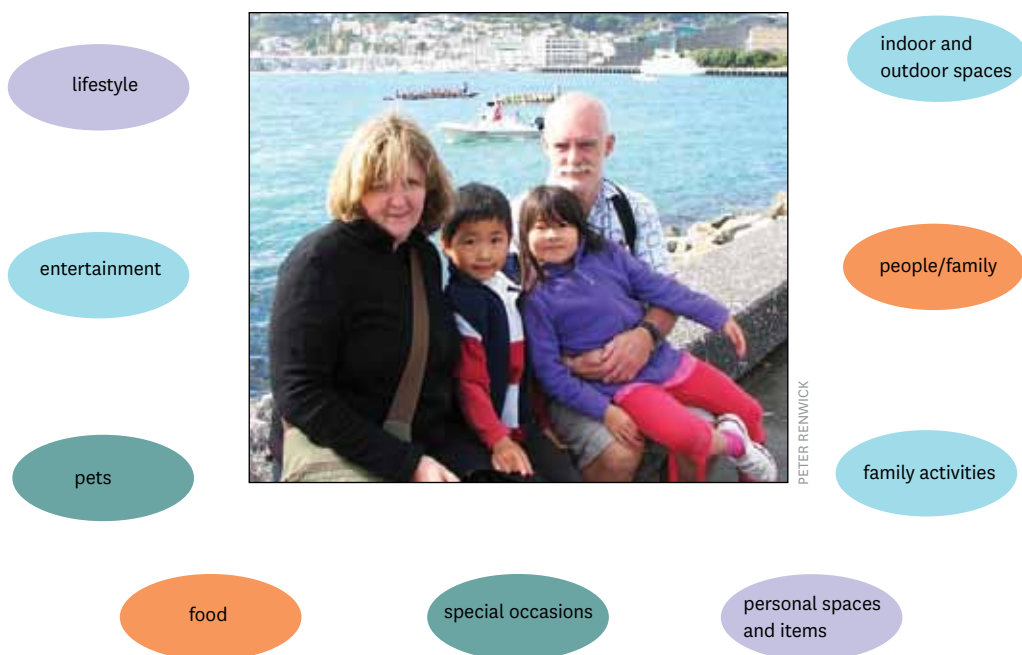
GLOSSARY
BOX

Your home is a busy environment made up of people, pets, and family activities. It includes various spaces both indoors and outdoors. All these function and interact differently yet relate to each other and contribute to your lifestyle.

You are going to use your home environment as a context to find an opportunity for a technology project.

THE CONTEXT

Meet the Smiths.

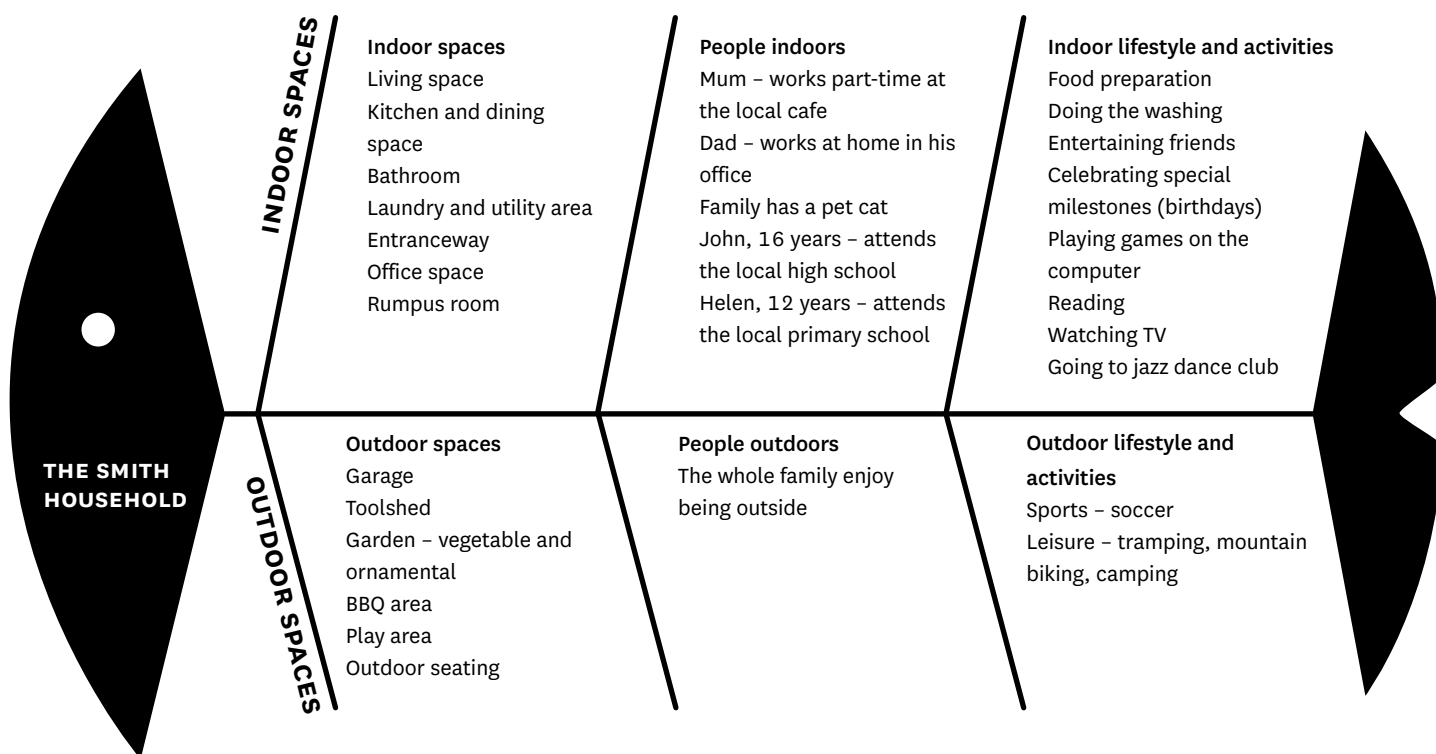


Create an image board about my home.

Use the worksheet titled 'My household'.

The Smiths decided to sort their household information into a fishbone diagram. Here is how they grouped the information:

FISHBONE DIAGRAM FOR THE SMITHS



When you sort your own home information you might like to think about some of the following:

- people - number, ages, ethnicity, genders, dietary needs
- pets and their needs
- physical areas - indoor: kitchen, bathroom, living rooms, bedrooms
- physical areas - outdoor: garage, BBQ, garden, shed
- lifestyle - daily, weekly and yearly activities, hobbies, sports, leisure activities
- social activities, food, entertainment, special occasions and celebrations.

In the spaces provided on the fishbone diagram, use words to sort and describe your household.

Use the worksheet titled 'My household fishbone diagram'.

CONTEXT

A CLOSER LOOK

You should now have an overall picture of your home environment. The Smiths investigated their household in more detail for possible opportunities. They took photographs and recorded their observations.



Observation: the garage is full of junk and clutter everywhere. It has become Dad's dumping ground.



Observation: there is junk and clutter all over the children's bedroom floor. Mum and Dad get very stressed over the mess!



Observation: the garden is unattractive and unused because no one has time to care for it. We really enjoyed playing and sitting in it.



ISTOCKPHOTO

Observation: the kitchen is highly used because we all love cooking and trying new food dishes. Preparing food and eating is important but it is sometimes difficult to find and store things.



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Observation: we are an outdoor family and all enjoy walking and tramping. We also go camping and cycling.



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Observation: the green waste is being dumped and is not very hygienic. We used to make compost and had a vegetable plot. There is nowhere to store the garden tools.

The Smiths looked at each observation detail. They listed opportunities and then explored the potential of each.

Record your own closer observations of your household.

Use the worksheet titled 'Observations'.

COMPARING OPPORTUNITIES

List opportunities	Reason why each opportunity has or has not got the potential to be developed
Area/activity 1: Tramping	
New snack and lunch for day tramps	This has potential because it is doable. The family enjoy tramping and having a healthy and nutritious snack.
Toilette bag	This is potentially doable, we have a sewing machine and mum could help me to use it. Having a trendy bag would be cool.
Camping gear (tent/sleeping bag)	No potential. I do not have the skills to make these and our equipment is new and works well.
Safety gear	This has potential but finding space in backpacks might be difficult and it will be expensive.
Area/activity 2: messy bedroom	
Redecorate the bedroom	Has potential but expensive and not really a technological activity. This might include a full renovation project.
Storage of clothes	A lot of potential to create a modern clothes storage unit. Might be out of my league because I do not have good carpentry skills and tools. Do not want to waste materials.
Personal items	A lot of potential to create a small trendy storage unit for the sister's bedroom. Basic skills needed and should be manageable.
Messy sister	This has high potential but this is the sister's problem not a technological one.

What opportunities do you see for development in **your** observations? What could you improve for a better outcome?

Use the worksheet titled 'My opportunities'.



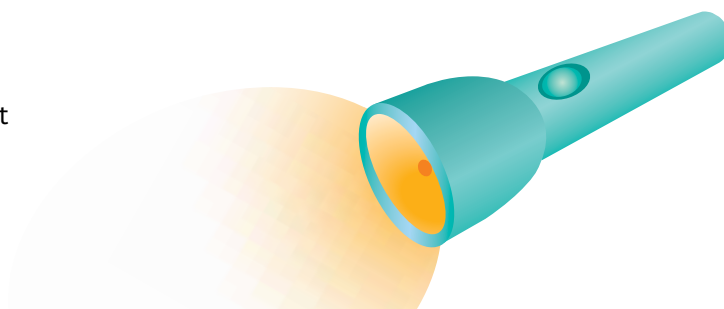
ISTOCKPHOTO

A CSI INVESTIGATION

The Smiths decided that the messy bedroom area and their outdoor activities contained a lot of opportunities that met their skills and interests.

The Smiths used a 'CSI investigation' to further interrogate these two environments and identify specific opportunities.

Try this: take a small torch and like an investigator, use it to focus on and spot light the details in each environment.



What does CSI stand for?

- CSI stands for Crime Scene Investigation. The investigation involves gathering evidence and information.


 A circular icon with a white background and a purple border. Inside the circle, the words "GLOSSARY BOX" are written in purple capital letters.

GLOSSARY
BOX

During this investigation, the Smiths wrote notes to identify things that:

- worked well
- did not work well
- were annoying
- were impractical
- looked good
- were unattractive
- could be improved
- were old fashioned and needed updating
- needed organising or better storage
- were too big or too small
- were unused, overused, broken.

SMITHS' CSI INVESTIGATION INTO OUTDOOR ACTIVITIES

TRAMPING AND WALKING

All our camping gear, tent and sleeping bags are good quality. We have boots etc. Carrying water and hot drinks is heavy but we do have collapsible bottles.

Backpack for day and overnight trips is light weight, waterproof and works well.

Safety gear: Dad carries the safety gear. I am not sure what we would do if he lost it! Perhaps we should all carry our own kit?

Personal hygiene is important on overnight tramps, we usually carry toiletries in plastic bags which are not really practical, my tooth paste got squashed last time.

Clothes: we layer up and have waterproofs. My sister says she always looks like a boy in her gear. She thinks it is old fashioned and unattractive.

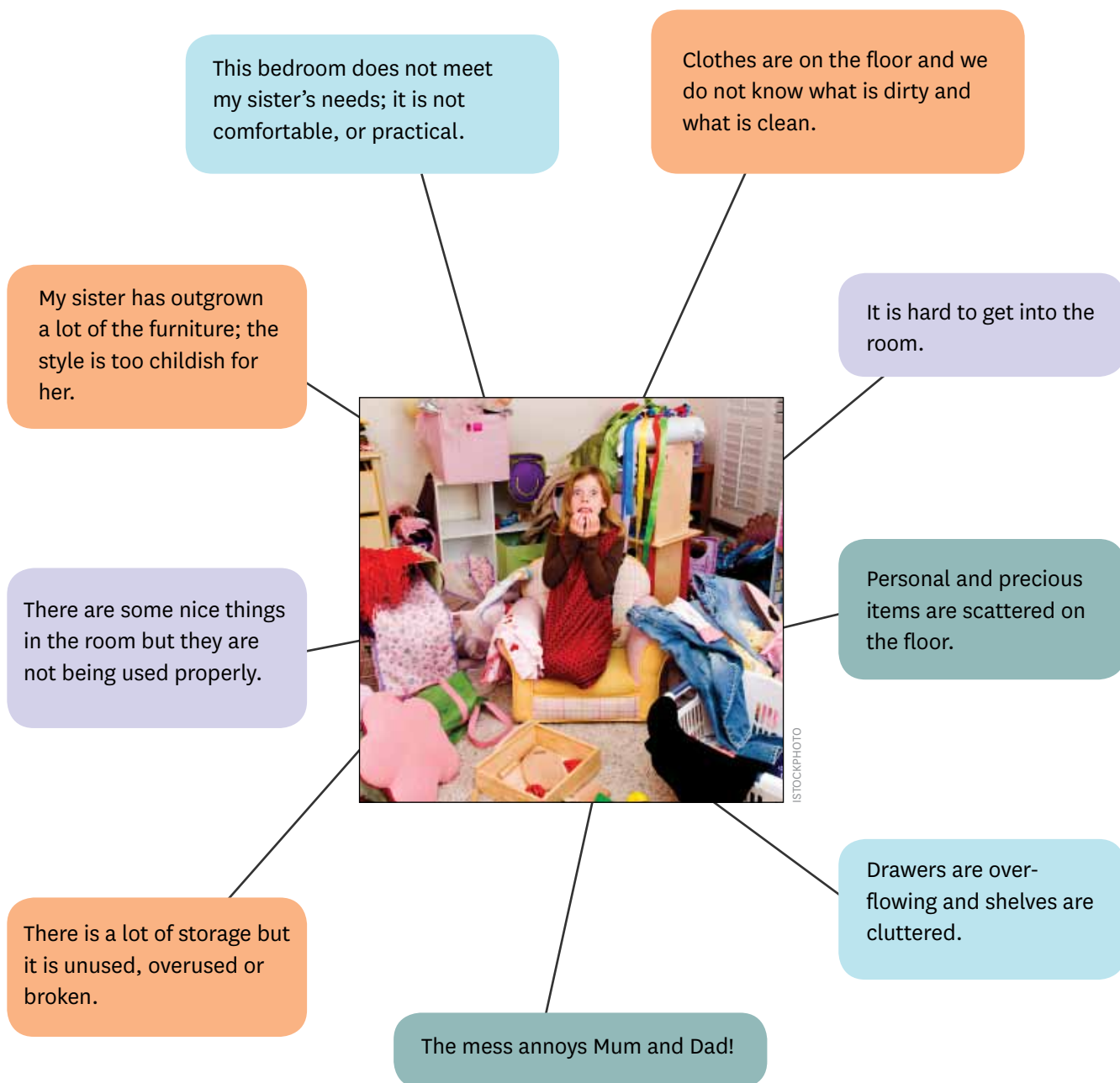


ISTOCKPHOTO

Food: for day trips we take sandwiches but these are often boring and not very tasty. It would be really good if we could find a nutritious light weight snack to take with us. For longer trips we take pasta but some new high-energy food would be good.

Cooking utensils: we take cutlery and cooking pots out of the kitchen. This is not ideal because they are heavy and bulky.

SMITHS' CSI INVESTIGATION INTO MESSY BEDROOM



CONTEXT

Complete your own CSI investigation into those areas that you have highlighted and record observations.

Use the worksheet titled 'My CSI investigation'.

THE SMITHS' NEXT STEP

After the Smiths explored both bedroom and tramping areas they decided to develop an outcome in the messy bedroom because:

- the bedroom is used on a daily basis and is more urgent than tramping that they only do occasionally
- the untidy bedroom mess creates conflict and frustration in the family
- Helen, the sister, would be a suitable client because she knows what she wants and deserves something nice in her bedroom
- the bedroom opportunity appears to be a realistic and 'doable' project and will suit their skills and interest in multi materials.

THE SMITHS' BEST OPPORTUNITY

The Smiths decided that a better storage system for Helen's bedroom offered that best opportunities because:

- a storage system is required to hold and store her personal items
- the items could be stored safely and securely
- clutter would be removed from the floor
- Helen's precious items would be safe
- there should be a lot of creative opportunities in this project.

STAKEHOLDERS

The Smiths decided that Uncle Joe would be a good stakeholder because he is DIY (Do It Yourself) mad.

The neighbour, Mrs Chin, would be a useful stakeholder because she is an interior designer and she has a daughter the same age as Helen who recently had her bedroom renovated.

Choose the best opportunity you see for development.

Client and stakeholder

A client is a person who will benefit most from the outcome.
The client is the main or key stakeholder.



Use the worksheet titled 'Best household opportunity'.

Jot down your first ideas about this opportunity. Explain who your client will be.

A stakeholder is someone who has an interest in the project, and can give feedback and feed forward, or has expertise or funding that will be useful in the project. Stakeholders invest time and interest in a project.



Use the worksheet titled 'First ideas'.

Your teacher would like to discuss your chosen project with you now. The conversation you will have will help to ensure that your project is feasible and has sufficient depth for NCEA Level 2.

Complete the discussion checklist for your chosen best opportunity.

Use the worksheet titled 'Discussion checklist'.



When you have completed it, phone your teacher. Be prepared to make notes on your worksheet, so have a pen handy.

2 INITIAL BRIEF

LEARNING OUTCOME

Establish an initial brief that contains the conceptual statement.

LEARNING INTENTION

In this lesson you will learn to:

- write an initial brief to solve your chosen issue.

INTRODUCTION

Your chosen opportunity has now become your technological issue. You are going to write a brief which you will continue to develop during the project. The brief is going to help you specify what needs to be done and will set parameters that will guide your design work.

INITIAL BRIEF

A brief describes a desired outcome that would meet a need or realise an opportunity. It includes a conceptual statement that says what is to be done and why, and gives specifications that state the physical and functional requirements of the outcome.

After talking to your teacher you should have identified and confirmed your best opportunity.

Now you are ready to write your initial brief.

A brief has four main requirements:

- issue – the opportunity you have identified in your household and agreed on with your teacher
- conceptual statement – communicates what is to be done and why
- specifications – the physical and functional details or attributes your solution must have
- constraints – the difficulties or barriers which will need to be overcome.

What is an attribute?

- An attribute describes the special physical and functional details or features for a product or process.

GLOSSARY
BOX

IMPORTANT

As you work through all the stages in the technological process, the initial brief will need to be regularly updated and refined to make it more detailed. Keep upgrading your brief as you discover new ideas or information.

The Smiths developed their initial brief:

Issue

The younger sister Helen has junk and clutter on the bedroom floor.

Conceptual statement

There is a need to develop a suitable storage system to organise Helen's personal and precious items.

Specifications

The storage system must:

- suit the décor of the bedroom
- be easily accessible and versatile
- be inexpensive
- fit in to the given room dimensions
- use some recycled materials.

Constraints

Limited construction skills.

Limited time.

Limited space.

Limited budget.

Develop your own initial brief.

Use the worksheet titled 'My initial brief'.

WHEN YOU HAVE FINISHED YOUR WORK

Complete the self-assessment and the cover sheet at the back of the book and attach these to your worksheets. Send your work to Te Kura (The Correspondence School) with the self-assessment and cover sheet.

Your teacher will give you feedback and return your worksheets.

ACKNOWLEDGEMENTS

Every effort has been made to acknowledge and contact copyright holders. Te Aho o Te Kura Pounamu apologises for any omissions and welcomes more accurate information.

Photos

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SELF-ASSESSMENT

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Fill in the rubric by ticking the boxes you think apply for your work. This is an opportunity for you to reflect on your achievement in this topic and think about what you need to do next. It will also help your teacher. Write a comment if you want to give your teacher more feedback about your work or to ask any questions.

Fill in your name and ID number.

Student name: _____ Student ID: _____

	Not yet attempted	Didn't understand	Understood some	Understood most	Very confident in my understanding
Explore the context to select an issue.					
Establish an initial brief that contains the conceptual statement.					

Please place your comments in the relevant boxes below.

	Student comment
Explore the context to select an issue.	
Establish an initial brief that contains the conceptual statement.	
Any further student comments.	



Contact your teacher if you want to talk about any of this work.
Freephone 0800 65 99 88

TEACHER USE ONLY

Please find attached letter <input type="checkbox"/>
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Teacher comment

COVER SHEET – TE2011



STUDENTS – PLACE STUDENT ADDRESS LABEL BELOW OR WRITE IN YOUR DETAILS.

Full Name _____

ID No. _____

Address _____
(If changed)

AUTHENTICATION STATEMENT

I certify that the assessment work is the original work of the student named above.

Signed _____ Signed _____
(Student) (Supervisor)

FOR SCHOOL USE ONLY

ASSESSMENT