Entry Pathways Qualifications in Science Today

UNITS AND GUIDANCE

(To be read in conjunction with the Entry Pathways Specification)

Qualifications available	Cash-in Code
Entry 2 Award in Science Today	6004/A2
Entry 2 Certificate in Science Today	6004/C2
Entry 2 Diploma in Science Today	6004/D2
Entry 3 Award in Science Today	6004/A3
Entry 3 Certificate in Science Today	6004/C3
Entry 3 Diploma in Science Today	6004/D3

Contents

Units and Guidance for Centres

Units that contribute to qualifications in Science Today

Important Note: Please read this document in conjunction with the specification.

Unit Code	Unit title	Unit Level and Unit Reference Code			
		Entry 1	Entry 2	Entry 3	Level 1
6110/E2 6110/E3	Working as Part of a Group		H/502/0451	K/502/0455	
6111/E2 6111/E3	Working towards goals		Y/502/0435	D/502/0453	
6123/E2 6123/E3	Choices and decisions		J/503/2774	L/503/2775	
6164/E2 6164/E3	Food and Health		A/600/8921	Y/600/8926	
6200/E2 6200/E3	Introduction to Plant Care		T/601/3373	F/601/3375	
6201/E2 6201/E3	Introduction to Land Maintenance		H/601/3529	Y/601/3530	
6202/E2 6202/E3	Introduction to Animal Care		Y/601/3527	D/601/3528	
6203/E2 6203/E3	Science: Health and Safety		H/503/3950	M/503/3949	
6204/E2 6204/E3	Science and our Universe		K/503/3951	M/503/3952	
6205/E2 6205/E3	Making Useful Compounds		T/503/3953	A/503/3954	
6206/E2 6206/E3	Science and the Human Body		J/503/3956	F/503/3955	
6207/E2 6207/E3	Science and the Plant World		L/503/3957	R/503/3958	
6208/E2 6208/E3	The science of light and sound		Y/503/3959	L/503/3960	
6209/E2 6209/E3	Variation and Adaptation		R/503/3961	Y/503/3962	
6210/E2 6210/E3	Working with Electrical Circuits		D/503/3963	H/503/3964	
6211/E2 6211/E3	Energy in the home and workplace		K/503/3965	M/503/3966	
6212/E2 6212/E3	Chemical Products used in the Home and their Environmental Impact		A/503/3968	T/503/3967	
6234/E2 6234/E3	Climate Change: Causes, Effects and Human Responses - From September 2024 ONLY		T/617/3317	A/617/3318	

WJEC PATHWAYS – ENTRY QUALIFICATIONS

Title	**Working as Part of a Group**
Unit Ref. No.	**H/502/0451**
Entry Code	**6110/E2**
Level	**Entry 2**
Credit value	**2**
Unit aim	This unit aims to enable learners to become an active contributor when working with others on group activities and to be able to review their own progress and skills development.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Demonstrate an awareness of how to work with others in appropriate ways.	AC1.1 Participate in setting ground rules for working with others. AC1.2 Relate basic information about the work to be carried out. AC1.3 Identify their role in the group.
LO2 Be able to demonstrate working as part of a group.	AC2.1 Carry out given tasks when working with others. AC2.2 Ask for or offer help when required. AC2.3 Identify what went well and what went less well.

Title	**Working as Part of a Group**
Unit Ref. No.	**K/502/0455**
Entry Code	**6110/E3**
Level	**Entry 3**
Credit value	**2**
Unit aim	This unit aims to enable learners to become an active contributor when working with others on group activities and to be able to review their own progress and skills development.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know how to work with others in appropriate ways.	AC1.1 Contribute to setting ground rules for working with others. AC1.2 Make suggestions about the role they should play in the group.
LO2 Be able to play an active role in working as part of a group.	AC2.1 Carry out agreed activities when working with others on a group task. AC2.2 Make suggestions and receive feedback appropriately. AC2.3 Ask for or offer help when required.
LO3 Review their role in the group.	AC3.1 Review their work with others. AC3.2 Identify how they contributed to the group. AC3.3 Identify what went well and areas they could improve in working with others.

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

This unit could be undertaken to support any group activity, such as an enterprise activity or one of the companion units such as Environmental Awareness, Community Action etc or even a unit from another pathway such as Investigating your History, Introduction to Animal Care etc.

LO1

The learner will need to appreciate the value of working as a member of a team and identify requirements such as:

- Being honest
- Speaking for themselves, but not dominating
- Taking responsibility for their own actions
- Ensuring all group members contribute to final outcome
- Listen to other's point of view.

LO2

The learner will need to be actively involved in a group activity that includes:

- Defining a task
- Making a plan
- Allocating work
- Checking performance
- Identifying help required
- Completing tasks.

LO3

The learner will need to review the part they played within the group in terms of negative as well as positive aspects of the experience.

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Working towards goals, Community action, Environmental awareness, Managing social relationships plus various appropriate units across the Entry Level Pathways that lend themselves to group activities.

3.2 Resources

WJEC support materials (legacy first skills/PSS)
Appropriate PSE texts within the centre

Internet websites:

www.wjec.co.uk
www.navca.org.uk
www.**communityaction**.org.uk
www.wastewatch.org
www.wcl.org
www.worldlandtrust.org
www.earthdefenders.co.uk

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit

The following types of evidence are likely to feature:

Photographs, evaluation sheets, Witness Statements, wall displays, posters, Power point presentations, videos, records of oral questioning, annotated task sheets.

Overall comments will be summarised on the Record Form.

4.2 Examples of Tasks

The requirements of the Assessment Criteria may be satisfied whilst the learners are involved in a group activity as part of other units, although some such activities could be created specifically for this unit, such as:

Task 1 Making cakes for a charity stall

Task 2 Organising a tea for local elderly people

Task 3 Planning a day out at a theme park

Task 4 Planning a wildlife garden in the school

Task 5 Organising an anti-litter campaign

Task 6 Setting up a mini-business/enterprise, e.g. car-wash; cake stall; plant sales; tuck shop etc.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each assessment criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, learning outcomes may be common but assessment criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services.

WORKING AS PART OF A GROUP - ENTRY 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Participate in setting ground rules for working with others.			
AC1.2 Relate basic information about the work to be carried out.			
AC1.3 Identify their job role in the group.			
AC2.1 Carry out given tasks when working with others.			
AC2.2 Ask for or offer help when required.			
AC2.3 Identify what went well and what went less well.			

General Comments

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Teacher:_____Date: _____

Moderator:_____ Date: _____

WORKING AS PART OF A GROUP - ENTRY 3

ASSESSMENT RECORD

Candidate Name _____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Contribute to setting ground rules for working with others.			
AC1.2 Make suggestions about the role they should play in the group.			
AC2.1 Carry out agreed activities when working with others on a group task.			
AC2.2 Make suggestions and receive feedback appropriately.			
AC2.3 Ask for or offer help when required.			
AC3.1 Review their work with others.			
AC3.2 Identify how they contributed to the group.			
AC3.3 Identify what went well and areas they could improve in working with others.			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC PATHWAYS – ENTRY QUALIFICATIONS

Title	**Working towards Goals**
Unit Ref. No.	**Y/502/0435**
Entry Code	**6111/E2**
Level	**Entry 2**
Credit value	**2**
Unit aim	This unit aims to enable learners working at Entry 2 to understand how to identify and work towards goals appropriately.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Demonstrate an awareness of the skills and qualities needed for success in work and life.	AC1.1 Recognise their skills, qualities and interests. AC1.2 Identify their strengths. AC1.3 Say what they could improve.
LO2 Demonstrate an awareness of how to identify goals.	AC2.1 Identify some short-term goals they would like to work towards. AC2.2 Agree a goal with an appropriate person.
LO3 Follow steps to achieve a personal goal.	AC3.1 Say who will support them to work towards the agreed goal. AC3.2 Carry out given activities to work towards the agreed goal. AC3.3 Identify what has been achieved.

Title	**Working towards Goals**
Unit Ref. No.	**D/502/0453**
Entry Code	**6111/E3**
Level	**Entry 3**
Credit value	**2**
Unit aim	This unit aims to enable learners working at Entry 3 to understand how to identify and work towards goals appropriately.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Be able to identify goals.	AC1.1 State their strengths and what they need to improve. AC1.2 Identify an appropriate short-term goal to work towards. AC1.3 Agree the goal with an appropriate person.
LO2 Be able to plan how to meet their agreed goal.	AC2.1 Identify what needs to be done to work towards the goal. AC2.2 Identify sources of support to help achieve their goal. AC2.3 Say what the deadlines are for achieving the goal.
LO3 Follow a plan to achieve an agreed goal.	AC3.1 Carry out activities to achieve the goal. AC3.2 Review their progress towards achieving the goal. AC3.3 Identify whether the goal has been achieved.

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;

- providing opportunities for progression;

- centre facilities and resources.

LO1

Learners will need to identify what their personal strengths and weaknesses are. What are their ideas for the future? What they need to develop in order to achieve their ambitions. Consider various options. Decide on a short-term goal in the context of the centre.

LO2

Identify an action plan which includes:
- What they will need to do to achieve the goal?

- The people who can help them

- Any other support they will need

- A time-scale for completing it.

LO3

Follow the plan by:
- Carrying out the agreed processes

- Reviewing what they have achieved

- Reflecting on the outcomes

- Suggesting ways to improve.

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Managing own money
Making the most of leisure time
Dealing with problems in daily life
Working as part of a group
Developing self
Managing social relationship
Community action
Individual rights and responsibilities

3.2 Resources

Apart from resources used by individual centres, the WJEC has provided a range of materials to supplement other resources to support the work of this unit.

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked

units. The following types of evidence are likely to

feature:

Photographs, evaluation sheets, Witness Statements, wall displays, posters, Power point presentations, videos, records of oral questioning, annotated task sheets.

Overall comments will be summarised on the Record Form.

4.2 Examples of Tasks

Task 1 Produce a leaflet about a job that interests you.

Task 2 Keep a record of the activities that led to you reaching your agreed goal.

Task 3 Produce a simple display of the various skills required for at least four different jobs.

Task 4 Produce a PowerPoint presentation describing the steps taken to reach the goals you have identified.

Task 5 Decide on a new skill you may wish to learn e.g. playing chess, fishing, new IT skills such as PowerPoint, swimming etc.

Task 6 Decide one thing in your life you would like to change, such as starting to exercise, cycling to school, eating healthier food, etc

Task 7 Produce a plan on how to achieve a specific personal goal:
- Losing weight
- Increasing fitness levels
- Eating 5 portions of fruit and vegetables a day.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each assessment criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, learning outcomes may be common but assessment criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

WORKING TOWARDS GOALS - ENTRY 2
ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Recognise their skills, qualities and interests.			
AC1.2 Identify their strengths.			
AC1.3 Say what they could improve.			
AC2.1 Identify some short-term goals they would like to work towards.			
AC2.2 Agree a goal with an appropriate person.			
AC3.1 Say who will support them to work towards the agreed goal.			
AC3.2 Carry out given activities to work towards the agreed goal.			
AC3.3 Identify what has been achieved.			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WORKING TOWARDS GOALS - ENTRY 3
ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No. _____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 State their strengths and what they need to improve.			
AC1.2 Identify an appropriate short-term goal to work towards.			
AC1.3 Agree the goal with an appropriate person.			
AC2.1 Identify what needs to be done to work towards the goal.			
AC2.2 Identify sources of support to help achieve their goal.			
AC2.3 Say what the deadlines are for achieving the goal.			
AC3.1 Carry out activities to achieve the goal.			
AC3.2 Review their progress towards achieving the goal.			
AC3.3 Identify whether the goal has been achieved.			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC PATHWAYS - ENTRY QUALIFICATIONS

Title	**Choices and Decisions**
Unit Ref. No.	**J/503/2774**
Entry Code	**6123/E2**
Level	**Entry 2**
Credit value	**1**
Unit aim	This unit aims to provide learners with the opportunity to develop decision-making skills which will enable them to make appropriate choices in their own lives.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know that choices can be made.	AC1.1 Suggest where choices can be made.
LO2 Be able to take part in decision-making.	AC2.1 Take part in making a decision about an aspect of their life.

Title	**Choices and Decisions**
Unit Ref. No.	**L/503/2775**
Entry Code	**6123/E3**
Level	**Entry 3**
Credit value	**1**
Unit aim	This unit aims to provide learners with the opportunity to develop some decision-making skills which will enable them to make appropriate choices in their own lives.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know that choices can be made in both activities and daily events.	AC1.1 Identify activities where choices can be made. AC1.2 Identify daily events where choices can be made.
LO2 Be able to make a decision.	AC2.1 Identify choices involved in decision making AC2.2 State choices made.

2. Amplification of Content

The following suggestions should be considered in the context of

- the level the learner is working at
- providing opportunities for progression
- centre facilities and resources.

LO1

The learner needs to appreciate that they are making choices on a regular basis, at home, in school, in the community, particularly in terms of:

- Food - what to eat, how is it cooked, eating a healthy diet
- Fashion - what to wear on particular occasions, keeping up with trends
- Transport - how to get to a particular place - walk or catch a bus
- Entertainment - how shall we spend our time - cinema, bowling, leisure centre, disco etc
- Schoolwork - choosing to do homework or going out
- Careers - what do I want to do, what qualifications will I need etc.
- Relationships - Who are my best friends? Who do I like being with? etc.

LO2

The learner needs to appreciate that the choices they make will have a variety of consequences.

That some will have an immediate effect and others are more long-term.

The choices should relate as far as possible to their lifestyle and should range from the simple to the more complex (e.g. who they socialise with, who they may confide in, about where to live, who to live with, how much support they need, how to spend their money).

The learner should also be afforded the opportunity to make a variety of choices from given options such as:

- Passive or active involvement in sport
- What type of TV programme to watch
- How to get to a particular destination.

The learner should also be able to justify their decisions.

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Working towards goals, Working as part of a group, Developing self, Making the most of leisure time, Community Action, Personal Identity, Preparing for Work, Myself within the Community, Planning a Journey.

3.2 Resources

"Low Cost, No Cost Youth Work:101 Positive Activities for Young People":
Vanessa Rogers
WJEC Support Materials (legacy specifications)

Internet websites:

www.nya.org.uk
www.youthwork.com/activitiesinit.html
www.theproblemsolvingcompany.co.uk

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:

- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

Photographs, evaluation sheets, Witness Statements, wall displays, posters, Power point presentations, DVDs, records of oral questioning, annotated task sheets.

Overall comments will be summarised on the Record Form.

4.2 Examples of Tasks

Task 1 Produce a spider diagram that identifies a variety of routines where you make choices and which are related to school or work, or home.

Task 2 Produce a wall chart that identifies activities that have to be done and activities that you can choose to do.

Task 3 Prepare a presentation for your group, identifying your choice between a number of options you have been given, demonstrating that your understanding that by making a choice, you cause something to happen.

Task 4 Prepare a presentation for your group in which you identify two options that you might take in a given situation (e.g. share a room/have own room; take the bus/walk etc.).

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services.

CHOICES AND DECISIONS - ENTRY 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Suggest where choices can be made.			
AC2.1 Take part in making a decision about an aspect of their life.			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

CHOICES AND DECISIONS - ENTRY 3

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify activities where choices can be made. AC1.2 Identify daily events where choices can be made.			
AC2.1 Identify choices involved in decision making AC2.2 State choices made.			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC PATHWAYS – ENTRY QUALIFICATION

Title:	**Food and Health**
Unit Ref No.	**A/600/8921**
Entry Code:	**6164/E2**
Level:	**Entry 2**
Credit value:	**4**
Unit aim:	The unit aims to provide learners with the opportunity to develop an understanding of the link between food and health.

Learning outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Understand the principles of a healthy diet.	AC1.1 Give a basic explanation of current nutritional guidelines. AC1.2 Identify the main nutrients needed by the body. AC1.3 Illustrate clearly the results of poor food choice.
LO2 Be able to apply dietary knowledge to plan meals to meet dietary needs.	AC2.2 Identify dishes / meals from a selection that are suitable for a range of different dietary needs.
LO3 Be able to use a range of practical skills to make healthy meals / food items.	AC3.1 Prepare a number of healthy dishes e.g. salads, soups, fruit dishes, stir fry, kebabs.

Title:	**Food and Health**
Unit Ref No.	**Y/600/8926**
Entry Code:	**6164/E3**
Level:	**Entry 3**
Credit value:	**4**
Unit aim:	The unit aims to provide learners with the opportunity to develop an understanding of the link between food and health.

Learning outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Understand the principles of a healthy diet.	AC1.1 Explain current nutritional guidelines and why they should be followed. AC1.2 Identify the main nutrients needed by the body and give examples of main food sources. AC1.3 Review sample diets and explain the results they could have on health and well being.
LO2 Be able to apply dietary knowledge to plan meals to meet dietary needs.	AC2.2 Plan a minimum of 2 days meals to meet a range of dietary needs e.g. low fat diet, coeliac, anaemic, pregnant woman.
LO3 Be able to use a range of practical skills to make healthy meals / food items.	AC3.1 Adapt recipes to make the dishes they produce healthier (use of alternative cooking methods and different ingredients etc.)

2. Amplification of Content

The following suggestions should be considered in the context of:

- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1

Learners will need to gain an understanding of what constitutes as a Balanced diet.

This should include:

- An understanding of current nutritional guidelines
- Knowledge of the main nutrients required by the body: functions, sources in the diet
- Energy and food balance
- Results of poor food choice: obesity, nutritional deficiencies e.g. Anaemia, tooth decay, skin problems, high cholesterol

Students could produce posters / charts/ leaflets to demonstrate their knowledge.

LO2

Learners will need to be given the opportunity to plan diets for people with different dietary needs.

Students to collect a bank of recipes for:

- Toddlers
- Pregnant women
- Teenagers
- Vegetarians
- Coeliacs
- Ageing population
- People recovering from Illness or at risk of illness e.g. Obesity, heart disease.

Students could produce posters / charts / leaflets covering points to consider when planning meals for the range of clients / people with different dietary needs looked at.

LO3

Learners will need to know how to make a selection of dishes to suit a variety of needs.

And explore different cooking methods: stir frying, baking, grilling, contact grill, slow cooker etc.

They need to have the opportunity to participate in individual, group or experimental sessions.

The following list of suggested dishes is not exhaustive:

- Dishes containing fruit and vegetables
- Vegetable curry / lasagne, soups, coleslaw, salads, stuffed green peppers, filled jacket potatoes
- Fresh fruit salad, fruit tarts / crumbles, mousses/fools, muffins
- Dishes using wholemeal pasta
- Macaroni cheese, pasta bake, Spaghetti Bolognese
- Use of quorn: chilli con carne, shepherds pie, veggie burgers

Basic recipes adapted e.g.: Use of artificial sweetener in desserts / cakes / buns
Half fat margarine / butter used in traditional recipes
Use of wholemeal flour: pizza bases, bread products, cakes
Gluten free products.

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all of completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners.

For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Level Pathways specification.

Closely related units likely to be delivered along with Food and Health are:

- Food Preparation, cooking and serving
- Health, Safety and Hygiene
- Introduction to the hospitality industry
- Science and the Human Body

In developing Individual Learning Plans and planning the curriculum as a whole, it is also likely that this unit will link with PSD units such as Healthy Living and Developing Self. As well as course content, it is advisable to think about coverage of associated Assessment Criteria (as illustrated below in some of the examples of tasks).

3.2 Resources

Recipe books as available in the centre

Text books

All about Food – McGrath H
Understanding Cookery
Food Choice – Anita Tull
The Food Magazine
BBC Good food magazine
BBC Olive magazine
Range of women's magazines feature weight reduction menu plans

WJEC Food Studies Resource booklet

Healthy Eating literature: government, supermarket, manufacturers

Internet web-sites

www.nhs.uk
www.foodafactoflife.org.uk
www.nhs.uk
www.patient.co.uk
www.eatwell.gov.uk

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:

- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units (e.g. Food and Health)

The following types of evidence are likely to feature:

Photographs, evaluation sheets, witness statements, teacher comments including records of oral questioning.

Overall comments will be summarised on the Record Form.

4.2 Examples of Tasks

(a) Tasks specific to Food and Health

Task: Produce a leaflet / poster on what is meant by a “balanced / healthy diet“.

Task: Produce a power point on the different nutrients needed by the body.

Task: Set up a display of foods and explain to others in the class how they would fit into a daily diet.

Task: Design a game to show what happens to people who make poor food choices.

Task: In groups plan a range of meals to meet a range of dietary needs. Present your findings to each other.

(b) Tasks Providing Evidence for Other Units

Food Preparation

Task: Keep a diary / photographic evidence / recipe book of the dishes you have made and make a note of important points that need to be considered when preparing and storing the item prior to serving.

Basic Cookery

Task: Keep a diary / photographic evidence / recipe book of the dishes you have made and record what went well and how you would improve it if you made it again.

Food Science

Task: Eggs have many different uses when preparing meals. Prepare and serve two dishes which show different uses of eggs.

Task: Many different kinds of cereals are used when preparing meals. Prepare, cook and serve two dishes which show the use of different cereals.

Food Preparation, Cooking and Serving

Task: A young married couple have a limited budget. Plan and cook two dishes which would be suitable for their evening meal.

Task: You and your four-year-old brother are going out for the day. Prepare and pack a suitable lunch for both of you.

Task: Your best friend, who is a vegetarian, is coming to lunch. Prepare and serve two dishes she would enjoy.

Task: As a student, you have limited time to prepare meals. Use some convenience foods to help in preparing a healthy two-course evening meal for yourself and a friend.

Health, Safety and Hygiene

Task: Many items of modern equipment save time and energy. Show how the use of one item of equipment can help you prepare a 2 course meal more efficiently.

Task: Plan and make a selection of dishes which could be served at an end-of-term buffet at your local youth club, include sweet and savoury dishes.

Task: Produce a revision booklet for year 11 students on:
"All there is to know about Food Poisoning"

You will need to include: causes of food poisoning, types of food poisoning, and rules to remember to prevent food poisoning.

An Introduction to the hospitality Industry

Task: Produce a portfolio / brochure to show the different types of hospitality and catering establishments in the area where you live or go to school.

You may wish to collect information by:

- Going on a field trip – walk around local town
- Internet research
- Looking in Holiday brochures
- Local newspapers.

Task: Produce a booklet or a wall chart which may be used at the Year 9 or Year 11 option evening in your school / college to show the different employment opportunities available within the hospitality and catering industry.

You may wish to collect information by:

- Internet job search
- Visiting local employers or local
- Contacting the careers guidance department.

Task: Design a matching game that year 10 class could use to learn about:

(1) The different types of establishments that offer hospitality or catering services
Or
(2) The different roles within the hospitality and catering industry.

Task: Imagine you are opening a new hotel in your local area and need to employ staff.

Write an advert for the local paper stating the qualities you would be looking for in:

(i) A head chef

(ii) Wait staff

(iii) Receptionist

(centre to choose staff suitable for the candidates to relate to).

Task: Carry out a role play activity to interview a person for a specific job in the new restaurant you own.

List the questions you will need to ask to find out if they are suitable for the post.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements.

FOOD AND HEALTH – ENTRY 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No. _____

Centre Name_____ Centre No. _____

Assessment Criteria	Met	Evidence
AC1.1 Give a basic explanation of current nutritional guidelines.		
AC1.2 Identify the main nutrients needed by the body.		
AC1.3 Illustrate clearly the results of poor food choice.		
AC2.2 Identify dishes / meals suitable for a range of occasions and to meet different needs.		
AC3.1 Produce a range of dishes.		

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

FOOD AND HEALTH – ENTRY 3

ASSESSMENT RECORD

Candidate Name_____ Candidate No. _____

Centre Name_____ Centre No. _____

Assessment Criteria	Met	Evidence
AC1.1 Explain current nutritional guidelines and why they should be followed.		
AC1.2 Identify the main nutrients needed by the body and give examples of main food sources.		
AC1.3 Analyse sample diets explaining the results they could have on health and well being.		
AC2.2 Plan a minimum of 2 days meals to meet a range of dietary needs e.g. low fat diet, coeliac, anaemic, pregnant woman.		
AC3.1 Prepare a number of healthy dishes.		
AC3.2 Adapt recipes to make the dishes they produce healthier (use of cooking methods and different ingredients).		

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC PATHWAYS – ENTRY QUALIFICATIONS

Title:	**Introduction to Plant Care**
Unit Ref. No.:	**Entry 2: T/601/3373** **Entry 3: F/601/3375**
Entry Code:	**6200/E2/E3**
Level:	**Entry 2 / 3**
Credit value:	**3**
Unit aim:	This unit aims to enable learners to gain basic skills and understanding in the care of plants.

Learning outcomes ***To be awarded credit the learner will:***	**Assessment Criteria** **Entry 2** ***Assessment of the learning outcome will require the learner to demonstrate that they can:***	***Amplification of Content***
LO1 Know the requirements of plants for healthy growth.	AC1.1 List the requirements of plants for healthy growth.	Requirements of a plant for healthy growth (to include requirement for germination): • Water • Warmth • Light • Plant food • Control weeds/pests *Learners should demonstrate their knowledge by examining the requirements of a* ***particular*** *plant.*
LO2 Be able to propagate a plant.	AC2.1 Assist in the preparation of a seed bed.	• Positioning and preparation of seed beds/ seed trays;
	AC2.2 Follow instructions to sow seeds for one type of plant.	• Spacing of seeds; • Seed depth; • Use of propagators to germinate seeds. • Instructions: verbal/written
LO3 Be able to care for a plant, maintaining healthy growth.	AC3.1 Assist in the care of seedlings.	• Repot; • Thin out;
	AC3.2 Follow instructions to maintain the healthy growth of a plant.	• Plant food/fertilisers; • Water requirements; • Identify common plant pests/diseases of plants (e.g. greenfly, 'rust'); • Control common pests; Identify common weeds/ Control weeds
LO4 Be able to produce a food/flower crop.	AC4.1 Produce a food or flower crop from seed.	

Learning outcomes ***To be awarded credit the learner will:***	**Assessment Criteria Entry 3** ***Assessment of the learning outcome will require the learner to demonstrate that they can:***	**Amplification of Content**
LO1 Know the requirements of plants for healthy growth.	AC1.1 State the requirements of plants to maintain healthy growth.	Requirements of a plant for healthy growth (to include requirement for germination) • Water • Warmth • Light • Plant food • Control weeds/pests *Learners should demonstrate their knowledge by examining the requirements of a particular plant.*
LO2 Be able to propagate a plant.	AC2.1 Select appropriate tools to prepare a seed bed.	• Appropriate tools • Preparation of seed beds/ seed trays;
	AC2.2 Select an appropriate sowing technique to sow two different types of seed.	• Use of propagators to germinate seeds; • Spacing of seeds; • Seed depth.
	AC2.3 Correctly position a plant for healthy growth.	Positioning of seed beds/ seed trays; • Shade, direct sun light, sheltered, greenhouse. • North/South facing
LO3 Be able to care for a plant, maintaining healthy growth.	AC3.1 Use appropriate techniques to care for seedlings.	• Repot; • Thin out;
	AC3.2 Care for a plant to maintain healthy growth.	• Plant food/fertilisers; • Water requirements.
	AC3.3 Control a common weed or pest.	• Identify common plant pests/diseases of plants (e.g. greenfly, 'rust'). • Control common pests; • Control common weeds.
LO4 Be able to produce a food/flower crop.	AC4.1 Harvest a food or flower crop from seed or from cuttings.	• Produce one or more food/flower crops to show basic principles of control and management; • Harvesting.

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1

LO2

- Positioning and preparation of seed beds/ seed trays;
- Use of propagators to germinate seeds;
- Spacing of seeds;
- Seed depth.

Learners should demonstrate their skills by propagating a particular plant

LO3

Learners should demonstrate their skills by propagating and maintaining healthy growth in one plant/crop.

LO4

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with **Introduction to Plant care** are:

Introduction to Land Maintenance

Introduction to Animal Care

Science and the Plant World

Variation and Adaptation

3.2 Resources

Resources

There are no particular books that cover this unit. Learners can find information using textbooks, websites, CD ROMs, magazines and newspapers.

Books

Gardening Books.
e.g. RHS Gardening Through the Year **ISBN-13:** 978-1405308922

Websites

http://www.garden.org/plantguide/
http://www.plantcare.com/gardening-guides/
http://www.flowers.org.uk/plants/plants-index.htm
http://mygarden.rhs.org.uk/blogs/vegpert_blog/archive/2008/07/04/plant-care.aspx
http://www.complete-gardens.co.uk/online/online-gardening-videos.php
NGFL resources: http://www.ngfl-cymru.org.uk/eng/vtc-home/vtc-ks4-home/vtc-ks4-land_studies

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In practice, ways of demonstrating that the criteria have been met will depend upon the way in which this unit has been integrated with other units in the delivery of the course as a whole. Further guidance is given in the section 'Delivery and Assessment'. However, the following types of evidence are likely to feature:

- photographic history of learners carrying out work;
- diary of work;
- witness statements.
- Presentations/ Posters produced by the learners
- written work;
- story boards;
- evaluation sheets;
- records of oral questions;

4.2 Examples of Tasks

(a) Tasks specific to Introduction to Plant Care

Task 1: Produce a poster showing a flowering plant and provide information on what the plant needs for healthy growth.

Task 2: Design a leaflet, showing a variety of garden tools and the functions of each.

Task 3: Design a flow diagram to show the stages in the preparation of a seed bed.

Task 4: Your school / college entrance would like you to provide a display of plants. On a plan of the area, show which plants you would choose and where you would position them.

Task 5: Complete a weekly (photographic) diary, recording all the work you have done to produce a food or flower crop, from seed (or cutting) to harvesting. Make sure that your diary contains photographs of you:

- Preparing a seed bed
- Sowing seeds
- Caring for seedlings (e.g. watering)
- 'Feeding' plants
- Weeding or checking for pests
- Harvesting a food crop or flowers

(b) Extension Tasks/ Tasks Providing Evidence for Other Units:

Task 1: Design an area for planting (Land Maintenance E3 AC3.1).

Task 2: The school/college grounds has a problem with a particular weed or pest. Using books or the internet, gather information on how the weed / pest may be controlled. Display you findings on a poster or leaflet. (Land Maintenance AC1.1 Describe how to carry out maintenance of planted areas.)

Task 3: Visit your local garden centre. Look at the fertilizers, weed killers and pesticides that they sell. Choose one from each category and find out:

- What it does
- The type of plants it is suitable for
- How it is to be applied
- The cost of the product
- Safety instructions.

Task 4: Set up a plant display in an area of your school / college which shows how you care for plants at different times during the season. (Land maintenance E3, AC2.1 Describe a calendar of maintenance for planted areas).

Task 5: Using seed catalogues, books and the internet, research food or flower crops. Make a booklet of the varieties that you would like to grow. You could include for each type:

- When to sow seeds
- How to care for the seedlings
- Requirements for healthy growth (Science and the Plant World AC2.1 factors affecting plant growth)
- Harvesting time.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

PLANT CARE – ENTRY 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	**Met**	**Evidence**
AC1.1 List the requirements of plants for healthy growth		
AC2.1 Assist in the preparation of a seed bed.		
AC2.2 Follow instructions to sow seeds for one type of plant.		
AC3.1 Assist in the care of seedlings.		
AC3.2 Follow instructions to maintain the healthy growth of a plant		
AC4.1 Produce a food or flower crop from seed.		

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

PLANT CARE – ENTRY 3

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence
AC1.1 State the requirements of plants to maintain healthy growth		
AC2.1 Select appropriate tools and prepare a seed bed.		
AC2.2 Select an appropriate sowing technique to sow two different types of seed.		
AC2.3 Correctly position a plant for healthy growth.		
AC3.1 Select and use appropriate techniques to care for seedlings.		
AC3.2 Care for a plant to maintain healthy growth.		
AC3.3 Control a common weed or pest.		
AC4.1 Harvest a food or flower crop from seed or from cuttings.		

General Comments

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Teacher:_____ Date: _____

Moderator: _____ Date: _____

WJEC PATHWAYS – ENTRY QUALIFICATIONS

Title:	**Introduction to Land Maintenance**
Unit Ref. No.:	**Entry 2: H/601/3529** **Entry 3: Y/601/3530**
Entry Code:	**6201/E2/E3**
Level:	**Entry 2 / 3**
Credit value:	**3**
Unit aim:	This unit aims to help develop learners' skills and knowledge of maintaining planted areas.

Learning outcomes **To be awarded credit for this unit the learner will**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require the learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require the learner to demonstrate that they can:**
LO1 Know how to maintain a planted area.	AC 1.1 Identify the tools required to carry out maintenance of planted areas.	AC1.1 Describe how to carry out maintenance of planted areas.
LO2 Know when to carry out maintenance of planted areas.	AC2.1 State the best time to carry out maintenance activities in the garden.	AC2.1 Describe a calendar of maintenance for planted areas.
LO3 Be able to plant an area for a purpose.	AC3.1 Suggest plants for a design.	AC3.1 Design an area for planting.
	AC3.2 Assist in the planting of an area.	AC3.2 Follow a design to plant an area.
LO4 Be able to maintain planted areas.	AC4.1 Use tools to assist in the maintenance of planted areas.	AC4.1 Select and use appropriate tools for the maintenance of planted areas.
		AC4.2 Carry out maintenance of planted areas.
		AC4.3 Perform tests on soil.

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1

Learners should know how to carry out maintenance activities for at **least one** planted area.

Planted areas

Planted areas may include:

- indoor garden, paved areas, formal, cottage gardens rock gardens, window box, hanging basket, grassland, parkland and lawns.

Tools

Learners must be able to recognise appropriate tools for at least one type of land maintenance.

Maintenance Activities

Learners should carry know about at least **two** maintenance activities. Examples of maintenance include:

- Weed control;
- Use of fertilises;
- Repairing damaged areas;
- Pruning of shrubs/trees;
- Lawn care (e.g. moss control, repairing damaged edges, aerating lawn)
- Soil care (e.g. drainage, acidity)

LO2

Calendar for the care for planted area

- Learners must cover at **least one** aspect of the gardening calendar. Examples may include:
    - Calendar for the care of grassed areas
    - Calendar for the care of shrubs/trees (e.g. pruning, topiary, removing a branch)
    - Calendar for the care of flower beds/vegetable garden

LO3

Creating a design

- Learners need to identifying suitable plants for at least one type of planted area
- *Design requires consideration of:*
    - Height;
    - colour;
    - flowering time.

Planting an area

Learners should have opportunity to plant **two** different areas. Suggested planting areas can be found under LO1.

LO4

Planted areas

Examples are given in LO1

Maintenance of planted areas

Routine maintenance for planted areas involves:

- Weed control (e.g. moss control in a lawn)
- Use of fertilises;
- Repairing damaged areas (e.g. damaged edges to lawns, removing dead plants)
- Soil care (e.g. drainage, acidity)
- Plant care (e.g. pruning of shrubs/trees) or

*Learners must maintain at least **one** type of planted area*

Tools for maintenance

Learners will need to use appropriate tools for carrying out two maintenance activities different planted areas.

Soil Tests

Learners who are working towards Entry Level 3 must also be able to carry out simple soil tests.

Learners must cover two tests from:

- *pH of soil;*
- NPK test;
- Water content;

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with **Introduction to Land Maintenance** are:

Introduction to Animal Care

Introduction to Plant Care

Variation and Adaptation

Science and the Plant World

3.2 Resources

There are no particular books that cover this unit. Learners can find information using textbooks, websites, CD ROMs, magazines and newspapers.

Books

RHS Encyclopaedia of Gardening **ISBN-13:** 978-1405322270
RHS Gardening Through the Year **ISBN-13:** 978-1405308922

Websites

http://www.complete-gardens.co.uk/online/online-gardening-videos.php
NGFL resources: http://www.ngfl-cymru.org.uk/eng/vtc-home/vtc-ks4-home/vtc-ks4-land_studies
http://www.dgsgardening.btinternet.co.uk/index.htm
http://www.rhs.org.uk/advice/profiles0401/lawn_care_spring_summer.asp
http://www.bbc.co.uk/gardening/basics/techniques/pruning_index.shtml
http://www.bbc.co.uk/gardening/design/

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In practice, ways of demonstrating that the criteria have been met will depend upon the way in which this unit has been integrated with other units in the delivery of the course as a whole. Further guidance is given in the section 'Delivery and Assessment'. However, the following types of evidence are likely to feature:

- photographic history/diary of learners carrying out work;
- witness statements;
- written work;
- story boards;
- presentations/ posters produced by the learners
- evaluation sheets;
- records of oral questions.

4.2 Examples of Tasks

(a) Tasks specific to Land Maintenance

Task 1: Design a leaflet showing the tools that are needed to maintain a planted area.

Task 2: Complete a seasonal calendar to show when maintenance activities for your planted area must be carried out.

Task 3: Using seed catalogues, choose a variety of plants for your planted area. Make a scrap book of pictures of your chosen plants, include notes on height, colour and flowering time of your plants and any other information you think is important.

Task 4: Design and plant an area (e.g. small garden, organising pots on a paved area, large pot, hanging basket) for planting. On your design show which plants you would use and where you would position them (your scrap book will be useful for this task).

Task 5: Produce a poster to show how at least two maintenance activities on a lawn/grassed area. Have a photographic record of yourself made carrying out maintenance of a lawn. (Maintenance could be carried out on a variety of different planted areas other than lawns. Maintenance activities could include pruning a shrub; weeding an area, dead heading flowers etc).

Task 6: Use a soil testing kit to measure the pH of soil. Keep a record of the results.

(b) Extension Tasks/Tasks Providing Evidence for Other Units

Task 1: Design a leaflet, showing a variety of garden tools that are used to plant an area (Introduction to Plant Care. AC2.1 Select appropriate tools and prepare a seed bed).

Task 2: Design a poster showing the requirements a planted area has for healthy growth (AC1.1 State the requirements of plants to maintain healthy growth).

Task 3: Research different methods of controlling weeds. Choose the method suitable for your area and make a poster about the product / method. (Introduction to Plant Care. AC3.3 Control a common weed or pest).

Task 4: A relative has moved into a brand new house and is keen to develop the garden. She needs to carry out soil tests, but is unsure of the procedure. Test the garden soil for N, P and K and find out the pH. Write them a letter or e-mail them with your findings.

Task 5: Your local council is planning a new park in your area. The park needs to have areas for dog walkers, a children's playground, ball games, seating , picnic benches and flower beds. In a group, produce a design which would satisfy the needs of all the people who would use the park.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

LAND MAINTENANCE – ENTRY 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence
AC 1.1 Identify the tools required to carry out maintenance of planted areas		
AC2.1 State the best time to carry out maintenance activities in the garden		
AC3.1 Suggest plants for a design		
AC3.2 To assist in the planting of an area.		
AC4.1 Use tools assist in the maintenance of planted areas.		

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

LAND MAINTENANCE – ENTRY 3

ASSESSMENT RECORD

Candidate Name_____Candidate No._____

Centre Name_____Centre No._____

LO	Assessment Criteria	Met	Evidence
LO1	AC1.1 Describe how to carry out maintenance of planted areas		
LO2	AC2.1 Describe a calendar of maintenance for planted areas		
LO3	AC3.1 Design an area for planning		
	AC3.2 Follow a design to plant an area		
LO4	AC4.1 Select and use appropriate tools for the maintenance of planted areas		
	AC4.2 Carry out maintenance of planted areas		
	AC4.3 Perform tests on soil		

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC PATHWAYS – ENTRY QUALIFICATIONS

Title:	**Introduction to Animal Care**
Unit Ref. No.:	**Entry 2: Y/601/3527** **Entry 3: D/601/3528**
Entry Code:	**6202/E2/E3**
Level:	**Entry 2 / 3**
Credit value:	**3**
Unit aim:	This unit aims to enable learners to gain skills and understanding of the basic requirements of caring for an animal.

Learning outcomes **To be awarded credit for this unit the learner will**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require the learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require the learner to demonstrate that they can:**
LO1 Know basic animal requirements.	AC1.2 List a minimum of three basic 'animal needs' for survival.	AC1.1 Describe a minimum of three basic 'animal needs' for survival.
LO2 Know how to care for animals.	AC2.1 State how often an animal need feeding.	AC2.1 Describe the food and watering requirements of an animal.
	AC2.2 List symptoms of ill health in an animal.	AC2.2 Identify the typical symptoms of disease or parasitic infection in animals.
	AC2.3 List ways to prevent ill health in an animal.	AC2.3 Describe how to prevent disease or parasitic infection in an animal.
		AC2.4 Describe how to care for a sick animal.
LO3 Know the purpose in breeding animals.	AC3 .1 State a purpose in the selective breeding of an animal.	AC3 .1 Describe the purpose in the selective breeding of an animal.
		AC3.2 Describe the different characteristics of two different breeds of an animal.
LO4 Be able to care for animals.	AC4.1 Assist in the care of an animal.	AC4.1 Demonstrate care for an animal.

2. Amplification of Content

The following suggestions should be considered in the context of:

- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1

Basic needs to include:

- Food (energy, health, growth, survival);
- Water (health, growth, survival, good health);
- Housing (shelter, safety, comfort, rest);
- Good environmental conditions (freedom, temperature, light, shelter, social groups).

LO2

Animal care

- Watering;
- Feeding (balanced diet),
- Types of food, methods of feeding;
- How to maintain good environmental conditions (temperature, light, space, ventilation, housing including the placement of housing and bedding);
- Healthcare (Recognising ill health, common diseases and parasites)
- Caring for a sick animal.
- Importance of good hygiene and work practise when caring for animals.
- Duty of care.

In order to achieve LO2 learners must provide evidence that they have met the criteria by describing the care for a particular animal. The particular animal can be any animal (e.g. locusts, hamsters, cats, guinea pigs, farm animals).

LO3

- Reproduction in animals;
- Breeding;
- Reasons for selective breeding (e.g. cows – improve milk production, chickens for egg production or meat, cattle for meat production, dog breeding for variety of characteristics);
- Characteristics of different breeds of selected animals.

In order to achieve LO3 learners must provide evidence that they have met the criteria by describing the care for a particular animal. The particular animal can be any animal (e.g. locusts, hamsters, cats, guinea pigs, farm animals). Ideally this is the animal they used to achieve LO2.

LO4

Demonstrates care for any type of animal

- Feeding
- Watering
- Monitoring for ill health
- Maintaining suitable environmental conditions
- Good hygiene when caring

In order to achieve LO4 learners must provide evidence that they have met the criteria by describing the care for a particular animal. The particular animal can be any animal (e.g. locusts, hamsters, cats, guinea pigs, farm animals). Ideally this is the animal they used to achieve LO2 and LO3. The care should extend over a ***minimum*** *of five days.*

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with **Introduction to Animal care** are:

Introduction to Plant Care

Introduction to Land Maintenance

Variation and Adaptation

Science and the Plant World

3.2 Resources

Resources

There are no particular books that cover this unit. Learners can find information using textbooks, websites, CD ROMs, magazines and newspapers.

Learners should have access to a range of biology resources that supports the themes covered in this unit.

Websites

http://www.rspca.org.uk/servlet/Satellite?pagename=RSPCA/RSPCARedirect&pg=animalcare
http://www.rspca.org.uk/servlet/Satellite?pagename=RSPCA/AnimalCare/Animals
http://www.colchester-zoo.co.uk/index.cfm?fa=education.secondary (also see other 'zoo sites'.

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

Ways of demonstrating that the criteria have been met

In practice, ways of demonstrating that the criteria have been met will depend upon the way in which this unit has been integrated with other units in the delivery of the course as a whole. Further guidance is given in the section 'Delivery and Assessment'. However, the following types of evidence are likely to feature:

- Photographic record/ diary of learners carrying out work;
- Presentations/ Posters produced by the learners
- Witness statements,
- Diary of animal care
- Written work;
- Story boards;
- Evaluation sheets;
- Records of oral questions.

4.2 Examples of Tasks

(a) Tasks specific to Introduction to Animal Care.

Task 1: Design a poster to list (and describe) three or more animal needs for survival.

Task 2: For a named animal produce and complete a daily record sheet to track the feeding, watering and daily care needs for that animal.

Task 3: Design a leaflet showing the cause, symptoms, treatment and prevention of a disease or parasitic infection of a named animal.

Task 4: Using books and / or the internet, research selective breeding. Produce a power point presentation to show what you have found out.

Task 5: Complete a daily diary to show that you have successfully looked after a named animal for a period of one week.

(b) Extension Tasks

Task 1: A friend is thinking of buying a pet, but can't decide what breed to choose. Using pictures of two breeds of the chosen animal, label the different characteristics of each breed.

Task 2: Your local primary school is thinking of buying an animal for the children to care for. In a group, discuss suitable animals. Using books and the internet, research and produce a poster of 3 animals, saying why you think each animal is suitable for school children.

Task 3: Your local vet has asked you to make an information leaflet about your favourite animal. The leaflet will be displayed in the surgery for his customers. You will need to include information on housing, feeding, grooming, exercise, health etc.

Task 4: A relative has just had a new pet. They need to register with a local vet, and they ask you for advice:
- Find out the name, address and telephone number of vets in your area.
- Make a list of the services that the veterinary practice offers, and what the charges for these services are.

Task 5: Visit your local farm or small animal centre. Find out the daily care programme for three animals. Write a report on your findings.

Task 6: In a group, design a complete housing, feeding and exercise area for a named animal. Present your ideas to the rest of your class.

Task 7: Carry out a survey to find out which pets are the most popular. Present your findings in a graph.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

INTRODUCTION TO ANIMAL CARE – ENTRY 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 List a minimum of three basic 'animal needs' for survival.			
AC2.1 State how often an animal need feeding			
AC2.2 List symptoms of ill health in an animal			
AC2.3 List ways to prevent ill health in an animal.			
AC3 .1 State a purpose in the selective breeding of an animal.			
AC4.1 Assist in the care of an animal.			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

INTRODUCTION TO ANIMAL CARE – ENTRY 3

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence
AC1.1 Describe a minimum of three basic 'animal needs' for survival.		
AC2.1 Describe the food and watering requirements of an animal.		
AC2.2 Identify the typical symptoms of disease or parasitic infection in an animal.		
AC2.3 Describe how to prevent disease and parasitic infection in an animal		
AC2.4 Describe how to care for sick animals.		
AC3 .1 Describe the purpose in the selective breeding of an animal.		
AC3.2 Describe the different characteristics of two different breeds of an animal.		
AC4.1 Demonstrate care for an animal.		

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Science: Health and Safety**	
Unit Ref. Nos.	**Entry 2: H/503/3950**	**Entry 3: M/503/3949**
Entry Codes	**Entry 2: 6203/E2**	**Entry 3: 6203/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit aims to help learners to appreciate hazards associated with using materials and procedures in the home, workplace or laboratory and how they can minimise the chance of harm.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know about different types of hazards	AC1.1 Identify different hazard symbols AC1.2 Identify hazards when using equipment in a workplace	AC1.1 Identify hazards from hazard symbols AC1.2 Identify hazards when using equipment in a workplace
LO2 Know how to work safely in a workplace	AC2.1 Safely use equipment under close supervision	AC2.1 Safely use equipment under close supervision AC2.2 Safely use hazardous substances under close supervision AC2.3 Identify how risks can be reduced when using hazardous substances

***LO3** over page*

LO3 Know about fire safety	AC3.1 Locate in a particular workplace: • fire exits • fire safety points • assembly points AC3.2 Identify different types of fire extinguisher	AC3.1 Describe actions to take in the event of fire in a particular workplace AC3.2 Identify dangers associated with using incorrect fire extinguishers AC3.3 Describe how to extinguish a fire using: • water extinguishers • carbon dioxide extinguishers • fire blankets AC3.4 Identify limitations of water extinguishers

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know about different types of hazards

Types of hazards:

- Fire
- Electricity
- Chemicals
- Biohazards

Hazard symbols

Corrosive, irritant, toxic, biohazard, oxidising, explosive, environmental hazard, biohazard, electrical shock

Substances

Hazardous chemicals (including those found in the home, garden and laboratory), biohazards (e.g. potential allergies to pollen, poisonous plants)

Workplaces

Science laboratories, kitchens, gardens, etc

Procedures

Procedures to include handling, pouring, transferring and measuring chemicals/hazardous materials; using glassware; using laboratory equipment

Equipment

Laboratory equipment, general glassware

LO2: Know how to work safely in a workplace

- Safe use of equipment (e.g. simple laboratory equipment including general glassware; equipment to measure or transfer materials; electrical equipment, garden equipment)
- Difference between hazard and risk
- Reducing risks associated with equipment and handling hazardous materials
- Use of safety equipment (safety glasses, gloves etc)
- Checking equipment before use
- Following procedures

LO3: Know about fire safety

Fire Safety

- Action to take in fire. Sound alarm, exit building in orderly fashion, collect at assembly point, take register of persons
- Location fire exits, fire escapes, fire equipment, fire alarms, assembly points
- Purpose of fire doors

Fire

- Requirements for fire: ‘fire triangle’
- Ways of extinguishing fire: remove fuel, cut off oxygen or cool fire

Fire extinguisher

- Class A, B, C and F fires; electrical fires (entry 3)
- Different types of fire extinguishers (water, CO_2 and powder)
- Fire blankets
- How a CO_2, foam, water extinguisher and fire blanket work
- When to use a CO_2 water extinguisher work and fire blanket work
- Hazards when using the wrong type of extinguisher (e.g. water on chip pan fire)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with '**Science: Health and Safety'** are:
Making Useful Compounds

Science and the Plant World

Working with Electrical Circuits

Chemical Products used in the Home and their Environmental Impact

Introduction to Land Maintenance

3.2 Resources

Safety Symbols
http://www.ngfl-cymru.org.uk/vtc/ngfl/science/103_new/asc1/hazardsymbol.htm
http://www.echalk.co.uk/Science/Physics/hazard/hazard.html
http://www.ngfl-cymru.org.uk/vtc/ngfl/science/103_new/asc1/quiz1.html
http://www.ngfl-cymru.org.uk/vtc/ngfl/science/103_new/hotpots/hazsym.htm

Fire Triangle
http://www.hantsfire.gov.uk/kids/learn/firetriangle.html
http://www.ci.oswego.or.us/fire/documents/INTERMEDIATE99_02.pdf (lesson ideas involving fire triangle)
http://ehs.sc.edu/modules/Fire/01_triangle.htm

Fire extinguishers
http://www.fireextinguisherguide.co.uk/
http://www.fireextinguisher.com/

Fire Safety
http://www.hantsfire.gov.uk/kids/11nup

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work;
- photographs of learners carrying out work;
- story boards;
- presentations/ posters produced by the learners;
- evaluation sheets;
- records of oral questions;
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to Science: Health and Safety

Task 1: Print photographs of different types of substances on and A4 worksheet. Learners name the type of hazard shown by the substance

Task 2: Give learners a map of a laboratory and ask them to show on the map fire exits and fire safety equipment. Learners add the nearest assembly point for that room

Task 3: Print on to separate cards each action to be taken in the event of a fire. Make sure there are a few cards with misleading information (e.g. collect together all your stuff before leaving' run quickly out of the building'. Ask learners to put the cards in to their correct order, discarding the cards with incorrect instructions

Task 4: Print photographs of different types of fire on to A5 card. Underneath learners write down the type of extinguisher and what types of fire the extinguisher can be used

Task 5: Produce a poster showing the different types of fire extinguishers and the types of fire they can be used for

Task 6: Show videos or pictures of different types of extinguishers used to put out fires. Ask the learner to identify which part of the fire triangle the fire extinguisher uses to extinguish the fire. Record the learners' response as evidence of completion

(b) Tasks Providing Evidence for Other Units

The following tasks could be used with any science unit that requires the learner to carry out practical work.

Task 1: Show learner a practical activity (from another science unit) and ask oral questions about the hazards associated with the task. Make a record of the learner's responses

Task 2: Carry out a practical activity from another science unit in which the learner safely uses equipment **(and a hazardous substance – entry 3).** Complete a witness statement and/or produce a photographic record of the learner completing the task

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Science: Health and safety - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify different hazard symbols			
AC1.2 Identify hazards when using equipment in a workplace			
AC2.1 Safely use equipment under close supervision			
AC3.1 Locate in a particular workplace: • fire exits • fire safety points • assembly points			
AC3.2 Identify different types of fire extinguisher			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

Science: Health and Safety - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify hazards from hazard symbols			
AC1.2 Identify hazards when using equipment in a workplace			
AC2.1 Safely use equipment under close supervision			
AC2.2 Safely use hazardous substances under close supervision			
AC2.3 Identify how risks can be reduced when using hazardous substances			
AC3.1 Describe actions to take in the event of a fire in a particular workplace			
AC3.2 Identify dangers associated with using incorrect fire extinguishers			
AC3.3 Describe how to extinguish a fire using: • water extinguishers • carbon dioxide extinguishers • fire blankets			
AC3.4 Identify limitations of water extinguishers			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC ENTRY LEVEL PATHWAYS

1. QCF Details

Title:	**Science and our Universe**	
Unit Ref. Nos.	**Entry 2: K/503/3951**	**Entry 3: M/503/3952**
Entry Codes	**Entry 2: 6204/E2**	**Entry 3: 6204/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit enables learners to explore themes connected with space and our Universe.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 (E2) Know about the structure of galaxies and our Solar System **LO1 (E3)** Know about galaxies and our Solar System	AC1.1 Describe our Solar System using: • sun • planet • moon AC1.2 Identify spiral galaxies	AC1.1 Describe our Solar System using: • sun • planet (inner planets, outer planets and dwarf planets), asteroid belt • moon AC1.2 Identify different types of galaxies
LO2 (E2) Know how we can find out about the Universe **LO2 (E3)** Know ways of finding out about the Universe	AC2.1 Identify images of the Sun produced using different parts of the electromagnetic spectrum AC2.2 State an advantage of using space-based telescopes over earth-based telescopes	AC2.1 Identify images of objects in space produced using different parts of the electromagnetic spectrum AC2.2 State advantage of using: • space-based telescopes • earth-based telescopes AC2.3 Identify information gathered by space probes

LO3 over page

LO3 Know factors that affect the surfaces of planets and moons	AC3.1 State how craters have formed on the moon and planets AC3.2 Identify how an atmosphere has affected the surface of a planet	AC3.1 Identify factors that affect the surface of planets and moons AC3.2 State ways in which the surface of a planet can be affected by: • water • an atmosphere • volcanic activity AC3.3 Explain why some planets have craters

2 . Amplification of Content

The following suggestions should be **considered** *in the context of:*

- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1 Know about the structure of galaxies and our Solar System (E2)
LO1 Know about galaxies and our Solar System (E3)

- Terms: Universe, galaxy, stars and solar system
- Formation of the Universe (Big Bang etc)
- Scale of space (magnitude of distance between objects)
- Examples of different galaxies (Spiral (e.g. our galaxy**), *Elliptical and Irregular***) **(Entry 3)**
- The Solar System as composed of the Sun, planets, moons and **Asteroid Belt (Entry 3)**
- Inner planets, outer planets and dwarf planets
- Planets in our Solar System
- Examples of moons ((e.g. 'The Moon', Phobos and Deimos, Titan)

LO2: Know how we can find out about the Universe (E2)
LO2: Know ways of finding out about the Universe (E3)

- Earth based telescopes
- Space based telescopes (e.g. Hubble)
- Electromagnetic radiation (x-rays, UV, visible, infrared, microwave radio waves)
- Images of the Sun, objects in deep space and planets using different parts of the electromagnetic spectrum
- Information from manned and unmanned space exploration (e.g .Moon – Apollo flights; Mars – Viking, Mars exploration rovers, Mars Reconnaissance Obiter; Jupiter; Voyager 1 and 2, Galelio probe, Cassini)

LO3: Know factors that affect the surfaces of planets and moons

- Cratering
- Affect of water and atmosphere on a planet surface (e.g. weathering)
- Movement of tectonic plates on earth, earthquakes and volcanoes
- Volcanic activity on the Earth and other planets

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

3.2 Resources

General
http://www.windows2universe.org/sun/sun.html

Galaxies
http://www.damtp.cam.ac.uk/research/gr/public/gal_home.html
http://hubblesite.org/gallery/album/galaxy/
http://starchild.gsfc.nasa.gov/docs/StarChild/universe_level1/galaxies.html
http://cas.sdss.org/dr7/en/astro/galaxies/galaxies.asp

Our Solar System
http://amazing-space.stsci.edu/eds/tools/topic/solarsystem.php.p=Teaching+tools%40%2Ceds%2Ctools%2C
http://www.windows2universe.org/our_solar_system/solar_system.html
http://www.science-resources.co.uk/KS3/Physics/Earth_and_Beyond/Solar_System.htm
http://marsprogram.jpl.nasa.gov/allaboutmars/extreme/
http://lroc.sese.asu.edu/EPO/Trivia/expMoon.php
http://marsprogram.jpl.nasa.gov/allaboutmars/extreme/moons/

Images using different parts of Electromagnetic spectrum
http://solar.physics.montana.edu/ypop/Spotlight/Today/xray.html
http://imagine.gsfc.nasa.gov/docs/science/know_l1/xray_sun.html
http://www.windows2universe.org/sun/sun.html

Hubble space Telescope
http://hubblesite.org/

Making a model of Hubble Space Telescope
http://hubblesite.org/the_telescope/hand-held_hubble/pvc.php

Space missions
http://mars.jpl.nasa.gov/
http://solarsystem.nasa.gov/planets/profile.cfm?Object=Jupiter&Display=Educ
http://www.nasa.gov/mission_pages/juno/education/index.html

Factors affecting planet surfaces
Cratering
http://lunarscience.arc.nasa.gov/kids/surface_features
http://lunarscience.arc.nasa.gov/articles/how-are-craters-formed
http://www.universetoday.com/19616/earths-10-most-impressive-impact-craters/
http://www.universetoday.com/22600/craters-on-mars/

Modelling crater formation
http://www.nasa.gov/centers/jpl/education/craters-20090924.html
http://space.about.com/cs/backyardscience/qt/makingcraters.htm

Volcanoes
http://www.science-resources.co.uk/KS3/Chemistry/Earth_Structure/volcanoes.html
http://www.universetoday.com/14837/volcanoes-on-mars/
http://www.lpi.usra.edu/publications/slidesets/mvolcan/volcanoes_index.shtml

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- photographic history/diary of learners carrying out work;
- witness statements;
- written work;
- story boards;
- presentations/ posters produced by the learners;
- evaluation sheets;
- records of oral questions.

4.2 Examples of Tasks

Tasks specific to 'Science and Space'

Task 1: Produce a display on the theme 'Our Universe'. The display must show our Solar System and different types of galaxies

Task 2: Match key fact cards to different objects in the Solar System

'Key fact' cards should be pre-printed with information about an object in Solar System. The learners then match the card to an object in the Solar System

Task 3: Produce a presentation (e.g. PowerPoint presentation) about the Mars Exploration Rover Mission. The presentation should include information about the Rover and images of Mars obtained by the Rover (Entry 3)

Task 4: Print photographs of the sun produced by different parts of the electromagnetic spectrum. Paste each the photograph on to A5 card and write onto the card how the photograph was taken (i.e. Photograph taken using x-rays). For Entry 3 this task could be extended to cover another object in space (e.g. of a nebula)

Task 5: Produce a poster showing craters on the surface of the Moon, Mars and Earth explaining how they were formed. The poster should also explain why the Moon as many craters and the Earth very few

Task 6: Match features on a photograph to possible causes (e.g. Sand dunes laid down by action of wind, valleys formed by action of water). Photographs from Earth and/or Mars could be used

Task 7: Learner models the formation of craters by dropping several round objects of different sizes (BB, Marble, Golf Ball, etc) on to a surface made of flour/water (see resources). They give a verbal explanation to the assessor of how this explains crater formation

Task 8: Learners collect photographs of how volcanoes have changed the landscape (e.g. forming mountains, islands, ash deposits/fallout from explosive eruptions)

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Science and our Universe - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Describe our Solar System using: • sun • planet • moon			
AC1.2 Identify spiral galaxies			
AC2.1 Identify images of the Sun produced using different parts of the electromagnetic spectrum			
AC2.2 State an advantage of using space-based telescopes over earth-based telescopes			
AC3.1 State how craters have formed on the moon and planets			
AC3.2 Identify how an atmosphere has affected the surface of a planet			

General Comments

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_____

Teacher:_____Date: _____

Moderator:_____Date: _____

Science and our Universe - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Describe our Solar System using: • sun • planet (inner planets, outer planets and dwarf planets), asteroid belt • moon			
AC1.2 Identify different types of galaxies			
AC2.1 Identify images of objects in space produced using different parts of the electromagnetic spectrum			
AC2.2 State advantage of using: • space-based telescopes • earth-based telescopes			
AC2.3 Identify information gathered by space probes			
AC3.1 Identify factors that affect the surface of planets and moons			
AC3.2 State ways in which the surface of a planet can be affected by: • water • an atmosphere • volcanic activity			
AC3.3 Explain why some planets have craters			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Making Useful Compounds**	
Unit Ref. Nos.	**Entry 2: T/503/3953**	**Entry 3: A/503/3954**
Entry Codes	**Entry 2: 6205/E2**	**Entry 3: 6205/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit aims to help learners to use simple laboratory equipment to prepare useful chemicals and gain an understanding of the chemistry behind the reactions they have used.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know how neutralisation reactions make salts	AC1.1 State acids and bases that react to make named salts	AC1.1 Describe reactions of acids with bases to prepare named salts AC1.2 Identify uses of neutralisation reactions
LO2 Know how to identify hazards	AC2.1 Identify hazards associated with chemicals	AC2.1 Describe hazards associated with chemicals using hazard symbols
LO3 Be able to prepare useful chemical compounds	AC3.1 Identify key items of laboratory equipment AC3.2 Use simple laboratory equipment under close supervision	AC3.1 Select key items of equipment when preparing and testing chemical compounds AC3.2 Correctly use simple laboratory equipment AC3.3 Safely use equipment and chemicals AC3.4 Record results from preparation

2. Amplification of Content

The following suggestions should be considered in the context of:

- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know how neutralisation reactions make salts

Neutralisation reactions

- Neutralisation involves reaction of an acid with a base
- Acids react with bases to form salts and water

Acids and bases

- Acids. e.g. sulfuric, hydrochloric and nitric acid
- Base. A metal oxide/metal hydroxide e.g. sodium hydroxide, potassium hydroxide, iron oxide (rust)
- A soluble base is an alkali e.g. sodium hydroxide, potassium hydroxide,
- Solutions of ammonia are also alkaline

Describing reactions

- General word equation Acid + metal hydroxide → a salt + water

  Examples:
  - Hydrochloric acid + sodium hydroxide → sodium chloride + water
  - Sulfuric acid + potassium hydroxide → potassium sulfate + water
- Naming simple salts
  - Sulfates from sulfuric acid
  - Nitrates from nitric acid
  - Chlorides from hydrochloric acid
  - Names of salt with simple metal oxides/hydroxides

Uses of Neutralisation:

- Making salts, treating soil (plants grow best a pH 7), treating waste products

LO2: Know how to identify hazards

- Identifies hazards using labels on bottles, from procedures, data sheets
- Common hazard symbols: corrosive, irritant, toxic, harmful, and highly flammable

LO3: Be able to prepare useful chemical compounds

Useful chemical compounds

- Fertilisers, Garden chemicals (e.g. moss remover) food additives, toothpaste, simple medications (e.g. zinc sulfate)

Equipment

- General laboratory glassware e.g. Test-tubes, beakers, measuring cylinders
- Bunsen burners
- Filtration apparatus
- Dropping pipette

Preparation

- Using soluble bases
- Using insoluble bases
- Making toothpaste (Baking soda and hydrogen peroxide)

Safety

- Use correct protective equipment and procedures when working with chemicals in the laboratory (e.g. gloves, lab coats, safety glasses etc)
- Safe methods of working
- Following safety procedures

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification**.

Closely related units likely to be delivered along with '**Making Useful Compounds'** are:

Science: Health and safety

Chemical products used in the Home and their Environmental Impact

3.2 Resources

Websites
General Resources
Acids, Alkalis and neutral substances
http://www.s-cool.co.uk/gcse/chemistry/acids-and-alkalis/revise-it/acids-alkalis-and-neutral-substances
PH testing
http://www.nelsonthornes.com/secondary/science/scinet/scinet/reaction/acids/litmus.htm
Hazard and symbols
http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/chemicalreactions/chemicalsinthelabandhomerev2.shtml
Methods for preparing salts
http://www.docbrown.info/page03/AcidsBasesSalts06.htm
http://www.practicalchemistry.org/experiments/intermediate/acids-alkalis-and-salts/topic-index.html

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work;
- photographs of learners carrying out work;
- story boards;
- presentations/ posters produced by the learners;
- evaluation sheets;
- records of oral questions;
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to Making useful products

Task 1: Produce a table that lists specific acid and base reactions and the salt that is produced

Task 2: Produce a "safety in the laboratory" booklet that shows common hazard symbols and what they mean

Task 3: Investigate some reactions of common household products: acid drops and bicarbonate of soda, fruit juice and soda toothpaste

Task 4: Plan to carry out experiments to produce a useful compound, list all the equipment you might need

Task 5: Carry out an experiment following a standard procedure to produce a useful compound

Task 6: Prepare a presentation that identifies some uses of prepared chemical compounds from neutralisation reactions

(b) Tasks Providing Evidence for Other Units

Task 1: Evidence for this unit and the Unit 'Chemical products used in the Home and their Environment Impact'

Using a standard procedure, carry out a practical to mix an acid with a base, test the pH of the solutions at the beginning of the experiment identify the products of this reaction and test pH of the solutions at the end of the experiment

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Making Useful Compounds - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 State acids and bases that react to make named salts			
AC2.1 Identify hazards associated with chemicals			
AC3.1 Identify key items of laboratory equipment			
AC3.2 Use simple laboratory equipment under close supervision			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

Making Useful Compounds - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Describe reactions of acids with bases to prepare named salts			
AC1.2 Identify uses of neutralisation reactions			
AC2.1 Describe hazards associated with chemicals using hazard symbols			
AC3.1 Select key items of equipment when preparing and testing chemical compounds			
AC3.2 Correctly use simple laboratory equipment			
AC3.3 Safely use equipment and chemicals			
AC3.4 Record results from preparation			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Science and the Human Body**	
Unit Ref. Nos.	**Entry 2: J/503/3956**	**Entry 3: F/503/3955**
Entry Codes	**Entry 2: 6206/E2**	**Entry 3: 6206/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit aims to help learners gain a basic understanding of how science can help us look after our health.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 (E2) Know key functions of major body systems **LO1 (E3)** Know the function of major body systems	AC1.1 Identify the key function of the major body systems	AC1.1 Outline the structure of major body systems AC1.2 Outline the function of major body systems AC1.3 Describe relationship between two major body systems
LO2 Know the factors that affect the health of individuals	AC2.1 State factors that can increase the risk of ill health AC2.2 Identify actions that can be taken to maintain health	AC2.1 Describe how different factors can increase the risk of ill health AC2.2 Describe actions that can be taken to maintain health
LO3 Be able to investigate the health of individuals	AC3.1 Gather basic health data by following instructions under close supervision AC3.2 Make simple conclusions about the health of individuals	AC3.1 Obtain data about the health of individuals using a suitable testing methods AC3.2 Make conclusions about the health of individuals

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know key functions of major body systems (E2)

LO1: Know the function of major body systems (E3)

- Major body systems: Cardiovascular, respiratory, digestive and excretory system and nervous system
- Cardiovascular system
  - Function of circulatory system
  - The heart as a pump
  - **Double circulatory system (entry 3)**
  - Blood (red and white blood cells)
  - Blood vessels (veins, arteries and capillaries)
- Respiratory system
  - **Outline structure of lungs (entry 3)**
  - Function of lungs – Gaseous exchange
- Nervous system—coordination system
  - Function of nervous system
  - Central nervous system
  - Peripheral nervous system
- Digestive and excretory system
  - Function of both systems
  - Digestion, absorption and eliminating waste products

LO2: Know the factors that affect the health of individuals

- Lifestyle
  - Diet
    - Carbohydrate, fat, protein, vitamins and fibre
    - Balanced diet
  - Exercise
  - Smoking
  - Alcohol and abuse of drugs
  - Sexual activity
  - Dental hygiene
- Medical treatment
  - Use of drugs to treat medical conditions
- Factors: Genetic, environmental, lifestyle and medical treatment
  - Genetic (e.g. Cystic fibrosis, Sickle-cell anaemia)
- Environmental
  - Housing
  - Work place
  - Temperature
- How health can be affected by factors (both negatively and positively)

LO3: Be able to investigate the health of individuals

- Investigations:
  - Carrying out simple tests (e.g. affect of exercise on heart rate resting and recovery times; **measurement BMI (entry 3),** blood pressure, peak flow readings
  - Collecting information through questionnaires (e.g. amount of exercise, type of food eaten in a day)
  - Making simple conclusions from data
  - Presentation methods (Posters, using presentation software, verbal feedback)
- People involved in collecting or examining information on our health (e.g. doctors, nurses, dieticians, physiotherapists)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with '**Science and the Human Body'** are:

Variation and Adaptation

Food and Health

Health, Safety and Hygiene

3.2 Resources

General
Healthy Living:

http://www.ngfl-cymru.org.uk/vtc/ngfl/pse/16/ks2/default.html

http://www.nhs.uk/Change4Life/Pages/change-for-life.aspx

http://www.bbc.co.uk/health/treatments/healthy_living/
Lungs
http://www.bbc.co.uk/schools/gcsebitesize/pe/appliedanatomy/respiratory/1_anatomy_respiratorysys_act.shtml
Circulatory system
http://lgfl.skoool.co.uk/keystage3.aspx?id=63
http://www.nlm.nih.gov/changingthefaceofmedicine/resources/lesson_3_4.html
Smoking

http://lgfl.skoool.co.uk/content/keystage3/biology/pc/learningsteps/CSSLC/launch.html
Alcohol education
http://www.teachers.tv/video/3367
http://www.qca.org.uk/qca_7364.aspx

Peak flow measurements:

http://www.nlm.nih.gov/medlineplus/ency/article/003443.htm

Blood pressure measurement and readings

http://www.bpassoc.org.uk/BloodPressureandyou/Thebasics

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work;
- photographs of learners carrying out work;
- story boards;
- presentations/ posters produced by the learners;
- evaluation sheets;
- records of oral questions;
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to 'Science and the Human Body'

Task 1: Prepare a poster about a major body system (e.g. the lungs or heart and circulation system

Task 2: Using information and images from the internet prepare a leaflet for year 7 students that outline the affect of smoking on the body

Task 3: Use a questionnaire to find information on peoples' diet/ amount of exercise/ alcohol intake etc

Task 4: Complete a diary for a week that records food eaten, exercise completed, cigarettes smoked, alcohol consumed

Task 5: Produce a poster or presentation to persuade people to live a healthy lifestyle

Task 6: Carry out tests to find peoples recovery rate after exercise by measuring resting heart rate (pulse) and heart rate (pulse) after exercise

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Science and the Human Body - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify the key function of the major body systems			
AC2.1 State factors that can increase the risk of ill health			
AC2.2 Identify actions that can be taken to maintain health			
AC3.1 Gather basic health data by following instructions under close supervision			
AC3.2 Make simple conclusions about the health of individuals			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

Science and the Human Body - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Outline the structure of major body systems			
AC 1.2 Outline the function of major body systems			
AC 1.3 Describe the relationship between two major body systems			
AC2.1 Describe how different factors can increase the risk of ill health			
AC2.2 Describe actions that can be taken to maintain health			
AC3.1 Obtain data about the health of individuals using suitable testing methods			
AC3.2 Make conclusions about the health of individuals			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Science and the Plant World**
Unit Ref. Nos.	**Entry 2: L/503/3957 Entry 3: R/503/3958**
Entry Codes	**Entry 2: 6207/E2 Entry 3: 6207/E3**
Level	**Entry 2 and Entry 3**
Credit value:	**3**
Unit aim:	This unit aims to enable learners to develop understanding of the structure of plants, the basic needs of a plant for healthy growth and how plants can reproduce.

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know the conditions needed for growth of plants	AC1.1 Identify the conditions needed for growth of plants AC1.2 Identify conditions needed for germination of plants	AC1.1 Describe conditions needed for germination of plants AC1.2 Describe the conditions needed for growth of plants AC1.3 Outline the responses of plants to different conditions
LO2 (E2) Be able to investigate the growth of plants **LO2 (E3)** Be able to investigate growth of plants	AC2 .1 Follow simple instructions to investigate plant growth AC2.2 Obtain results from investigations	AC2.1 Safely investigate growth of plants AC2.2 Safely investigate germination of plants AC2.3 Record results from investigations AC2.4 Display results from investigations

LO3 and LO4 next page

LO3 (E2) Know the science of plant growth **LO3 (E3)** Understand the science of plant growth	AC3.1 Identify the major parts of a plant designed to support growth	AC3.1 Describe the function of major parts of a plant designed to support growth AC3.2 Identify the main parts of a plant cell that support growth
LO4 Understand the science of plant reproduction	AC4.1 Identify the parts of a flower that are designed for reproduction AC4.2 Outline the function of reproductive parts of a flower	AC4.1 Identify the female and male parts of plant reproductive organs AC4.2 Describe the function of the reproductive parts of a flower

2. Amplification of Content

The following suggestions should be considered in the context of:

- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know the conditions needed for growth of plants

- Requirements for plant growth
    - Light– photosynthesis (word equations not required) (entry 3)
    - Temperature
    - water
    - Oxygen and carbon dioxide
    - nutrients (nitrogen, phosphorus, potassium) (entry 3)
    - Responses: Tropisms-different parts of the plant (entry 3)

LO2: Be able to investigate the growth of plants (E2)

LO2: Be able to investigate growth of plants (E3)

- Equipment
    - Microscope
    - Routine laboratory equipment
- Instructions: written or verbal
- Obtaining Results –observing and recording
- Displaying results
    - Charts and simple graphs
- Investigations
    - Response to stimulus: Stem tip responds to light, root tip to gravity
    - Show that starch is produced in a plant leaf
    - Affect of light levels on plant growth
    - Investigate plant growth points for two plants (e.g. grass and water cress)
    - Affect of nutrients, pH on plant growth

LO3: Know the science of plant growth (E2)

LO3: Understand the science of plant growth (E3)

- Major parts of a plant: roots, leaves, stem, flower
- Function related to structure: stomata on leaves, veins on leaves to spread water and nutrients, xylem and phloem in stems to transport materials
    - Recognise plant parts are formed by groups of tissues which are in turn made of cells
    - Recognise main features of plant cell that support growth mechanisms: cell wall, nucleus, vacuole and chloroplasts
    - Role of nucleus and chloroplast in a plant cell

LO4: Understand the science of plant reproduction

- Plant reproduction
    - Difference between sexual and asexual reproduction
    - Reproductive organs, names of male and female parts, and function
    - Process of fertilisation/pollination (insect pollination and wind pollination)

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with **Science and the Plant World** are:

Introduction to Plant care

Introduction to Land Maintenance

Variation and Adaptation

3.2 Resources

http://www.tooter4kids.com/
http://urbanext.illinois.edu/gpe/index.html
http://www.mbgnet.net/bioplants/parts.html
http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa/plants/plants1.shtml
http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/genes/reproductionandcloningrev2.shtml
http://www.bbc.co.uk/scotland/learning/bitesize/standard/biology/world_of_plants/growing_plants_rev1.shtml
http://lgfl.skoool.co.uk/content/keystage4/biology/pc/lessons/uk_ks4_plant_nutrition/h-frame-ie.htm

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work;
- photographs of learners carrying out work;
- story boards;
- presentations/ posters produced by the learners;
- evaluation sheets;
- records of oral questions;
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to Science and the Plant World

Task 1: Produce a poster showing the parts of a plant and the conditions needed for the growth of the plant

Task 2: Produce a leaflet or PowerPoint show to describe the different conditions needed for plant growth

Task 3: Plan and carry out experiments to investigate germination and/or plant growth in different light conditions, different moisture levels and different levels of nutrients

Task 4: Test leaves for starch from plants grown in different light conditions

Task 5: Plan and carry out experiments to compare the growth of a plant (such as grass) with and without the addition of fertiliser

Task 6: Investigate the structure of a plant cell using a microscope, draw and label a plant cell

Task 7: Produce a poster to show the major parts of a plant and outline the function of each of these parts

Task 8: Design a flow diagram (or a series of PowerPoint slides) to show how the different parts of a flower are involved in reproduction

(b) Tasks Providing Evidence for Other Units

Evidence for this unit and the unit 'Variation and Adaptation'
Grow seeds with different numbers of seeds per small pot, record the number of seeds that germinate and show this on a chart/diagram. Give reasons for the results.

Evidence for this unit and the unit 'Variation and adaptation'
Measure the pH and water content of soil in different areas, produce a poster that shows the different plants found in each of the areas, relate your findings of plants found to your measurements of pH and moisture content.

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Science and the Plant World - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____ *Candidate No.*_____

*Centre Name*_____ *Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify the conditions needed for growth of plants			
AC1.2 Identify conditions needed for germination of plants			
AC2 .1 Follow simple instructions to investigate plant growth			
AC2.2 Obtain results from investigations			
AC3.1 Identify the major parts of a plant designed to support growth			
AC4.1 Identify the parts of a flower that are designed for reproduction			
AC4.2 Outline the function of reproductive parts of a flower			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

Science and the Plant World - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____ *Candidate No.*_____

*Centre Name*_____ *Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Describe conditions needed for germination of plants			
AC1.2 Describe the conditions needed for growth of plants			
AC1.3 Outline the responses of plants to different conditions			
AC2.1 Safely investigate growth of plants			
AC2.2 Safely investigate germination of plants			
AC2 .3 Record results from investigations			
AC2.4 Display results from investigations			
AC3.1 Describe the function of major parts of a plant designed to support growth			
AC3.2 Identify the main parts of a plant cell that support growth			
AC4.1 Identify the female and male parts of plant reproductive organs			
AC4.2 Describe the function of the reproductive parts of a flower			

General Comments

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Teacher:_____ Date:_____

Moderator: _____ Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**The science of light and sound**	
Unit Ref. Nos.	**Entry 2: Y/503/3959**	**Entry 3: L/503/3960**
Entry Codes	**Entry 2: 6208/E2**	**Entry 3: 6208/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit enables learners to explore themes connected with light and sound. By undertaking investigations they will develop knowledge of properties and the use of light and sound.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know basic science of light and sound	AC1.1 Identify properties of light AC1.2 Identify properties of sound	AC1.1 Describe properties of light AC1.2 Describe properties of sound
LO2 Be able to investigate light and sound	AC2.1 Safely use equipment to investigate light, under close supervision AC2.2 Safely use equipment to investigate sound, under close supervision	AC2.1 Safely use equipment to investigate light AC2.2 Safely use equipment to investigate sound AC2.3 Record observations from investigations AC2.4 Make simple conclusions
LO3 Know how light can be used for communication purposes	AC3.1 Identify applications of light that involve communication	AC3.1 Describe applications of light that involve communication

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know basic science of light and sound

- Sound travels in the form of waves
- Sound is caused by vibrations and is a form of kinetic energy
- Speed of sound: travels 330 metres every second in air **(speed alters depending on the density of the medium through which it is travelling – entry 3)**
- Loudness of sound
- High levels of noise can damage hearing
- Sound cannot travel through a vacuum
- Visible light is just part of a continuous spectrum of electromagnetic radiation
- Various types of electromagnetic radiation with longer wavelengths and with shorter wavelengths
- All types of electromagnetic waves travel at the same speed through space
- X-rays, visible light and radio waves are all types of electromagnetic radiation
- Electromagnetic radiation is a form of energy
- All waves carry energy from one place to another
- Reflection of light and sound waves
- Light and sound can be absorbed
- **Refraction of light (entry 3)**

LO2: Be able to investigate light and sound

- Reflection/ absorption of light and sound
- Investigating wave forms of different sounds
- Heating affect of radiation
- Using photocells to transfer light into electricity
- Measuring the loudness of different sound.

LO3: Know how light can be used for communication purposes

- Radio waves, microwaves, infra-red and visible light (fibre optic cables) may be used to communicate
- Electromagnetic radiation can be used for wireless communication: radio waves used to transmit television and radio programmes, microwaves are used to transmit mobile phone
- "wireless technology"
- Remote controls
- Radiation is electromagnetic wave similar to light
- Solar panels
- Heating/cooking using electromagnetic radiation-microwave ovens, halogen heaters
- Dangers of radiation
- Possible harmful effect of microwave radiation from mobile phones but science uncertain.

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with '**The science of light and sound'** are:

Energy in the Home and Workplace

Working with Electrical Circuits

3.3 Resources

http://www.acoustics.salford.ac.uk/schools/index1.htm

http://www.dangerousdecibels.org/virtualexhibit/6measuringsound.html

http://www.ngfl-cymru.org.uk/vtc/ngfl/2007-08/science/radiation_pelydriad/S/index.html

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work
- photographs of learners carrying out work
- story boards
- presentations/ posters produced by the learners
- evaluation sheets
- records of oral questions
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to the science of light and sound

Task 1: Produce a presentation or a table that compares some properties of sound and light

Task 2: Create a Mexican wave in the classroom; video this and include some explanation of how this could represent light

Task 3: Carry out experiments to investigate the “loudness” of various sounds around the home, for example television, washing machine, traffic noise etc. Record findings on a poster

Task 4: Set up a contained light source and demonstrate how light always travels in a straight line (series of cardboard sheets with holes at exact height of light source)

Task 5: Set up a photocell and use it to generate electricity

Task 6: Using torches and the code sheet for Morse code send a message using visible light

Task 7: Prepare a leaflet that illustrates some applications of light that involves communication

Task 8: Carry out an experiment to investigate the effect of black and white surfaces on heat absorption rates, record the results of the experiment

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

The science of light and sound - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify properties of light			
AC1.2 Identify properties of sound			
AC2.1 Safely use equipment to investigate light, under close supervision			
AC2.2 Safely use equipment to investigate sound, under close supervision			
AC3.1 Identify applications of light that involve communication			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

The science of light and sound - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____ *Candidate No.*_____

*Centre Name*_____ *Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Describe properties of light			
AC1.2 Describe properties of sound			
AC2.1 Safely use equipment to investigate light			
AC2.2 Safely use equipment to investigate sound			
AC2.3 Record observations from investigations			
AC2.4 Make simple conclusions			
AC3.1 Describe applications of light that involve communication			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Variation and Adaptation**	
Unit Ref. Nos.	**Entry 2: R/503/3961**	**Entry 3: Y/503/3962**
Entry Codes	**Entry 2: 6209/E2**	**Entry 3: 6209/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit aims to help learners to understand how organisms are adapted to their environment and how the diversity of organisms in an environment can be protected.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know about the range of organisms in an environment	AC1.1 Identify ways in which organisms are adapted to their environment	AC1.1 Describe ways in which organisms are adapted to their environment AC1.2 State causes of variation between organisms
LO2 Know about factors that affect the range of organisms in an environment	AC2.1 Identify natural factors that affect the range of organisms found in an environment AC2.2 Identify ways in which human activity can affect the range of organisms found in an environment	AC2.1 Identify natural factors that affect the range of organisms found in an environment AC2.2 Describe how external factors have affected a particular plant AC2.3 Describe how external factors have affected a particular animal

LO3 Understand that organisms are interdependent	AC3.1 Construct a simple food chain, identifying predator and prey	AC3.1 Identify in a food web: • producers • consumers • carnivores • herbivores • omnivores AC3.2 State how change affects species in a food web
LO4 Be able to identify organisms in a particular habitat	AC4.1 Use a simple identification key to identify some organisms found in a habitat AC4.2 Present information to show the organisms identified	AC4.1 Identify different organisms in a habitat AC4.2 Present information to show range and numbers of organisms identified

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know about the range of organisms in an environment

- Spot variation in organisms of the same species including animals and plants
- Concept of environment and habitat
- Different environments (e.g. desert, fresh water, sea water, rainforest, grassland)
- Adaption
- Describe how plants are adapted to survive in different environments
- Describe how animals are adapted to their environment (E.g. temperate and arctic foxes or hares)
- Causes of variation, including inherited characteristics and mutation
- Know that variation within species can cause evolution change
- Understand that species may become extinct if the habitat changes
- Know that “the fittest” organisms survive and breed, passing on their features to the next generation”

LO2: Know about factors that affect the range of organisms in an environment

- Natural factors: living things compete for food (including light), shelter and mates
- Human activity: The effect of pollution/waste on range and numbers of organisms (e.g. plastic waste, other litter and acid rain), effect of climate change on habitat, destruction of habitats such as hedgerow loss, use of fertilisers and pesticides and change in use of land (e.g. clearing forests for farming; building)
- Endangered species
- Protection of wildlife (e.g. creating wildlife friendly areas, avoid disrupting ecosystems, reducing use of pesticides)

LO3: Understand that organisms are interdependent

- Food chains and webs
- Population size
- Basic principles of population control
- Producer and consumer
- Carnivores, herbivores and omnivores

LO4: Be able to identify organisms in a particular habitat

- Use of the term habitat
- Use of keys to identify collected organisms in a habitat
- Use a range of sampling methods: nets, pooters, pitfall traps, quadrat surveys
- Use tally charts to record information
- Presentation methods (tables, charts, graphs, posters)

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered with **Variation and Adaptation** are:

Science and the Plant World

Introduction to Plant Care

Introduction to Land Maintenance

Introduction to Animal Care

3.2 Resources

Websites

General Resources

http://www.britishecologicalsociety.org/educational/

http://www.naturalengland.org.uk/information_for/students_and_teachers/default.aspx

Ecokids – a website with many interactive resources for teaching populations, competition and adaptations:

http://www.ecokids.ca/pub/games_activities/index.cfm

Adaption:

http://www.bbc.co.uk/nature

http://www.bristolzoo.org.uk/learning/visits/secondarylevel/adaptation

http://www.marwell.org.uk/education/resources/resources.asp?css=1

Food chains/webs:

http://www.vtaide.com/png/foodchains.htm

Links to sites with information and activities based upon food webs and pyramids:

http://www.ftexploring.com/links/foodchains.html

Bird watch (survey):

http://www.rspb.org.uk/birdwatch/

Creating a habitat for wildlife

http://www.nwf.org/Get-Outside/Outdoor-Activities/Garden-for-Wildlife/Create-a-Habitat.aspx

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Anglian Water osprey project

http://www.anglianwater.co.uk/environment/our-projects/osprey-update/

Activities on pollution and pollution indicators

http://www.ngfl-cymru.org.uk/eng/ks4_-_science_-_organisms_-_and_-_health_-pollution

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work
- photographs of learners carrying out work
- story boards
- presentations/ posters produced by the learners
- evaluation sheets
- records of oral questions
- results from field work
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to Variation and Adaptation

Task 1: Complete an observation log of the variety of organisms seen on a visit to a park, pond or garden. The log should include distinguishing features noted for each organism

Task 2: Collect (using appropriate techniques) organisms from a particular habitat, record findings of the types and numbers of organisms found using notes, photographs and tally charts

Task 3: Prepare a poster that shows how particular animals and plants are adapted to particular environments

Task 4: Identify, using simple identification keys the organisms found in two different types of habitat (e.g. park and woodland) and make posters showing differences between the two

Task 5: Construct food web(s) to show the interdependence of organisms in a local environment

Task 6: Prepare a presentation that explains the harmful effects of pollution on a particular habitat

Task 7: Produce a poster on how an endangered species (such as pandas, gorillas, ospreys or leopards) could be protected

Task 8: Produce a timeline to show how a particular plant or animal could have evolved or time, indicating possible reasons why the plant or animal may have evolved

(b) Tasks Providing Evidence for Other Units

Task 1: Evidence for this unit and 'Science and the plant world'
Set up a number of controlled habitats by germinating/growing a variety of plants (each habitat to be set up with differing conditions such as light or moisture). Observe and make notes on the plants that grow/don't grow in each habitat. Suggest reasons why some plants grow and others don't in each habitat

Task 2: Evidence for this unit and 'Introduction to Land Maintenance'
In a planted area, use a sampling technique to estimate the number of weeds. Make a list of ways to reduce the weed population and note the effect that these control mechanisms could have on all other organisms in that habitat

Task 3: Evidence for this unit and 'Introduction to Animal care'
Produce an information leaflet that shows how selective breeding of an animal is likely to reduce variation

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Variation and Adaptation - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify ways in which organisms are adapted to their environment			
AC2 .1 Identify natural factors that affect the range of organisms found in an environment			
AC2.2 Identify ways in which human activity can affect the range of organisms found in an environment			
AC3.1 Construct a simple food chain, identifying predator and prey			
AC4.1 Use a simple identification key to identify some organisms found in a habitat			
AC4.2 Present information to show the organisms identified			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

Variation and Adaptation - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Describe ways in which organisms are adapted to their environment			
AC1.2 State causes of variation between organisms			
AC2.1 Identify natural factors that affect the range of organisms found in an environment			
AC2.2 Describe how external factors have affected a particular plant			
AC2.3 Describe how external factors have affected a particular animal			
AC3.1 Identify in a food web: • producers • consumers • carnivores • herbivores • omnivores			
AC3.2 State how change affects species in a food web			

Assessment record - continued over page

Variation and Adaptation - Entry 3

AC4.1 Identify different organisms in a habitat			
AC4.2 Present information to show range and numbers of organisms identified			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Working with Electrical Circuits**	
Unit Ref. Nos.	**Entry 2: D/503/3963**	**Entry 3: H/503/3964**
Entry Codes	**Entry 2: 6210/E2**	**Entry 3: 6210/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit enables learners to explore themes connected with the use of electrical circuits.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know basic principles of electrical circuits	AC1.1 Identify the components used in simple electrical circuits AC1.2 Identify simple circuits in which electricity can flow AC1.3 State some energy changes taking place in an electrical circuit	AC1.1 Identify components in a simple circuit diagram AC1.2 State the purpose of the components in an electrical circuit AC1.3 Describe energy changes taking place in an electrical circuit AC1.4 Define key terms used in electrical circuits
LO2 Know how to use electricity safely	AC2.1 Identify some hazards associated with the use of electricity AC2.2 Suggest some ways to reduce risks when using electricity	AC2.1 Identify hazards associated with the use of electricity AC2.2 Explain how the risks of using electricity can be reduced

LO3 overpage

LO3 Be able to work with electrical circuits	AC3.1 Build simple working circuits	AC3.1 Build simple working circuits from simple circuit diagrams AC3.2 Measure current and voltage in electrical circuits with accuracy AC3.3 Record results

2 . Amplification of Content

The following suggestions should be **considered** *in the context of:*

- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know basic principles of electrical circuits

- Components in circuit. Power source (e.g. battery, solar cell), wires, switches, resistors, lamps, bells, buzzers
- Requirements for flow of electricity
- Terms: Series and parallel circuits, current, voltage, resistance, resistor, volts, amps
- Energy changes in simple circuits (e.g. circuits involving batteries, lamps, buzzers, bells)

LO2: Know how to use electricity safely

- Hazards associated with high voltage sources: electrocution, fire
- Hazards associated with using mains electricity in the damp/ wet
- Hazards associated with damaged electrical equipment/ poorly wired electrical circuits, plugs
- Reducing risk of injury
    - Check equipment for damage
    - Use of low voltage equipment for outdoor use
    - Rules for using electrical equipment safely
- Function of fuse, earth, double insulation, trip switch, double insulation

LO3: Be able to work with electrical circuits

- Simple circuits (Parallel and series)
- Components: batteries, switches, lamps, buzzers/bells
- Circuits to test a fuse or cable for continuity
- Measurement of current and voltage

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with '**Working with Electrical Circuits'** are:

Science: Health and safety

The science of light and sound

Energy in the Home and Workplace

3.4 Resources

http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/electricityworld/thecostofelectricityrev1.shtml

http://www.miniscience.com/link/make_electricity.html

http://www.sep.org.uk/downloads/DL100/WND_booklet.pdf (you will need to register with SEP first but registration is free)

http://powerup.ukpowernetworks.co.uk/over-11/using-electricity-safely.aspx

http://lgfl.skoool.co.uk/keystage3.aspx?id=93

http://www.echalk.co.uk/Science/physics/circuitBuilder/circuitBuilder.html

http://www.garyfallidou.org/en_index.html

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- photographic history/diary of learners carrying out work
- witness statements
- written work
- story boards
- presentations/ posters produced by the learners
- evaluation sheets
- records of oral questions.

4.2 Examples of Tasks

Tasks specific to 'Electrical Circuits'

Task 1: Produce a poster showing an electrical circuit and the purpose of each component in the circuit

Task 2: Build a simple battery using one or more lemons (alternative: use potatoes)

Task 3: Generate an electric current using a simple wind turbine (see SEP website publication 'Wind Power' for more details)

Task 4: Produce a poster to help people recognise the dangers that can be associated with using mains electricity

Task 5: Build simple lighting circuits involving one or more bulbs and switches

Task 6: Build a series circuit, vary the number of lamps and identify the effect on the current in the lamps and their brightness

Task 7: Build a parallel circuit, add more lamps and note the effect on the current

Task 8: Build a simple circuit to switch a buzzer on or off

Task 9: Match the term: Match electrical terms printed on separate cards to their definitions

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Working with Electrical Circuits - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____*Candidate No.*_____

*Centre Name*_____*Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify the components used in simple electrical circuits			
AC1.2 Identify simple circuits in which electricity can flow			
AC1.3 State some energy changes taking place in an electrical circuit			
AC2.1 Identify some hazards associated with the use of electricity			
AC2.2 Suggest some ways to reduce risks when using electricity			
AC3.1 Build simple working circuits			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

Working with Electrical Circuits - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____ *Candidate No.*_____

*Centre Name*_____ *Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify components in a simple circuit diagram			
AC1.2 State the purpose of the components in an electrical circuit			
AC1.3 Describe energy changes taking place in an electrical circuit			
AC1.4 Define key terms used in electrical circuits			
AC2.1 Identify hazards associated with the use of electricity			
AC2.2 Explain how the risks of using electricity can be reduced			
AC3.1 Build simple working circuits from simple circuit diagrams			
AC3.2 Measure current and voltage in electrical circuits with accuracy			
AC3.3 Record results			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Energy in the home and workplace**	
Unit Ref. Nos.	**Entry 2: K/503/3965**	**Entry 3: M/503/3966**
Entry Codes	**Entry 2: 6211/E2**	**Entry 3: 6211/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**3**	
Unit aim:	This unit enables learners to explore themes connected with energy use and transfer in the home and workplace.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know basic principles of energy	AC1.1 Identify three different types of energy	AC1.1 State three different forms of energy AC1.2 Identify how energy is transferred in simple systems
LO2 Know how energy is used in the home and workplace	AC2.1 Identify some uses of energy in a home AC2.2 Identify some uses of energy in a workplace AC2.3 Rank electrical appliances in order of power consumption	AC2.1 Describe ways in which energy is used in a home AC2.2 Describe ways in which energy is used in a workplace AC2.3 Compare power consumption for different electrical appliances

LO3 over page

LO3 Know how energy waste can be reduced in the home and workplace	AC3.1 Identify ways in which energy is wasted in a home AC3.2 Identify ways in which energy is wasted in a workplace AC3.3 Identify ways to reduce energy waste in a home AC3.4 Identify ways to reduce energy waste in a workplace	AC3.1 Identify ways in which energy is wasted in a home AC3.2 Identify ways in which energy is wasted in a workplace AC3.3 Suggest ways to reduce energy waste in a home AC3.4 Suggest ways to reduce energy waste in a workplace

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know basic principles of energy

- Types of energy: Potential, kinetic, chemical, electrical, thermal, gravitational
- Energy can be transferred from one place to another in many different forms
- Energy transfer diagrams: show each type of energy whether it is stored or not, and the processes taking place as it is transferred. Examples: car engine, which transfers chemical energy (fuel) into kinetic energy in the engine and wheels or electric lamp where the energy input is electrical energy which is transferred into light energy as an energy output
- Energy diagrams show useful energy transfers
- "Waste" energy such as heat and noise generated by the car engine or heat generated by the lamp
- "Waste" and "useful" energy during energy transfer can be used to compare the efficiency of a device e.g. ordinary electric lamps compared to modern energy saving lamps

LO2: Know how energy is used in the home and workplace

- Power consumption and power rating: the amount of electricity used by an electrical appliance in a given time depends on the power rating; the bigger the power rating the more electricity used
- Measuring energy consumption (electrical appliances) in the home/ work place
- Energy conservation around home/ work place: Insulation

LO3: Know how energy waste can be reduced in the home and workplace

- Ways in which is wasted. e.g. Poor insulation resulting in heat loss through walls; unnecessary running of electrical appliances; rooms over-heated
- Preventing heat loss (e.g. cavity wall insulation, loft insulation, double glazing, draft excluders)
- Reducing energy consumption e.g. by switching off appliances, use of time switches, motion detectors to switch off lights etc
- Using low energy devices (e.g. low energy light bulbs)

(This list is by no means exhaustive)

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

The following types of evidence are likely to feature:

- photographic history/diary of learners carrying out work;
- witness statements;
- written work;
- story boards;
- presentations/ posters produced by the learners;
- evaluation sheets;
- records of oral questions.

3.5 Resources

http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/electricityworld/thecostofelectricityrev1.shtml

http://www.s-cool.co.uk/gcse/physics/energy-transfers/revise-it/types-of-energy-transfers

http://www.green-planet-solar-energy.com/radiant-water-heat.html

http://www.uwsp.edu/cnr/wcee/keep/Mod1/Whatis/experiments.htm

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

4.2 Examples of Tasks

(a) Tasks specific to Energy in the Home and Workplace

Task 1: Produce a poster that shows how energy is transferred in simple systems, such as in car engines and lights

Task 2: Carry out investigations to look at the efficiency of transforming energy from one form to another (show temperature increase on a thermometer when different bulbs shine onto it)

Task 3: Draw up a table that identifies three forms of energy used in the home and how they are used. A similar activity could be carried out in a workplace

Task 4: Do an energy survey in a work place to identify how energy is used and use the results to identify ways of saving energy

Task 5: Investigate how energy is used in a home and use the results to suggest how energy could be changed

Task 6: Photograph a range of forms of energy used in the home and work place. Put each photograph onto an A4 card and identify the type of energy and its use

Task 7: Carry out investigations and record the power consumption of different electrical appliances. Compare findings with others in the class

Task 8: Investigate the loss of heat energy from rooms and impact of different types of insulation/ different thicknesses of insulation

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at both Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Energy in the home and workplace: Entry 2

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify three different types of energy			
AC2.1 Identify some uses of energy in a home			
AC2.2 Identify some uses of energy in a workplace			
AC2.3 Rank electrical appliances in order of power consumption			
AC3.1 Identify ways in which energy is wasted in a home			
AC3.2 Identify ways in which energy is wasted in a workplace			
AC3.3 Identify ways to reduce energy waste in a home			
AC3.4 Identify ways to reduce energy waste in a workplace			

General Comments

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Teacher:_____Date: _____

Moderator:_____Date: _____

Energy in the home and workplace: Entry 3

ASSESSMENT RECORD

Candidate Name_____ Candidate No._____

Centre Name_____ Centre No._____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 State three different forms of energy			
AC1.2 Identify how energy is transferred in simple systems			
AC2.1 Describe ways in which energy is used in a home			
AC2.2 Describe ways in which energy is used in a workplace			
AC2.3 Compare power consumption for different electrical appliances			
AC3.1 Identify ways in which energy is wasted in a home			
AC3.2 Identify ways in which energy is wasted in a workplace			
AC3.3 Suggest ways to reduce energy waste in a home			
AC3.4 Suggest ways to reduce energy waste in a workplace			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC ENTRY LEVEL PATHWAYS
1. QCF Details

Title:	**Chemical Products used in the Home and their Environmental Impact**	
Unit Ref. Nos.	**Entry 2: A/503/3968**	**Entry 3: T/503/3967**
Entry Codes	**Entry 2: 6212/E2**	**Entry 3: 6212/E3**
Level	**Entry 2 and Entry 3**	
Credit value:	**2**	
Unit aim:	This unit aims to help learners to appreciate that there are a range of chemical products used in the home and that the disposal of these materials can have an impact on the environment.	

Learning Outcomes **To be awarded credit for this unit, the learner will:**	**Assessment Criteria Entry 2** **Assessment of the learning outcome will require a learner to demonstrate that they can:**	**Assessment Criteria Entry 3** **Assessment of the learning outcome will require a learner to demonstrate that they can:**
LO1 Know about different types of chemical products used in the home	AC1.1 Identify different types of chemical products used in the home AC1.2 Identify some household uses of acids and bases AC1.3 Identify household solutions as acidic or a alkaline using simple tests	AC1.1 Classify different types of chemical products used in a home AC1.2 Link the properties of chemical products to their use AC1.3 Identify the pH of certain chemical products found in the home
LO2 Know that chemical products can be obtained from raw materials	AC2.1 Identify raw materials that can be used to produce useful chemical products	AC2.1 Identify raw materials used to produce a range of useful chemical products

LO3 (E2) Know how certain chemical products can affect the environment **LO3 (E3)** Understand the impact certain chemical products have on the environment	AC3.1 State some harmful effects different chemical products can have on the environment AC3.2 Identify chemical products in household waste that can be recycled AC3.3 Identify chemical products that are produced from non-renewable sources	AC3.1 Describe how certain chemical products harm the environment AC3.2 Identify advantages of recycling household waste AC3.3 Identify how certain household chemical products should be disposed AC3.4 Explain the need to use raw materials sustainably

2. Amplification of Content

The following suggestions should be considered in the context of:
- the level the learner is working at;
- providing opportunities for progression;
- centre facilities and resources.

LO1: Know about different types of chemical products used in the home

Types of chemical products:

- Natural/organic- for example those based on carbon and extracted from oil, such as **plastics**
- Synthetic/inorganic-those containing elements other than carbon and originating from non-living things-for example **glass, metals or ceramics**
- Mixtures: solutions, suspensions, gels, emulsions, foams and aerosols, examples cosmetics, paints, toothpaste, hair gel, glues, cleaning products etc
- Acids, alkalis (bases) and neutral solutions: chemical properties of many solutions enable them to be classified as acid, alkalis or neutral—the strength of acidity or alkalinity is expressed by “pH scale”

Properties of materials

- Properties include acidity, alkalinity, solubility, texture, hardness, strength, flexibility etc
- Acids and bases
- Examples of alkalis as household products: drain cleaner, bleach, ammonia, baking powder
- Examples of acids as household products: vinegar, Lemon juice
- Testing
- Classify a solution as a base or an acid or acid or alkaline using the pH scale: litmus paper or universal indicator paper/solution and pH meters

LO2: Know that chemical products are often obtained from raw materials

Useful products in the home

- Household cleaners and soaps made from sodium hydroxide (caustic soda), made from sodium chloride
- PVC and plastics made from chlorine (from sodium chloride) and alkenes (from crude oil)
- Bases react with oils and fats, so they are often used in strong household cleaners. Drain cleaners and oven cleaners usually contain sodium hydroxide for example. Ammonia is also commonly used in cleaners

Raw materials

- Vast majority of chemical substances are found in the earth as compounds. These are separated or extracted to give us useful products, such as crude oil and natural gas, metal ores and salt deposits
- Some substances are used as they are: limestone or marble
- A very small number of materials exist as elements, in other words not combined with other elements, e.g. gold, some sulphur and some copper
- Most raw materials are changed to useful products by rearrangement of atoms in substance

LO3: Know how certain chemical products can affect the environment (E2)
LO3: Understand the impact certain chemical products have on the environment (E3)

Harmful effects on the environment

- A large amount of waste material is not biodegradable. This means that micro-organisms cannot break them down, so they may last for many years in rubbish dumps. This leads to large amounts of rubbish at landfill sites, which are unsightly, smelly and possibly dangerous. Landfill sites produce methane that contributes to greenhouse gases
- Plastics can be burnt or incinerated at very high temperatures; however this produces carbon dioxide which contributes to greenhouse gases. Toxic gases may also be produced if plastics are not burnt at a high enough temperatures. How our knowledge of harmful effects of chemical products as changed with time (e.g. impact of burning fossil fuels on global warming).
- Water pollution
- Most plastics are not biodegradable; however it is possible to include chemicals in the plastics that help them break down more quickly. Some carrier bags and refuse bags made from degradable materials are now available

Recycling

- Materials that can be recycled e.g. plastics, metals and other materials (such as glass)
- Advantages recycling e.g. reduces the disposal problems and the amount of non-renewable materials used
- Disadvantages e.g. necessary to separate materials from each other first. This can be difficult and expensive

Using non-renewable resources/sustainability

- Non-renewable e.g. Fossil fuels both in terms of energy and for making useful products
- Sustainability e.g. Need to find more renewable, sustainable ways of generating energy and making useful products

3. Delivery

3.1 Planning Courses

Achievement of each unit is confirmed through a 'statement of achievement', so that learners will gain some recognition for all completed work. However, in planning courses teachers will need to consider the possible qualification outcomes for individual learners. **For full details of the qualifications (Awards and Certificates) that this unit may contribute to, and rules of combination, please refer to the WJEC Entry Pathways specification.**

Closely related units likely to be delivered along with '**Chemical Products used in the Home and their Environmental Impact'** are:

Science: Health and safety

Making Useful Compounds

3.2 Resources

http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/oils/polymersact.shtml

http://www.fantasticplastic.org.uk/biz_profile_axion.html

http://www.greenpeace.org/international/campaigns/toxics/polyvinyl-chloride/pvc-waste/

http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/oneearth/usefulproductsrev4.shtm
http://www.bbc.co.uk/schools/ks3bitesize/science/chemical_material_behaviour/acids_bases_metals/revise1.shtml

http://webarchive.nationalarchives.gov.uk/+/http://www.defencedynamics.mod.uk/lesson/319-Recycling

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

In planning assessment opportunities it will be necessary to consider:
- formative as well as summative assessment
- coverage of Assessment Criteria for this unit
- coverage of Assessment Criteria for linked units

The following types of evidence are likely to feature:

- written work
- photographs of learners carrying out work
- story boards
- presentations/ posters produced by the learners
- evaluation sheets
- records of oral questions
- witness statements.

4.2 Examples of Tasks

(a) Tasks specific to Useful Products

Task 1: Identify the materials used in a range of useful products; prepare a presentation that links the properties of materials to their use in these products

Task 2: Produce a poster that illustrates household uses of Acids and Bases

Task 3: Use litmus paper to test the pH of a range of solutions. Compile a table to record the findings and classify these solutions as either acidic or alkaline

Task 4: Prepare a flow diagram that illustrates how raw materials are turned into materials that are used in useful products

Task 5: Collect information on the materials that can be made from crude oil. Produce a leaflet that illustrates these materials

Task 6: Produce a leaflet explaining how different chemicals and materials can have a harmful effect on the environment

Task 7: Photograph a range of materials from household waste, put each photograph onto an A4 card and identify how that material can be recycled

Task 8: Prepare a presentation on the advantages of recycling household waste; include in the presentation two specific examples of how household materials are disposed of, and why they are disposed of in a particular way

Task 9: Prepare a short report that explains the problem with using products from non-renewable sources

(b) Tasks Providing Evidence for Other Units

Task 1: Evidence for this unit and 'Making Useful Compounds'.
Using a standard procedure, carry out a practical to mix an acid with a base, test the pH of the solutions at the beginning of the experiment identify the products of this reaction and test pH of the solutions at the end of the experiment

4.3 Recording

Assessment will be recorded on the attached form by indicating successful completion of each Assessment Criterion. All criteria must be met for the unit to be achieved and credit awarded. Where a unit is provided at Entry 2 and Entry 3, Learning Outcomes may be common but Assessment Criteria will be differentiated and must be met at the relevant level.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the WJEC Entry Pathways specification, which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services

Chemical Products used in the Home and their Environmental Impact - Entry 2

ASSESSMENT RECORD

*Candidate Name*_____ *Candidate No.*_____

*Centre Name*_____ *Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Identify different types of chemical products used in the home			
AC1.2 Identify some household uses of acids and bases			
AC1.3 Identify household solutions as acidic or a alkaline using simple tests			
AC2.1 Identify raw materials that can be used to produce useful chemical products			
AC3.1 State some harmful effects different chemical products can have on the environment			
AC3.2 Identify chemical products in household waste that can be recycled			
AC3.3 Identify chemical products that are produced from non-renewable sources			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

Chemical Products used in the Home and their Environmental Impact - Entry 3

ASSESSMENT RECORD

*Candidate Name*_____ *Candidate No.*_____

*Centre Name*_____ *Centre No.*_____

Assessment Criteria	Met	Evidence	Office Use
AC1.1 Classify different types of chemical products used in a home			
AC1.2 Link the properties of chemical products to their use			
AC1.3 Identify the pH of a range of chemical products found in the home			
AC2.1 Identify raw materials used to produce a range of useful chemical products			
AC3.1 Describe how certain chemical products harm the environment			
AC3.2 Identify advantages of recycling household waste			
AC3.3 Identify how certain household chemical products should be disposed			
AC3.4 Explain the need to use raw materials sustainably			

General Comments

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Teacher:_____ Date: _____

Moderator:_____ Date: _____

WJEC PATHWAYS - ENTRY QUALIFICATIONS

Title	**Climate Change: Causes, Effects and Human Responses**
Unit Ref. No.	**T/617/3317** **A/617/3318**
Entry Code	**6234/E2** **6234/E3**
Level	**Entry 2/3**
Credit Value	**3**
Unit aim	This unit aims to enable learners to find out about the causes and effects of climate change and what individuals and the UK government can do to reduce risks posed by climate change. It looks at how the UK will meet its future energy needs in a more sustainable manner by developing and making more use of renewable energy sources. It is possible to co-teach this unit with aspects of the WJEC GCSE Geography, Eduqas GCSE Geography A and Geography B specifications.

Learning outcomes To be awarded credit for this unit, the learner will:	**Assessment Criteria Entry 2** Assessment of the learning outcome will require a learner to demonstrate that they can:	**Assessment Criteria Entry 3** Assessment of the learning outcome will require a learner to demonstrate that they can:
LO1 Know about the causes of climate change.	**AC1.1** Recognise key evidence for climate change. **AC1.2** Identify natural causes of climate change. **AC1.3** State ways in which human activity influences climate change and global warming.	**AC1.1** Outline the evidence for climate change. **AC1.2** Give natural causes of climate change. **AC1.3** Outline ways in which human activity influences climate change and global warming.
LO2 Know about the effects of climate change.	**AC2.1** Identify some of the major consequences of climate changes. **AC2.2** Identify positive and negative effects of climate change in the UK.	**AC2.1** Outline the major consequences of climate changes. **AC2.2** Give positive and negative effects of climate change in the UK.

LO3 Know what individuals and the UK government can do to reduce the risk of climate change.	**AC3.1** Identify sources of renewable energy that could be used to meet future energy needs in the UK. **AC3.2** State what individuals can do to reduce the risk of climate change. **AC3.3** State what the UK government can do to reduce the risk of climate change.	**AC3.1** Outline renewable energy sources that could be used to meet future energy needs in the UK. **AC3.2** Outline what individuals can do to reduce the risk of climate change. **AC3.3** Outline what the UK government can do to reduce the risk of climate change.

2. Suggested Unit Content

The following suggestions should be considered in the context of:

- the level the learner is working at – either Entry 2 or Entry 3
- the level is determined not by the amount of work completed but should demonstrate achievement of the specified assessment criteria. Completion should be closely linked to the command words used in the assessment criteria.
- centre facilities and resources
- teaching time and curriculum organisation
- opportunities to co-teach with GCSE Geography
- providing opportunities for progression including studying a Humanities based subject to GCSE level

This unit is open-ended in its coverage. There are a number of different ways of approaching it. The following section is designed to assist teachers in approaching the issue of content. **The content and context chosen must be capable of delivering the learning outcomes associated with the unit.** The learning outcomes do not have to be taught separately but can be integrated and taught as a whole.
For schools in England, this unit can be co-taught with:
Eduqas Geography A Key Idea 5.1: Climate change during the Quaternary period
Eduqas Geography A Key Idea 2.4: Climate change – cause and effect

For schools in Wales, this unit can be co-taught with:
WJEC Geography Key Idea 5.1: Climate change during the Quaternary period

LO1: Know about the causes of climate change

The factors that learners must know about will include:

- the difference between ‘weather’ and ‘climate’
- that climate has gone through change in the past, but the rate of change has increased significantly in recent decades
- evidence that climate change is taking place, e.g. temperature records, frequency of extreme weather events
- natural causes of climate change:
  - Natural climate cycles: ice ages, sun spot activity
  - Volcanic activity: gases, dust and ash blocking incoming rays from sun leading to drops in temperature
- ways in which human activity influences climate change and global warming.
  - Burning fossil fuels: to meet increased demands for energy all over the world; build-up of greenhouse gases
  - Modes of transport: more and more vehicles on roads, rail and in the air, increasing levels of atmospheric pollution.

LO2: Know about the effects of climate change

The factors that learners must know about will include:

- *changes in sea level - melting ice caps leading to possible 1.5 metre rise*
- *climate changes*
  - *patterns of rainfall becoming less reliable; some places wetter and others drier with severe drought becoming more common*
  - *rising temperatures leading to more heat waves*
  - *more severe hurricanes in hurricane seasons that are getting longer and less predictable*
- *agriculture*
  - *loss of fertile land due to drought and spread of deserts*
  - *need for more irrigation schemes*
  - *loss of fertile land in lowland areas due to flooding*
  - *less reliable rainfall leading to farmers having to change what crops they grow*
- *tourism - less snow in the Alps affecting tourism*
- *health*
  - *increased incidence of heat stroke*
  - *spread of pests and diseases due to higher temperatures*
- *economy - governments needing to spend more money to repair damage caused by extreme weather events*
- *that the UK will be affected by climate change*
- *climate change will have both positive and negative consequences for the UK.*

LO3: Know what individuals and the UK government can do to reduce the risk of climate change

The factors that learners must know about will include:

- *renewable and non-renewable sources of energy*
- *improving energy efficiency at home*
- increasing personal use of public transport
- actions taken by UK government to reduce the risk of climate change
  - implementing international agreements on climate change, e.g. Kyoto Agreement (1997) and Paris Agreement (2016)
  - Government policies, e.g. reduced road tax on cars with low carbon emissions
  - promoting use of public transport
  - congestion charging in city centres, e.g. London
  - grants to businesses develop renewable energy schemes
  - Government funded research into renewable energy technologies.

3. Delivery

3.1 Planning Courses

This unit will contribute to the completion of an Entry Pathways qualification in Science Today. **For full details of the qualifications (Awards and Certificates) and rules of combination, please refer to the WJEC Entry Level Pathways specification.**
Closely related units likely to be delivered along with **Climate Change** are:

- Changing trends in tourism
- The changing population of the UK
- Responding to a major tectonic event
- Threatened ecosystems.

Choosing a combination of the above units would work towards an Entry Pathways qualification in Humanities, with a particular focus in the discipline of Geography. Alternatively, this unit can be studied with other units in the Humanities suite which will give a more cross-curricular approach.

3.2 Resources

No specific resources have been written for this unit. Teachers and learners are advised to gather relevant information using general Geography textbooks for Key Stages 2, 3 and 4, websites, digital resources, magazines, television programmes and films. Examples of useful text books include:

GCSE Geography for WJEC A: Core – Andy Owen, Jo Pritchard, Colin Lancaster, Jacqui Owen & Dirk Sykes
GCSE Geography for WJEC A: Option Topics - Andy Owen, Jo Pritchard, Cathie Brooks, Andy Leeder & Dirk Sykes
GCSE Geography for WJEC B: - Andy Owen, Colin Lancaster, Andy Leeder & Dirk Sykes
One useful area of resources and support for teachers of Entry Pathways units is available on the WJEC website. Teachers will find a wide range of supporting materials here. Much of this material is intended to be downloaded so that it can be edited by teachers to suit the needs of their own learners and centres. The site can be found here:

http://resources.wjec.co.uk/

Other useful websites include:

https://www.oxfam.org.uk/education/resources/climate-challenge-11-14

https://www.trocaire.org/education/lent2017/primary

https://climatekids.nasa.gov/menu/teach/

https://www.earthday.org/campaigns/education/climate-education-week/?gclid=EAIaIQobChMIuamxi4681wIVFPEbCh1hwgznEAAYAiAAEgKzP_D_BwE

http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2007%20before/climate-change/cc_primary.htm

http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2007%20before/climate-change/cc_ks3.htm

http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2012-13/geography/dfes-01/core/book1-contents-t02.html

http://resource.download.wjec.co.uk.s3.amazonaws.com/vtc/2012-13/geography/dfes-01/wjec-b/book3-contents-t02.html

4. Assessment

4.1 Ways of demonstrating that the criteria have been met

All Entry Pathways units are internally assessed and externally moderated. The following principles apply to the assessment of each unit:

- all assessment criteria must be met for unit learning outcomes to be achieved
- for units provided for Entry 2 and Entry 3, assessment criteria must be met in full at each level
- tasks may be set by the centre or chosen from examples given by WJEC (see below)

There are no set tests or assessments. WJEC will provide some suggestions that can be developed to provide evidence that the assessment criteria for each learning outcome have been met. It is hoped that teachers will build on some of these suggestions and develop activities of their own to provide assessments appropriate for their learners.

In practice, ways of demonstrating that the criteria have been met will vary according to centre type, the nature of learners and curriculum organisation. In addition, different learners within the same teaching group can demonstrate achievement of assessment criteria in different ways. However, the following general types of activities are likely to feature as ways of demonstrating that the assessment criteria have been met:

General activity	Possible purpose
Posters	Identify key features and characteristics of climate change
Written work	Outline examples of human activity that lead to climate change
Oral questions and answers	Identify different types of data about climate change
Oral presentations	Give positive and negative effects of climate change in the UK
Contributing to group discussions	Discuss ways of reducing climate change
Digital presentations, e.g. power point	Outline renewable energy sources
Use of visual images such as photographs or cartoons	Identify different renewable energy sources
Storyboards	Outline features and characteristics of global warming and climate change
Case studies	Find out about particular events in specific areas of the world
Interviews	Ask about people's awareness of climate change
Surveys and questionnaires	Use data to gather evidence about climate change
Map work	Identify/mark areas of world impacted by climate change on the world map
Audio / visual recordings	Talk about the impact of human activity on climate change

4.2 Examples of tasks:

Examples of tasks that can be used with learners to show evidence of meeting the assessment criteria:

LO1: Know about the causes of climate change.

At Entry 2, learners could:

- define terms: weather and climate: heads and tails exercise
- draw up a list of examples of 'weird weather' experienced in the UK
- select two natural causes of climate change from a selection provided
- label a diagram/sketch to explain 'the greenhouse effect'
- list common fossil fuels.

At Entry 3, learners could:

- write two sentences to explain the difference between weather and climate
- make a digital presentation about an extreme weather event that occurred in recent years in the UK and identify what was so different about this event
- outline how volcanic activity can help bring about climate change
- draw a diagram/sketch to explain 'the greenhouse effect'
- outline how we use fossil fuels in our daily lives with a series of photos sourced from the internet.

LO2: Know about the effects of climate change.

At Entry 2, learners could:

- list a number of extreme weather events that have occurred in recent years
- sort impacts in to two groups – those that affect people and those that affect the environment
- draw a series of cartoons or sketches to illustrate the effects of climate change
- create a collage on effects of climate change
- class discussion on positive and negative effects of climate change for the UK
    - create two lists
    - individual decision: overall are effects positive or negative for the UK?
- state why an MEDC may cope better with the effects of climate change than an LEDC.

At Entry 3, learners could:

- use the internet to find out about an extreme weather event that occurred in recent years, and, write a newspaper report outlining the key facts
- create a mind map to outline the effects of climate change
- outline how climate change could affect:
    - people living in coastal areas
    - wildlife in the Arctic
- suggest reasons why an MEDC may cope better with the effects of climate change than an LEDC
- create a digital presentation on the positive and negative effects of climate change for the UK.

LO3: Know what individuals and the UK government can do to reduce the risk of climate change.

At Entry 2, learners could:

- card sort on renewable and non renewable sources of energy
- find out about renewable sources of energy that could be used in the UK and list personal top 3
- investigate what individuals can do to reduce the risk of climate change, e.g. by improving energy efficiency at home
  - *identify the main areas where energy is used in the home, e.g. lighting, heating, provision of hot water, kitchen appliances (cooker, dish washer, oven, micro wave, grill, food mixer/blender etc), computer and other equipment (e.g. printers, scanners, telephones, televisions, audio equipment, etc)*
  - *identify areas where energy is currently being wasted in the home*
  - *state, orally or in writing, ways of using less electricity, e.g. being more energy efficient, using more energy efficient appliances, turning off lights and household appliances, using energy efficient light bulbs, improving insulation etc*
  - *make poster to encourage users to switch off lights not in use*
- list actions taken by UK government to reduce the risk of climate change.

At Entry 3, learners could:

- carry out research about renewable sources of energy
- find out about the advantages and disadvantages of each renewable source of energy
- investigate the suitability of each renewable source of energy for the UK
- create a presentation on renewable sources of energy that could be used in place of fossil fuels in the UK - wind (onshore and offshore), solar, hydro-electric, tidal, wave, geothermal and bio energy
- investigate what the individual can do to reduce the risk of climate change, e.g. by improving energy efficiency at home
  - *identify the main areas where energy is used in the home, e.g. lighting, heating, provision of hot water, kitchen appliances (cooker, dish washer, oven, micro wave, grill, food mixer/blender etc), computer and other equipment (e.g. printers, scanners, telephones, televisions, audio equipment, etc)*
  - *carry out an audit to identify areas where energy is currently being wasted in the home*
  - *outline ways of using less electricity, being more energy efficient, using more energy efficient appliances, turning off appliances, using energy efficient light bulbs, improving insulation etc*
  - *working in groups, outline possible strategies that could be adopted to promote energy efficiency in the areas of lighting, heating, provision of hot water, kitchen appliances (cookers, dish washers, ovens, micro wave ovens, grills, food mixers/blenders etc), computer and other equipment (e.g. printers, scanners, telephones, televisions, audio equipment, etc)*
  - *create a digital presentation on the views of the group for the class*

- find out what actions have been taken by UK government to reduce the risk of climate change, e.g.
  - implementing international agreements on climate change, e.g. Kyoto Agreement (1997) and Paris Agreement (2016)
  - Government policies, e.g. reduced road tax on cars with low carbon emissions
  - promoting use public transport
  - congestion charging in city centres, e.g. London
  - grants to businesses develop renewable energy schemes
  - Government funded research into renewable energy technologies
- create a presentation of findings.

4.3 Recording

Assessment will be recorded on the relevant assessment record by indicating successful completion of each Assessment Criterion. Where a unit is provided at both Entry 2 and Entry 3, learning outcomes may be common but assessment criteria will be **differentiated** and must be met at the relevant level. All criteria must be met for the unit to be achieved and credit awarded.

Copies of the assessment records are on pages 11-12.

5. Administrative Arrangements

For details of administrative arrangements, please refer to the **WJEC Entry Pathways specification,** which includes information about:

- Entry Procedures
- Internal Assessment and External Moderation
- Awarding and Reporting
- Issue of Results
- Access Arrangements
- Post-Results Services.

Essential points to note with regard to administrative arrangements

- Submit all work by unit and not by candidate
- Ensure that all candidate work submitted for moderation is fully marked and annotated
- Annotate completed candidate work with the relevant assessment criteria, e.g. AC 1.3 or AC 3.2, showing where and how the work presented has met the required assessment criteria
- Check that ALL assessment criteria have been met for each unit by each candidate. Do not submit work for moderation if all assessment criteria have not been clearly and fully met.
- Complete in full an Assessment Record Sheet for each unit for individual candidates, ensuring it is signed the teacher, including as much detail as possible on where and how assessment criteria have been met.

Climate Change - ENTRY 2

WJEC ASSESSMENT RECORD

Candidate Name _____ **Candidate No**._____
Centre Name _____ **Centre No**._____

LO	*Assessment Criteria*	*Met*	*Evidence*
LO1	**AC1.1** Recognise key evidence for climate change. **AC1.2** Identify natural causes of climate change. **AC1.3** State ways in which human activity influences climate change and global warming.		
LO2	**AC2.1** Identify some of the major consequences of climate changes. **AC2.2** Identify positive and negative effects of climate change in the UK.		
LO3	**AC3.1** Identify sources of renewable energy that could be used to meet future energy needs in the UK. **AC3.2** State what individuals can do to reduce the risk of climate change. **AC3.3** State what the UK government can do to reduce the risk of climate change.		

General Comments

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Teacher: _____ **Date:** _____
Moderator: _____ **Date:** _____

Climate Change - ENTRY 3

WJEC ASSESSMENT RECORD

Candidate Name _____ **Candidate No.**_____
Centre Name _____ **Centre No**._____

LO	*Assessment Criteria*	*Met*	*Evidence*
LO1	**AC1.1** Outline the evidence for climate change. **AC1.2** Give natural causes of climate change. **AC1.3** Outline ways in which human activity influences climate change and global warming.		
LO2	**AC2.1** Outline the major consequences of climate changes. **AC2.2** Give positive and negative effects of climate change in the UK.		
LO3	**AC3.1** Outline renewable energy sources that could be used to meet future energy needs in the UK. **AC3.2** Outline what individuals can do to reduce the risk of climate change. **AC3.3** Outline what the UK government can do to reduce the risk of climate change.		

General Comments

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Teacher: _____ **Date:** _____
Moderator: _____ **Date:** _____