



# 50 SHADES GREENER

Creating action based educational programmes for carbon emissions management to help build a NetZero society.

The purpose of this toolkit is to provide learning collateral and opportunity focused on green jobs, the required skills and the different levels of green skills for education and how to embed suitable learning outcomes for sustainability into educational curriculums in order to build Nepal's Green Economy for TVET and TITI.

You will see **clickable links** within this manual for:

- Further learning resources
- Downloadable leaflets you can use to communicate with other educators or curriculum developers

For more information, visit the Dakchyata website: <https://www.dakchyata-nepal.org/>

**Dakchyata:** TVET practical partnership is a skills development programme, funded by the European Union and delivered by the British Council in partnership with the government of Nepal, to realise the potential of young people who - equipped with the right skills - can contribute to national economic success in the agricultural, tourism and construction industries.

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## EDUCATION FOR SUSTAINABLE DEVELOPMENT - ESD

### THERE CAN BE NO SUSTAINABLE DEVELOPMENT WITHOUT EDUCATION

*“Environmental, economic and social indicators tell us that our current model of progress is unsustainable. Climate change is destroying our path to sustainability.*

*Ours is a world of looming challenges and increasingly limited resources. Sustainable development offers the best chance to adjust our course.”*

**UN Secretary-General Ban Ki-Moon, January 2012**

Still in 2022 we need to put our world on a more sustainable development path. Yet reaching – and teaching – sustainability is still a paramount challenge. Without education, there can be no sustainable development.

Education empowers people with the knowledge, skills and confidence they need to shape a more stable and peaceful future. It is thus the key to building greener societies.

Sustainable development cannot be reached through technological solutions or financial instruments alone. Achieving sustainable development requires a change in the way people think and act. This change can be attained by

- Systematically integrating Education for Sustainable Development (ESD) into all levels and settings of education and training, from early childhood to higher education and workplace learning.
- Advancing and greening Technical and Vocational Education and Training (TVET). TVET prepares learners for fields of work and business such as construction, waste management and agriculture, many of which consume enormous amounts of energy, raw materials and water. Green TVET helps develop skilled workers who have knowledge of – and commitment to – sustainable development, as well as the requisite technical knowledge. Greening TVET is crucial for making a transition from energy and emissions-intensive economies to cleaner and greener production and service patterns.

## WHY INVEST IN ESD?

- Because ESD can help everyone to acquire the values, skills and knowledge needed to build a sustainable future.
- Because the transition to green economies and societies requires informed citizens and consumers who can move the sustainable development agenda forward.

## WHAT IS GREEN TVET?

- Green TVET encompasses pre-employment education and training, learning in the workplace and further training that address environmental, economic, and social sustainability, while meeting the needs of industries and individual learners.
- Green TVET prepares people for green jobs that contribute to preserving or restoring quality of the environment, while improving human well-being and social equity.

## WHY INVEST IN GREEN TVET?

- Because Green TVET helps production move to more environmentally conscious practices.
- Because national governments need to seize the potential for job creation by providing skills needed in new green sectors.
- Because disadvantaged groups in the labour market (youth, women, persons with disabilities, rural communities, and other vulnerable groups) require targeted support to develop knowledge and skills for green jobs.

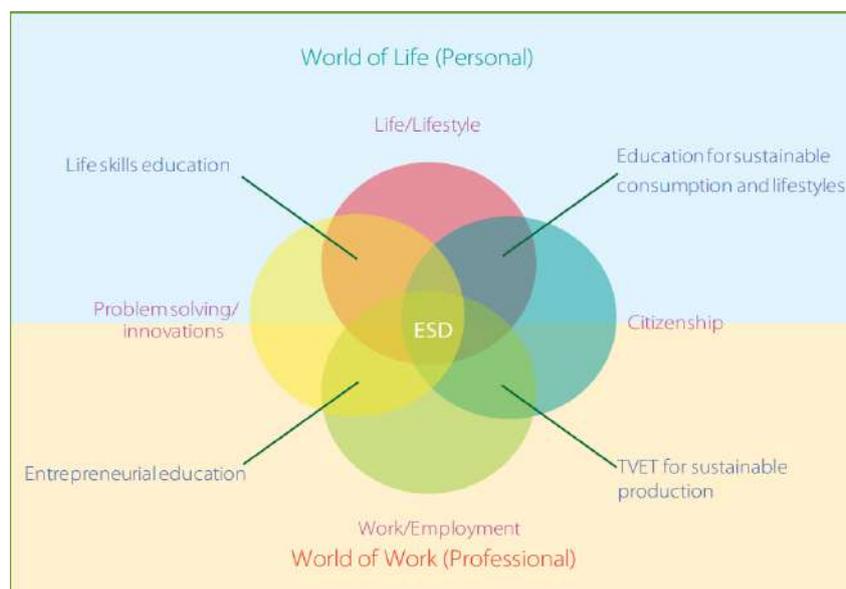
## THE ROLE OF TVET IN GREEN SKILLS

The TVET sector is unique in that it offers every individual an opportunity and pathway to pursue education, regardless of previous levels of attainment.

TVET also has direct links to local communities, their networks, and distinct regional enterprises, with the benefit of national support and investment. It is uniquely placed therefore, to provide opportunities to move into exciting, interesting vocations and careers within the green economy, in addition to creating pathways to pursue further green skills training within higher education. It also offers bespoke upskilling opportunities responding to the impact of social, economic, technological, and political changes on the employment market.

Climate justice, sustainable development and the circular economy represent significant global and national challenges. All 3 areas require appropriate technological and cultural change, transforming the way goods are produced and services delivered. That change requires the monumental development of the appropriate knowledge and skills to drive it forward and several industries served by TVET (construction, agriculture, etc.) have central roles to ensure that employees and employers have the sufficient skills to thrive in the green economy.

## COMPLIMENTARY FACTORS OF ESD AND GREEN TVET



TVET goes beyond promoting skills development for employability. It empowers young people and adults to develop skills for work and life. Green TVET therefore means more than developing technical skills for green employment (such as eco-tourism, renewable energy and recycling). It also means developing 'soft' green skills. There are thus considerable overlaps between ESD and Green TVET.

Like ESD, Green TVET can include education for enhancing problem-solving skills in everyday situations (life skills education), education for sustainable consumption and lifestyles, and entrepreneurial learning.

Green TVET ensures that all workers are able to play appropriate roles, both in the workplace and the broader community, by contributing to environmental, economic and social sustainability. ESD is at the core of green skills and provides a framework to reorient education and training at all levels towards sustainability.

## THE ROLE OF EDUCATION IN SUSTAINABILITY

The UN's **sustainable development goals** address the global challenges we face as a society. They are the ultimate goals we all as humans should strive to comply with. One of those goals, is climate action.

Education plays a pivotal role in helping young people make the connection between global issues and local communities. Cultivating our imaginative capacity through education enhances our motivation for change and for taking action to make the world a sustainable place.

[CLICK HERE](#)  
[UN SDGS EXPLAINED](#)

[CLICK HERE](#)  
[UN SDGS POSTERS](#)

[CLICK HERE](#)  
[UN SDGS INFOGRAPHICS](#)

In his 2016 Peace Proposal, [Dr. Daisaku Ikeda](#), an educator and a 2015 Nobel Peace Prize nominee, identifies two important functions of learning:

1. To enable people to accurately assess the impact of their actions and to empower them to effect positive change for themselves and those around them; and
2. To bring forth the courage to persevere in the face of adversity.

In his proposal, Dr. Ikeda emphasizes the importance of education in building youth solidarity – a united group of young people – to encourage citizens to take courageous action to achieve a sustainable global community.

[Education for Sustainable Development](#) (ESD) gives learners of all ages the knowledge, skills, values and agency to address interconnected global challenges including climate change, loss of biodiversity, unsustainable use of resources, and inequality. It empowers learners of all ages to make informed decisions and take individual and collective action to change society and care for the planet. ESD is a lifelong learning process and an integral part of quality education. It enhances the cognitive, socio-emotional and behavioural

dimensions of learning and encompasses learning content and outcomes, pedagogy and the learning environment itself.

UNESCO has been the lead United Nations agency on Education for Sustainable Development (ESD) since the United Nations Decade of Education (2005-2014). ESD is widely recognized as an integral element of Agenda 2030, in particular Sustainable Development Goal 4 (SDG 4), and a key enabler of all the other SDGs.

**UNESCO** Education for Sustainable Development Roadmap:

<https://unesdoc.unesco.org/ark:/48223/pf0000374802.locale=en>

To shift to a sustainable future, we need to rethink **what, where and how** we learn to develop the knowledge, skills, values and attitudes that enable us all to make informed decisions and take individual and collective action on local, national and global urgencies.

More countries say ESD is reflected in their education policy, teacher training and curricula. However, often ESD is interpreted with narrow focus on topical issues rather than with a holistic approach on learning content, pedagogy, and learning outcomes to bring about the fundamental behavioural shift to sustainable development.

A UNESCO study, which reviewed policy documents of 10 countries, shows that ESD is mostly associated with the teaching of scientific knowledge on environment. This is not enough to bring the transformative power of education to its full force.

ESD for 2030 places emphasis on education's contribution to the achievement of the SDGs. It aims to review the purposes and values that underpin education and reorient all levels of education and learning to contribute to sustainable development and to strengthen education and learning in all activities that promote sustainable development.

The EDS Toolbox provides priority areas of implementation which must be reviewed and adopted by all Educational institutions <https://en.unesco.org/themes/education-sustainable-development/toolbox>

## GREEN SKILLS DEFINITION & LEVELS

In order to embed sustainable development through green skills into Nepal's future economy, it is vital to identify what Green Skills means in a Nepalese context.

Four definitions were presented to the stakeholders during the project and the following definition was adopted by all stakeholders.

*"Technical skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community"* - **Source: NCVET 2013, Australia**

With an agreed definition the next step is to identify the different levels of Green Skills that should be embedded into curriculums, programmes of study and also training through occupational standards:

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**GS1 – Awareness:** Develop environmental awareness, resource-efficient activities aimed at reducing the negative impact of human activity on the environment, building an understanding of environmental, social governance (ESG) and their contribution to sustainability.

GS1 should be embedded into all curriculums regardless of the programme of study so we can at a minimum rise environmental and social sustainability awareness amongst everyone in society.

**GS2 – Specific:** The Implementation of standards and processes to protect ecosystems and biodiversity, to reduce energy, materials and water consumption as well as implementing social governance to promote equality, diversity and social justice.

GS2 should be embedded into current curriculums at supervisor/management levels, and also create standalone GS2 programmes (sustainability officers or managers) allowing individuals to have the knowledge and skills to develop systems and processes to measure and manage environmental and social sustainability within organisations.

**GS3 - Highly specialized:** Development and implementation of green technologies such as renewable energies, sewage treatment or recycling centres. GS3 relates to highly specialized jobs related to climate mitigation and climate adaptation, like the renewable energy industry.

## RECOMMENDED FRAMEWORK FOR IMPLEMENTATION

Green Skills need to be valued as an integral part of education at all levels.

**In primary schools** we need to include nature-based learning, taking young children out in nature to learn and promote empathy for all species on the planet.

Kindness and empathy are the two most important attitudes needed to create a mindset change in society.

**In post primary schools**, children should learn about climate change, the problem but also the individual solutions they can adopt within their own lives. They need to understand resource efficiency and how our daily decisions through our purchasing habits have an effect on the environment and on other people's lives.

Once students leave school, they may opt for further education and training or third level education.

### FOR FET :

1. We need to include GS1, awareness, onto every single educational curriculum, no matter what the subject in question is. By continually including GS1 onto all levels of education, the entire society will be at least aware of their own environmental impact and the solutions they can adopt.
2. But we also need to create pathways for those students that have a desire to continue learning about sustainability as a career path for a green economy. We need to introduce standalone programmes for GS2 and GS3.

### SUSTAINABLE DEVELOPMENT EDUCATION NEEDS TO:

1. **Present the problem** – people need to know the why. Climate action will mean they have to change the way they do things sometimes, and people need to understand the importance of the why. Regardless of how much we think people know about climate change, the reality is that there is a huge amount of misinformation out

there, particularly with social media and the internet being a primary source of information for society. The only way to ensure that people know the reality of climate change is by teaching through our educational systems.

2. **Outline the solution:** Presenting the problem alone is not enough, as this might cause fear and anxiety, we also need to teach what an individual can do within their own lives and workplace to fight climate change and support a just, equal and fair society. When someone has the skills and tools to do their part to solve a problem, they feel empowered to do so, and this leads to action.
3. Finally, we need to show students how individual solutions lead to **collective action**, which ultimately will provoke change and results.



## PROMOTING GREEN SKILLS

If we want to embed green skills into society, Education institutions need to lead by example to become sustainable and start within:

- Campus – Implement environmental management systems to reduce energy, waste and water from school buildings while engaging students in sustainability activities and initiatives.
- Curriculum – Implement green skills and sustainability into curriculum.
- Culture - Develop a culture that prioritises investing time and resources into green.
- Community – Partner with community (businesses, utilities, government agencies, trade associations) to explore green best practices and skills.

Work closely with stakeholders to cocreate the vision and implement the plans, policies, and processes required for an inclusive green economy.

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During the October 2022 workshops for the Dakchyata project Green Economy section, TVET Schools came up with a list of actions implementable at any campus:

### Energy waste and water activities:

- Replace bulbs to LED
- Promote walk and cycling to school
- Reduce gas appliances and replace with electrics
- Fix water leaks
- Collect rainwater
- Water recycling
- Reduce food waste
- Implement waste segregation
- Replace SUP with reusables

- Aim for less packaging
- Buy in bulk
- Include information about the green programme on induction/orientation for students
- Solar panels
- Use food waste to feed animals
- Buy local
- Reduce reuse recycle
- Install sensors for electricity and water
- Provide awareness to the value of food
- Install centralised switches so its easier to turn off all lights
- Install drip systems
- Move to digital offices instead of paper
- Manage liquid waste
- Use filtration water systems
- Use second hand materials
- Abolish SUPs
- Use smokeless fuels
- Reuse books and uniforms

### Social sustainability

- GC Initiative ensures equality
- Friendly environmental structures for the disable
- Quota system for equality of all genders
- Social security & insurance for employees
- Creating a comfortable working space
- First aid kits for all departments
- Place hazardous symbols where needed
- Create a health & safety department
- Provide staff training for non-discrimination
- Counselling guidance for students

- Collaborating with all stakeholders: students, teachers, employees, parents, the wider community and local businesses
- Safety rules displayed in all departments
- Education to abolish superstition
- Drug abuse awareness
- Proper systems for female sanitation
- Extra curricular activities for wellbeing
- Fire safety – Emergency exit plans and evacuation
- Don't allow cast systems
- Provide PPE
- Excursion visits for students to industry

## STRATEGIES FOR INCORPORATING GREEN SKILLS INTO CURRICULUM

- Add a green programme outcome to an existing programme.
- Create an organisation-wide assessment rubric targeting a green skill outcome.
- Develop a new green programme.
- Create a course to augment an existing programme or use as a stand-alone offering.
- Analyse course level competencies and build learning modules for green competencies.
- Modify performance standards for competency assessment to incorporate sustainability into courses.

## ADDING GREEN SKILLS TO EXISTING PROGRAMMES

The suggested process for adding sustainability learning outcomes to an existing programme is:

1. Conduct focus groups with employers to analyse how sustainability impacts the occupation(s) and identify future green trends.
2. Cluster related topics into broad themes and prioritise if needed.
3. Conduct a “gap analysis” of existing programme outcomes.
4. Develop an action plan to revise existing programme outcomes.
5. Write a new programme outcome which addresses sustainability.
6. Engage faculty and employers together to review the programme outcome and performance criteria.
7. Validate proposed programme outcome by aligning it with relevant industry standards identified by faculty and employers.
8. Examine drafted programme outcome and alignment to industry standards with additional industry experts and employers.
9. Consider validation surveys and analyse data collected; revise as needed.
10. Map new programme outcome to courses and/or competencies.
11. Finalise the new programme outcome and criteria.

12. Revise college catalogue, website, or wherever curriculum is accessed.
13. Revise student learning plans and learning materials.
14. Update syllabi and instructor guides.

By following this process and involving industry on the development of learning outcomes and curriculums that match their Occupational standards we can ensure that our students today are prepared for the jobs they need to fulfil in the future.

**Focus on Solutions:** Help the School/College and staff improve student learning by creating applied projects and research assignments relevant to existing real world green economy issues.

**Transdisciplinary:** Include interdisciplinary approaches and use the school and communities as a living laboratory to help develop the green and inclusive economy.

**Applied Learning:** Equip students with opportunities to apply skills and knowledge necessary to pursue green careers via real world projects and applied research, connected to communities and employers using models.



## SUCCESSFUL TEACHING APPROACHES

As we shift towards a green economy, there are specific approaches to teaching & learning that enhance the learner's journey.

**Transversal skills approach**- skills that can be used in a wide variety of situations in life and in work. The term 'transversal' refers to the way these skills cut across different tasks and job roles, **making GS 1 green skills an essential transversal skill.**

Below is a list of transversal skills.

### WORKING WITH OTHERS

- **Verbal and Non-Verbal Communication** - Ability to confidently express themselves using clear verbal and non-verbal communication. (Language production).
- **Listening and Empathy** - Ability to listen and take on board information. Can understand others' perceptions, opinions, concerns and can provide respectable feedback when appropriate. May include others and create space for their opinions and concerns. (Reception & communication).

### WORK PROFESSIONALISM

- **Commitment** - Ability to maintain a professional attitude, showing consideration and respect for others in the workplace.

### SELF-MANAGEMENT

- **Self-Initiative** - Ability to identify and take opportunities, to use self-initiative and recognise how important this is in personal development.
- **Risk** - Ability to undertake tasks beyond comfort zone and to calculate risks, make decisions and be accountable.

- **Time Management** - Ability to identify tasks and plan, prioritise and adapt when faced with changing circumstances.

## DIGITAL LITERACY

- **Health, Safety and Security** - Ability to stay healthy, safe, and legal online – protecting data, identity and wellbeing, including online transaction and digital footprint.
- **Information and Data Literacy** - Ability to handle information – find, interpret, and evaluate information and data from multiple sources using a range of devices.
- **Digital Content Creation** - Ability to identify and use appropriate software to design and display content for different purposes and audiences including e-portfolios.
- **Connecting and Collaborating Effectively Online** - Ability to interact with others - communicate, collaborate and network effectively using digital tools for projects and social interaction.
- **Learning and Working Online** - Ability to learn and work in a blended environment - using digital tools to learn, manage tasks and complete assessments/assignments.

## PROBLEM-SOLVING AND DECISION MAKING

- **Creativity and Innovation** - Ability to identify problems and come up with effective solutions and make decisions using innovative and creative thinking.

## CITIZENSHIP

- **Citizenship** - Ability to confidently demonstrate intercultural understanding through working in diverse groups.
- **Active learning** places greater emphasis on personal responsibility, and less emphasis on faculty influence (MacVaugh & Norton, 2012). Methods of active learning include roleplaying, case studies, and experiential learning.

- **Experiential learning** – United Nations SDG Goals Sustainability Challenge, field trips to sustainable businesses, service projects, etc.

Helping students learn to be **systems thinkers** and **effective change managers** is a key component of quality education for a green economy.

Educators can provide direct instruction on specific **topics, tools, or procedures** that correspond to green knowledge and skills using some practical examples including:

- **Problem/project-based activities:** Provide learners with authentic, unstructured tasks. Guide students to explore an open-ended problem or situation and develop a response or solution. This prepares them for the complexity of real-world sustainability challenges
- **Learner ownership:** To allow learners to determine the actions they will take, ask questions that arise from their process, and provide opportunities for self-reflection
- **Interdisciplinary:** Expose learners to different disciplines and ways of thinking, and make sustainability more real and relevant

## SUSTAINABILITY TEACHING TOPICS – GS1 & GS2



**Climate change:** Outline the problem and the individual solutions we can adopt for global change.



**Sustainable development:** The UN Sustainable development goals, an urgent call for action by all countries in a global partnership



**Resource efficiency:** Using Earth's natural resources in a sustainable manner while minimising impacts on the environment



**Nature & biodiversity:** Understanding the connection between species, ecosystems and humans



**The circular economy:** Reducing the amount of raw materials we use and maximising the value of materials along the production and consumption chain



**Social justice:** The distribution of wealth, opportunities, and privileges within a society

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- Systems Thinking.
- Look at indigenous ways.
- Speak language of business (efficiency, profitability, customer service, etc.).
- Teach employers and employees to continually ask: How can I conserve and preserve resources while doing my job and keeping my employer profitable?
- Biomimicry – mimicking natural processes and entities.
- Understand that sustainability is not a “thing” but a “process”

## SUSTAINABILITY LEARNING OUTCOMES EXAMPLES - GS1 AND GS2

### Module 1: Understanding and measuring your environmental impact

**Aim:** This module will allow students understand the concept of sustainability and climate change. Learners will understand how they as individuals can align to the UN SDGs, what personal responsibility for climate change means and the need to become resource efficient for a sustainable future. After completing this module learners will have calculated their home energy and water use, as well as their waste production and direct Carbon Emissions.

Learning outcome 1	Assessment criteria	Indicative content
Understand the concept of sustainability	1.1 Define the term sustainability	Meeting the needs of the present without compromising the ability of future generations to meet their own needs
	1.2 Identify the 3 main pillars of sustainability	Economic- Profit Environment - Planet Social - People
	1.3 Identify key international climate change agreements that have influenced governments	<ul style="list-style-type: none"> <li>The United Nations Framework Convention on Climate Change (UNFCCC), agreed in 1992 is the main international treaty on fighting climate change. Its objective is to prevent dangerous man-made interference with the global climate system.</li> <li>Kyoto Protocol, agreed 1997 legally binding instrument for cutting greenhouse gas emissions</li> <li>The Paris Agreement adopted by all UNFCCC Parties in December 2015 is the first-ever universal, legally binding global climate agreement.               <ul style="list-style-type: none"> <li>2030</li> <li>2050</li> <li>1.5 degrees</li> <li>IPCC</li> </ul> </li> </ul>
Learning Outcome 2	Assessment criteria	Indicative Content
Understand what is meant by the UN's 17 sustainable development goals	2.1 Identify the UN's 17 SDGs	There are 17 priority goals that cover some of the most important issues of our time including ending extreme poverty, ensuring all children receive a good education, achieving equal opportunities for all, and promoting better

		practices for consumption and production that will help make the planet cleaner and healthier. <a href="https://sdgs.un.org/goals">https://sdgs.un.org/goals</a>
	<b>2.2</b> Describe the purpose of the 17 SDG's	The UN's Sustainable Development Goals are a blueprint for a sustainable world.
	<b>2.3</b> Outline the history of the SDGs	In September 2015, 193 countries agreed on 17 goals and 169 sub-goals at the United Nations General Assembly. Since the goals are to be achieved by 2030, they are also called the 2030 Agenda.
	<b>2.4</b> How do the SDGs affect government policy	From a political level, the SDGs provide the framework for action to be taken by policymakers who report to the UN every year on their progress towards the goals
	<b>2.5</b> How do the SDGs affect corporate policy	The SDGs align business strategy with the needs of people and the planet. They can highlight areas for improvement and opportunities for product or service innovation and potential new markets.
	<b>2.6</b> List the benefits for companies who align to the SDGs	<ul style="list-style-type: none"> <li>• Talent management – young generations want to work for sustainable companies</li> <li>• Brand – align your business to your customer values</li> <li>• Bids &amp; tenders – sustainability can be a contributing factor to winning contracts</li> <li>• Investors</li> </ul>
	<b>2.7</b> Outline ways for individuals to align to the SDGs	<ul style="list-style-type: none"> <li>• Treating everyone with respect regardless of their religion, culture, or gender.</li> <li>• Becoming involved on charity work to help others less fortunate than us.</li> </ul>

		<ul style="list-style-type: none"> <li>Reducing our impact on the planet through resource efficiency, caring for biodiversity, wildlife &amp; life under water.</li> <li>Making informed choices about our purchases and supporting our local communities</li> </ul>
Learning Outcome 3	Assessment criteria	Indicative Content
Understand the concept of climate change, its causes and potential risks	3.1 Outline the causes of climate change and why it is happening	<ul style="list-style-type: none"> <li>Use of fossil fuels</li> <li>Increase of GHG</li> <li>Loss of biodiversity</li> <li>Increased waste production</li> <li>Deforestation</li> </ul>
	3.2 Describe the term Green House Gases	Greenhouse gases are water vapour, carbon dioxide, methane and nitrous oxide. They absorb the heat rising from the surface of the earth and reflect it back down to the atmosphere.
	3.3 Outline the effects of greenhouse gasses on the planet	As the amount of GHG emissions has increased, the protective layer that protects earth has become thicker and thicker and less gas is escaping, and this is causing the planet to warm up.
	3.4 Outline the difference between weather & climate	<p><b>Weather</b> is the temperature, rain and wind as they change minute by minute and day by day in the atmosphere.</p> <p><b>Climate</b> is what the weather is like over a period of time in a specific area.</p>
	3.5 Identify the potential risks to our food systems due to climate change	<ul style="list-style-type: none"> <li>Food production is at risk due to worsening droughts and floods which are wiping out crops and livestock.</li> <li>There will be food shortages as basic crops like cereals are becoming difficult to grow, making harvest yields lower.</li> <li>GHG is changing the chemistry of the sea</li> </ul>

		water, which affects what can grow and live there and therefore our food chain
	<b>3.6</b> Describe the risks to the natural environment due to climate change	<ul style="list-style-type: none"> <li>• Whole ecosystems are at risk of collapse, including oceans, forests and soil.</li> <li>• Ocean acidification will lead to less CO<sub>2</sub> absorption.</li> <li>• Deforestation means less trees to absorb CO<sub>2</sub> emissions.</li> <li>• Soil erosion from intensive farming methods leads to soil degradation which means crops will be difficult to grow and soil will be washed away in landslides.</li> </ul>
	<b>3.7</b> Outline the potential risks to human health due to climate change	Human health is at risk due to extreme heat, cold and droughts as well as a higher level of pests and diseases that thrive in a warmer environment. Floods, droughts and fires
	<b>3.8</b> Identify the IPCC's maximum global temperature rise to avoid catastrophic consequences	In 2018, the Intergovernmental Panel on Climate Change (IPCC) warned that global warming must not exceed 1.5°C to avoid the catastrophic impacts of climate change
<b>Learning Outcome 4</b>	<b>Assessment Criteria</b>	<b>Indicative Content</b>
Understand the terms personal responsibility and resource efficiency in the built environment for climate action	<b>4.1</b> Describe the term "personal responsibility for climate change"	Most of everything we do in life has consequences in nature and creates carbon emissions, while one person cannot stop climate change, we all have a level of personal responsibility to reduce our own environmental impact. Our own behaviour matters.
	<b>4.2</b> Describe the term-built environment	The human-made surroundings that provide the setting for human activity, from households to schools, hospitals, workplaces, community buildings, etc

	<b>4.3</b> Describe the term resource efficiency in the built environment	To only use resources when needed while in the built environment without wasting them unnecessarily
	<b>4.4</b> List 3 resources we can reduce in the built environment	<ul style="list-style-type: none"> <li>• Waste</li> <li>• Water</li> <li>• Energy</li> </ul>
	<b>4.5</b> Outline personal behaviours that affect resource use & climate change	<ul style="list-style-type: none"> <li>• Energy use from our daily activities</li> <li>• Water use for our daily activities</li> <li>• Waste generation from our daily activism,</li> <li>• Consuming goods</li> <li>• Travelling</li> </ul>
	<b>4.6</b> Identify the benefits of resource efficiency	<ul style="list-style-type: none"> <li>• Using only what we need</li> <li>• Assist with climate action</li> <li>• Ethics – assisting the next generation</li> <li>• Cost savings</li> </ul>
<b>Learning Outcome 5</b>	<b>Assessment criteria</b>	<b>Indicative Content</b>
Know how to analyse utility bills or meter readings to calculate carbon emissions	<b>5.1</b> Describe how utilities affect our carbon footprint	Energy, waste and water produce carbon emissions, the more we use the larger our emissions will be
	<b>5.2</b> Identify which utility bills are needed to calculate carbon emissions.	<ul style="list-style-type: none"> <li>• Electricity.</li> <li>• Gas.</li> <li>• Oil.</li> <li>• Water.</li> <li>• Waste.</li> </ul>
	<b>5.3</b> List terminology used in environmental data found on utility bills	<ul style="list-style-type: none"> <li>• Kilowatt.</li> <li>• Kilowatt hours.</li> <li>• Kg.</li> <li>• Cubic metre.</li> <li>• Litres.</li> <li>• Metre reading.</li> <li>• Watts</li> <li>• AUP</li> </ul>
	<b>5.4</b> Use technology to calculate your CO2	Converting data from our utility bills to CO2 can be done with simple mathematical formulas or with the use of technology
<b>Learning outcome 6</b>	<b>Assessment criteria</b>	<b>Indicative content</b>

Be able to accurately calculate electricity consumption and set electricity KPI.	<b>6.1</b> Identify kWh Day units and kWh Night units and the different rates offered.	<ul style="list-style-type: none"> <li>Identify kWh Day and night units on a bill.</li> <li>Identify different costs associated with day and night units.</li> <li>Accurately record this information.</li> </ul>
	<b>6.2</b> Identify the AUP (Average unit price).	<ul style="list-style-type: none"> <li>Calculate the AUP on a bill.</li> <li>Identify AUP (Average unit price) on a bill.</li> <li>Accurately record this information.</li> </ul>
	<b>6.3</b> Calculate your home's electricity KPI with the help of technology	Daily electricity usage divided by the number of people in the home
<b>Learning outcome 7</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Be able to calculate heating fuel usage and set KPI.	<b>7.1</b> Identify different methods to calculate your heating KPI	Methods used to calculate oil usage: <ul style="list-style-type: none"> <li>By delivery.</li> <li>By meter readings.</li> <li>Calculate oil usage:</li> <li>Use monthly oil delivery docket to calculate usage.</li> <li>Use meter readings and monthly delivery to calculate usage.</li> </ul>
	<b>7.2</b> Calculate your home heating KPI with the help of technology	Total fuel used per day divided by the number of people in the household
<b>Learning outcome 8</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Be able to calculate waste volumes and set waste KPIs	<b>8.1</b> Understand and explain waste bill terminology.	<ul style="list-style-type: none"> <li>Kilogrammes.</li> <li>Tonnes.</li> <li>Brown bin.</li> <li>Mixed waste.</li> <li>Recycling waste.</li> <li>Glass waste.</li> <li>Cardboard.</li> </ul>
	<b>8.2</b> Calculate landfill, recycling and food waste KPIs of your household with the help of technology	Total Kg of waste produced divided by the number of people in the household
<b>Learning outcome 9</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Be able to calculate water usage and set water KPI.	<b>9.1</b> Identify the two methods to calculate water usage.	<ul style="list-style-type: none"> <li>Water bills.</li> <li>Meter readings.</li> </ul>
	<b>9.2</b> Reading a water meter	<ul style="list-style-type: none"> <li>Identify where it is located</li> </ul>

		<ul style="list-style-type: none"> <li>• Safely open and record numbers</li> <li>• Repeat the process monthly</li> </ul>
	9.3 Analyse water use and calculate water KPI with the help of technology	M3 consumption per day divided by the number of people in the home
Learning outcome 10	Assessment criteria	Indicative content
Know how to monitor & evaluate environmental KPIs	10.1 Create a routine to monitor environmental KPIs.	<ul style="list-style-type: none"> <li>• Allocate and schedule specific time to analyse bills and environmental KPIs.</li> <li>• Access and collect relevant information needed.</li> <li>• Calculate % increase and decrease with the use of technology</li> </ul>

## Sample Module 2: Reducing your impact

In this module learners will understand the problems humanity faces due to an increased use of fossil fuels, waste generation and water use. Learners will understand by observing our behavior and making changes to our daily activities can reduce our environmental impact and improve social justice. After this module learners will be able to implement an environmental management system in their homes to reduce their use of resources.

Learning outcome 1	Assessment criteria	Indicative content
Understand why it is important to reduce energy and use renewable energy	1.1 Identify how climate change will affect you	<ul style="list-style-type: none"> <li>• Short term: Rise in carbon tax. Increased energy cost for cooling and heating.</li> <li>• Long term: Possible destruction of infrastructure, stronger storms, food &amp; water scarcity...</li> </ul>
	1.2 Describe the term energy poverty	Energy poverty is lack of access to modern energy services. It refers to the situation of large numbers of people in <a href="#">developing countries</a> and some people in <a href="#">developed countries</a> whose well-being is negatively affected for a lack of access to energy. Access to energy is fundamental to improving quality of life and is a key imperative for economic development. In the developing world, energy poverty is still rife. Nearly 1.1 billion people still have no access to <a href="#">electricity</a> , according to the <a href="#">International Energy Agency</a> .
	1.3 List the disadvantages to using energy generated by fossil fuels.	<ul style="list-style-type: none"> <li>• Environmental damage from exploration.</li> <li>• Increase of CO2.</li> <li>• Limited resource.</li> </ul>
	1.4 Define the meaning of renewable energy	Energy from a source that is not depleted when used such as solar or wind.
	1.5 List types of renewable energy	<ul style="list-style-type: none"> <li>• Solar</li> <li>• Wind</li> <li>• Hydro energy</li> <li>• Biogas</li> <li>• Geothermal</li> </ul>

		<ul style="list-style-type: none"> <li>• Biomass</li> </ul>
	1.6 Identify the environmental benefits to using renewable energy	<ul style="list-style-type: none"> <li>• Most renewable energy produces little to no GHG</li> <li>• Reduce air pollution</li> <li>• Reduces the import of fossil fuels</li> <li>• Helps the fight against climate change</li> </ul>
<b>Learning outcome 2</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Understand where and how much energy is used in your home	2.1 Outline where we use energy on the built environment	<ul style="list-style-type: none"> <li>• Lighting</li> <li>• Equipment</li> <li>• Heating &amp; cooling systems</li> </ul>
	2.2 Be able to conduct a light audit	
	2.3 Be able to conduct an equipment audit	
	2.4 Be able to conduct a heating/cooling system audit	
	2.5 Identify the cost and environmental benefits of switching to LED lights and energy efficient equipment	While LED lights are more expensive to buy initially, they actually work out less expensive in the long run as they last five times longer or more. The cost of LEDs has come down significantly in recent years and the extra cost of installing them can have a payback time of less than a year
<b>Learning outcome 3</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Understand why it is important to reduce waste	3.1 Identify the factors that have led to the global waste problem	<ul style="list-style-type: none"> <li>• Convenience</li> <li>• Consumerism</li> <li>• Population growth</li> <li>• Linear economy</li> </ul>
	3.2 Identify how much municipal waste is estimated to be produced per year and how much of this waste is not managed properly	The global population generates 2.01 billion tonnes of municipal solid waste every year. It's estimated that 33% of that is not managed in an environmentally safe way.
	3.3 Identify the different types municipal waste	<ul style="list-style-type: none"> <li>• Landfill/general</li> <li>• Food</li> <li>• Recycling</li> <li>• E-waste</li> <li>• Glass</li> <li>• Cardboard</li> </ul>

		<ul style="list-style-type: none"> <li>• Hazardous/chemicals</li> </ul>
	3.4 Identify the environmental impact of food waste	<ul style="list-style-type: none"> <li>• If food waste were a country it would be the third largest emitter of carbon emissions after the US and China</li> <li>• It is estimated that food waste emissions are in the region of 8-10%</li> <li>• Adding food waste to your waste collection system can really impact your carbon emissions</li> <li>• When food waste ends up in landfill it emits methane, a GHG 23 times stronger than CO2</li> </ul>
<b>Learning outcome 4</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Understand where and what type of waste we generate	4.1 Outline the purpose of a waste audit	Helps us understand what waste we are generating to be able to reduce it
	4.2 Describe what is needed to conduct a waste audit	<ul style="list-style-type: none"> <li>• Scales or waste bills to measure waste</li> <li>• Newspaper to cover the floor that can be composted afterwards</li> <li>• Bags to segregate the waste - black for landfill, clear for recycling and green or brown for compost</li> <li>• Thick gloves</li> </ul>
	4.3 List the necessary steps to complete a waste audit	<ul style="list-style-type: none"> <li>• Empty the bins onto the floor and start categorising the waste into the right bins</li> <li>• Observe the items that come up the most often</li> <li>• Log the contents as you go on</li> <li>• Weigh the filled bags at the end to measure each waste stream</li> </ul>
	4.4 Be able to complete a waste audit	

Learning Outcome 5	Assessment criteria	Indicative content
Understanding the principles of waste segregation	<b>5.1</b> Outline possible waste types that need to be segregated	<ul style="list-style-type: none"> <li>• Landfill</li> <li>• Recycling</li> <li>• Food</li> <li>• Glass</li> <li>• Cardboard</li> <li>• Metal/aluminium</li> <li>• Chemicals/hazardous waste</li> <li>• E-waste</li> </ul>
	<b>5.2</b> Understand waste segregation and why it is important	All types of waste need to be dealt with according to their type to lessen its environmental impact
	<b>5.3</b> Identify what items should be disposed of in each bin when segregating waste	
Learning outcome 6	Assessment criteria	Indicative content
Understand how to reduce waste production	<b>6.1 Describe what is meant by top waste challenge</b>	<ul style="list-style-type: none"> <li>• Watch the bins for 1 week in all departments.</li> <li>• Identify items that end up in the bin the most.</li> <li>• Plan solutions to abolish those items</li> </ul>
	<b>6.2</b> Outline the process used to reduce top waste challenges	Conduct a waste audit Identify items that end up in your bin the most Abolish buying those items, or find alternatives like reusables or even single use items that are made of materials that are biodegradable or compostable
	<b>6.3</b> Identify how to use fewer plastic items	Investigate alternative materials to replace your plastic items. Starting with those items you use the most like drinking bottles, coffee cups...
	<b>6.4</b> Identify ways to reduce food waste	<ul style="list-style-type: none"> <li>• Menu planning</li> <li>• Intentional shopping</li> <li>• Reusing leftovers</li> <li>• Keeping covers and fridges tidy</li> <li>• Freezing food</li> <li>• Not overloading plates</li> </ul>
	<b>6.5</b> Understand the concept and benefits of buying local or growing your own food	<ul style="list-style-type: none"> <li>• Know where your food comes from</li> </ul>

Learning outcome 7	Assessment criteria	Indicative content
Understand why it is important to conserve water	7.1 Identify how much water on the planet is fresh drinkable water	<ul style="list-style-type: none"> <li>• Enhance your relationship with food</li> <li>• Enhance awareness of food production</li> <li>• Health benefits</li> <li>• Less food waste</li> <li>• No packaging</li> </ul>
	7.2 Describe the term “water cycle”	97% of water is found in our oceans and is salty. 2% of freshwater is locked up in ice. This leaves only 1% of available freshwater for nearly 8 billion people  The earth is made mostly of water, approximately 71%. This water is constantly being recycled in a closed loop, water cycle system, therefore being a finite source. Being moved from the atmosphere, to the earth and back again in a constant rotation. The amount of water on Earth will always remain the same, we don't lose it and we don't create more.
	7.3 Identify current water scarcity levels	2019 - 17 countries experiencing "extremely high" levels of baseline water stress. Nearly one-quarter of the world's population - around 1.7 billion people - currently live in an area where agriculture, industries and cities withdraw 80 percent of their available water supply every year.
	7.4 Identify possible causes of water scarcity	<ul style="list-style-type: none"> <li>• Climate change: extreme weather events</li> <li>• Agriculture, as the demand for more food grows so does the amount of water we need to grow food</li> <li>• Industry - industrial processes that make the things we buy require water use</li> <li>• Consumerism – the more we buy the more water we need to make those products</li> </ul>

Learning outcome 8	Assessment criteria	Indicative content
Understand where and how much water is used in your household	8.1 Identify where water is used in your household	<ul style="list-style-type: none"> <li>Population growth</li> <li>Leaks from the built environment</li> </ul>
	8.2 Describe the term water flow rate	<ul style="list-style-type: none"> <li>Taps</li> <li>Showers</li> <li>Cisterns</li> <li>Leaks</li> </ul>
	8.3 Outline good practice standards for water flow rates	<ul style="list-style-type: none"> <li>The speed at which water comes out of our taps and showers in litres per minute, and the capacity of our cisterns in litres</li> </ul>
	8.4 Be able to calculate the water flow rates of taps and showers	<ul style="list-style-type: none"> <li>8 litres per minute - taps</li> <li>10 litres per minute – showers</li> <li>6 litres cisterns</li> </ul>
	8.5 Be able to calculate cistern capacity	
	8.6 Be able to identify leaks within the household	
Learning Outcome 9	Assessment Criteria	Indicative Content
Understand how to conserve water use	9.1 Describe how to conserve water use in toilet cisterns	<ul style="list-style-type: none"> <li>Check for cistern leaks</li> <li>Put a cistern water saver in your toilet</li> <li>Install water saving flush toilets and/or urinals.</li> </ul>
	9.2 Describe how to conserve water from taps	<ul style="list-style-type: none"> <li>Install tap aerators</li> <li>Install spray taps</li> <li>Only use taps when necessary</li> <li>Turn off taps when not needed</li> </ul>
	9.3 Describe how to conserve water from showers	<ul style="list-style-type: none"> <li>Shorten shower time, 4/5 minutes is good practice</li> <li>Make sure you have low flow shower heads.</li> </ul>
	9.4 Describe how to conserve water from dishwashers/washing dishes	<ul style="list-style-type: none"> <li>Only use a dishwasher when is full</li> <li>Don't wash dishes with the tap running</li> <li>Use a bowl to catch the water, if not too dirty it can be used to water plants</li> </ul>

	<p><b>9.5</b> Describe how to conserve water from our garden activities</p>	<ul style="list-style-type: none"> <li>• Grow drought resistant plants</li> <li>• No need to water your grass - it will bounce back after dry spells by itself</li> <li>• Use water retaining granules in pots so you don't need to water that often</li> <li>• Mulch your soil to keep the moisture in</li> <li>• Check the forecast - if it's set to rain the next day then no need to water</li> <li>• Use a watering can</li> <li>• Water plants at the base of the stem rather than on the leaves</li> <li>• Water plants early in the morning or evening</li> </ul>
<b>Learning Outcome 10</b>	<b>Assessment criteria</b>	<b>Indicative content</b>
Understand how your purchasing decisions affect the environment	<p><b>10.1</b> Identify factors influencing purchasing decisions</p>	<ul style="list-style-type: none"> <li>• Convenience</li> <li>• Price</li> <li>• Marketing and influencers</li> <li>• Availability</li> <li>• Conscience-</li> <li>• Ethics</li> <li>• Personal values</li> </ul>
	<p><b>10.2</b> Describe the environmental impact of your food choices</p>	Where does the food come from, how is it produced And how is it packaged
	<p><b>10.3</b> Describe the term fast fashion</p>	52 fashion seasons per year, cheaply manufacture items to increase sales.
	<p><b>10.4</b> Outline how the fashion industry affects the environment</p>	<ul style="list-style-type: none"> <li>• Clothes dye</li> <li>• Water pollution</li> <li>• Exhaustion of resources</li> <li>• Slavery</li> <li>• Underage workers</li> <li>• Poor working conditions</li> </ul>
	<p><b>10.5</b> Outline how poor purchasing decisions can affect the human rights of others</p>	Buying products from companies that use slavery or under aged children in their production lines. The cheaper it is for us to buy something the more someone else is paying for it.
	<p><b>10.6</b> Identify ways to reduce your impact on the environment through your purchasing decisions</p>	Understand the life cycle of your purchases

## THE GREEN MANAGER – LO'S AND UNIT DESCRIPTORS EXAMPLE

The below tables reflect an example of the possible unit descriptors, learning outcomes, assessment criteria and indicative content of the role of the Green Manager / Sustainability officer of any industry. This programme can be designed as a stand-alone programme of study or incorporated as a module onto existing programmes.

Unit 1: Environmental Sustainability and the Role of the Green Manager	
<b>Unit Purpose and Aim(s)</b>	<p>This unit aims to provide learners with the skills and understanding of how any business that operates within a building contributes to Co2 emissions and climate change. It also allows them to understand the importance of the Green Manager role in the fight for positive climate change, appoint key personnel including the green team and how to liaise with all departments of the business to ensure positive behavioural changes happen within their operations.</p> <p>Learners will understand the role of the green manager and the importance of measuring and managing energy, water and waste and know how to plan and conduct effective green team meetings.</p>
<b>Learning Outcome 1</b>	Understand how an environmental management system can reduce the harmful effects on the environment.
<b>Assessment Criteria</b>	<b>Unit Content</b>
<p>1.1 Identify how a business' use of resources negatively impacts the environment.</p> <p>1.2 Define environmental Key Green Performance Indicators that affect resources in a business.</p> <p>1.3 Identify how resource efficiency can generate cost savings.</p> <p>1.4 Outline the 4 phases of implementing an</p>	<p>(1.1)</p> <ul style="list-style-type: none"> <li>● Increased energy demands.</li> <li>● Increased waste generation.</li> <li>● Increased water demands.</li> </ul> <p>(1.2)</p> <ul style="list-style-type: none"> <li>● Define environmental sustainability.</li> <li>● Energy usage.</li> <li>● Water usage.</li> <li>● Waste generation.</li> </ul> <p>(1.3)</p> <ul style="list-style-type: none"> <li>● Using less energy.</li> <li>● Using less water.</li> <li>● Creating less waste.</li> </ul> <p>(1.4)</p> <ul style="list-style-type: none"> <li>● Phase 1: Measurement</li> <li>● Phase 2: Observation</li> <li>● Phase 3: Implementation</li> <li>● Phase 4: Monitoring &amp; Reporting</li> </ul>

<p>environmental management system.</p> <p>1.5 Describe how carbon emissions affect climate change.</p>	<p>(1.5)</p> <ul style="list-style-type: none"> <li>● Definition of carbon emissions.</li> <li>● What is a carbon footprint?</li> <li>● Global warming.</li> <li>● Melting polar ice caps.</li> <li>● Rising of sea levels.</li> <li>● Disturbance of animal habitats.</li> <li>● Extreme weather conditions.</li> </ul>
<p><b>Learning Outcome 2</b></p>	<p>Understand how personal behaviour with resource use impacts climate change and environment.</p>
<p><b>Assessment Criteria</b></p> <p>2.1 Describe what is meant by water scarcity around the world and the contributing factors.</p> <p>2.2 Describe the world's global waste problem and the role humans play.</p> <p>2.3 Describe how fossil fuels contribute to climate change.</p> <p>2.4 Identify how humans can take personal accountability for climate change.</p> <p>2.5 Explain the 17 United Nations</p>	<p><b>Unit Content</b></p> <p>(2.1)</p> <ul style="list-style-type: none"> <li>● Lack of sufficient available water.</li> <li>● Lack of access to water.</li> <li>● Climate change.</li> <li>● Natural disasters.</li> <li>● Floods.</li> <li>● Drought.</li> <li>● Increased human consumption.</li> <li>● Overuse and wastage.</li> </ul> <p>(2.2)</p> <ul style="list-style-type: none"> <li>● General waste disposal.</li> <li>● Chemical contamination.</li> <li>● Greenhouse gases.</li> <li>● Air quality.</li> <li>● Pollution of the natural environment.</li> <li>● Increased volumes of waste.</li> <li>● Increased consumer demand on resources.</li> <li>● Increased use of plastic.</li> <li>● Increased demand for convenience.</li> <li>● Unsustainable habits.</li> </ul> <p>(2.3)</p> <ul style="list-style-type: none"> <li>● Increased greenhouse gases.</li> <li>● Carbon dioxide.</li> <li>● Global warming.</li> </ul> <p>(2.4)</p> <ul style="list-style-type: none"> <li>● Buy less.</li> <li>● Buy local produce.</li> <li>● Use energy and water wisely.</li> <li>● Opt for renewable energies.</li> <li>● Eat for a climate stable planet.</li> <li>● Reduce the amount of waste generated.</li> <li>● Reduce the use of resources.</li> <li>● Reuse resources.</li> <li>● Avoid single use plastics.</li> <li>● Start a climate conversation.</li> </ul> <p>(2.5)</p> <ul style="list-style-type: none"> <li>● GOAL 1: No Poverty.</li> <li>● GOAL 2: Zero Hunger.</li> <li>● GOAL 3: Good Health and Well-being.</li> <li>● GOAL 4: Quality Education.</li> </ul>

Sustainable Development Goals.	<ul style="list-style-type: none"> <li>● GOAL 5: Gender Equality.</li> <li>● GOAL 6: Clean Water and Sanitation.</li> <li>● GOAL 7: Affordable and Clean Energy.</li> <li>● GOAL 8: Decent Work and Economic Growth.</li> <li>● GOAL 9: Industry, Innovation, and Infrastructure.</li> <li>● GOAL 10: Reduced Inequality.</li> <li>● GOAL 11: Sustainable Cities and Communities.</li> <li>● GOAL 12: Responsible Consumption and Production.</li> <li>● GOAL 13: Climate Action.</li> <li>● GOAL 14: Life Below Water.</li> <li>● GOAL 15: Life on Land.</li> <li>● GOAL 16: Peace and Justice Strong Institutions.</li> <li>● GOAL 17: Partnerships to achieve the Goal.</li> </ul>
<b>Learning Outcome 3</b>	Understand the role of the green manager within a Hospitality and Tourism Business.
<p><b>Assessment Criteria</b></p> <p>3.1 Identify the benefits to running a Green Business.</p> <p>3.2 Describe the role of the green manager within a business.</p> <p>3.3 Outline some of the tasks of a green manager.</p> <p>3.4 Describe the importance of the role of the green manager in the fight against climate change.</p>	<p><b>Unit Content</b></p> <p>(3.1)</p> <ul style="list-style-type: none"> <li>● Increased marketability.</li> <li>● Reduced business energy and waste costs.</li> <li>● Increased productivity.</li> <li>● Improved recruitment and retention of quality employees.</li> <li>● Preparedness for legislative changes.</li> <li>● Healthier work environment for employees.</li> </ul> <p>(3.2)</p> <ul style="list-style-type: none"> <li>● Principles of sustainability.</li> <li>● Implement an environmental management system.</li> <li>● Measure &amp; benchmark energy and water consumption and waste generation.</li> <li>● Set goals and targets.</li> <li>● Monitor performance goals.</li> <li>● Identify training needs within the business team.</li> <li>● Motivate the team and spread a culture of sustainability.</li> </ul> <p>(3.3)</p> <ul style="list-style-type: none"> <li>● Implement an action plan.</li> <li>● Keep an accurate record and date.</li> <li>● Implement actions to reduce energy and water use.</li> <li>● Set KPIs.</li> <li>● Monitor performance against KPIs.</li> <li>● Provide leadership to the green team.</li> <li>● Plan and conduct green team meetings.</li> <li>● Report performance to the team and management.</li> </ul> <p>(3.4)</p> <ul style="list-style-type: none"> <li>● Good governance.</li> <li>● Reduce energy, water and waste use.</li> <li>● Reduce carbon emissions.</li> <li>● Motivate a team to effect positive climate change.</li> <li>● Implement and action plan.</li> </ul>
<b>Learning Outcome 4</b>	Be able to appoint and form a green team.

Assessment Criteria	Unit Content
<p>4.1 Define the purpose and responsibilities of a green team.</p> <p>4.2 Build a green team and allocate tasks to subgroups.</p> <p>4.3 Identify ways to communicate the purpose and actions of a green team.</p>	<p>(4.1)</p> <ul style="list-style-type: none"> <li>● Develop an environmental management system.</li> <li>● Implement environmentally sustainable practices.</li> <li>● Actively monitor energy, waste and water use across all departments</li> <li>● Promote green activities amongst colleagues and customers</li> <li>● Measure Green KPIs (energy, water, waste and CO2) regularly</li> <li>● Report Green KPIs to all stakeholders of the business</li> <li>● Identify team training needs</li> </ul> <p>(4.2) Build a green team:</p> <ul style="list-style-type: none"> <li>● Energy team and leader.</li> <li>● Water team and leader.</li> <li>● Waste team and leader.</li> <li>● Green manager.</li> </ul> <p>Team members' qualities:</p> <ul style="list-style-type: none"> <li>● Positivity.</li> <li>● Interested.</li> <li>● Motivated.</li> <li>● Passionate.</li> <li>● Knowledgeable.</li> <li>● Team player.</li> <li>● Leadership skills.</li> </ul> <p>Allocate tasks:</p> <ul style="list-style-type: none"> <li>● Attend meetings.</li> <li>● Monitor action plans are actioned.</li> <li>● Identify training needs and report back.</li> </ul> <p>(4.3)</p> <ul style="list-style-type: none"> <li>● Email.</li> <li>● Staff meeting.</li> <li>● Notice board.</li> <li>● General announcement.</li> </ul>
<b>Learning Outcome 5</b>	Be able to plan and conduct a green team meeting.
Assessment Criteria	Unit Content
<p>5.1 Describe the importance of planning a meeting in advance.</p> <p>5.2 Describe how setting clear goals can lead to more effective (green) team meetings.</p>	<p>(5.1)</p> <ul style="list-style-type: none"> <li>● Professionalism.</li> <li>● Effective use of time.</li> <li>● Clearer communication.</li> <li>● Better outcomes.</li> </ul> <p>(5.2)</p> <ul style="list-style-type: none"> <li>● Actionable.</li> <li>● Measurable.</li> <li>● Resource saving: <ul style="list-style-type: none"> <li>○ Time.</li> </ul> </li> </ul>

<p>5.3 Identify ways to support (green) team members.</p>	<ul style="list-style-type: none"> <li>○ Energy.</li> <li>● Money.</li> </ul>
<p>5.4 Describe the purpose and elements of an agenda for your (green) meeting.</p>	<p>(5.3)</p> <ul style="list-style-type: none"> <li>● Reward.</li> <li>● Recognition.</li> <li>● Allowing time.</li> </ul> <p>(5.4)</p> <ul style="list-style-type: none"> <li>● Clear outline.</li> <li>● Identify who will lead each task.</li> <li>● Improves efficiency.</li> <li>● Better use of time.</li> <li>● How much time is needed?</li> <li>● Opportunity for all to add any other business.</li> <li>● Agenda title, attendees.</li> <li>● Start time and timeframe required for meeting.</li> <li>● Subject areas included in meeting.</li> <li>● Who is responsible for each subject?</li> <li>● Actions and agreed timeframes.</li> </ul>
<p>5.5 Describe the importance of keeping minutes of (green) meetings.</p>	<p>(5.5)</p> <ul style="list-style-type: none"> <li>● Clear record.</li> <li>● Opportunity for clarification.</li> <li>● Record of planned actions.</li> <li>● Supports accountability.</li> <li>● Provides a reference for measurement against actions</li> </ul>

### Unit 2: Baselines and key performance indicators

<p><b>Unit Purpose and Aim(s)</b></p>	<p>This unit aims to teach learners how to establish the business green KPIs, the baselines of environmental data that they can use to evaluate and compare their use and ensure their green actions are working therefore reducing carbon emissions over time. Learners will be able to understand terminology, analyse utility bills and data needed to calculate carbon emissions including electricity, gas, oil, waste &amp; water. Learners will understand the importance of accurately calculating the true numbers of customers and staff and how they impact workplace carbon emissions, using mathematical formulas to calculate the % increases or reductions of their Green KPIs in order to report back to the team, management and customers.</p>
<p><b>Learning Outcome 1</b></p>	<p>Know how to use utility bills to calculate utility usage and carbon emissions.</p>
<p><b>Assessment Criteria</b></p> <p>1.1 Describe the importance of utility bills in calculating, setting and evaluating carbon emission use.</p>	<p><b>Unit Content</b></p> <p>(1.1)</p> <ul style="list-style-type: none"> <li>● Accurate gauge of use.</li> <li>● True cost to business.</li> <li>● Simple way to monitor and evaluate changes.</li> <li>● Simple way to evaluate cost savings for a business.</li> <li>● Environmental data to inform choices.</li> </ul> <p>(1.2)</p> <ul style="list-style-type: none"> <li>● Electricity.</li> </ul>

<p>1.2 Identify which utility bills are needed to calculate carbon emissions in the built environment</p> <p>1.3 List terminology used in environmental data found on utility bills.</p>	<ul style="list-style-type: none"> <li>● Gas.</li> <li>● Oil.</li> <li>● Water.</li> <li>● Waste.</li> </ul> <p>(1.3)</p> <ul style="list-style-type: none"> <li>● Renewable energies.</li> <li>● Kilowatt.</li> <li>● Kilowatt hours.</li> <li>● Kg .</li> <li>● Tonne.</li> <li>● Cubic metre.</li> <li>● Max import capacity.</li> <li>● Litres.</li> <li>● Gallons (US/Imperial).</li> <li>● Metre reading.</li> <li>● Usage.</li> </ul>
<b>Learning outcome 2</b>	Be able to make a physical or digital green folder and use environmental data to set and monitor Key Performance Indicators.
<p><b>Assessment Criteria</b></p> <p>2.1 Prepare a physical or digital folder of utility bills for later use.</p> <p>2.2 Organise a green folder in a logical order and appropriate format.</p> <p>2.3 Demonstrate the use of environmental data to set and monitor Key Performance Indicators.</p>	<p><b>Unit Content</b></p> <p>(2.1)</p> <ul style="list-style-type: none"> <li>● Digital folder- subfolders with restricted access.</li> <li>● Physical folder- with dividers.</li> </ul> <p>(2.2)</p> <ul style="list-style-type: none"> <li>● Folder &amp; sub folder/category named.</li> <li>● Clear labelling.</li> <li>● Indexed.</li> <li>● Logical order.</li> <li>● Dated or version.</li> </ul> <p>(2.3)</p> <ul style="list-style-type: none"> <li>● Ensure green folder security.</li> <li>● Record environmental data from utility bills accurately.</li> <li>● Maintain &amp; record up to date information and data.</li> <li>● Record keeping is clear and logical.</li> <li>● Ensure data is easy to find and reportable.</li> </ul>
<b>Learning Outcome 3</b>	Be able to accurately calculate electricity consumption and set baselines and KPIs.
<p><b>Assessment Criteria</b></p> <p>3.1 Identify kWh Day units and kWh Night units and the different rates offered.</p> <p>3.2 Identify the AUP (Average unit price).</p>	<p><b>Unit Content</b></p> <p>(3.1)</p> <ul style="list-style-type: none"> <li>● Identify kWh Day and night units on a bill.</li> <li>● Identify different costs associated with day and night units.</li> <li>● Accurately record this information.</li> </ul> <p>(3.2)</p> <ul style="list-style-type: none"> <li>● Calculate the AUP on a bill.</li> <li>● Identify AUP (Average unit price) on a bill.</li> <li>● Accurately record this information.</li> </ul> <p>(3.3)</p>

<p>3.3 Identify what the MIC of a business is and explain its importance.</p>	<p>MIC:</p> <ul style="list-style-type: none"> <li>Maximum Import Capacity (MIC) is the maximum electricity a building can demand from the network in a given day.</li> </ul> <p>MIC Importance:</p> <ul style="list-style-type: none"> <li>It sets an upper limit on the total electrical load you may use.</li> <li>It impacts how much you will be charged for your connection.</li> <li>If the MIC is too high, you will be paying for more capacity than you need.</li> <li>If the MIC is too low, you will incur penalties when you exceed it.</li> <li>Relevant data to calculate electricity usage, KPI and carbon emissions.</li> </ul>
<p><b>Learning outcome 4</b></p>	<p>Be able to calculate oil usage and set baselines and KPIs.</p>
<p><b>Assessment Criteria</b></p> <p>4.1 Calculate oil KPI and oil usage using the delivery and meter reading method.</p> <p>4.2 State the carbon emissions generated from your oil usage.</p>	<p><b>Unit Content</b></p> <p>(4.1) Methods used to calculate oil usage:</p> <ul style="list-style-type: none"> <li>By delivery.</li> <li>By meter readings.</li> </ul> <p>Calculate oil usage:</p> <ul style="list-style-type: none"> <li>Use monthly oil delivery docket to calculate usage.</li> <li>Use meter readings and monthly delivery to calculate usage.</li> </ul> <p>Calculate oil KPI:</p> <ul style="list-style-type: none"> <li>Calculate customer and employee numbers for the month.</li> <li>Divide overall usage by the number of people.</li> </ul> <p>(4.2)</p> <ul style="list-style-type: none"> <li>Report CO2 emissions to stakeholders.</li> </ul>
<p><b>Learning outcome 5</b></p>	<p>Be able to calculate gas usage and set baselines and KPI's.</p>
<p><b>Assessment Criteria</b></p> <p>5.1 Calculate gas PKI and gas usage using the delivery, meter and delivery and meter readings methods.</p> <p>5.2 State the carbon emissions</p>	<p><b>Unit Content</b></p> <p>(5.1) Methods used to calculate gas usage:</p> <ul style="list-style-type: none"> <li>By delivery.</li> <li>By meter readings and delivery.</li> <li>By meter alone.</li> </ul> <p>Calculate gas usage:</p> <ul style="list-style-type: none"> <li>Use monthly oil delivery docket to calculate usage.</li> <li>Use meter readings and monthly delivery to calculate usage.</li> <li>Use meter only- deduct starting monthly value from monthly end value.</li> </ul> <p>Calculate gas KPI:</p> <ul style="list-style-type: none"> <li>Calculate (people) customer and employee numbers for the month.</li> <li>Divide overall usage by the number of people.</li> </ul> <p>(5.2)</p> <ul style="list-style-type: none"> <li>Report CO2 emissions to stakeholders.</li> </ul>

generated from your gas usage.	
<b>Learning outcome 6</b>	Be able to calculate waste volumes and set baselines and KPIs
<b>Assessment Criteria</b>	<b>Unit Content</b>
6.1 Understand and explain waste bill terminology.	(6.1) <ul style="list-style-type: none"> <li>● Kilogrammes.</li> <li>● Tonnes.</li> <li>● Lift charges.</li> <li>● Processing charges.</li> <li>● Brown bin.</li> <li>● Mixed waste.</li> <li>● Recycling waste.</li> <li>● Glass waste.</li> <li>● Cardboard.</li> <li>● Electric/Hazardous.</li> </ul>
6.2 Identify different types of waste charges and analyse waste bills.	(6.2) <p>Waste charges:</p> <ul style="list-style-type: none"> <li>● Lift charges.</li> <li>● Processing charges.</li> </ul> <p>Waste bills analysis:</p> <ul style="list-style-type: none"> <li>● Check no double entries.</li> <li>● Verify number of lifts.</li> <li>● Calculate the weight associated with each type of waste.</li> <li>● Calculate the cost associated with each type of waste.</li> </ul>
6.3 Calculate landfill, recycling and food waste KPIs at the workplace	(6.3) <ul style="list-style-type: none"> <li>● Calculate (people) customer and employee numbers for the month.</li> <li>● Divide overall waste production for each type of waste by the number of people.</li> </ul>
<b>Learning outcome 7</b>	Be able to calculate water usage and set baselines and KPIs
<b>Assessment Criteria</b>	<b>Unit Content</b>
7.1 Identify the two methods to calculate water usage.	(7.1) <ul style="list-style-type: none"> <li>● Water bills.</li> <li>● Meter readings.</li> </ul>
7.2 Analyse water bills and their cost and calculate water KPI.	(7.2) <p>Analyse water bills and their cost:</p> <ul style="list-style-type: none"> <li>● Identify the Cubic metre usage.</li> <li>● Identify the unit price.</li> </ul> <p>Calculate water KPI:</p> <ul style="list-style-type: none"> <li>● Calculate (people) customer and employee numbers for the month.</li> <li>● Divide overall water usage by the number of people.</li> </ul>
<b>Learning outcome 8</b>	Know how to monitor, evaluate & report environmental KPIs.

Assessment Criteria	Unit Content
8.1 Create a work routine to monitor environmental KPIs.	<ul style="list-style-type: none"> <li>• Allocate and schedule specific time to analyse bills and environmental KPIs.</li> <li>• Access and collect relevant information needed.</li> <li>• Calculate % increase and decrease of utility use with a mathematical formula.</li> <li>• Report % increase or decrease in usage and KPIs back to stakeholders.</li> </ul>

Unit 3: Water conservation	
<b>Unit Purpose and Aim(s)</b>	<p>This unit aims to provide learners with the skills and understanding of the global water scarcity issues humans have created and the challenges for a sustainable environment. Learners will know how to calculate water flow rate within a building and how it compares to recommended good practice standards in order to reduce water usage.</p> <p>Learners will be able to use this learning for the conservation of this limited resource and detect potential leaks in a building by measuring their current usage and establishing a pattern of usage for future monitoring.</p>
<b>Learning Outcome 1</b>	Know why it is important to conserve water.
<b>Assessment Criteria</b>	<b>Unit Content</b>
1.1 Identify sources of water.	(1.1) <ul style="list-style-type: none"> <li>• Precipitation (rain).</li> <li>• Frozen glaciers and lakes.</li> <li>• Rivers.</li> <li>• Streams.</li> <li>• Wells.</li> <li>• Oceans.</li> </ul>
1.2 Describe what is meant by the term 'Fresh water' and how much of it is available for human consumption.	(1.2) <ul style="list-style-type: none"> <li>• Drinking water.</li> <li>• 3% of the earth's water is drinking water.</li> <li>• 2% is unavailable frozen in glaciers.</li> <li>• 1% is accessible for human consumption.</li> </ul>
1.3 Describe the impact of increasing global water scarcity.	(1.3) <ul style="list-style-type: none"> <li>• 17 countries experiencing high level water stress.</li> <li>• 25% of world population 1.7 billion people suffer.</li> </ul>
<b>Learning outcome 2</b>	Be able to calculate water flow rate.
<b>Assessment Criteria</b>	<b>Unit Content</b>
2.1 Explain water flow rate.	(2.1) Water flow rate: <ul style="list-style-type: none"> <li>• The volume of water that passes through a device.</li> </ul>

<p>2.2 Identify recommended good practice water flow rates for cisterns, taps and showers.</p> <p>3.3 Be able to measure water flow rates</p>	<ul style="list-style-type: none"> <li>• How much water comes out in litres or gallons (US or Imperial) per minute.</li> </ul> <p>(2.2) Water flow rates:</p> <ul style="list-style-type: none"> <li>• Taps: 8 litres per minute.</li> <li>• Showers: 10 litres per minute.</li> <li>• Cisterns: 6 litres per minute.</li> </ul> <p>(3.3) Calculate the water flow rate for cisterns, taps and showers within a building: Use a wide neck bowl, measuring jug and a timer to calculate litres of water per minute for taps and showers. Empty the cistern and refill manually using measuring jugs or containers.</p>
<b>Learning outcome 3</b>	Be able to set up a water leak detection system.
<p><b>Assessment Criteria</b></p> <p>3.1 Demonstrate the monitoring and tracking of buildings water usage.</p> <p>3.2 Recognise how business levels directly affect water usage.</p> <p>3.3 Describe how to detect potential underground water leaks.</p>	<p><b>Unit Content</b></p> <p>(3.1) Accurately read building water meter:</p> <ul style="list-style-type: none"> <li>• Taking meter readings regularly.</li> <li>• Establishing pattern of usage.</li> <li>• Record usage levels.</li> </ul> <p>Analyse water usage using metre readings:</p> <ul style="list-style-type: none"> <li>• Recognise changes in usage.</li> <li>• Identify anomalies.</li> <li>• Investigate unexplained changes.</li> </ul> <p>(3.2)</p> <ul style="list-style-type: none"> <li>• Increase usage/volumes.</li> <li>• Decrease usage/volumes.</li> <li>• Cost factors.</li> <li>• Increase of people contributes to increased usage.</li> </ul> <p>(3.3)</p> <ul style="list-style-type: none"> <li>• Unexplained patterns.</li> <li>• Read the meter when the building is closed and/or water is not being used.</li> <li>• Increase of the water KPI.</li> </ul>
<b>Learning outcome 4</b>	Be able to reduce a cistern water capacity
<p><b>Assessment Criteria</b></p> <p>4.1 Describe the benefits of using a hippo bag in a cistern.</p>	<p><b>Unit Content</b></p> <p>(4.1)</p> <ul style="list-style-type: none"> <li>• Reduced water usage per flush.</li> <li>• Reduced carbon footprint.</li> <li>• Reduce water costs.</li> <li>• Insert a hippo bag in a toilet cistern.</li> </ul> <p>(4.2)</p> <ul style="list-style-type: none"> <li>• Calculate the cost of purchase of hippo bags.</li> </ul>

<p>4.2 Calculate return on investment (ROI) from reducing cistern capacities.</p> <p>4.3 Develop a water action plan to reduce cistern capacities over time.</p>	<ul style="list-style-type: none"> <li>• Calculate potential water cost savings.</li> </ul> <p>(4.3)</p> <ul style="list-style-type: none"> <li>• Identify biggest water using cisterns that are above good practice standards.</li> <li>• Outline a SMART action plan that is time bound to reduce water flow rate on those devices</li> </ul>
<p><b>Learning outcome 5</b></p>	<p>Be able to reduce water flow rates from taps and showers.</p>
<p><b>Assessment Criteria</b></p> <p>5.1 Describe aerators and what they are used for.</p> <p>5.2 Calculate return on investment (ROI) from aerator installations.</p> <p>5.3 Develop a plan to install aerators.</p>	<p><b>Unit Content</b></p> <p>(5.1)</p> <ul style="list-style-type: none"> <li>• Filtrate water and air by reducing the area for water to flow through.</li> <li>• Reducing water flow.</li> <li>• Maintaining the relevant pressure.</li> <li>• Different sizes have greater effect.</li> </ul> <p>(5.2)</p> <ul style="list-style-type: none"> <li>• Calculate the cost of purchase aerators.</li> <li>• Calculate potential water cost savings after installation.</li> </ul> <p>(5.3)</p> <ul style="list-style-type: none"> <li>• Identify biggest water using taps &amp; showers that are above good practice standards</li> </ul> <p>Outline a SMART action plan that is time bound to reduce water flow rate on those devices</p>
<p><b>Learning outcome 6</b></p>	<p>Develop a water action plan for reducing future water usage.</p>
<p><b>Assessment Criteria</b></p> <p>6.1 Describe the purpose of a water action plan.</p> <p>6.2 Describe the benefits to updating the water action plan.</p> <p>6.3 Identify ways to improve action plans and further reduce water usage.</p>	<p><b>Unit Content</b></p> <p>(6.1)</p> <ul style="list-style-type: none"> <li>• To clarify the goal for the water action plan.</li> <li>• Identify what resources are needed to reach the goal.</li> <li>• Formulate a timeline for when specific tasks need to be completed.</li> <li>• Assign responsibilities for actioning tasks.</li> <li>• Ensure tasks are measurable.</li> </ul> <p>(6.2)</p> <ul style="list-style-type: none"> <li>• Continuous improvement.</li> <li>• Increase team members accountability.</li> <li>• Evaluate the progress and possible improvements.</li> </ul> <p>(6.3)</p> <ul style="list-style-type: none"> <li>• Continued research of subject area.</li> <li>• Replace old equipment with latest technology.</li> <li>• Create more ambitious goals and targets.</li> <li>• Plan funding streams and investment for future projects.</li> </ul>

Unit 4: Waste management	
<b>Unit Purpose and Aim(s)</b>	This unit aims to provide learners with the skills and understanding of the global waste problem facing society. Learners will have an understanding of the need to set up a waste management system for the purpose of reducing waste as the first principle of waste management. The learner will be able to identify the different waste streams and the importance of waste segregation. The learners will be able to identify their top waste challenges and implement measures to reduce and monitor waste production at any building particularly for landfill, food and recycling waste.
<b>Learning Outcome 1</b>	Be able to explain the global waste problem.
<b>Assessment Criteria</b>	<b>Unit Content</b>
1.1 Describe how much waste is generated around the world today.	(1.1) World waste: <ul style="list-style-type: none"> <li>• 2.12 billion tonnes per year.</li> </ul> Different types of waste: <ul style="list-style-type: none"> <li>• Food.</li> <li>• General waste.</li> <li>• Chemical/ hazardous/Electrical.</li> <li>• Cardboard.</li> <li>• Paper.</li> <li>• Plastic.</li> <li>• Glass.</li> </ul>
1.2 List the factors contributing to increased global waste production.	(1.2) <ul style="list-style-type: none"> <li>• Increased consumption and demand.</li> <li>• Single use items.</li> <li>• Convenience.</li> <li>• Shopping habits/consumerism.</li> <li>• Lifestyle changes.</li> <li>• Population increase.</li> </ul>
1.3 Explain the reasons for the exponential increase in plastic production over the past 70 years.	(1.3) <ul style="list-style-type: none"> <li>• Recycling- creating a false narrative.</li> <li>• Demand for cheaper products.</li> <li>• Demand for cheaper resources.</li> <li>• Demands for greater profitability.</li> <li>• Consumer demand for convenience products.</li> <li>• Oil manufacturers wanting to reuse oil byproducts.</li> </ul>
1.4 Describe different methods of waste disposal.	(1.4) <ul style="list-style-type: none"> <li>• Landfill (buried).</li> <li>• Incineration/combustion.</li> <li>• Recovery/recycle.</li> <li>• Plasma gasification.</li> <li>• Composting.</li> <li>• Waste to energy (recovery energy).</li> </ul>
1.5 Explain the negative effects waste disposal has	(1.5) <ul style="list-style-type: none"> <li>• Increased greenhouse gasses.</li> <li>• Increased pollution.</li> </ul>

<p>on the environment.</p> <p>1.6 Identify what should be taken into consideration when calculating the cost of food waste</p>	<ul style="list-style-type: none"> <li>● Acid rain.</li> <li>● Increased litter.</li> <li>● Ocean pollution.</li> <li>● Soil degradation.</li> </ul> <p>(1.6)</p> <ul style="list-style-type: none"> <li>● Cost of purchase.</li> <li>● Cost of storage and preparation.</li> </ul> <p>Cost of waste disposal charges</p>
<p><b>Learning outcome 2</b></p>	<p>Understand the importance of waste segregation .</p>
<p><b>Assessment Criteria</b></p> <p>2.1 Identify cost implications and environmental impact of not having proper waste segregation systems.</p> <p>2.2 Implement a waste segregation system in all areas of the business.</p>	<p><b>Unit Content</b></p> <p>(2.1)</p> <p>Waste segregation:</p> <ul style="list-style-type: none"> <li>● To divide waste on to different streams so they can be treated accordingly at waste collection plants.</li> </ul> <p>Cost implications:</p> <ul style="list-style-type: none"> <li>● Landfill waste is the most expensive to process.</li> <li>● The real cost of food waste is not just for its collection we must include purchasing &amp; storing costs.</li> <li>● Loss of profitability.</li> <li>● Recycling waste is the cheapest to disposed of.</li> </ul> <p>Environmental impact:</p> <ul style="list-style-type: none"> <li>● If food waste is mixed in landfill it releases methane gas.</li> <li>● If recycling waste is not clean it can contaminate the entire recycling waste truck.</li> </ul> <p>(2.2)</p> <p>Waste segregation system:</p> <ul style="list-style-type: none"> <li>● Ensure the right bins are in the right places to assist the team segregate properly.</li> <li>● Conduct staff interviews to identify waste segregation training needs.</li> <li>● Allocate a person to monitor waste segregation all year around.</li> </ul> <p>Monitoring waste segregation:</p> <ul style="list-style-type: none"> <li>● Identify re-training needs.</li> <li>● Identify cost savings.</li> <li>● Reduces contamination of waste.</li> <li>● Reduces greenhouse gasses.</li> </ul>
<p><b>Learning outcome 3</b></p>	<p>Understand how to manage waste within a business.</p>
<p><b>Assessment criteria</b></p> <p>3.1 List the benefits to the environment for managing waste generation and disposal.</p>	<p><b>Unit Content</b></p> <p>(3.1)</p> <ul style="list-style-type: none"> <li>● Less waste will produce less greenhouse gasses.</li> <li>● Food waste can be composted if segregated properly.</li> <li>● Composted food waste can be used for soil regeneration.</li> <li>● Reduce plastic pollution.</li> <li>● Improve health environment from reducing incineration of landfill.</li> </ul>

<p>3.2 Describe the benefits to a business for managing waste generation and disposal.</p> <p>3.3 Outline the process to identify top waste challenges for landfill and recycling waste.</p>	<p>(3.2) Managing waste benefits:</p> <ul style="list-style-type: none"> <li>• Cost savings.</li> <li>• Ethical responsibility.</li> <li>• Improve reputation for environmental sustainability.</li> <li>• Recognition from waste management awards.</li> </ul> <p>Monitoring waste production:</p> <ul style="list-style-type: none"> <li>• Identify cost savings.</li> <li>• Identify training needs.</li> <li>• Ensure waste is reducing overtime.</li> <li>• Achieve waste reduction targets.</li> </ul> <p>(3.3)</p> <ul style="list-style-type: none"> <li>• Watch the bins for 1 week in all departments.</li> <li>• Identify items that end up in the bin the most.</li> <li>• Plan solutions to abolish those items from your operations.</li> </ul>
<b>Learning outcome 4</b>	Understand the importance of a waste collection area.
<p><b>Assessment Criteria</b></p> <p>4.1 Describe the importance of understanding the waste collection cycle for a business.</p> <p>4.2 Explain how completing checks on the waste collection area help identify possible problems.</p>	<p><b>Unit Content</b></p> <p>(4.1)</p> <ul style="list-style-type: none"> <li>• Allows for planning of waste collection area inspections.</li> <li>• Allows to identify cost savings from the number of picked up bins.</li> </ul> <p>(4.2) Completing checks:</p> <ul style="list-style-type: none"> <li>• Waste segregation rules might not be followed properly – training needs.</li> <li>• Area must be kept clean and tidy – attract rodents.</li> <li>• Bins might not be full – extra cost to the business.</li> </ul> <p>Examples of items found in wrong bins:</p> <ul style="list-style-type: none"> <li>• Plastic or food in landfill.</li> <li>• Food or landfill in the recycling bin.</li> <li>• Plastic or landfill in food bin.</li> </ul> <p>How to avoid finding items in wrong bins.</p>
<b>Learning outcome 5</b>	Understand the importance of monitoring and managing food waste.
<p><b>Assessment Criteria</b></p> <p>5.1 Describe the importance of understanding the items found in and the volumes of food waste in a business.</p>	<p><b>Unit Content</b></p> <p>(5.1)</p> <ul style="list-style-type: none"> <li>• It allows for better food purchasing planning.</li> <li>• It allows us to set KPIs and targets for improvement.</li> <li>• It allows us to calculate food waste costs.</li> <li>• It allows us to identify which items end up in the bin the most.</li> </ul> <p>(5.2)</p> <ul style="list-style-type: none"> <li>• Select a date to audit food waste from dining areas.</li> </ul>

<p>5.2 Describe the process of how to measure food waste coming back from dining areas.</p> <p>5.3 List reasons why food items are returned from service areas.</p> <p>5.4 Identify the importance of analysing food waste data.</p> <p>5.5 Implement solutions for food waste reduction.</p>	<ul style="list-style-type: none"> <li>● Provide a system for staff to segregate food items into different buckets.</li> <li>● At the end of service weight the buckets to identify most disposed of items.</li> </ul> <p>(5.3)</p> <ul style="list-style-type: none"> <li>● Portions are too big.</li> <li>● Food quality.</li> <li>● Customer changed their mind.</li> <li>● Poor cooking and presentation.</li> </ul> <p>(5.4)</p> <ul style="list-style-type: none"> <li>● Allows to plan menus better.</li> <li>● Identify chef training needs.</li> <li>● Identify cost savings.</li> <li>● Set targets for reduction.</li> </ul> <p>(5.5)</p> <p>Identify ways to reduce food waste within a business:</p> <ul style="list-style-type: none"> <li>● Stock rotation.</li> <li>● Only purchase what is needed.</li> <li>● Menu planning to reduce waste.</li> <li>● Portion control systems.</li> <li>● Standardised recipe.</li> </ul> <p>Training.</p>
<p><b>Learning outcome 6</b></p>	<p>Understand the importance to abolish single use items from business operations.</p>
<p><b>Assessment Criteria</b></p> <p>5.1 Explain what is meant by single use items within a business</p> <p>5.2 List the benefits for abolishing single use plastics.</p> <p>5.3 Identify reasons why abolishing single use plastics is seen as difficult.</p> <p>5.4 Calculate return on investment from</p>	<p><b>Unit Content</b></p> <p>(6.1)</p> <p>Single use plastic items:</p> <ul style="list-style-type: none"> <li>● Items with a short life cycle, to be used once or a couple of times before discarding of them.</li> </ul> <p>(6.2)</p> <p>Benefits to the environment:</p> <ul style="list-style-type: none"> <li>● Less ocean pollution.</li> <li>● Less micro plastics in the environment.</li> <li>● Less demand for plastic production.</li> <li>● Reduction of CO2.</li> </ul> <p>Benefits to the business:</p> <ul style="list-style-type: none"> <li>● Cost savings.</li> <li>● Less waste.</li> <li>● Reputation as an environmentally friendly business.</li> <li>● Ethical benefits.</li> </ul> <p>(6.3)</p> <ul style="list-style-type: none"> <li>● Mindset.</li> <li>● Perceived costs.</li> <li>● Perceived increased workloads.</li> <li>● Lack of knowledge.</li> <li>● Lack of cost analysis.</li> <li>● Misunderstanding of information.</li> </ul> <p>(6.4)</p> <ul style="list-style-type: none"> <li>● Identify cost to purchase SUPs.</li> <li>● Cost to dispose of SUPs.</li> </ul>

abolishing single use plastics.  5.5 Understand the importance of calculating environmental data from single use plastics.	<ul style="list-style-type: none"> <li>• Cost to purchase reusable options.</li> <li>• Calculate ROI.</li> </ul> (6.5) <ul style="list-style-type: none"> <li>• Assist with setting up targets for the future.</li> <li>• Allows for green messaging to be powerful.</li> <li>• Provides transparency.</li> </ul>
<b>Learning outcome 7</b>	Establish a waste management action plan for the future
<b>Assessment Criteria</b>	<b>Unit Content</b>
7.1 Describe the purpose of a waste management action plan.	(7.1) <ul style="list-style-type: none"> <li>• To clarify the goals for the waste action plan.</li> <li>• Identify what resources are needed to reach the goals.</li> <li>• Formulate a timeline for when specific tasks need to be completed.</li> <li>• Assign responsibilities for actioning tasks.</li> </ul>
7.2 Describe the benefits to updating the waste management action plan.	(7.2) <ul style="list-style-type: none"> <li>• Continuous improvement.</li> <li>• Adapting to new technologies.</li> <li>• Evaluate the progress and possible improvements.</li> <li>• Accountability from team members to complete allocated actions.</li> </ul>
7.3 Identify ways to improve action plans and further manage waste.	(7.3) <ul style="list-style-type: none"> <li>• Continued research of subject area.</li> <li>• Replace old equipment with latest technology.</li> <li>• create more ambitious goals and targets.</li> <li>• Plan funding streams and investment for future projects.</li> </ul>

<b>Unit 5: Energy management</b>	
<b>Unit Purpose and Aim(s)</b>	This unit aims to provide learners with the skills and understanding needed to manage energy within a business in order to reduce carbon emissions and generate cost savings and become energy efficient throughout the business operations. The unit explores the relation between energy usage, climate change and how our own behaviour can have an effect on both.  The learner will be able to measure their current energy use, observe where, when and why they use energy and establish a team approach to behavioural change using only energy that is necessary.
<b>Learning Outcome 1</b>	Be able to outline why it is important to conserve energy.
<b>Assessment Criteria</b>	<b>Unit Content</b>

<p>1.1 Identify how climate change will affect businesses.</p> <p>1.2 Describe the advantages and disadvantages to using energy generated by fossil fuels.</p> <p>1.3 Explain the term renewable energy.</p> <p>1.4 Explain the meaning of personal responsibility for climate change.</p>	<p>(1.1) Energy sources:</p> <ul style="list-style-type: none"> <li>● Electricity.</li> <li>● Oil.</li> <li>● Gas.</li> <li>● Coal.</li> <li>● Wood.</li> <li>● Petrol/diesel.</li> <li>● Nuclear.</li> <li>● Geothermal.</li> <li>● Hydroelectric.</li> <li>● Renewables.</li> <li>● Wind.</li> <li>● Solar.</li> <li>● Tidal.</li> </ul> <p>Impact:</p> <ul style="list-style-type: none"> <li>● Rise in carbon tax.</li> <li>● Increased energy cost for cooling and heating.</li> </ul> <p>(1.2)</p> <ul style="list-style-type: none"> <li>● Environmental damage from exploration.</li> <li>● Increase of CO2.</li> <li>● Limited resource.</li> </ul> <p>(1.3)</p> <ul style="list-style-type: none"> <li>● Energy that is collected from renewable resources, which are naturally replenished on a human timescale, including carbon neutral sources like sunlight, wind, rain, tides, waves, and geothermal heat.</li> </ul> <p>(1.4)</p> <ul style="list-style-type: none"> <li>● Everyone produces carbon emissions in their lives, at home and the workplace and it is our moral and ethical obligation not to waste natural resources regardless of what anyone else is doing.</li> </ul>
<p><b>Learning outcome 2</b></p>	<p>Identify business energy needs from lighting.</p>
<p><b>Assessment Criteria</b></p> <p>2.1 Calculate the annual cost of lighting for the business.</p>	<p><b>Unit Content</b></p> <p>(2.1) Compare and identify the energy savings from LED bulbs against regular bulbs:</p> <ul style="list-style-type: none"> <li>● Identify bulb wattage.</li> <li>● Identify hours in use per day.</li> <li>● Calculate annual cost.</li> <li>● Compare to energy saving alternative.</li> </ul> <p>Conduct a light bulb audit at the business.</p> <p>Annual cost of lighting:</p> <ul style="list-style-type: none"> <li>● Identify bulb wattage.</li> <li>● Identify hours in use per day.</li> <li>● Calculate annual cost.</li> </ul>

2.2 Calculate the return on investment for changing light bulbs to LED or energy saving bulbs.	(2.2) <ul style="list-style-type: none"> <li>• Cost of new bulbs.</li> <li>• Cost of installation.</li> <li>• Pay back estimation.</li> </ul>
<b>Learning outcome 3</b>	Identify business energy needs from equipment.
<b>Assessment Criteria</b>	<b>Unit Content</b>
3.1 Conduct an equipment audit at the business.	(3.1) How equipment timers and sensors contribute to reducing energy usage: <ul style="list-style-type: none"> <li>• They reduce human error from having to switch equipment on/off by automating this activity.</li> </ul> Calculate the cost of running equipment: <ul style="list-style-type: none"> <li>• Identify kWh from each machine.</li> <li>• Identify hours in use per day.</li> <li>• Calculate annual cost.</li> </ul>
3.2 Develop an action plan to reduce energy use from equipment.	(3.2) <ul style="list-style-type: none"> <li>• Audit equipment to include kWh &amp; hours in use.</li> <li>• Identify highest energy using equipment.</li> <li>• Device on/off plan to suit business needs.</li> <li>• Train staff.</li> <li>• Ensure new procedures are adhere to.</li> </ul>
<b>Learning outcome 4</b>	Identify energy use in less used areas of the business.
<b>Assessment Criteria</b>	<b>Unit Content</b>
4.1 Identify the energy usage of less used areas.	(4.1) Areas less used within a business: <ul style="list-style-type: none"> <li>• Corridors.</li> <li>• Back of house.</li> <li>• Meeting rooms and function rooms.</li> <li>• Stores.</li> <li>• Staff areas.</li> </ul>
4.2 Establish standardised operational procedures (SOP's) for closing down less used areas in order to conserve energy.	(4.2) Energy usage of less used areas: <ul style="list-style-type: none"> <li>• Lighting.</li> <li>• Equipment.</li> <li>• Heating/cooling.</li> <li>• Close down checklist.</li> </ul>
<b>Learning outcome 3</b>	Audit the business heating/cooling system.
<b>Assessment Criteria</b>	<b>Unit Content</b>
5.1 Identify common heating/cooling systems and the fuel used to run them.	(5.1) <ul style="list-style-type: none"> <li>• Oil boiler.</li> <li>• Solar panels.</li> <li>• Natural gas boiler.</li> <li>• LPG gas boiler.</li> <li>• Heat pumps.</li> <li>• Geothermal pumps.</li> </ul>

<p>5.2 Outline recommended heating temperature for hot water for a business.</p> <p>5.3 Describe the importance of regular servicing of boilers.</p>	<p>(5.2)</p> <ul style="list-style-type: none"> <li>• 60 Degrees Celsius.</li> <li>• Establish if boilers are heating water at the recommended temperature.</li> </ul> <p>(5.3)</p> <p>Regular servicing of boilers:</p> <ul style="list-style-type: none"> <li>• Boilers should not operate at any less than 94% efficiency.</li> <li>• Plumbers can offer an efficiency report during annual servicing.</li> <li>• Cost savings.</li> <li>• Health and safety.</li> </ul> <p>Standardised operational procedure:</p> <ul style="list-style-type: none"> <li>• Ensure temperature is controlled throughout the building.</li> <li>• Prepare checklists.</li> </ul>
<b>Learning outcome 6</b>	Audit the building insulation of the business.
<p><b>Assessment Criteria</b></p> <p>6.1 Identify solutions to remedy poor insulation within a business.</p> <p>6.2 Conduct a building audit of insulation and identify areas for improvement.</p>	<p><b>Unit Content</b></p> <p>(6.1)</p> <ul style="list-style-type: none"> <li>• Reseal doors and windows to reduce air leaks.</li> <li>• Improve attic insulation.</li> <li>• Improve wall insulation.</li> </ul> <p>(6.2)</p> <ul style="list-style-type: none"> <li>• Window insulation.</li> <li>• Attic insulation.</li> <li>• Wall insulation.</li> </ul>
<b>Learning outcome 7</b>	Audit the refrigeration systems.
<p><b>Assessment Criteria</b></p> <p>7.1 Audit refrigeration and freezer equipment.</p>	<p><b>Unit Content</b></p> <p>(7.1)</p> <p>Guided safe temperatures for refrigerators:</p> <ul style="list-style-type: none"> <li>• 0 and 5 °C, or between 36 and 45 degrees Fahrenheit.</li> </ul> <p>Guided safe temperatures for freezers:</p> <ul style="list-style-type: none"> <li>• -18 degrees Celsius or 0.4 Fahrenheit.</li> </ul> <p>Digital controls or manual checks.</p> <p>Lighting control:</p> <ul style="list-style-type: none"> <li>• Push buttons on a timer.</li> <li>• Sensor lights.</li> <li>• Manual switch.</li> </ul> <p>Air leaks identification:</p> <ul style="list-style-type: none"> <li>• Step inside the fridge/freezer and close the door.</li> <li>• Turn off the light.</li> <li>• If light comes through from the door air is also leaking out.</li> </ul>
<b>Learning outcome 8</b>	Establish an energy management action plan for the future.
<p><b>Assessment Criteria</b></p> <p>8.1 Describe the purpose of an</p>	<p><b>Unit Content</b></p> <p>(8.1)</p> <ul style="list-style-type: none"> <li>• To clarify the goals for the energy action plan.</li> </ul>

<p>energy management action plan.</p> <p>8.2 Describe the benefits to updating the energy management action plan.</p> <p>8.3 Identify ways to improve action plans and further manage energy waste.</p>	<ul style="list-style-type: none"> <li>● Identify what resources are needed to reach the goals.</li> <li>● Formulate a timeline for when specific tasks need to be completed.</li> <li>● Assign responsibilities for actioning tasks.</li> </ul> <p>(8.2)</p> <ul style="list-style-type: none"> <li>● Continuous improvement.</li> <li>● Adapting to new technologies.</li> <li>● Evaluate the progress and possible improvements.</li> <li>● Accountability from team members to complete allocated actions.</li> </ul> <p>(8.3)</p> <ul style="list-style-type: none"> <li>● Continued research of subject area.</li> <li>● Replace old equipment with latest technology.</li> <li>● create more ambitious goals and targets.</li> <li>● Plan funding streams and investment for future projects.</li> </ul>
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Unit 6: Green Marketing	
<b>Unit Purpose and Aim(s)</b>	<p>This unit aims to provide learners with the skills and understanding of how to market an environmental programme for a business in a way that is compelling to potential customers and share environmental data for powerful messaging.</p> <p>The learner will be able to write a business environmental policy, establish a green customer programme, enter environmental awards and spread environmental awareness to all stakeholders.</p> <p>The learner will also have a clear understanding of how environmental leadership needs to always be positive, non-judgemental and inclusive.</p>
<b>Learning Outcome 1</b>	Write a business environmental policy.
<b>Assessment Criteria</b>	<b>Unit Content</b>
1.1 Develop an environmental policy for a business.	<p>Purpose of an environmental policy:</p> <ul style="list-style-type: none"> <li>● Statement of intent to let all stakeholders know their environmental ethos, goals and strategy.</li> </ul> <p>Key elements of an environment policy:</p> <ul style="list-style-type: none"> <li>● General Statement.</li> <li>● Future goals.</li> <li>● Achievements to date.</li> <li>● Date.</li> </ul> <p>Communicate your environmental policy:</p> <ul style="list-style-type: none"> <li>● Place it on the website.</li> <li>● Place it at the entrance of the building.</li> <li>● Include it on guest communication.</li> <li>● Email it to all employees and business stakeholders.</li> <li>● Publish it on social media channels.</li> </ul>
<b>Learning outcome 2</b>	Understand green leadership.
<b>Assessment Criteria</b>	<b>Unit Content</b>

<p>2.1 Describe the characteristics of a good (green) leader.</p> <p>2.2 Identify motivating factors for people on to the environmental sustainability journey.</p> <p>2.3 Describe key elements to motivating other team members.</p> <p>2.4 Explain the importance of environmental data for effective (green) leadership.</p>	<p>(2.1)</p> <ul style="list-style-type: none"> <li>• Balances business performance and employee care.</li> <li>• Not forceful.</li> <li>• Motivational.</li> <li>• Integrity &amp; humility.</li> <li>• Strategic thinking.</li> <li>• Takes personal responsibility.</li> <li>• Raises awareness in a positive way.</li> <li>• Good communicator and good delegator.</li> </ul> <p>(2.2)</p> <ul style="list-style-type: none"> <li>• Climate change education - building awareness.</li> <li>• Cost savings - good financial rewards.</li> <li>• Customer demand.</li> <li>• Future policy and carbon tax.</li> </ul> <p>(2.3)</p> <ul style="list-style-type: none"> <li>• Listen and address concerns.</li> <li>• Positive reinforcement.</li> <li>• Reward schemes.</li> <li>• Education and training.</li> <li>• Non-judgemental.</li> <li>• Inclusivity.</li> <li>• Communication.</li> </ul> <p>(2.4)</p> <ul style="list-style-type: none"> <li>• Data is more impactful to the consumer.</li> <li>• Data provides transparency.</li> <li>• Data allows for real measurement of environmental impact.</li> </ul>
<b>Learning outcome 3</b>	Implement a green marketing strategy.
<p><b>Assessment Criteria</b></p> <p>3.1 Create examples of impactful messages using environmental data.</p>	<p><b>Unit Content</b></p> <p>(3.1) Green marketing benefits:</p> <ul style="list-style-type: none"> <li>• Attract the carbon conscious consumer</li> <li>• Increase trust and reputation.</li> <li>• Champion your team's efforts publicly.</li> </ul>
<b>Learning outcome 4</b>	Implement a green customer programme.
<p><b>Assessment Criteria</b></p> <p>4.1 Identify the benefits of implementing a customer green programme.</p> <p>4.2 Identify the purpose of team training to communicate the</p>	<p><b>Unit Content</b></p> <p>(4.1)</p> <ul style="list-style-type: none"> <li>• Cost savings.</li> <li>• Customer loyalty.</li> <li>• Builds trust.</li> <li>• Builds a culture of sustainability for all stakeholders.</li> </ul> <p>(4.2)</p> <ul style="list-style-type: none"> <li>• Clear and accurate information.</li> <li>• Consistency.</li> <li>• Empowerment of the team.</li> <li>• Ensures guest understands the overall goal of the business</li> </ul>

green programme to all stakeholders.	
<b>Learning outcome 5</b>	Know how to apply for environmental awards.
<b>Assessment Criteria</b>	<b>Unit Content</b>
<p>5.1 Describe the benefits to a business of achieving environmental sustainability awards.</p> <p>5.2 Describe how to write award applications for environmental sustainability.</p> <p>5.3 Describe the importance of including environmental data on award applications.</p>	<p>(5.1)</p> <ul style="list-style-type: none"> <li>● They put your business in front of the media - free PR.</li> <li>● Boost team's morale.</li> <li>● Team building.</li> <li>● Stand out from competitors.</li> <li>● Customer recognition.</li> <li>● Increases trust from the community and customers.</li> </ul> <p>(5.2)</p> <p>Award applications:</p> <ul style="list-style-type: none"> <li>● Ensure the right person fills the application.</li> <li>● Read questions careful.</li> <li>● Ensure the answer matches the question.</li> <li>● Be passionate on your answers.</li> <li>● Ensure you stick to the word count. <ul style="list-style-type: none"> <li>● Be factual.</li> <li>● Be transparent.</li> <li>● Always include environmental data for future goals and past achievements.</li> </ul> </li> </ul> <p>Key environmental data to support an environmental award application:</p> <ul style="list-style-type: none"> <li>● % reduction or increase of energy, waste and water.</li> <li>● % reduction or increase of green procurement.</li> </ul> <p>(5.3)</p> <ul style="list-style-type: none"> <li>● Without real numbers (data) answers are just words, data gives the judges the opportunity to understand how the business has reduced its impact on the environment.</li> <li>● Strengthens the application.</li> <li>● Provides transparency.</li> </ul>