Technology Australian Upper Level Primary - Years 3-6 Curriculum For Sustainability Complementing the Australian Framework

General Capabilities (Integrated across all areas):

- **Literacy**: Reading, writing, speaking, and listening skills across subjects.
- **Numeracy**: Application of mathematical concepts and problem-solving.
- **ICT Capability**: Use of technology in learning and problem-solving.
- **Critical and Creative Thinking**: Ability to analyze, reason, and create solutions.
- **Personal and Social Capability**: Self-management, social awareness, and interpersonal skills.
- **Ethical Understanding**: Ability to make decisions based on ethics and social responsibility.
- **Intercultural Understanding**: Awareness of and respect for cultural differences.

Cross-Curriculum Priorities:

- **Aboriginal and Torres Strait Islander Histories and Cultures**: Recognizing the cultural significance and history of Australia's Indigenous peoples.
- **Asia and Australia's Engagement with Asia**: Exploring Asia's history, cultures, and connections with Australia.
- **Sustainability**: Encouraging responsible stewardship of resources and environmental awareness.

English and Langauages	Mathematics	Science	Humanities and Social Sciences (HASS)	Health and Physical Education (HPE)	The Arts	Technologies

English	Mathematics	Science	Humanities and Social Sciences (HASS)	Health and Physical Education (HPE)	The Arts	Technologies
Content Areas: **Language**: Focus on the structure of language, including grammar, spelling, punctuation, and vocabulary. **Literature**: Students explore a range of texts, including stories, poems, and plays. They analyze characters, themes, and context. **Literacy**: Focus on reading and writing skills, listening, speaking, and viewing. Students are encouraged	**Content Areas:** **Number and Algebra**: Students work with whole numbers, fractions, decimals, percentages, and introduce simple algebraic concepts. **Measurement and Geometry**: Understanding units of measurement, time, volume, angles, and basic geometry. **Statistics and Probability**: Collecting data, understanding chance and	**Content Areas:** **Biological Sciences**: Study of living things, including plants, animals, ecosystems, and human biology. **Chemical Sciences**: Understanding the properties of materials and the reactions that occur between different substances. **Physical Sciences**: Introduction to concepts of energy, force, motion, and simple machines. **Earth and Space Sciences**:	**Content Areas:** **History**: Focus on historical events, time periods, and the development of societies. **Geography**: Study of places and spaces, understanding human-environment interactions, and geographical features.	**Content Areas:** **Personal, Social, and Community Health**: Topics include healthy lifestyle choices, mental health, safety, and personal well-being. **Movement and Physical Activity**: Physical exercise, sports,	**Content Areas:** **Dance**: Creating and performing dances, exploring movement, rhythm, and expression. **Drama**: Acting, storytelling, and performing to express ideas, feelings, and stories. **Music**: Understanding musical concepts, playing instruments,	**Content Areas:** **Design and Technologies**: Introduction to designing and making products using digital and non-digital materials. This includes developing solutions for problems and understanding processes of designing, planning, and production. **Digital Technologies**: Focus on computational thinking, understanding

to communicate effectively in various situations. **Key Goals**: Develop comprehension skills (listening, reading, viewing). Increase fluency in writing. Build vocabulary and grammar proficiency. Understand and analyze literary and non-literary texts. **Languages** **Content Areas:** Focus on the study of languages other than	probability, interpreting and analyzing statistical information. **Key Goals**: Improve numeracy and problem-solving skills. Apply mathematical understanding in practical and real-world contexts. Develop logical thinking and reasoning in mathematical contexts.	Understanding the Earth's systems, weather, climate, and the solar system. **Key Goals**: Develop scientific inquiry skills. Understand natural systems and the environment. Encourage curiosity and exploration through experiments and observations.	**Civics and Citizenship**: Understanding the rights and responsibilities of citizens in society, the function of governments, and the democratic process. **Economics and Business**: Introduction to economic concepts such as needs, wants, resources, and the economy. **Key Goals**: Develop critical thinking about	fitness, and developing motor skills. **Key Goals**: Promote physical fitness and health. Teach teamwork, collaboration, and social skills through physical activity. Encourage well-being and the development of healthy habits.	singing, and composing. **Visual Arts**: Exploring various forms of art such as drawing, painting, sculpture, and digital media. **Key Goals**: Foster creativity and self-expression. Develop appreciation and skills in different forms of art. Enhance cultural understanding through	algorithms, coding, and digital systems. **Key Goals**: Foster problem-solving skills and innovation. Encourage students to use technology creatively. Develop practical skills in digital and non-digital fields.

English (e.g., French, Japanese, Mandarin, etc.). Learn about language structure, vocabulary, and grammar, as well as cultural understanding related to the language studied. **Key Goals**: Develop communication skills in a second language. Enhance cultural awareness and understanding.			the past and present. Build an understanding of geography, social studies, and citizenship. Encourage decision-making based on historical knowledge and current events.		artistic exploration.	

Build confidence in speaking, listening, reading, and writing in a new language.						

The Sustainability Curriculum Headings

Understanding Sustainability (SUS1)	Environmental Awareness (SUS2)	Environmental Stewardship (SUS3)	Waste Management (SUS4)	Energy Conservation (SUS5)	Biodiversity and Ecosystems (SUS6)
Climate Change and Adaptation (SUS7)	Food and Agriculture (SUS8)	Water Conservation (SUS9)	Sustainable Transport and Urban Planning (SUS10)	Citizenship / Global Responsibility and Sustainable Development (SUS11)	Outdoor Learning and Connection to Nature (SUS12)

Understanding Sustainability (SUS1)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable products that use renewable materials, reduce waste, or promote energy efficiency, contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students design a composting system for the school garden using both digital and non-digital materials. They will explain how the composting process reduces food waste and benefits the soil, helping to create a more sustainable school environment.
- **Objective 1.2:** Students will explore how sustainable design principles can be applied to everyday products, such as eco-friendly packaging or energy-efficient devices, and evaluate their potential environmental impact, in line with SDG 12 (Responsible Consumption and Production) and SDG 7 (Affordable and Clean Energy).
  Example: Students design an eco-friendly packaging prototype using biodegradable or recyclable materials. They will assess how their product helps reduce plastic waste and present it as a solution to address sustainability in packaging.
- **Objective 1.3:** Students will evaluate and improve their designs based on sustainability criteria, considering factors such as material sourcing, energy consumption, product lifespan, and environmental impact, contributing to SDG 13 (Climate Action) and SDG 6 (Clean Water and Sanitation).
  Example: After designing a solar-powered water pump, students will assess how the pump works in comparison to conventional energy-consuming pumps. They will reflect on the energy efficiency, environmental benefits, and long-term sustainability of their design.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and coding to develop digital systems that track and monitor sustainable practices, such as energy consumption or waste management, in alignment with SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production).
  Example: Students code a simple program or app that helps users monitor their water or energy usage at home or school.

The app could provide real-time data and suggest tips for reducing consumption, such as using energy-efficient appliances or conserving water.

- **Objective 2.2:** Students will develop digital models or simulations to demonstrate sustainable resource management, such as simulating the lifecycle of a product, from production to disposal, contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students create a simulation that models the environmental impact of producing a product, such as a plastic bottle. They will input variables like material sourcing, manufacturing processes, and disposal methods to show the product's overall environmental footprint and identify areas for improvement.
- **Objective 2.3:** Students will use digital tools to collect and analyse data on environmental practices, such as tracking waste or monitoring energy efficiency, to make informed decisions about sustainability, supporting SDG 12 (Responsible Consumption and Production) and SDG 6 (Clean Water and Sanitation).
  Example: Students design a digital system to track the amount of waste generated in their classroom or school, categorising it into recyclables, compostables, and landfill waste. They will analyse the data and propose strategies to reduce waste and promote recycling.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate both digital and non-digital technologies to create sustainable solutions that address environmental challenges, such as creating renewable energy systems, waste management solutions, or systems for conserving natural resources, in line with SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).
  Example: Students work together to design a small-scale, off-grid renewable energy system for their school or community, using solar panels and wind turbines. They will use digital tools to plan and model the system, then use non-digital materials to construct prototypes of their energy systems.
- **Objective 3.2:** Students will develop and implement sustainability projects that raise awareness about environmental issues, such as creating educational campaigns or digital platforms that encourage others to adopt sustainable practices, contributing to SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students create a multimedia campaign (video, posters, app) to promote sustainable living in their school or community. They will focus on energy conservation, reducing waste, or protecting biodiversity, using both digital and physical tools to engage others in making more sustainable choices.

Environmental Awareness

(SUS2)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create products that help raise awareness about environmental issues, such as products that reduce waste, conserve energy, or promote biodiversity conservation, in alignment with SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land).
  Example: Students design a sustainable, reusable shopping bag made from upcycled materials. They will explore the environmental benefits of using reusable products and reducing single-use plastics, and present their designs to raise awareness about sustainable consumption.
- **Objective 1.2:** Students will explore the process of designing products that help protect the environment, such as solar-powered gadgets or water-saving devices, in alignment with SDG 7 (Affordable and Clean Energy) and SDG 6 (Clean Water and Sanitation).
  Example: Students design a solar-powered phone charger using non-digital and digital materials. They will explain how renewable energy sources like solar power contribute to reducing carbon emissions and raising awareness about the importance of clean energy.
- **Objective 1.3:** Students will evaluate the environmental impact of their designs, considering lifecycle analysis, material sourcing, and product disposal, contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: After designing a product like a biodegradable plant pot, students assess how their design reduces waste compared to traditional plastic pots and propose ways to make the product even more environmentally friendly, such as using local materials or reducing carbon footprint.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking to create digital solutions that raise awareness about environmental issues, such as an app or website that educates users about climate change, waste management, or sustainable energy

practices, in line with SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production).
Example: Students design a simple app that allows users to track their carbon footprint and suggests actions to reduce it, such as using public transport or conserving water. The app could also include educational facts on climate change and sustainability.

- **Objective 2.2:** Students will develop digital tools or simulations to model environmental systems, such as ecosystems or the water cycle, demonstrating how human activities affect these systems, contributing to SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land).
  Example: Students create a simulation that shows the effects of deforestation or pollution on a local ecosystem. They will model how these human activities reduce biodiversity and propose solutions, such as reforestation or waste reduction, to protect natural habitats.
- **Objective 2.3:** Students will use digital technologies to track and analyse environmental data, such as energy consumption, water usage, or pollution levels, and use this data to make informed decisions on improving sustainability, in alignment with SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production).
  Example: Students use a digital tool or spreadsheet to monitor the energy consumption of their school over a week. They will analyse the data and propose ways to reduce energy use, such as turning off lights when not in use or switching to energy-efficient appliances.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate both digital and non-digital technologies to create a sustainable product or system that promotes environmental awareness, such as a green energy system, a waste management solution, or a system to monitor local biodiversity, contributing to SDG 7 (Affordable and Clean Energy) and SDG 15 (Life on Land).
  Example: Students collaborate to design a small-scale wind turbine or solar panel system for a school project. They will use digital tools to plan and simulate the system and non-digital materials to create the prototype. The system will be designed to educate others about renewable energy and its importance in addressing climate change.
- **Objective 3.2:** Students will use technology creatively to design campaigns or educational tools that raise awareness about environmental stewardship, such as through videos, posters, apps, or interactive websites, supporting SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production).
  Example: Students design a multimedia campaign to raise awareness about water conservation. This could include creating a video, designing posters, and building an interactive website that educates their peers on how to save water and why it is important for environmental sustainability.

Environmental Stewardship

(SUS3)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable products that contribute to environmental stewardship, such as energy-efficient devices, products made from recycled materials, or systems that reduce waste, in alignment with SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students design a product such as a compost bin or a recycling station for their school. They will focus on using sustainable, locally sourced materials and demonstrate how the product helps reduce waste and supports sustainable resource management.
- **Objective 1.2:** Students will explore and design solutions for protecting and enhancing biodiversity through sustainable product design, such as creating wildlife-friendly gardens, eco-friendly farming tools, or green building solutions, supporting SDG 15 (Life on Land) and SDG 14 (Life Below Water).
  Example: Students create a product like a birdhouse or an insect hotel using recycled materials. They will design it to provide shelter for local wildlife and explain how it contributes to preserving biodiversity in their local environment.
- **Objective 1.3:** Students will evaluate the environmental impact of their designs, considering factors such as resource use, lifecycle, and sustainability, contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: After testing their designs, such as an eco-friendly shopping bag made from repurposed fabric, students assess how the product helps reduce plastic waste and its long-term environmental impact. They will propose improvements to make the product even more sustainable.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and coding to develop digital solutions that support environmental stewardship, such as apps or systems that help monitor energy consumption, reduce waste, or track environmental data,

supporting SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
Example: Students code an app that tracks water usage at school and suggests ways to reduce consumption, such as using low-flow taps or recycling water for irrigation. The app would allow users to monitor their consumption and set goals for reducing waste.

- **Objective 2.2:** Students will design and create digital models or simulations to understand and visualise the impact of human activities on the environment, such as climate change, pollution, or deforestation, in alignment with SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students create a digital simulation that models the impact of deforestation on local wildlife and ecosystems. They will explore how different environmental factors, such as tree removal and habitat destruction, affect biodiversity and propose solutions for mitigating these impacts.
- **Objective 2.3:** Students will use digital systems to collect and analyse environmental data, such as air quality, water levels, or biodiversity indicators, and use this data to inform environmental stewardship actions, contributing to SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land).
  Example: Students use sensors or apps to track the quality of water in a local river or pond. They will analyse the data collected and suggest practical steps for improving water quality, such as reducing pollution or supporting local water conservation projects.

3. General Integration Across Technologies

- **Objective 3.1:** Students will combine both digital and non-digital technologies to create practical solutions for environmental stewardship, such as designing a sustainable energy system, waste management solution, or ecosystem restoration project, in alignment with SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
  Example: Students design a sustainable garden system that uses both solar-powered irrigation and organic farming practices. They will use digital tools to plan the layout and monitor system efficiency, while using non-digital materials for the construction and planting of the garden.
- **Objective 3.2:** Students will work collaboratively to develop innovative solutions for preserving and enhancing ecosystems, such as designing community-based projects for biodiversity conservation, waste reduction, or renewable energy use, supporting SDG 15 (Life on Land) and SDG 13 (Climate Action).
  Example: Students collaborate to design a waste reduction project for their school or local community, incorporating digital tools for tracking waste and non-digital solutions like composting, recycling bins, and educational campaigns on environmental stewardship.

Waste Management

(SUS4)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create products that help reduce waste, such as upcycled items, sustainable packaging, or products for recycling, in line with SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students design a reusable shopping bag made from repurposed materials, such as old t-shirts or fabric scraps. They will assess how their design helps reduce plastic waste and present their solutions for sustainable waste management.
- **Objective 1.2:** Students will explore the process of designing a waste management system that encourages recycling, composting, or reducing landfill waste, focusing on sustainability and environmental impact, supporting SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students design a waste separation system for their school or home, where organic waste, recyclables, and general waste are sorted into different bins. They will consider how this system promotes recycling and reduces landfill use, explaining the benefits of each type of waste management.
- **Objective 1.3:** Students will evaluate the effectiveness of their waste-reducing designs and suggest improvements, focusing on reducing the environmental footprint and supporting sustainable practices, contributing to SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land).
  Example: After testing their composting system, students evaluate its effectiveness in managing food waste. They will propose improvements to the system, such as using compost for garden beds or improving waste separation, and reflect on how these changes can support biodiversity and soil health.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking to create digital tools or systems that monitor waste production or promote recycling and waste reduction, supporting SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students design a simple app or system that tracks the amount of waste generated in their school or home and suggests ways to reduce it. The app could provide information on recycling, composting, and waste management practices, helping users make more sustainable choices.
- **Objective 2.2:** Students will develop algorithms or digital simulations to model waste management processes, such as the impact of recycling or composting on reducing landfill, in alignment with SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students code a digital simulation that models the environmental impact of different waste management strategies, such as landfill, recycling, and composting. They can experiment with changing variables like population size and waste production to see how effective different strategies are in reducing waste and pollution.
- **Objective 2.3:** Students will use digital tools to create a data-driven waste audit, analysing waste generation patterns and providing recommendations for improving waste management, supporting SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students conduct a waste audit at their school or home and use digital tools (such as spreadsheets or apps) to track the amount and type of waste produced over a week. They will analyse the data to identify areas where waste can be reduced and propose solutions to improve waste management practices.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate digital and non-digital technologies to design a community-wide waste management solution, such as a recycling and composting system that reduces waste and promotes sustainability, contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students collaborate to design a waste management solution for their school or local community, combining digital tools (for tracking and reporting waste) with physical systems (such as compost bins and recycling stations). They will evaluate the effectiveness of their system in reducing waste and improving sustainability.
- **Objective 3.2:** Students will use technology creatively to raise awareness about waste reduction and the importance of recycling, creating campaigns or educational materials that inform others about sustainable waste management practices, supporting SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students create a digital campaign, such as a video or social media posts, that educates others on the benefits of reducing, reusing, and recycling. They will use digital tools to create engaging content that encourages their peers to adopt sustainable waste management practices.

Energy Conservation **(SUS5)**

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create energy-efficient products or systems that promote energy conservation, such as solar-powered devices, energy-saving appliances, or insulation solutions, contributing to SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
  Example: Students design a solar-powered lamp or charger using both digital and non-digital materials. They will assess how their design reduces energy consumption and contributes to the use of renewable energy sources, discussing the environmental benefits of solar power in reducing carbon emissions.
- **Objective 1.2:** Students will explore and create sustainable solutions for reducing energy waste in homes, schools, or communities, using design thinking to develop products that help conserve energy, such as smart thermostats, energy-efficient lighting, or heat recovery systems, in alignment with SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).
  Example: Students create a model of an energy-efficient building that uses smart technology to monitor and regulate energy use, such as automated lighting or heating systems. They will present their designs and explain how these technologies reduce energy consumption and support a sustainable lifestyle.
- **Objective 1.3:** Students will evaluate the environmental impact of their designs and suggest improvements to make their energy conservation solutions more effective, considering factors such as resource use, lifecycle, and sustainability, contributing to SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: After designing a product like a wind-powered fan or a water-saving irrigation system, students evaluate how it works in real-life conditions, looking at energy use, the materials involved, and its impact on reducing environmental degradation.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and coding to develop a digital solution that helps monitor and reduce energy consumption, such as an app that tracks energy usage or provides tips on saving energy, supporting SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
  Example: Students code an app that allows users to track their home energy usage (lighting, heating, electronics) and provides suggestions for reducing energy consumption based on the data, promoting energy-saving behaviours at home and school.
- **Objective 2.2:** Students will design and create digital tools to model the effects of different energy-saving strategies, such as the implementation of renewable energy sources, energy-efficient appliances, or improved insulation, in alignment with SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
  Example: Students use simulation software to model the energy consumption of a school or community with and without renewable energy sources (e.g., solar panels). They will analyse the impact of energy-saving measures and present the data on energy savings and cost reductions.
- **Objective 2.3:** Students will explore how digital technologies can support the transition to green energy, developing systems that monitor renewable energy production (e.g., solar, wind), manage energy storage, and optimise usage, supporting SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).
  Example: Students design a digital platform that monitors solar panel performance in real-time, adjusting energy distribution between storage and use. They will explore how this system can be used in schools or communities to manage energy resources effectively.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate both digital and non-digital technologies to create innovative energy conservation solutions, such as designing a community-scale green energy system that uses renewable resources for power generation, in alignment with SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
  Example: Students collaborate to design a sustainable energy model for their school or local community, using solar power, wind energy, and energy-efficient technologies. They will use digital tools to plan and model the system, while also creating physical prototypes of renewable energy components (e.g., small solar panels or wind turbines).
- **Objective 3.2:** Students will use both design thinking and digital technologies to address climate change through energy conservation, creating projects that reduce carbon footprints and promote the use of green energies, contributing to SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).
  Example: Students develop a digital solution (such as an app or website) that promotes energy-saving habits in daily life, such as turning off lights when not in use, using public transport, or adopting renewable energy. The project could include

gamification elements to encourage users to track and reduce their energy consumption.

Biodiversity and Ecosystems **(SUS6)**

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable products or systems that support biodiversity conservation, such as wildlife habitats, pollinator-friendly gardens, or eco-friendly packaging, in line with SDG 15 (Life on Land) and SDG 12 (Responsible Consumption and Production).
  Example: Students design a small-scale habitat for local wildlife, such as a birdhouse, insect hotel, or plant pot using recyclable materials. They will consider how their product supports local biodiversity, provides shelter for animals, and enhances ecosystems.
- **Objective 1.2:** Students will develop solutions to problems that impact ecosystems, such as habitat destruction, pollution, or invasive species, using both digital and non-digital materials, in alignment with SDG 15 (Life on Land) and SDG 13 (Climate Action).
  Example: Students create a model or prototype of an ecosystem restoration project, such as a riverbank stabilization system to prevent erosion or a plant-based solution to reduce pollution in urban areas. They will assess how their design can help restore or maintain healthy ecosystems.
- **Objective 1.3:** Students will evaluate their designs based on their impact on local biodiversity, considering the sustainability and environmental benefits of their products or systems, contributing to SDG 15 (Life on Land) and SDG 6 (Clean Water and Sanitation).
  Example: After designing and building an outdoor composting system or a rainwater collection system, students assess how their design helps improve soil health, reduces waste, or supports water conservation, fostering a deeper understanding of how human actions can affect ecosystems.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and digital systems to model ecosystems and their interactions, helping to understand the role of biodiversity in maintaining healthy environments, supporting SDG 15 (Life on Land) and SDG 13 (Climate Action).
  Example: Students code a simple simulation that models the interactions within a local ecosystem, such as a forest or wetland, showing how different species depend on each other. They can experiment with changes in variables (e.g., removal of a species, pollution) to see how these affect the ecosystem's health and biodiversity.
- **Objective 2.2:** Students will develop a digital tool that helps track and monitor local biodiversity, such as a wildlife observation app or a system for recording plant species, contributing to SDG 15 (Life on Land) and SDG 13 (Climate Action).
  Example: Students design an app or digital database where users can log and track local plant or animal species, including endangered species, and monitor changes over time. The tool could also suggest actions for protecting and conserving these species, fostering global responsibility and environmental stewardship.
- **Objective 2.3:** Students will create a digital representation of how human activities impact ecosystems, using coding and algorithms to model the effects of pollution, deforestation, or overfishing on biodiversity, supporting SDG 14 (Life Below Water) and SDG 15 (Life on Land).
  Example: Students design an interactive website or app that shows how different human activities impact marine ecosystems. The app could simulate the effects of oil spills, plastic pollution, or coral bleaching on marine life, and suggest actions for mitigating these impacts.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate both digital and non-digital technologies to create practical solutions for protecting and enhancing ecosystems, focusing on biodiversity conservation, sustainable resource use, and habitat restoration, in line with SDG 15 (Life on Land) and SDG 13 (Climate Action).
  Example: Students collaborate on designing an eco-friendly product such as a sustainable gardening kit for planting native species that support local biodiversity. They will use digital tools to map areas where these plants can be introduced, and present the design with a focus on its impact on the local ecosystem.
- **Objective 3.2:** Students will work on projects that combine outdoor learning and technology to monitor and protect local ecosystems, promoting biodiversity awareness and environmental conservation, in alignment with SDG 15 (Life on Land) and SDG 14 (Life Below Water).
  Example: Students participate in a citizen science project where they use sensors or cameras to track local wildlife populations or monitor water quality in nearby rivers or coastal areas. They will analyse the data collected through digital systems and present their findings, recommending actions to protect local biodiversity.

Climate Change and Adaptation

(SUS7)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create products that address the challenges of climate change and adaptation, such as products for reducing energy consumption, conserving water, or managing waste, in alignment with SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production).
  Example: Students design a water-saving device, such as a rainwater collection system, using both digital and non-digital tools. They will present their designs, highlighting how their product can help adapt to changing climates by conserving water resources in an Australian context.
- **Objective 1.2:** Students will apply sustainable design principles to create solutions that help mitigate the effects of climate change, such as using renewable energy or reducing carbon footprints, in line with SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action).
  Example: Students create a solar-powered lantern or device that can be used in areas affected by power outages due to extreme weather events. They will evaluate how their design uses renewable energy to reduce dependence on fossil fuels and reduce the impact of climate change.
- **Objective 1.3:** Students will assess the environmental impact of their designs, considering factors such as materials, production processes, and the product's lifecycle, contributing to SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land).

Example: After designing a product such as a sustainable food container or an eco-friendly building material, students will evaluate how their design helps reduce waste and supports the environment by using recyclable materials, energy-efficient production methods, and long-lasting design.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and coding to create digital solutions that help monitor or predict climate change impacts, such as modelling temperature increases, water usage, or energy consumption, supporting SDG 13 (Climate Action) and SDG 6 (Clean Water and Sanitation).
  Example: Students code a simple digital model that predicts water usage in drought-affected regions based on various inputs such as population growth, weather patterns, and water-saving measures. This model can help local communities adapt to water shortages and plan for more efficient water use.
- **Objective 2.2:** Students will develop digital tools or simulations to model climate-related issues, such as sea-level rise, changes in ecosystems, or the impact of extreme weather events on local communities, in alignment with SDG 13 (Climate Action) and SDG 14 (Life Below Water).
  Example: Students design a digital simulation of an Australian coastal town and model the effects of rising sea levels. They will adjust variables like coastal defences or natural barriers and assess how these factors can help communities adapt to climate change.
- **Objective 2.3:** Students will use digital systems to collect and analyse environmental data, such as temperature, air quality, or biodiversity indicators, to inform decisions on climate adaptation and resilience, contributing to SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students use sensors or digital tools to measure local air quality or temperature in their school environment and use the data to suggest ways the school could adapt to heatwaves or reduce its carbon footprint, such as through better insulation or more green spaces.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate both digital and non-digital technologies to create practical solutions for climate adaptation, focusing on sustainable energy use, waste management, and environmental protection, in line with SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).
  Example: Students collaborate to design a model of a sustainable community that uses solar energy, rainwater harvesting, and waste-to-energy systems. They will present a digital simulation of the community and use non-digital prototypes to demonstrate how their design can help mitigate the effects of climate change.

- **Objective 3.2:** Students will work collaboratively to design and develop products or systems that contribute to climate change adaptation, such as building resilient infrastructure or creating disaster-resistant buildings, in alignment with SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action).
  Example: Students design a resilient shelter or community space that can withstand extreme weather events like floods or bushfires, using sustainable materials and energy-efficient designs. They will present their designs, highlighting how their solutions can improve climate resilience in local communities.

Food and Agriculture

(SUS8)

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable agricultural, aquaculture, or agroforestry systems using both digital and non-digital materials that address environmental and food security issues, supporting SDG 2 (Zero Hunger) and SDG 15 (Life on Land).
  Example: Students design a small-scale aquaponics system, using a combination of digital tools for planning and non-digital materials like tanks, pumps, and plants. The project could demonstrate how aquaculture and agriculture can be integrated for sustainable food production.
- **Objective 1.2:** Students will apply sustainable practices in designing solutions for food production, such as designing an agroforestry model that integrates tree planting with crops to improve soil health and biodiversity, in alignment with SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students create a prototype of an agroforestry system that involves planting fruit trees alongside vegetables. They will explain how this design helps to protect the soil, improve biodiversity, and reduce the impact of climate change, such as by preventing erosion and enhancing water retention.
- **Objective 1.3:** Students will evaluate and improve their designs based on their environmental and societal impacts, considering factors such as water usage, energy efficiency, and support for biodiversity, contributing to SDG 12 (Responsible Consumption and Production) and SDG 6 (Clean Water and Sanitation).

Example: After testing their designs, such as an aquaculture pond or a community garden, students will assess how water, energy, and materials are used. They will identify areas for improvement, like incorporating renewable energy for water pumps or reducing water wastage, and present their solutions to the class.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and coding to develop digital tools or systems that help monitor and manage agricultural or aquaculture practices for sustainability, in line with SDG 2 (Zero Hunger) and SDG 6 (Clean Water and Sanitation).
  Example: Students design a digital system that monitors and tracks the water quality in an aquaculture system. The system could use sensors to measure pH, temperature, and oxygen levels, sending real-time data to an app or dashboard that helps farmers maintain optimal conditions for fish farming.
- **Objective 2.2:** Students will apply algorithms and coding to create simulations or models that demonstrate sustainable food production practices, such as predicting crop yields or fish growth in aquaculture, supporting SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students develop a simple digital simulation of a farm or fish tank that uses data inputs (e.g., soil quality, water temperature) to predict growth patterns for crops or fish. They will experiment with the simulation to see how changes in conditions affect sustainability outcomes, such as crop yield or fish health.
- **Objective 2.3:** Students will explore how digital systems can support decision-making in sustainable farming practices, such as tracking resources or optimizing production techniques, contributing to SDG 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production).
  Example: Students create a digital tool (such as a spreadsheet or app) that helps track resources used in sustainable farming, such as water, compost, or fertilisers, to ensure the most efficient use of inputs and minimize waste.

3. General Integration Across Technologies

- **Objective 3.1:** Students will work collaboratively to design and develop a sustainable farming system or aquaculture model that integrates both digital and physical technologies to address food security and environmental sustainability challenges, supporting SDG 2 (Zero Hunger) and SDG 15 (Life on Land).
  Example: Students collaborate to create a small farm that uses a combination of aquaponics, agroforestry, and renewable energy. They will use both non-digital materials for the physical components and digital systems for monitoring and managing resources, such as a weather station or soil moisture sensor.
- **Objective 3.2:** Students will use technology creatively to design solutions that improve the sustainability of food systems,

such as designing an eco-friendly packaging system for food or creating a digital platform for local food distribution, contributing to SDG 12 (Responsible Consumption and Production) and SDG 2 (Zero Hunger).
Example: Students design a food delivery system that connects local farmers with consumers while minimizing environmental impact. They could create a website or app that helps users find local, sustainably produced food and reduces food waste through smart planning and delivery systems.

Water Conservation

(SUS9)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable water conservation products using both digital and non-digital materials, fostering innovation in solving water scarcity issues, in line with SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production).
  Example: Students design a rainwater harvesting system for a school or community garden, using recycled materials and creating a simple digital plan or diagram to represent the system. They will evaluate how this system can help conserve water and reduce dependency on mains water.
- **Objective 1.2:** Students will apply design thinking to create products that encourage water conservation in everyday life, considering the materials, processes, and environmental impacts of their designs, supporting SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action).
  Example: Students create a water-efficient irrigation system for a small vegetable garden. The system could use timers, moisture sensors, or a drip irrigation model to reduce water wastage. Students will present their designs, explaining how they help conserve water and reduce environmental footprints.
- **Objective 1.3:** Students will evaluate and improve their designs based on feedback and reflect on how their solutions can

be scaled up to larger communities or regions, contributing to SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land).
Example: After testing their water-saving products (e.g., water-efficient showerheads or rainwater collection systems), students will evaluate how these could be implemented in homes or schools, considering factors like cost, efficiency, and accessibility.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking to develop a digital solution that promotes water conservation, such as a system for tracking water usage in a school or home, supporting SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production).
  Example: Students design a simple app or spreadsheet that tracks daily water usage in their school. The app can offer suggestions on how to reduce water consumption, such as turning off taps or using less water for cleaning.
- **Objective 2.2:** Students will learn coding and algorithms to create a simulation or digital model of a sustainable water system, demonstrating how different methods of water conservation impact water consumption and environmental health, in alignment with SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action).
  Example: Students code a digital simulation that models the effects of different water-saving strategies, such as installing low-flow faucets or using rainwater for irrigation. They can adjust variables like population size, rainfall, and water use to see how these strategies can impact overall water conservation.
- **Objective 2.3:** Students will use digital tools to collect and analyse data on water consumption, such as monitoring water usage in various environments (e.g., home, school, park) and presenting their findings to inform conservation decisions, supporting SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action).
  Example: Students use digital sensors or smart meters to measure water usage in different areas of the school and create visual data representations (e.g., graphs or charts) showing where water is being used most. They can analyse this data to propose water-saving solutions for the school.

3. General Integration Across Technologies

- **Objective 3.1:** Students will combine both digital and non-digital technologies to develop practical solutions for water conservation, encouraging critical thinking and innovation in managing water resources, contributing to SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action).
  Example: Students design a community water conservation project that integrates a digital app (for tracking usage and setting reminders) with a physical system (e.g., rainwater collection or greywater recycling). They will plan, design, and create a prototype of the system, explaining how each part contributes to water conservation.

- **Objective 3.2:** Students will use technologies creatively to raise awareness about water conservation, designing campaigns or projects that encourage their peers or community members to adopt water-saving practices, supporting SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production).
  Example: Students create a digital presentation or website that educates the school about water-saving techniques, such as reducing water wastage in bathrooms or implementing rainwater systems. They could use videos, interactive tools, and infographics to engage their audience in adopting sustainable water practices.

Sustainable Transport and Urban Planning

(SUS10)

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable transport solutions using both digital and non-digital materials that support environmentally friendly urban planning, contributing to SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action).
  Example: Students design a model of a sustainable city, including transport systems like electric buses, cycling lanes, and pedestrian paths. They will present their design and discuss how each element reduces carbon emissions, promotes green spaces, and supports accessibility.
- **Objective 1.2:** Students will explore and develop transport solutions that reduce environmental impact and increase urban mobility, using sustainable materials and eco-friendly designs, in alignment with SDG 11 (Sustainable Cities and Communities) and SDG 9 (Industry, Innovation, and Infrastructure).
  Example: Students create a prototype of a sustainable transport product, such as a solar-powered vehicle or a bike-sharing station. They will evaluate the environmental benefits and discuss how their design can be implemented in real urban settings to reduce congestion and pollution.
- **Objective 1.3:** Students will evaluate the impact of their transport designs on biodiversity and urban ecosystems,

considering how urban planning and transportation systems can support or hinder local wildlife and green spaces, supporting SDG 15 (Life on Land) and SDG 11 (Sustainable Cities and Communities).
Example: Students design a green transportation hub, incorporating green roofs, bike storage, and public transport links. They will assess how their design benefits local biodiversity by incorporating sustainable materials, reducing pollution, and providing green spaces for wildlife.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use computational thinking and coding to design a digital solution that optimises urban transport systems for sustainability, reducing carbon emissions and improving efficiency, in alignment with SDG 13 (Climate Action) and SDG 9 (Industry, Innovation, and Infrastructure).
  Example: Students create a simple program that calculates the most energy-efficient transport routes in a city, factoring in elements like distance, energy usage, and pollution. The program can be used to help local governments optimise transport networks.
- **Objective 2.2:** Students will develop a digital model or simulation of a sustainable city, using algorithms and digital systems to analyse traffic flow, energy consumption, and emissions, contributing to SDG 11 (Sustainable Cities and Communities) and SDG 7 (Affordable and Clean Energy).
  Example: Students use digital modelling software to design a city grid that incorporates sustainable transport options such as electric buses and bike paths. They will analyse how these systems impact the overall sustainability of the city, including energy usage and carbon emissions.
- **Objective 2.3:** Students will explore how digital systems can be used to monitor and improve sustainable transport systems in urban areas, such as tracking public transport usage, air quality, or traffic congestion, in line with SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action).
  Example: Students design a simple app or website that tracks the use of sustainable transport options in their local area, such as public transport or cycling, and provides feedback to encourage more people to use eco-friendly transportation.

3. General Integration Across Technologies

- **Objective 3.1:** Students will work collaboratively to design and develop a transport or urban planning solution that integrates both digital and physical elements, focusing on sustainability, efficiency, and environmental impact, supporting SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action).
  Example: Students collaborate to design a smart public transport system that uses sensors to track passenger numbers and adjust services accordingly, minimising waiting times and energy use. They will use both digital tools and

non-digital prototypes to present their solution.

- **Objective 3.2:** Students will use technology creatively to design solutions for urban sustainability, incorporating sustainable transport, green spaces, and eco-friendly infrastructure, contributing to SDG 11 (Sustainable Cities and Communities) and SDG 15 (Life on Land).
  Example: Students design a model of a sustainable neighbourhood that incorporates a solar-powered transport system, rainwater harvesting, green building materials, and biodiversity-friendly landscaping. They will present their ideas using a combination of digital simulations and physical models to demonstrate how their design supports environmental sustainability.

Citizenship / Global Responsibility and Sustainable Development **(SUS11)**

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable products that address global challenges such as climate change, waste reduction, or sustainable consumption, promoting global responsibility and contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).
  Example: Students design a product such as a reusable shopping bag or a compost bin using both digital and non-digital materials. They will present their design with a focus on how their product can reduce waste and promote sustainability in their community.
- **Objective 1.2:** Students will explore and develop solutions for local and global issues, using design thinking to create products that support biodiversity conservation or sustainable urban planning, in alignment with SDG 15 (Life on Land) and SDG 11 (Sustainable Cities and Communities).
  Example: Students design a sustainable product like a vertical garden or wildlife habitat using recycled materials. They will research the importance of biodiversity in urban areas and how their product can help support local wildlife.
- **Objective 1.3:** Students will evaluate their designs in terms of global responsibility, reflecting on how their solutions contribute to environmental sustainability, reduce inequalities, and promote social justice, in line with SDG 16 (Peace,

Justice, and Strong Institutions) and SDG 10 (Reduced Inequalities).
Example: After testing their products, students evaluate how their designs could be used in different communities around the world, considering factors like resource use, accessibility, and environmental impact. They will suggest improvements that make their designs more inclusive and sustainable.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will develop a digital solution that promotes global responsibility, such as an app or website that educates others about sustainable living practices or global issues like climate change or fair trade, supporting SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production).
  Example: Students design an app that encourages users to track their carbon footprint and suggests ways to reduce it, such as by using renewable energy or consuming less plastic. The app will include educational resources and share global best practices for sustainable living.
- **Objective 2.2:** Students will learn to code and use computational thinking to solve real-world problems related to environmental or social issues, fostering global responsibility and innovation, aligned with SDG 6 (Clean Water and Sanitation) and SDG 14 (Life Below Water).
  Example: Students create a program that monitors water usage in their school or community and provides recommendations for water-saving measures. The project will highlight the importance of conserving water resources and the role of technology in global sustainability efforts.
- **Objective 2.3:** Students will use digital systems to analyse and communicate data about global issues, such as deforestation or pollution, and develop algorithms to suggest solutions, in alignment with SDG 15 (Life on Land) and SDG 14 (Life Below Water).
  Example: Students use digital tools to gather and analyse data about local wildlife populations or pollution levels in nearby rivers. They will create visual representations of this data and use computational models to suggest actions that can improve environmental health.

3. General Integration Across Technologies

- **Objective 3.1:** Students will engage in a project that combines both design and digital technologies to create solutions for global issues, fostering problem-solving skills and encouraging creative innovation that supports sustainable development goals, in line with SDG 17 (Partnerships for the Goals) and SDG 13 (Climate Action).
  Example: Students collaborate to design a digital solution, such as an online platform or game, that teaches others about the impact of plastic waste on marine life. The platform could include interactive features that allow users to see how reducing plastic waste can benefit oceans and biodiversity.

- **Objective 3.2:** Students will develop practical skills in designing sustainable systems using both digital and non-digital methods, exploring how these technologies can support global citizenship and environmental conservation, in alignment with SDG 11 (Sustainable Cities and Communities) and SDG 6 (Clean Water and Sanitation).
  Example: Students design a digital model of a sustainable city that incorporates green spaces, renewable energy sources, and efficient waste management systems. They will learn to use design software to visualise their ideas and present them to the class, discussing how these innovations can support sustainable urban development.

Outdoor Learning and Connection to Nature **(SUS12)**

1. Design and Technologies

Content Area: Introduction to Designing and Making Products Using Digital and Non-Digital Materials. This Includes Developing Solutions for Problems and Understanding Processes of Designing, Planning, and Production.

- **Objective 1.1:** Students will design and create sustainable products using both digital and non-digital materials that solve environmental problems, promoting awareness of biodiversity and the importance of conservation, in alignment with SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land).
  Example: Students design and build a product, such as a water filtration system or a rainwater collection system, using simple materials. The project could include a digital presentation or model that explains how their product supports sustainability by conserving water or promoting biodiversity.
- **Objective 1.2:** Students will apply knowledge of sustainable materials to design and construct a product that addresses an environmental issue, such as waste reduction or habitat preservation, contributing to SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students design a sustainable habitat for local wildlife, using recycled materials. This could be a birdhouse, insect hotel, or plant pot made from biodegradable materials, with a focus on educating peers about biodiversity and eco-friendly practices.
- **Objective 1.3:** Students will evaluate and improve designs based on feedback and reflection on the environmental impact, incorporating principles of sustainability and environmental responsibility, in line with SDG 12 (Responsible Consumption and Production).

Example: After testing their product, students evaluate its functionality and environmental impact. For instance, they might redesign a reusable water bottle holder to make it more durable and eco-friendly, reflecting on how to reduce waste and environmental harm.

2. Digital Technologies

Content Area: Focus on Computational Thinking, Understanding Algorithms, Coding, and Digital Systems.

- **Objective 2.1:** Students will use digital technologies to design a project that promotes environmental sustainability, such as creating an app or website that educates others about conservation or encourages eco-friendly behaviours, supporting SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students design a basic app or website that helps users track their daily water usage or carbon footprint. The app could offer tips on reducing energy consumption or suggest sustainable practices, fostering environmental stewardship through digital engagement.
- **Objective 2.2:** Students will learn coding and computational thinking to develop algorithms that solve real-world environmental problems, focusing on areas such as waste reduction, resource management, or energy efficiency, in alignment with SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).
  Example: Students code a simple program that tracks the energy consumption of household appliances and suggests ways to reduce energy use, helping to raise awareness about sustainable living and energy conservation.
- **Objective 2.3:** Students will explore digital systems and sensors to collect data from outdoor environments and analyse it to inform decisions about sustainability, promoting SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land).
  Example: Students use sensors or digital tools to measure temperature, humidity, or soil quality in a school garden or outdoor space. They can analyse the data to identify how environmental factors impact plant growth and biodiversity, learning how digital tools can support sustainable agricultural practices.

3. General Integration Across Technologies

- **Objective 3.1:** Students will integrate design thinking and digital technologies to develop practical solutions for environmental sustainability, combining physical and digital tools to create functional, eco-friendly products, contributing to SDG 13 (Climate Action) and SDG 15 (Life on Land).
  Example: Students use both traditional crafting methods and digital technologies (such as 3D printing or coding) to design and prototype a sustainable urban garden system that uses minimal water and space. The project could involve creating a digital model of the garden and demonstrating how it can be implemented in small urban areas to encourage green spaces.
- **Objective 3.2:** Students will participate in collaborative projects that apply outdoor learning and technological

innovation to environmental problems, developing problem-solving skills and fostering a deeper connection to nature, supporting SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action). *Example:* Students collaborate on a project to design a sustainable waste management system for their school or community, combining outdoor learning (e.g., composting) with digital technologies (e.g., creating a tracking system for waste reduction). This project encourages them to apply their knowledge of sustainability in both the digital and physical world.