PROMISED

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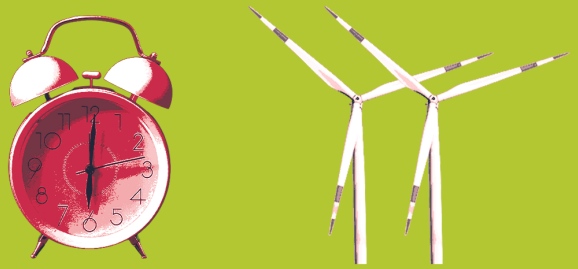
TESS THE TIME TRAVELLER: TIME HACKERS



UNIVERSIDAD DE BURGOS

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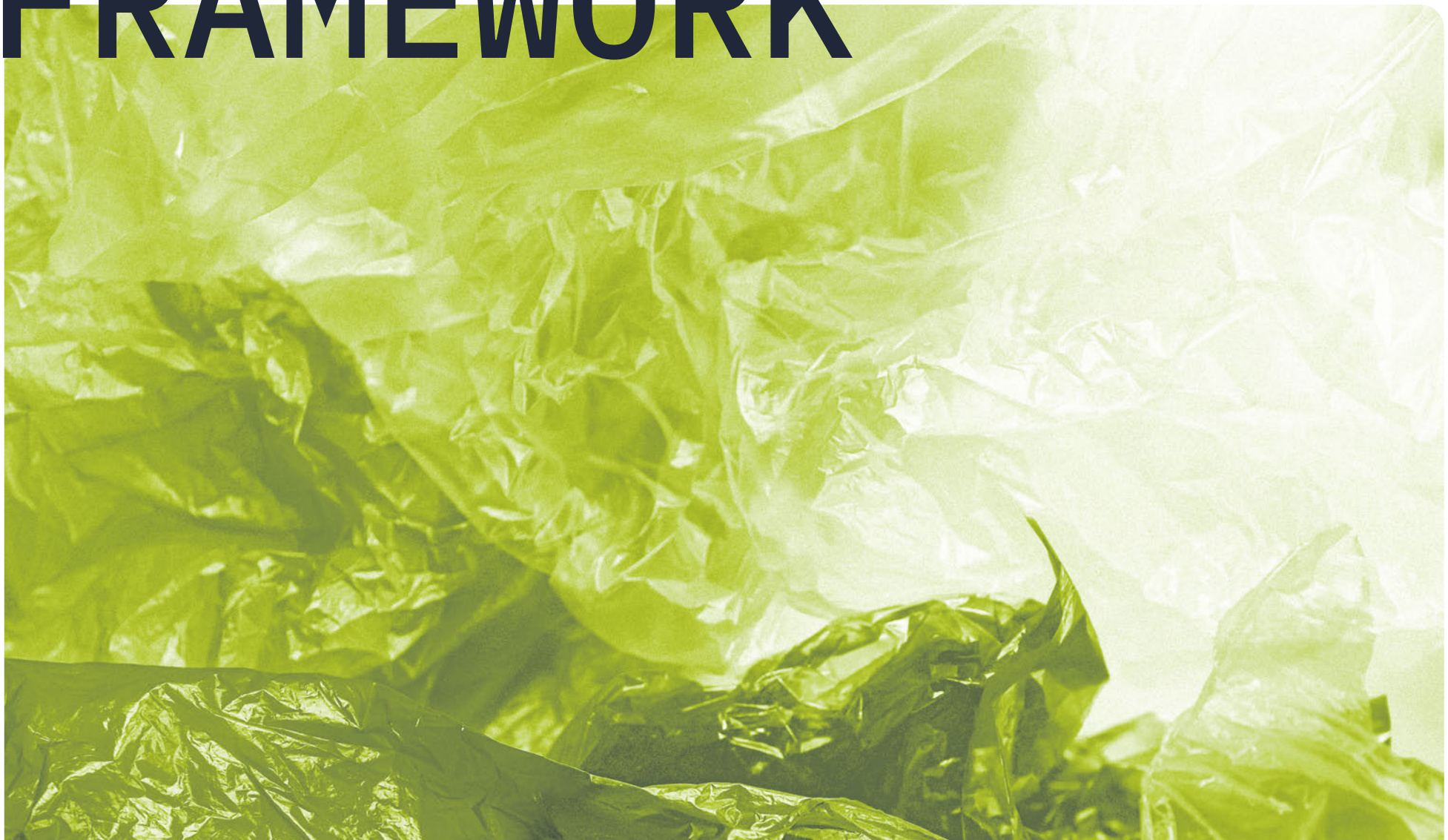
THEORETICAL FRAMEWORK



WHAT IS PROMISED?

PROMISED *(**PROM**oting twin transition through Integrated STEAM in bilingual Secondary **ED**ucation)* is a European project funded by Erasmus+ (2023-1-ES01-KA220-SCH-000157221) that aims to transform teaching practices in secondary education by integrating:

- ***STEAM education*** (Science, Technology, Engineering, Arts and Mathematics),
- ***CLIL*** (Content and Language Integrated Learning),
- and real-world challenges related to the ***twin transition***:
  - ***Green transition*** (sustainability, environmental awareness),
  - ***Digital transition*** (technological innovation, digital literacy).

The PROMISED framework, developed by Universidad de Burgos (Spain), Universidad de Granada (Spain), CFIE Burgos (Spain), Matej Bel University (Slovakia), and Howest University of Applied Sciences (Belgium), supports teachers in designing learning experiences that are interdisciplinary, plurilingual and competence-based, aligning with the priorities of the European Green Deal and the Digital Education Action Plan.

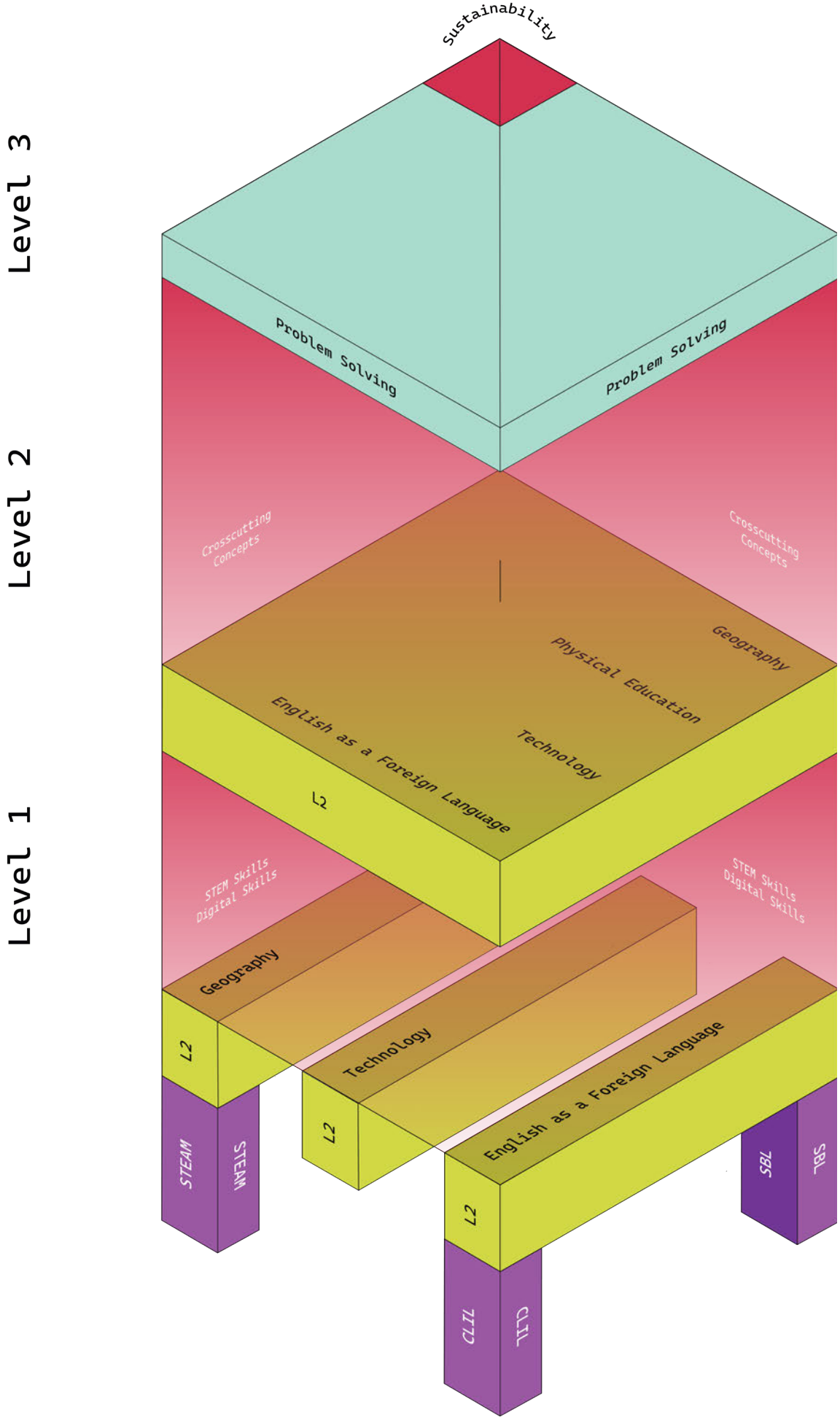
MAIN GOALS OF PROMISED

a. ***To support the development of students' key competences*** related to sustainability, digital literacy, scientific thinking and linguistic skills.
b. ***To encourage the use of interdisciplinary, project-based and inquiry-based approaches*** that make learning more engaging and meaningful.
c. ***To promote the use of a foreign language (L2***) as a tool for learning across content areas.
d. ***To foster teacher collaboration*** through co-design, co-implementation and co-assessment of learning sequences.

HOW DOES THE PROMISED FRAMEWORK WORK?

The PROMISED framework is designed to be flexible and adaptable. It offers three levels of implementation, allowing schools to progressively integrate bilingual, interdisciplinary teaching, starting from a single subject and moving towards fully collaborative, cross-curricular projects. Each level involves the use of a foreign language, as a vehicle for learning.

a. ***Level 1: One subject + L2:*** development of ***STEAM and digital skills*** within a single subject taught through a foreign language (L2).
b. L***evel 2: Two subjects + L2:*** connection of two or more subjects through ***cross-cutting concepts***, maintaining disciplinary boundaries while fostering curricular integration.
c. ***Level 3: Fully integrated project + L2:*** holistic learning through ***fully integrated projects*** centred on ***sustainability skills*** and complex problem solving.


Level 3
Level 2
Level 1
Sustainability
Problem Solving
Problem Solving
Crosscutting Concepts
Crosscutting Concepts
Geography
Physical Education
Technology
English as a Foreign Language
L2
STEM Skills Digital Skills
STEM Skills Digital Skills
Geography
L2
STEAM
STEAM
Technology
L2
SBL
SBL
English as a Foreign Language
L2
CLIL
CLIL

METHODOLOGICAL FRAMEWORK

At the heart of the PROMISED framework lies a simple but powerful idea: students learn best when they work on real problems that matter. Each unit starts from a challenge that feels relevant, meaningful and connected to the world around them. These are not imaginary or abstract topics, they are based on real-life situations, such as energy poverty, pollution, or the loss of biodiversity. When students feel that what they are doing in the classroom has a purpose beyond school, they become more engaged, more curious, and more motivated to learn.

All these challenges are explored through the lens of what we call the Twin Transition, the two big changes shaping our societies today:

- the green transition, focused on sustainability and environmental responsibility, and aligned with the United Nations Sustainable Development Goals (SDGs);
- the digital transition, which brings technology, data and innovation into everyday life, and involves the development of digital skills in a functional and responsible way.

These two themes are always present in PROMISED units, helping students understand how their learning connects to the bigger picture. Whether they are designing a simple prototype, reading a story, or discussing a global issue, they are also thinking about how to make the world more sustainable and how to use technology in smart, ethical ways.

To make this kind of learning possible, PROMISED brings together three main teaching approaches that work hand in hand in every unit:

a. STEAM: this stands for Science (Natural and Social), Technology, Engineering, the Arts and Mathematics. In our framework, we consider STEAM as an integrated educational approach that connects these subjects instead of teaching them separately. In PROMISED, students use ideas and skills from different areas to explore real problems and find creative solutions. The goal is to help them see how knowledge works together in real life.

b. CLIL (Content and Language Integrated Learning): CLIL means teaching subject content through a foreign language. The goal is not just to learn the language, but to use it as a tool to understand and communicate ideas. From this approach, students achieve an optimal level of cultural understanding, linguistic diversity is considered, and it is an attempt to overcome the limitations of traditional teaching by integrating the curriculum. According to Coyle et al. (2010), one of the most basic considerations is that there should be a balanced treatment among four key areas, which are: a) content, b) communication, c) cognition, and d) culture (see Figure 1). In PROMISED, students build subject knowledge while developing their communication skills through what is known as the language triptych, which includes language for learning, language of learning, and language through learning (see Figure 2).

c. Storytelling: serving as the starting point of each unit, storytelling introduces meaningful connections through a graphic novel or comic. Instead of starting with abstract explanations, students begin by reading a visual story that presents a relatable situation connected to the central challenge. This narrative trigger helps them understand why the topic matters, creates emotional engagement and supports comprehension. The story acts as a unifying thread that connects inquiry, language development and subject content throughout the unit, giving coherence and purpose to the entire learning process.

All of these general approaches are combined with active methodologies that guide how content is explored in each unit, such as inquiry-based science education (IBSE), the teaching of social knowledge and history through a problem-oriented and action-based approach, modelling, engineering design methodology, design thinking, and

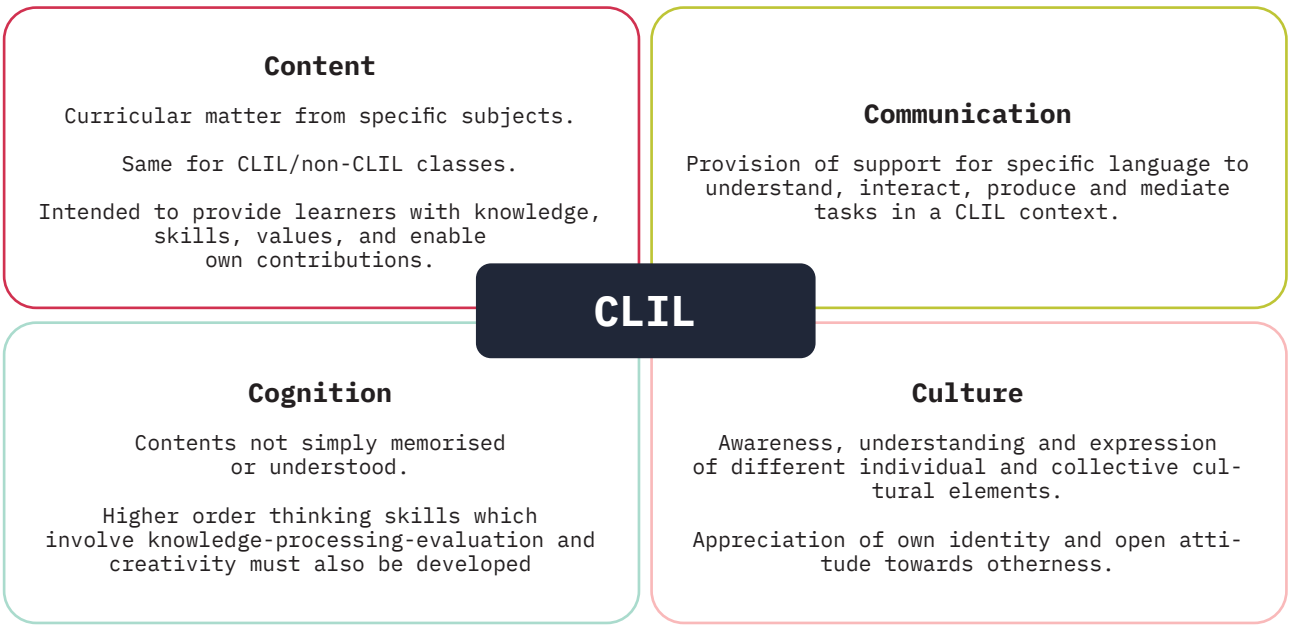


Figure 1
Foundations of CLIL and the 4Cs Model

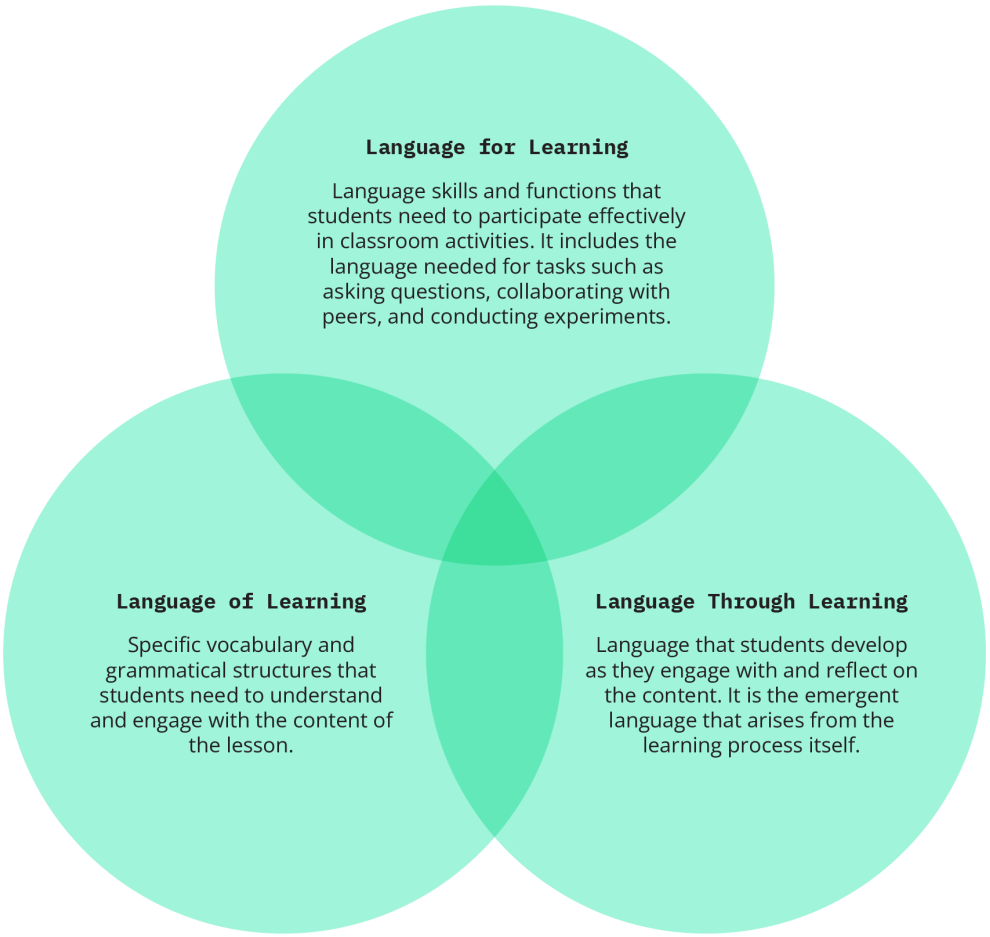
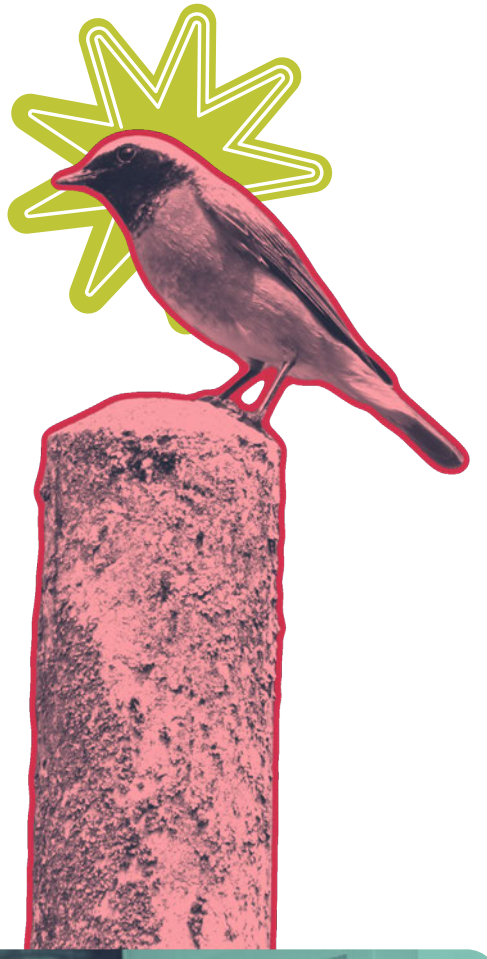


Figure 2
Language triptych: language of, for and through learning.

coding. These methodologies are integrated into the learning process to foster autonomy, engagement and interdisciplinary thinking.

In addition, PROMISED integrates a set of cross-cutting concepts that help students connect knowledge across disciplines, especially within STEAM and the social sciences. These concepts encourage learners to identify patterns, understand causes, analyse systems and think critically. The core concepts include: patterns, cause and effect, scale, proportion and quantity, systems and system models, energy-matter flows, structure and function, and stability and change.

For a full description of each methodology and the cross-cutting concepts, see PROMISED Pedagogical Framework.



CORE RECOMMENDATIONS

All the elements presented in this unit are intended as flexible guidelines, not fixed prescriptions. Teachers are not expected to follow every step exactly as written. Instead, the activities, materials and structure are designed to be adapted to the specific needs of each group, school context and teaching style. The proposals serve as a framework to inspire meaningful teaching and learning and can and should be adjusted as necessary. What truly matters is that the core principles (interdisciplinary work, active methodologies, and real-world relevance) remain central. To ensure effective integration, it is essential that all participating teachers reach a shared agreement on objectives, key contents, and timing. Without coordination, there is a risk of teaching each subject in isolation and simply combining outcomes at the end. True curricular integration happens when all disciplines contribute in a coherent, connected way throughout the process.

This integration includes joint evaluation, which is not done separately in each subject but designed collaboratively. Teachers agree on common assessment criteria and tools, making sure that students are evaluated on what they produce and learn across the whole project—not just in one area. This allows for a more holistic understanding of student progress and reinforces the idea that the work is genuinely interdisciplinary.

READY FOR THE FUTURE WITH TESS?


LVL 1

1. SUBJECTS

Level 1 unit with the integration of:

Mathematics

Foreign Language (L2)

Book: *Tess the Time Traveller*
Authors: Stephen P. Hughes, Ana Cristina Martínez Rodríguez, Pavlo Marynenko, Silvia Corral Robles, José Luis Ortega Martín
Year: 2025
Genre: Science Fiction, Teenage Readers, Graphic Novel

2. PROJECT GOALS, LEARNING OBJECTIVES AND FINAL PROJECT

This section describes the overarching goals and specific objectives for this unit. These goals primarily concern the development of skills and competences pertaining to the subjects of mathematics and the foreign language but also incorporate wider transversal skills.

General aims

At the end of this unit, students will be able to:

- Communicate effectively in English using in all modes (reception, production, interaction and mediation) in spoken, written and online tasks.
- Explore key mathematical ideas such as geometry, symmetry, and coding.
- Collaborate with peers in pair and group tasks across subjects.
- Use digital tools to support learning and share final products.
- Reflect on sustainability, problem-solving and creative thinking through interdisciplinary tasks.

Foreign language objectives

- Understand general and specific information in oral and written texts related to Tess's story.
- Produce short written texts (e.g., diary entries) and oral outputs (e.g., presentations) to reflect on story content and personal interpretation.
- Participate in group discussions and cooperative tasks to share ideas and present outcomes.
- Use appropriate vocabulary and basic grammar structures (e.g., past simple, past continuous) in spoken and written English.

Objectives in mathematics

- Identify and apply geometric concepts: Recognise and use 2D and 3D shapes, symmetry, and transformations (e.g., rotation, reflection) to design story-inspired structures like the Eloi city.
- Construct and describe geometric models: Build physical or digital models incorporating mathematical reasoning, visual-spatial skills, and accurate shape properties.
- Use basic encryption techniques: Create and decode messages using methods like the Caesar cipher and symbolic codes, linking mathematics with storytelling and communication.
- Collect, organise, and visualise data: Create graphs and charts to model real-world trends (e.g., climate, population), and make predictions using simple functions (linear, exponential).
- Communicate mathematical thinking: Use accurate vocabulary, diagrams, and digital tools to explain ideas clearly in journals, group discussions, and presentations.

Cooperative learning goals

- Work in small groups to solve tasks and prepare final products.
- Take on different group roles (e.g., speaker, writer, designer) and collaborate respectfully.
- Use peer feedback to improve both language and content output.
- Reflect on teamwork and identify personal contributions to the group.

Digital competence

- To share information and content through digital technologies.

- To cooperate and collaborate through digital technologies.
- To browse, search and filter data and information.

Critical thinking and reflection

- To develop critical thinking
- To explore the concepts of otherness
- To provide creative responses to story and problem situations

Final products

Foreign language: a group oral presentation about Tess's journey or key themes from the story.

Mathematics: a maths journal and presentation with visual designs, coded messages, and geometric models inspired by the Eloi city and story elements.

3. SDGs

This unit is related to the following SDGs:

Discover the SDGs:

4. CROSS-CUTTING CONCEPTS

Patterns

Students identify and create patterns in both language and mathematics (e.g., verb tenses, sentence frames) and mathematical elements (symmetry, geometric shapes, and encryption systems).

Cause and Effect

Through storytelling and data analysis, students reflect on how actions have consequences—whether in Tess's decisions, the future world's ecological challenges.

Change Over Time

The narrative arc of Tess's journey spans different time periods, encouraging students to track change in characters, environments, and ideas. Mathematically, students examine change through data modelling (e.g., population, trends).

Systems and Relationships

From the collaborative functioning of the Eloi society to the impact of environmental decisions, learners develop an understanding of systems thinking and the importance of balance, interaction, and interdependence.

5. SKILLS

5.1 STEAM SKILLS

Science

- Problem-solving and evaluating solutions, for example when analysing mathematical models of climate change or discussing solutions orally in L2.
- Understanding real-world issues (climate change, sustainability, innovation)

Technology

- Digital content creation (e.g., using Canva, Google Drawings, Geogebra, etc.)
- Coding and encryption (e.g., Caesar cipher, symbolic languages)

- Data analysis using spreadsheets (Google Sheets, Excel)
- Use of audio and video tools for recording presentations and dialogues

Engineering

- Design and prototyping through mathematical modelling tasks (e.g., 3D Eloi city using digital tools).
- Visual-spatial reasoning and structural thinking through geometric modelling

Arts

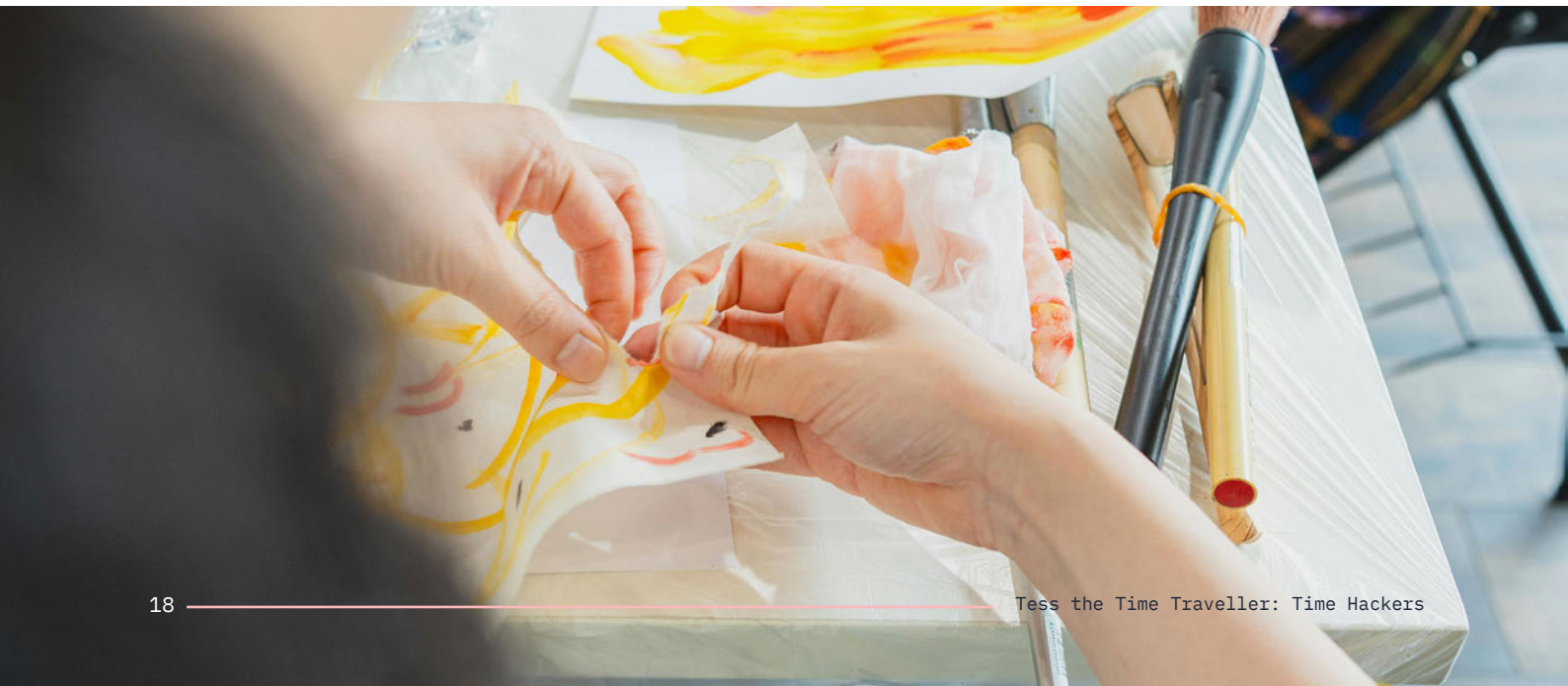
- Creative storytelling and performance (e.g., audio guides, character interpretation)
- Graphic and visual design (e.g., maths journal formatting, illustrated vocabulary cards, symbolic languages)
- Expressive oral language (e.g., presentations, role-plays)
- Sound exploration (e.g., using nature sounds or soundscapes to enhance setting and mood)

Mathematics

- Geometry and symmetry (2D and 3D shapes in design tasks)
- Transformations (rotation, reflection, translation)
- Data modelling and graphing (linear, exponential growth)
- Numerical reasoning and encryption (e.g., prime numbers, code-breaking)
- Mathematical communication (using correct vocabulary and representations)

5.1 DIGITAL SKILLS

- Digital content creation (posters, presentations, audio recordings)
- Coding and cryptography (e.g., Caesar cipher, symbolic code, digital pattern-making and logical sequencing)
- Data handling and visualisation (Google Sheets or Excel) to input, organize, and graph real-world data, line graphs, bar graphs, and trend charts
- Digital modelling and design: 2D and 3D models of Eloi architecture using tools like GeoGebra, etc.
- Working in shared digital documents (Google Docs, Slides) for group tasks
- Research and information literacy: online dictionaries and reliable data sources
- Digital communication: multimedia presentations; use of online tools to record, rehearse, and publish oral or visual work
- Cyber safety and responsible use: practising safe sharing (e.g., no personal data in videos), understanding copyright and ethical use of digital content



6. CLIL FRAMEWORK

6.1. THE 4 C'S

4C	DESCRIPTION
CONTENT	Students explore narrative elements and mathematical concepts such as geometry and coding through the story of Tess the Time Traveller.
COMMUNICATION	Learners develop their spoken and written English by participating in discussions, presentations, and collaborative tasks linked to Tess's journey.
COGNITION	The unit promotes thinking skills by asking students to solve problems, predict outcomes, analyse story events, and apply mathematical reasoning.
CULTURE	Through Tess's encounters with different societies, students reflect on values like cooperation, environmental care, and respect for diversity.

6.2 THE LANGUAGE TRIPTYCH

Language of Learning (Vocabulary)

Students need to understand key vocabulary to access lesson content. In this unit, vocabulary includes:

- Story & Literature: character, journey, future, past, invention, village, monster, message, problem, solution, decision, conflict, environment, change, mission.
- Mathematics: 2D shape, 3D shape, symmetry, rotation, reflection, translation, prism, pyramid, sphere, axis, coordinate, transformation, graph, data, trend, encryption, code, pattern, sequence.
- Grammar & Structures: past simple, past continuous, present simple, modals (should, must), comparatives, adjectives, descriptive language, sentence starters.
- Project & Digital Work: presentation, jo1urnal, script, recording, visual, audio, infographic, spreadsheet, model, feedback, peer review.

Language for Learning (Processes)

This is the language students use to learn, collaborate, and complete tasks:

- Asking and answering questions about story events or character actions.
- Giving and receiving feedback in group tasks
- Describing and explaining mathematical designs and models.
- Narrating events using past tenses.
- Comparing and contrasting ideas or visuals.
- Presenting findings and giving short oral explanations.
- Participating in discussions and collaborative planning.

Language through Learning (Incidental Language)

As students work on projects and solve problems, they naturally acquire:

- New vocabulary related to story themes, sustainability, and emotions.
- Expressions used during role-plays, debates, and presentations.
- Descriptive and comparative structures used in peer models and posters.
- Functional phrases for digital tasks (e.g., "click here," "upload the file," "record your voice").
- Idiomatic and expressive language from dialogues or character analysis.

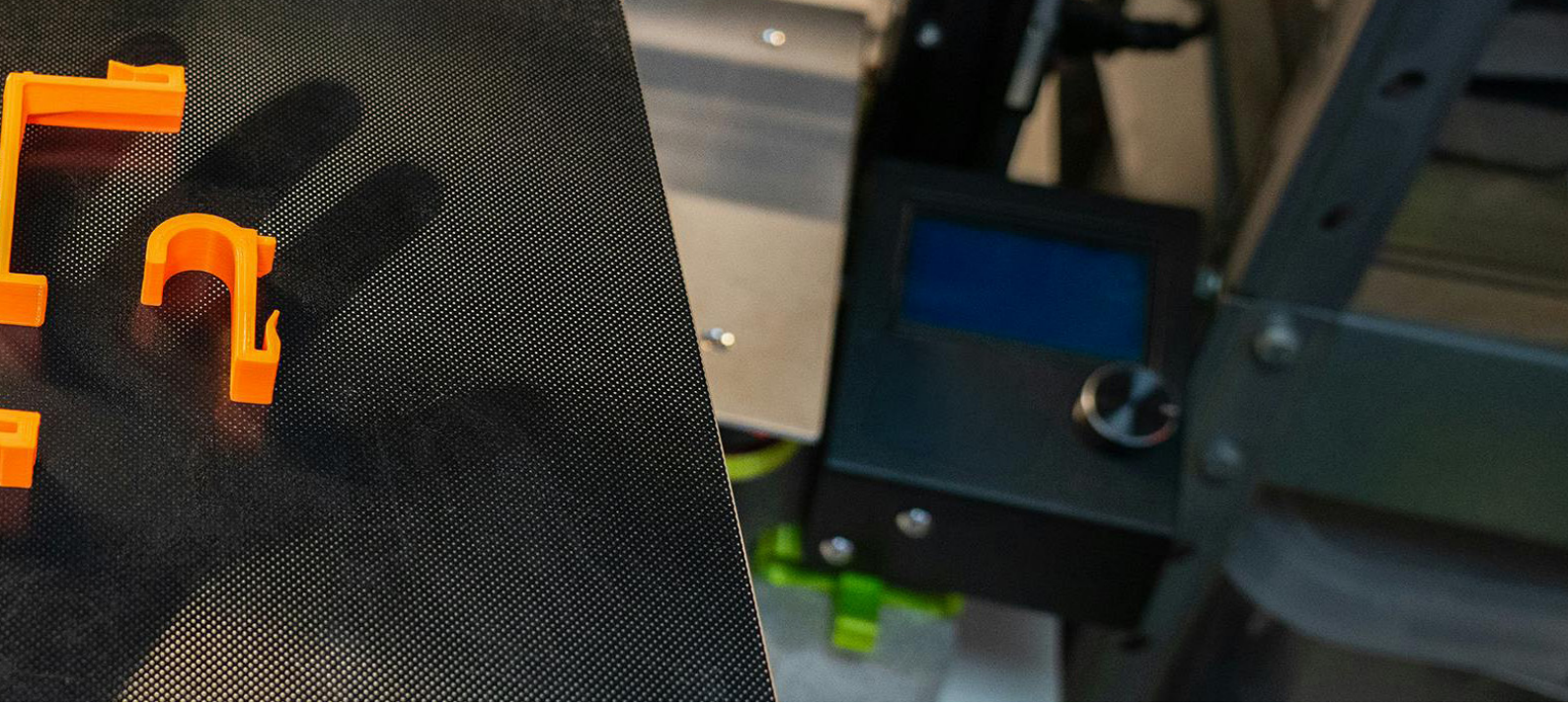
7. UNIVERSAL DESIGN FOR LEARNING

Applying Universal Design for Learning (UDL) to the Tess the Time Traveller unit ensures that all students can access, engage with, and express their learning in meaningful ways. The project embraces diversity in learning preferences, language levels, and abilities by offering multiple entry points and flexible supports across both mathematics and foreign language tasks. The unit is based on three key UDL principles, which are multiple means of: a) engagement, representation, and expression.

In the first case (Means of Engagement), students are motivated through:

- A narrative-driven structure that builds emotional connection with the character of Tess.
- Collaborative group tasks that promote shared discovery, creativity, and problem-solving.
- Real-world themes (e.g., sustainability, future societies) that link content to students' values and concerns.

In terms of Means of Representation, the graphic novel Tess the Time Traveller is designed for four CEFR levels (A1+, A2+, B1, B2), allowing learners to



access the same core story at a level appropriate to their language ability. This visual storytelling format supports:

- Visual literacy through expressive imagery, layout, and graphic elements.
- Simplified or scaffolded texts for lower levels and extended narrative depth at higher levels.
- Multimodal inputs (text, images, audio, video, movement) to reinforce comprehension.
- Use of manipulatives, digital tools, and spatial models in mathematical activities.

Finally, in relation to Means of Action and Expression, learners demonstrate their understanding through varied formats, such as:

- Oral presentations, audio recordings, and dramatic role-plays for language output.
- Mathematical journals, 3D models, and coded messages for interdisciplinary expression.
- Interactive games, group debates, and self-assessments to accommodate different learning styles.
- Opportunities for peer and self-assessment using checklists and guided reflection.

8. MAIN METHODOLOGICAL CONSIDERATIONS

This unit underscores the importance of the following methodological principles:

- Use of real-world and imaginary situations for problem solving
- Integration of communicative skills
- Story-based learning
- Inquiry-based learning
- Multimodal and multisensory learning
- Student-centred learning

9. ASSESSMENT

Assessment will take place using both formative and summative tools across English and Mathematics:

- Observation of participation, group work, and oral interaction.
- Evaluation of individual and group tasks (written work, maths journal, final presentation).
- Use of simple rubrics adapted for both subjects.
- Peer and self-assessment activities integrated into sessions.
- Optional use of digital tools (e.g., quizzes, slide shows, recorded reflections).

10. D DESCRIPTION OF THE SEQUENCE OF ACTIVITIES

L2 (English) activities are marked in green.

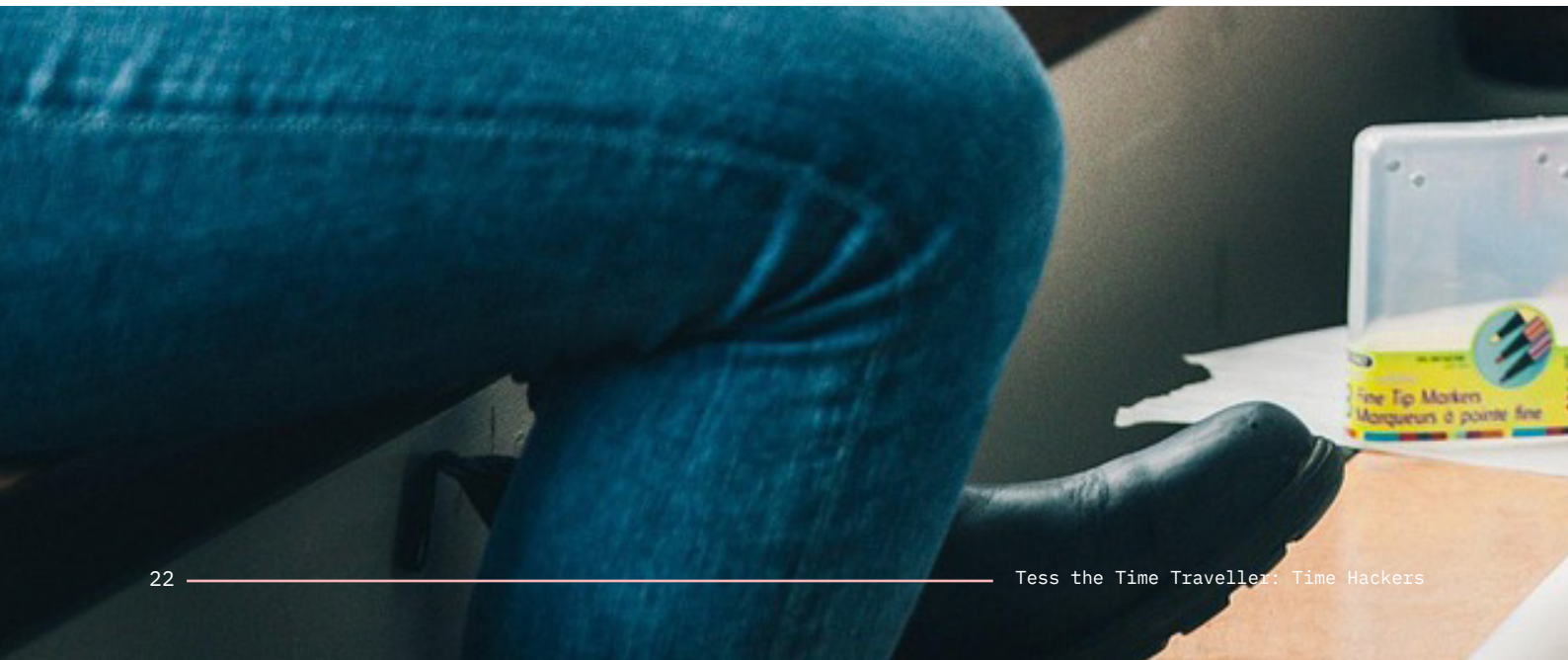
Maths activities are marked in red.

General tips

This unit connects storytelling with real problem-solving, using creativity, collaboration, and imagination. While there are a large number of suggested activities, there is a large degree of teacher (and, where possible) student autonomy. The following are some tips which can help you to get the most out of the project:

- Activities can be mixed, adapted, or simplified depending on your group's needs. In class, it is possible to pause, revisit, or skip steps to keep energy and understanding high.
- Many activities combine English and Mathematics. These can be approached flexibly—sometimes through storytelling and expression, other times through design, analysis, or building.

Activities	1	2	3	4	5
Duration (mins)	*60*	*60*	*60*	*60*	*60*
Mathematics					
L2					



- Students take the lead in tasks, working in teams, choosing tools, creating models, and sharing ideas.
- The final projects build on work done throughout the unit. They can be presented in different formats (spoken, written, visual, digital) depending on group goals.
- Tess's journey is also yours: learners take an active role, connect ideas across subjects, and imagine possible futures together.

In addition to these points, we have included a series of suggestions, or non-prescriptive tips which might serve as useful ideas for lesson development.

6	7	8	FP	FP
60	60	60	60	60
			FINAL PROJECT	
				FINAL PROJECT

60′

ACTIVITY 1

WHO IS TESS?

Story link: In this session, students meet Tess in Chapter 1 and use the opening of the story (title + images) to make predictions, then read the chapter with support and practise asking/answering questions and using future forms to predict what will happen next.

Objectives:

- Activate predictions and storytelling skills
- Practice oral interaction and asking/answering questions
- Practice predictions about future (using a variety of structures depending on level)

MATERIALS

- Story: *Tess The Time Traveller*
- Cambridge Learner Dictionary
- ISLCollective
- Tablets/computers

STEPS

1. Warm-up Speaking Game: Quick Fire Predictions

Students look at the title and 3–4 images from the story.
In pairs or groups. Example questions:

- Who is Tess?
- What does she invent?
- What happens next?

2. Story Reading (in class)

Read Chapter 1 with glossary and online dictionary as needed.
Recommended tool: Cambridge Learner Dictionary

3. Interactive comprehension

Students create questions for their partners to answer, then they ask and respond to questions. Afterwards, there is a whole class comprehension check and class discussion.

4. Grammar Focus

Making predictions about what will happen later. Depending on class level, this can be adapted

- A1: will for simple predictions (“She will go to the future.”)
- A2: will / won’t + maybe / probably (“She will probably meet new people. She won’t stay in her world.”)
- B1: Variety of future expressions (will, going to, might, could) and justification (“I think she might meet someone because she is travelling to another world.”)

TIPS FOR TEACHERS

1

- Use visuals to support language production and comprehension.
- Use images from the graphic novel
- Let students brainstorm ideas quickly before discussing aloud.
- Use sentence starters like “I think Tess is…” / “Maybe she will…” to scaffold responses.

2

- It is possible that story reading may take place outside the language class, for example in other classes that have time dedicated to reading and in this way, spend more time on the class activities.
- Project the online dictionary or have students keep it open on their tablets/computers.
- Optionally, learners read in pairs.
- Allow students to highlight or sketch new words in personal notebooks.

TIPS FOR TEACHERS

3

- Examples of questions:
- Who is Tess? How is she different from her classmates?
- What do her classmates think of her? Do you think they are fair?
- What does Tess build in her garage?
- What role does her grandmother play in her life?
- How does the chapter end?

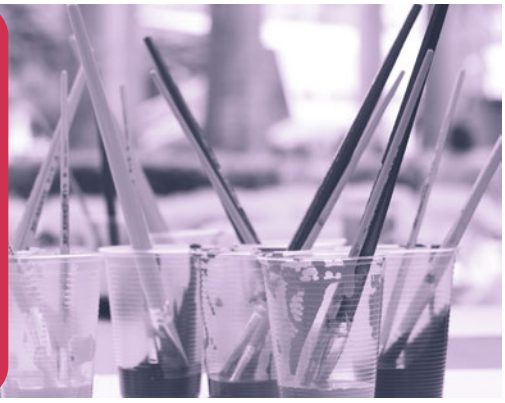
4

- Show 2–3 images from Chapter 2 without context and have students predict in pairs or groups.
- Use sentence starters on the board or slips to scaffold for A1/A2.
- For B1, challenge students to link predictions with reasons.
- For extra practice, use worksheets from ISLCollective.

ADDITIONAL:

Maths / Cross-Subject Connection:

Students can create a simple timeline or distance chart showing Tess's travels through time. They estimate how far and how long each trip would take, using basic measurements (days, centuries, kilometres). Link English expressions for time and sequence ("first," "then," "after that") with numbers and units.



Homework: Read chapter 2 at home.

60′

ACTIVITY 2

MAPPING ELOI GEOMETRY

Story link: Tess arrives in the peaceful Eloi village and notices symmetrical, eco-friendly structures.

Objectives:

- Identify geometric shapes and their properties.
- Apply transformations: reflection, rotation, translation, and central symmetry.
- Analyse symmetry and pattern in real and fictional contexts.

MATERIALS

- Digital whiteboard
- Image flashcards or slides for key concepts
- Apps: Google Drawings, Canva, or GeoGebra

STEPS

1. Warm-up

Students observe images of geometric tiling and symmetrical patterns (Suggestion: from the Alhambra or Islamic art).

Prompt students with questions. Examples:

- Which geometric shapes are used in these patterns, and what is their function in the overall design?
- Can you see a pattern?
- Which movements could create this pattern—reflection, rotation, or translation?

2. Main Task Cycle

In groups, students:

a. Observe and discuss symmetrical patterns from architecture (photos, digital gallery). Observe and discuss symmetrical patterns from architecture (photos, digital gallery). Student might also look for examples of symmetry and pattern in buildings, textiles, or artwork from their own community.

b. Identify different transformations (rotations, translations, etc.).

c. Sketch a section of the Eloi city, incorporating:

d. At least 3 geometric shapes (e.g., hexagons, triangles, circles).

e. At least 2 types of transformations.

f. Pattern repetition and symmetry.

TIPS FOR TEACHERS

1

- Choose a few high-quality images and project them
- Encourage students to trace shapes or transformations using transparent paper or tracing tools.
- Introduce key concepts (e.g., tessellation, axis, symmetry) using image labels or flashcards.
- Consider displaying visuals on a digital whiteboard to annotate in real time.

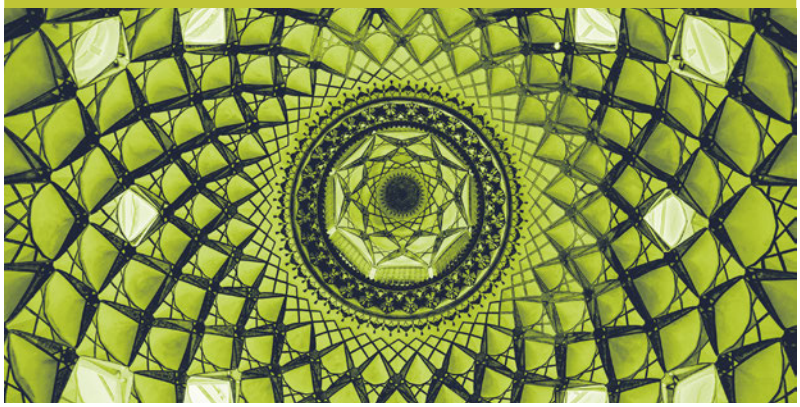
2

- Scaffolded Support and optional digital extension: Provide grid paper or use free design tools like GeoGebra or pattern generators.
- Clarify expectations with a checklist or model example.
- Assign group roles (e.g., shape finder, pattern sketcher, digital editor) to support collaboration.
- If devices are limited, offer a rotation system for digital workstations.
- Encourage students to connect their designs to the story world of the Eloi

Students use Google Drawings, Canva, or GeoGebra to replicate or enhance their hand-drawn design digitally.

3. Post-task/Plenary:
Gallery walk of sketches. Peers identify transformations used.

ADDITIONAL:
Language Connection:
Students use geometry to describe the Eloi city. They identify basic shapes and symmetry in its design (circles, triangles, arches) and explain them in L2 using comparative and spatial language: The dome is wider than the tower, The garden has four equal sections, The bridge forms a perfect arch.



TIPS FOR TEACHERS

3

- Provide sticky notes or digital comment templates for peer feedback.
- Use guided questions for the gallery walk: "What transformation do you notice?", "How does this shape repeat?", "Where is the line of symmetry?"
- Take photos or screenshots of work to document progress for assessment or display.

Homework: Students will include today's work in their Mathematical Time Travel Journal, with a short reflection and a sample of their design, model, or findings.

ACTIVITY 3

Story link: In this session, students read Chapter 3 and use five-senses vocabulary and descriptive adjectives to imagine the Eloi village; they then create and perform a short "audio guide" describing what Tess sees and experiences (optionally practising past simple/continuous).

Objectives:

- Develop descriptive vocabulary
- Practise giving short oral descriptions
- Practise contrasting past simple and continuous
- Build toward final product

MATERIALS

- Story: *Tess The Time Traveller*
- Cambridge Learner Dictionary
- Tablets/computers

STEPS

1. Warm-up

- Listen to 20–30 seconds of nature sounds (e.g., NoCopyright-Sounds on YouTube)
- Then students do a 5-senses speaking warm-up. Example:
- What could Tess see, hear, smell, feel, or taste?
- Pre-teach a few key vocabulary items from story with images

2. Story Reading (in class) (Or refresher on story if read previously)

Students read Chapter 3 aloud in groups or pairs, alternating paragraphs. Alternatively, students read silently with a partner.

3. Speaking Activity – "Describe the Eloi World"

In small groups, students describe the Eloi's world using 3–5 adjectives.

Use visual support: pip cards with images or symbols (e.g., soft, green, quiet, peaceful).

Then create and practise short spoken sentences like:

- The houses were small and round
- People were walking slowly and smiling
- Tess was watching the sky while they were singing
- The trees were glowing when she arrived
- (Present tense may be used as a support)

TIPS FOR TEACHERS

1

- Let students imagine life in the village before speaking.
- Scaffold with a "5 senses" prompt card or drawing template.
- Allow students to make quick sketches of things they could see, hear, etc.
- Differentiation: for lower levels 'can' may be used instead of 'could'.

2

- It is possible that story reading may take place outside the language class, for example in other classes that have time dedicated to reading and in this way, spend more time on the class activities.
- Provide sentence starters or quick-check questions to guide comprehension.

3

- Allow students to pick adjectives from a visual bank or word wall.
- Use sentence frames on the board to support output.
- Encourage descriptive language by asking, "What colours? What sounds?"
- Highlight contrastive examples (e.g., "noisy" vs "quiet") for range.

4. Mini Performance

Each group performs a short "audio guide" to the Eloi village:

- "Welcome to the Eloi village! Here you will see..."
- Encourage performance: tone, intonation, pacing

Students can make an audio recording of this presentation at home.

5. Post task: Consolidation of pronunciation

1. /θ/ and /ð/ – "th" sounds • Think ("Tess thinks they look like maths shapes.") • With ("They live with nature.") • This ("This shows the land.") • Their ("Their roofs have green plants.") • Other ("Other Eloi smile at her.")	**2. /v/ vs /b/** • Words from Chapter 3: • Village ("She sees a wooden table with lines on it.") • Live ("They live with nature.") • Vegetables (mentioned indirectly through food descriptions) • Very ("Very kind" in tone)
3. /ʃ/ – "sh" sound Words from Chapter 3: • Shape ("They look like maths shapes.") • She, Show ("Luma shows her the village.") • Share (conceptual word from "Each person is important")	**4. /əʊ/ and /aʊ/ – diphthongs** Words from Chapter 3: Show ("Luma shows her the village.") House ("The houses look like beehives.") Know ("They know maps and signs.")

Practice of difficult sounds arising from the chapter. Examples could include:

Examples of activities could include:

a. Minimal Pairs Showdown

Students work in pairs. One says a word (e.g. "think"), the other guesses if it's from a pair:

- think/sink, there/dare, vest/best, show/so, house/mouse
- Switch roles after 5 words. Score points for correct guesses.

b. Tongue Position Practice (mirror or partner)

Students practice words with /θ/ and /ð/ (think, this, there) in front of a mirror or with a partner.

They describe or observe where the tongue is:

- "Is it between the teeth?"
- "Can you hear the difference between 'sink' and 'think'?"

TIPS FOR TEACHERS

4

- Give a basic script model or outline to get them started.
- Rehearse in pairs before group performance.
- Differentiated outcome: depending on level, the length and complexity of performance may vary (e.g. 30 seconds to 1 minute).
- Use simple recording tools like Vocaroo or other voice apps.
- Encourage students to use gestures or visuals if presenting live.

5

- Use fun, low-pressure games to reinforce tricky sounds (e.g., team challenges, sound bingo).
- Integrate visual and physical cues: mirrors for tongue position, gestures for sound length or pitch.
- Consider audio recording tools (e.g., Vocaroo) for playback and self-assessment.

c. "Catch the Sound" Dictation Game
Teacher reads a series of words slowly. Students listen and circle the words with a target sound.

Example: ship, vest, best, think, pink, sink, this, zip, show, so.
Repeat with different target sounds.

d. Diphthong Echo
Teacher or audio says a sentence from the story slowly, stressing diphthongs like /əʊ/ and /aʊ/:

- "The houses look like beehives."
- "Luma shows her the land."

Students echo the sentence with exaggerated vowel glides, then repeat at normal speed.

e. Sound Sorting Race
Prepare a list of words from the story. Students sort them into sound columns:

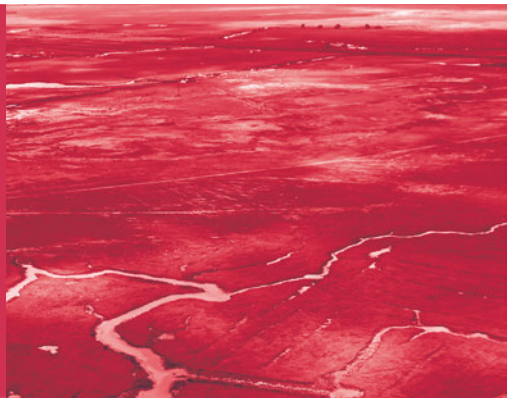
- /θ/ → think, with
- /v/ → village, live
- /ʃ/ → shape, show
- /əʊ/ → show, go

This can be done in teams as a speed competition.

f. Group Reading with Stress Focus
Choose a short paragraph from Chapter 3. Students read aloud in groups, each focusing on a target sound.
Example:

- Group 1 – Emphasize /v/ words; Group 2 – Emphasize /ʃ/ words; Groups take turns reading and listening.

ADDITIONAL:
Maths / Cross-Subject Connection:
Link descriptive language to measurement and proportion. As students describe the Eloi world, ask them to estimate sizes, distances, or quantities (The river is twice as long as the bridge, The trees are about five metres high). This reinforces comparative structures while practising numerical reasoning and scale awareness.



Homework: Read Chapter 4 independently (before next session)

ACTIVITY 4

BUILDING ELOI CITY IN 3D

60'

Story link: Tess helps recreate the Eloi city in 3D to share with her own world.

Objectives:

- Construct models using knowledge of shapes, angles and symmetry.
- Apply geometric reasoning in space.
- Collaborate to build a creative city layout.

MATERIALS

3D solids or printables as reference examples

GEOGEBRA TINKERCAD MINECRAFT

STEPS

1. Warm-up

Students see 3D shapes and answer questions about the shapes, symmetry, etc.

They can use physical models (cubes, pyramids, hexagonal prisms) or digital manipulative applications.

Students can complete a short challenge:

- Sketch a 3D shape and draw all lines of symmetry you can find.

2. Main Task Cycle

PART A

Planning In groups, students design their Eloi city plan on isometric or grid paper, identifying geometric solids and the types of symmetry they will use.

Each group creates a basic layout including:

- At least three different 3D solids (e.g., hexagonal prisms, pyramids, spheres)
- A pathway system using central or rotational symmetry
- Green areas or towers with repeating structural patterns

Students can also think about shapes or structures they have seen in local buildings or landmarks and use them as inspiration for their designs.

TIPS FOR TEACHERS

1

- Have a set of labelled 3D solids or printables ready for reference.
- Use real-world examples (e.g., buildings, crystals, domes) to inspire connections.
- For digital support, assign simple starter activities on GeoGebra or Tinkercad.
- Use a "symmetry detective" prompt: "Can you find hidden symmetry?"

Differentiation for lower levels

- Instead of going straight to designing with prisms, pyramids, or spheres, you can offer nets as a scaffold for students at lower levels. A net is a two-dimensional pattern that can be folded to make a three-dimensional solid (for example, six squares arranged in a cross shape fold up into a cube).
- Print nets of cubes, prisms, pyramids, etc.
- Have students cut, fold, and glue them.
- Use these as the "building blocks" for their Eloi city.

TIPS FOR TEACHERS

2

PART A

- Share example designs or simple templates to get them started.
- Assign roles: designer, shape checker, symmetry spotter, materials manager.
- Encourage sketching in pencil first for easy revision.
- Use colour coding or symbols to label symmetry types on paper.

PART B

- Allow flexibility: groups may combine physical and digital if needed.
- Support digital groups with mini-tutorials or quick-start guides.
- Encourage collaboration through design reviews before building begins.
- Use printed name tags or digital pop-ups to label features clearly.

3

- Let students vote for "most creative use of geometry" or "most harmonious design."
- Collect photos or screenshots for a class slideshow or virtual museum.
- Wrap up with a reflective discussion or short journaling task.

PART B

Groups build their city:

- Physical version: Using recyclable materials, cardboard, geometric solids, straws, and connectors.
- Digital version: Using Tinkercad, Minecraft Education, or GeoGebra 3D. Students label structures using pop-ups or tags to describe geometric features and symmetries.

Students take screenshots/photos and prepare a short explanation of the choices they made.

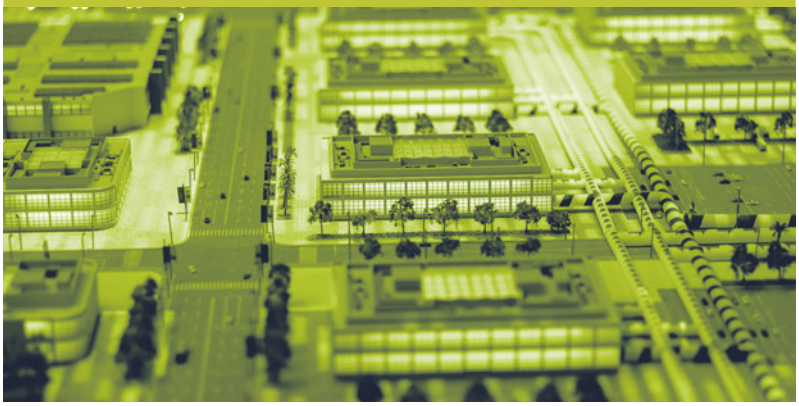
3. Post-task/Plenary

Groups present their city models. As they rotate around the room, they complete a peer feedback form, noting one creative element, one use of symmetry, and one question for the group.

ADDITIONAL:

Language Connection:

Have students describe their models orally using spatial and comparative vocabulary: The pyramid is higher than the cube,There is a park between the towers. Encourage short bilingual labels or captions on their city layouts, linking geometric terms to descriptive language from Lesson 3.



Homework: Students will include today's work in their Mathematical Time Travel Journal, with a short reflection and a sample of their design, model, or findings.

ACTIVITY 5

CONFLICT & DECISIONS

60'

Story link: In this session, students revisit Chapter 5 ("The Morlocks' Secret"), focusing on Tess's conflict with the Morlocks. They analyse types of conflict in the story, explore possible solutions using modal verbs, and play the Decision-Making Wheel game to practise expressing strategies and choices.

Objectives:

- Collaborate to construct meaning and solve problems (mediation skills).
- Practise expressing opinion orally.
- Express possible solutions using modal verbs.

MATERIALS

Story: Tess The Time Traveller

CAMBRIDGE LEARNER DICTIONARY

PADLET

QUIZLET

Decision-making wheel (see below)

Tablets/computers

STEPS

1. Warm-up

Conflict Card Match

- Students receive cards with types of conflict (e.g., Human vs Nature, Human vs Technology, Human vs Self, Human vs Human, Human vs Society).
- In pairs or small groups, they match each conflict type with quotes or moments from the story. Examples:
  - Human vs Human - "Some laughed at her and called her names like 'Time Travel Tess'."
  - Human vs Self - "She felt sad when they laughed at her."
  - Human vs Nature - "Thick, grey smoke filled the sky. The streets were dirty, and the air smelled bad."
  - Human vs Nature - "Her head felt light, and she couldn't breathe properly."
  - Human vs Other Beings - "The Morlocks tied her hands with thick ropes so she could not escape."

Follow-up questions:

- What kind of conflict is most common in Tess's world?
- Which type feels most relevant to real life today?

TIPS FOR TEACHERS

1

- Prepare a printable conflict card set in advance with visuals and quotes.
- Extra: Include 1–2 "tricky" or ambiguous cases to encourage debate (example: Tess knows the Morlocks are dangerous, but she also sees that they're suffering).
- For a digital alternative, use Padlet to sort cards collaboratively.

TIPS FOR TEACHERS

2 & 3

- Differentiation by group level: Instead of conditional tense, students might use present tense/ imperatives or 'can'
- Print or project the Decision-Making Wheel with clear, student-friendly icons.
- For added engagement, and depending on level, provide basic props or emotion cards. Encourage use of sentence starters like:
  - "Tess could try to…"
  - "If I were Tess, I would…"
- To scaffold output, give example structures.

4

- Use a sentence frame handout to help with accuracy.
- Optional digital extension: grammar card game on Quizlet.
- Optional wrap-up: Students write one sentence and act it out silently for classmates to guess.
- Extension (B1): Add because/so to justify solutions ("Tess should talk to them because fighting is dangerous.").

2. Bridge activity

Show that conflicts lead to choices and decisions. Teacher asks: "Now Tess is in conflict with the Morlocks (Human vs Other Beings). What can she do? What are her options?"

- Elicit a few short answers using modals ("She can/could run." "She can/could talk to them.").
- Write these sample strategies on the board.

3. Decision game – "What would/could you do?"

Students work in small groups.

- Each group spins the Tess Decision-Making Wheel (see below) and receives a scenario card (e.g., "Tess is captured by the Morlocks")
- Groups brainstorm a solution – they can use certain strategies/actions (see strategy guide in Decision-making wheel), then they present their solution to another group.

4. Post-task

Modals of ability, possibility, advice (can, could, should, might, would).

Examples (from story):

- "Tess can/could run away."
- "She must try to explain."
- "The Morlocks might listen."

Mini-task: In pairs, students write 2-3 sentences about different conflicts using modals.

ADDITIONAL:

Mathematics Connection:

Integrate logical reasoning and probability. When discussing Tess's options (She could run, She might stay), introduce simple likelihood language where possible (It's more likely she will escape if… / There's a 50% chance it works). This connects modal verbs to probability thinking.

Homework: Read Chapters 6 and 7 independently (before next session)

TESS'S DECISION-MAKING WHEEL
Classroom Instructions

Purpose: This activity helps students develop oral communication skills and creative problem-solving. Students imagine they are Tess and must resolve a story conflict using the strategy indicated by the wheel.

MATERIALS

- Printed copy of the Tess Decision-Making Wheel
- Pencil and paperclip (to create a spinner) or a split pin and a paper arrow
- Scissors
- Optional: roleplay cards or printed story scenes

Setup

a. Cut out the wheel.
b. In the centre, insert a pencil through a bent paperclip or attach a paper arrow using a split pin.
c. Place the wheel flat on a table so students can spin it easily.

How to Play – Option 1: Roleplay

a. Present a problem from the story. For example: "Tess is trapped by the Morlocks."
b. In pairs or small groups, students spin the wheel.
c. The group must roleplay or describe how Tess could solve the problem using the strategy they land on.
d. Example: If they land on "Persuade," they must act out Tess convincing the Morlocks to let her go.

How to Play – Option 2: Speaking Challenge

a. Ask the class: "Tess is in a dangerous situation. What should she do?"
b. One student spins the wheel.
c. The student must speak for 15 to 30 seconds, explaining how they would use that strategy as Tess.

How to Play – Option 3: Group Strategy Debate

a. Read or summarise a conflict from the book (e.g., Chapter 5: Tess vs. the Morlocks).
b. Divide students into small groups.
c. Each group spins the wheel and must develop a plan using their assigned strategy.
d. Groups present their plan to the class and answer questions from other students.

Strategy Guide for Students

a. ***Persuade*** – Try to convince someone with good reasons.
b. ***Hide*** – Avoid being seen or caught.
c. ***Explain*** – Tell the truth or share information clearly.
d. ***Use Light*** – Use a tool, science, or the environment to your advantage.
e. ***Trade*** – Offer something in return for help or freedom.
f. ***Ask for Help*** – Get support from a friend or another character.
g. ***Make a Deal*** – Offer a solution that works for both sides.
h. ***Distract*** – Take attention away from the problem to make an escape.

60′

ACTIVITY 6

ELOI CRYPTOGRAPHY CHALLENGE

Story link: Tess finds encrypted messages from the Eloi and students must help decode and create codes.

Objectives:

- Understand basic encryption techniques, including the Caesar cipher and prime number coding.
- Apply logical reasoning to encode and decode messages and develop their own symbolic language inspired by the Eloi.
- Analyse real-world applications of encryption.

MATERIALS

CRYPTII | DCODE | GOOGLE SLIDES

STEPS

1. Warm-up

Crack a basic Caesar cipher message. Introduce concept of shifting letters.

Example of a pattern to interpret:

- "Wklv lv wkh iluvw phvvdjh." (This is an example of a Caesar cipher, a classic encryption technique where each letter in a message is shifted by a fixed number of positions in the alphabet. – the answer to this is "This is the first message" – see Ceasar-cipher)

2. Main Task Cycle

EXPLORE CRYPTOGRAPHIC TOOLS

- Mini-stations or guided discovery:
- Caesar Cipher Practice (with different shift values)
- Prime-based Coding: Each letter corresponds to a prime number (e.g., A=2, B=3...)
- Matrix Cipher Intro: Encode a word using 2×2 matrix multiplication (see Matrix example below)

CREATE AND DECODE

- Students create short secret messages using two methods (e.g. Ceasar and Matrix cipher).
- Swap with other groups to attempt decoding.

TIPS FOR TEACHERS

1

- Use a Caesar cipher wheel (printable or digital) to make the concept visual.
- Try online tools for quick demonstrations: ***Cryptii*** or ***Dcode***.
- Start with short, simple words or phrases and build up gradually.

ELOI CODE DESIGN

- Class discussion: the idea of a visual/spatial Eloi writing system.
- Students invent an original symbolic script or numeric code inspired by Eloi aesthetics.

3. Post-task/Plenary

- Code Exchange: Each group deciphers another's Eloi code.
- Discussion: What strategies worked best? What made a message harder to decode?

2
EXPLORE CRYPTOGRAPHIC TOOLS

- Rotate groups every 10–15 minutes to maintain focus.
- Provide scaffolded instruction cards at each station with clear steps.
- For matrix activities, offer worked examples and pre-filled grids. Use a basic 2×2 matrix with simple numbers.
- Differentiation: Matrix cipher can be made more or less challenging depending on group or individual student level.

CREATE AND DECODE

- Limit message length (5–8 words) to keep decoding manageable.
- Encourage the use of coloured pens or highlighting to identify patterns in others' codes.
- Optional: use Google Docs/Slides for message exchanges to reinforce digital skills.

ELOI CODE DESIGN

- Show examples of symbolic systems (e.g., pictograms, runes, QR codes, fictional alphabets like Elvish or Klingon).
- Ask guiding questions: How would Eloi represent sound, ideas, or numbers?
- Allow flexibility—symbols can be geometric, abstract, or nature-based.

TIPS FOR TEACHERS

3

- Use sentence starters for reflection: "I decoded the message by…", "The hardest part was…", "Our code was clear because…"
- Optionally, give students a peer feedback form: "Was the code readable? Creative? Mathematical?"
- Highlight the most creative, most difficult, etc.

ADDITIONAL:

Language Connection:

Students practise language for explanation and instruction, describing how their codes work step by step (First we shift the letters, Then we add a number). Emphasise sequencing connectors and imperatives. This supports procedural discourse in L2.

Homework: Students will include today's work in their Mathematical Time Travel Journal, with a short reflection and a sample of their design, model, or findings.

MATRIX EXAMPLE

Step 1: Choose a 2×2 key matrix

We'll use:

$$[1\ 2\ 0\ 1]$$

Step 2: Convert letters to numbers (A=1, B=2, ..., Z=26)

Let's encode the word: ***HI***

- H = 8
- I = 9

Write this as a ***column vector***:

$$[8\ 9]$$

Step 3: Multiply matrix × vector

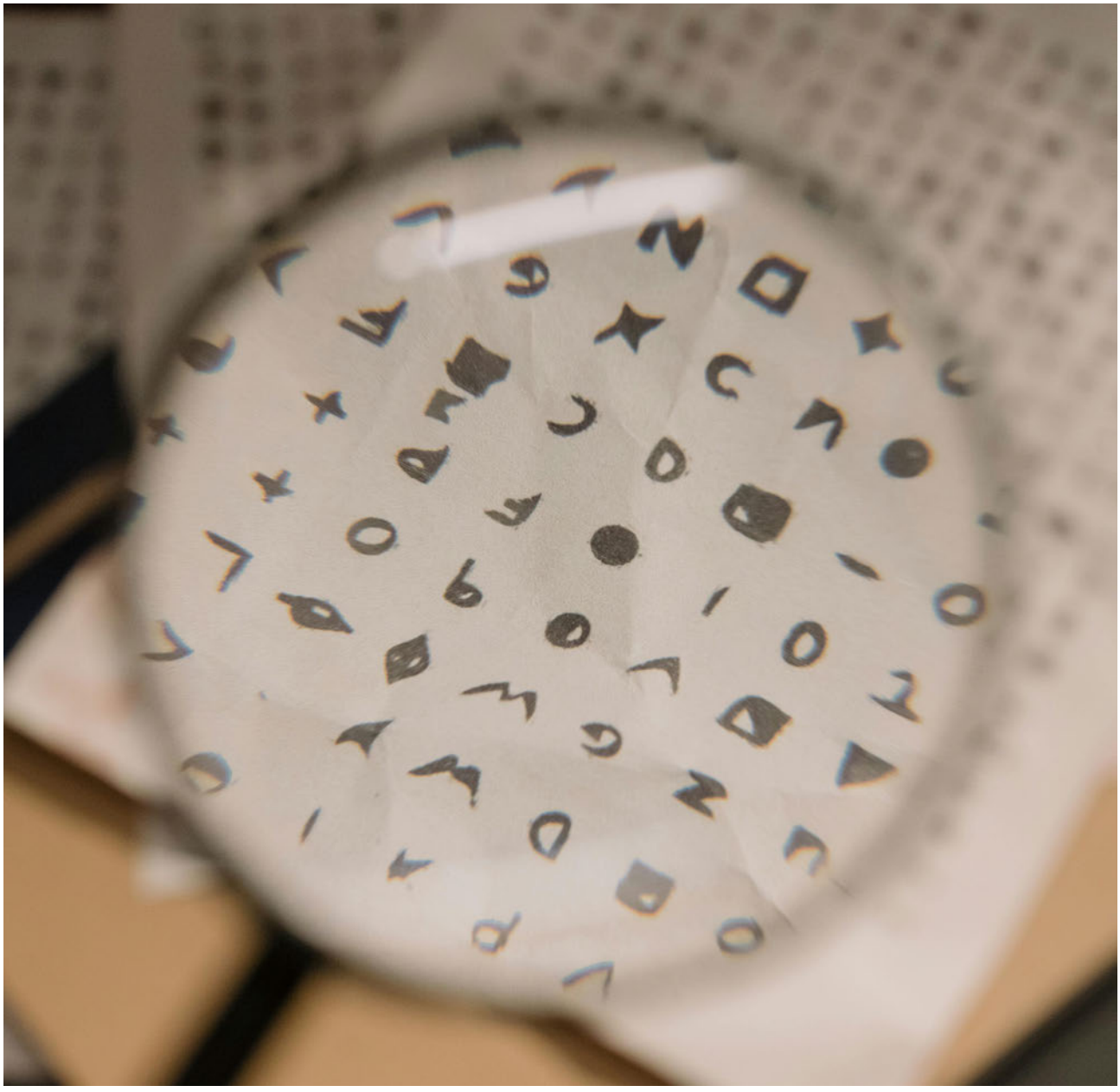
$$[1\ 2\ 0\ 1] \times [8\ 9] = [1 \times 8 + 2 \times 9\ \ 0 \times 8 + 1 \times 9] = [26\ 9]$$

Step 4: Convert result back to letters

- 26 = Z
- 9 = I

* If the number is greater than 26, we begin number 27=A

"HI" becomes "ZI"



ACTIVITY 7

THE MISSION AND THE MESSAGE

60'

Story link: In this session, students revisit Chapter 8 ("A Call to Action"). Tess reflects on her mission and what she has learned from her journey. Students prepare their own "mission" presentations, drawing on Tess's experiences to consolidate story knowledge and connect it to themes of sustainability, courage, and imagination.

Preparation: Final presentation

Objectives:

- Consolidate story knowledge
- Prepare and deliver a spoken final product
- Reflect on themes: sustainability, courage, imagination

MATERIALS

Story: Tess The Time Traveller

CAMBRIDGE LEARNER DICTIONARY

PADLET

QUIZLET

VOCAROO

Tablets/computers

STEPS

1. Warm-up: Focus & Goals

Brief class discussion:

- What is our mission for the presentation?
- What will each group talk about?
- Why is it important?
- What makes a good spoken presentation?

2. Project development

Student's mission is: "Tess's Mission: Past, Present and Future" – A short oral group presentation (2–3 minutes per group)

Each group chooses one of the following themes:

- What does/did Tess learn?
- What changes does/did she see?
- What can we do to protect the future?
- Other (suggested by teacher and/or groups)

TIPS FOR TEACHERS

1

Write a checklist on the board:

- Clear message
- Present or past tenses used accurately
- Group coordination
- Pronunciation & fluency
- Strong conclusion ("Tess shows/showed us that…")

TIPS FOR TEACHERS

2

- Hand out or project a simple structure guide.
- Distribute sentence starters for weaker groups.
- Offer scaffolds for transitions ("Now we will explain…" / "Next, we'll tell you…").

- More advanced questions could include:
- How Tess changes during the story
- What dilemmas she faces and how she solves them
- What we can learn from the Eloi
- How Tess handles conflict without violence
- What her mission teaches us about the future
- Other (suggested by teacher and/or groups)

SPEAKING REHEARSAL

- Give groups 10–15 minutes for focused rehearsal.
- Circulate with feedback slips or sticky notes.
- Help with timing, sentence flow, and delivery.
- If needed, act as audience for one run-through per group.

Each group creates the following parts:

a. Intro to their project
b. Main body part 1– e.g. a key moment
c. Main body part 2 – e.g. group opinion or call to action
d. Closing sentence: "Tess taught us that…"

SPEAKING REHEARSAL

Groups practise quietly or in breakout corners.

Use props or slides if they plan to.

3. Language Clinic: Grammar & Vocabulary

Mini practice in pairs or small groups:

- Fix verb tenses (e.g. present/past simple vs continuous)
- Improve use of adjectives, connectors, and intonation
- Clarify pronunciation of tricky words (e.g., environment, mission, future).

4. Wrap-Up & Final Checklist

Class discussion:

- What went well in rehearsal?
- What still needs work?

3

- Use resources:
- ISLCollective speaking cards (e.g., for past tense)
- Quizlet or printed vocabulary cards
- Mirror or audio tools (Vocaroo) for pronunciation.
- Set up quick "check stations" where you support groups briefly on grammar/pronunciation.

4

Have each group complete a short prep reflection:

- 1 thing we'll practise more
- 1 thing we feel confident about

Homework: Complete preparations for final presentation

ADDITIONAL:

Mathematics Connection:

Invite groups to include one simple visual or data-based element in their oral presentation if possible (e.g., a pie chart of What Tess learned, or a timeline of events). They describe it using quantifiers and trends: Most people believe..., The number increased after...

ACTIVITY 8

MODELLING A BETTER FUTURE

60'

Story link: Tess sees a broken world in the future and wants to understand what went wrong using mathematical tools.

Objectives: Students use real or estimated data to build basic models using functions such as linear and exponential growth. They develop spreadsheet and graphing skills and reflect on the role of mathematics in understanding social and environmental challenges.

MATERIALS

OUR WORLD IN DATA

BBC

STEPS

1. Warm-up Discussion

Prompt questions:

- How do scientists predict the future?
- What data do they use?
- What kinds of problems can be modelled?

Show 2–3 visuals (e.g., CO_2 rise, population trends, deforestation from Our World in Data).

Main task (see example worksheet below)

a. *Data Exploration*

- Students choose 1-2 variables and create graphs to show correlation. They can explore exponential functions using real climate or population data
- Build a basic predictive model using spreadsheet tools.
- Students choose a theme: e.g., population, emissions, energy use, plastic waste, water usage in school.
- They gather data and enter it into Google Sheets or Excel.

b. *Create Graphs*

- Students create a basic table and graph: Year and variable (e.g., population). Insert chart in PowerPoint (line or bar graph). Optional: Predict 2–3 future values using a linear estimate; as an extension, explore exponential growth and add to chart.

c. *Analyse & Reflect*

- Students write or discuss: What does the data show? What could happen in the future? Why does this matter? Optional: Link back to Tess's future world.

TIPS FOR TEACHERS

1

- Choose powerful, clear charts to project.
- Let students speculate before showing real data.
- Ask guiding questions like: "What do you notice? What do you wonder?"
- Encourage use of specific terms: increase, decrease, trend, predict, pattern.

2

- Suggest 1–2 reliable data sources (Our World in Data or UN data – other resources: BBC Interpreting data).
- Offer scaffolding sheets or examples if students are unfamiliar with spreadsheets.
- Use a projector to model how to insert data and graph.
- Provide sentence frames:
- "The graph shows that…"
- "If this continues, we might see…"
- "This reminds me of Tess's world because…"
- Encourage clear explanations: Trend + prediction + consequence.
- Offer sentence starters or a mini checklist.
- Differentiation: Exponential functions can be made more or less challenging depending on group or individual student level.

TIPS FOR TEACHERS

3

- Use printed reflection sheets or digital docs.
- Allow drawings or symbols.

d. *Group Presentations*

- Each group shares their graph and 2–3 conclusions. Use slides, or project directly from their spreadsheet.

3. Plenary/post-task

Written Reflection

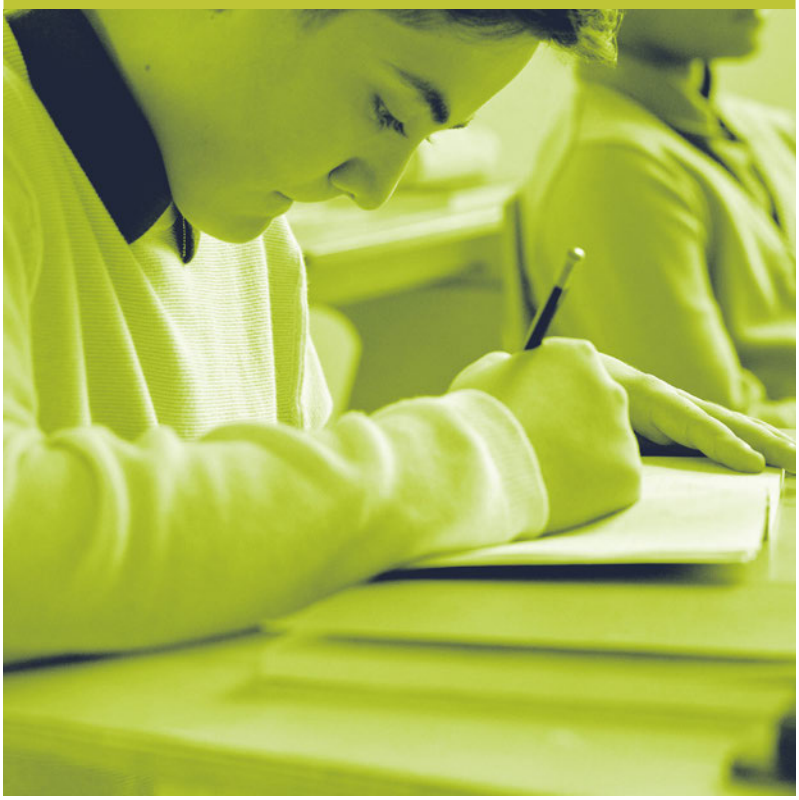
Students answer:

- What did your graph tell you about the future?
- How did maths help you understand a real-world problem?
- What would you like to explore next?

ADDITIONAL:

Language Connection:

Encourage students to write or present short conclusions in English describing their graphs (The data shows..., If this continues, we will...). Use comparative adjectives and prediction structures to bridge maths reasoning with English expression.



Homework: Students will include today's work in their Mathematical Time Travel Journal, with a short reflection and a sample of their design, model, or findings.

EXAMPLE OF INSTRUCTIONS/WORKSHEET

a. Choose a Topic to Explore. For example: World population growth, CO2 levels, plastic use, energy consumption, school water bottle use, etc.

b. Open a Spreadsheet Program. Use Google Sheets (recommended) or Microsoft Excel.

c. Create a Table Like This:

YEAR	POPULATION (IN BILLIONS)
1950	2.5
1970	3.7
1990	5.3
2010	6.9
2030	?
2050	?

d. Look at the Pattern. Estimate the missing numbers by observing the growth. Add your predictions in the empty cells.

e. Create a Graph (e.g. in Excel)

- Highlight the table (Years and Numbers)
- Click “Insert” > “Chart”
- Choose a “Line Chart” or “Bar Chart”

f. Analyse and Reflect

- Answer the following questions:
  - What is the trend? Is it going up, down, or staying the same?
  - What might happen if the pattern continues?
  - Why is this important to think about?

60’

FINAL PROJECT: FOREIGN LANGUAJE

Story link: In this final session, students reflect on the complete story of Tess the Time Traveller (Chapters 1–8). Drawing on Tess’s experiences—her invention, her dilemmas, and her mission—they deliver presentations that connect her journey to lessons about courage, sustainability, imagination, and problem-solving.

Objectives: Students deliver their final presentations, listen to their classmates, and reflect on what they have learned through the project and the story of Tess the Time Traveller.

MATERIALS

- Student presentations
- Laptops for presentations
- PowerPoint or other presentation apps
- Self-assessment sheets (see example below)

STEPS

1. Warm-up: Peer Feedback Preparation

Students receive a feedback form with 3 focus questions:

- Is/Was the presentation understandable?
- Is/Was it interesting?
- Is/Was the message clear?

2. Group Presentations

Each group presents for 2–3 minutes on their prepared topic.

Structure & Flow:

- The classroom is set up in a carousel format (e.g., stations around the room or spaced presentation spots).
- Half the class presents, while the other half rotates from group to group as the audience.
- After each presentation, audience members fill in a short peer feedback form, answering 2–3 guiding questions:
  - Is/Was the presentation understandable?
  - Is/Was it interesting?
  - Is/Was the message clear?
- Listeners also write one positive comment and one suggestion (e.g., “I like/liked how you use/used new vocabulary…” / “Next time you could speak a bit louder…”).

After one round, the groups switch roles so that everyone has a chance to both present and listen.

TIPS FOR TEACHERS

1

- Display sentence starters for feedback:
  - “Your message is/was clear because…”
  - “One thing I like is…. / I liked was…”
  - “Next time you could…”
- Emphasise respectful tone and body language.
- Distribute printed or digital feedback forms.
- Encourage note-taking during peer presentations (on keywords, phrases, or expressions).

2

- Use a timer to stay on track.
- Set up the room (perhaps larger room in school if available) in a semicircle or carousel format if space allows.
- Encourage students to speak from notes, not read.
- Offer a final reminder before presenting: focus on clarity, fluency, and message.
- If possible, record presentations for optional reflection or language analysis.

3. Post-task: Self-Assessment

Students complete a short written self-assessment (see example below).

SAMPLE SELF-ASSESSMENT SHEET

Rate each statement from 1 to 5 (1 = Strongly Disagree, 5 = Strongly Agree).

STATEMENT	1	2	3	4	5
I spoke clearly during my presentation.					
I worked well in my team.					
I used new vocabulary we learned.					
I used correct grammar.					
I pronounced key words correctly.					
I listened carefully to other groups (reception).					
I was able to express my ideas (production).					
I interacted well with others during the task (interaction).					
I helped others understand or explained ideas (mediation).					
I learned something about sustainability or the future.					
I improved my digital skills (e.g., slides, audio, video).					
I improved my ability to understand and compare different cultures or ways of life (for example, understanding the Morlocks and the Eloi).					

TIPS FOR TEACHERS

3

- Celebrate effort (e.g., "Time Traveller Communicator" certificate or stickers).
- If time allows, the session can close with a short group discussion. Students share one thing they learned about Tess's world, one thing they learned in English, or one message from the story that they think is important today.
- If there is additional time, students can play the Goose Game.

60’

FINAL PROJECT: TESS MATHS JOURNAL PRESENTATION

Story link: As an extension, students compile their work from all four sessions into a “Mathematical Time Travel Journal.” This may be submitted digitally or in physical format and includes design drafts, 3D model documentation, coded messages, data graphs, and brief written reflections in English.

MATERIALS

- Student journals
- Presentation apps and laptops

STEPS

1. Opening & Setup

Introduce the day’s goal: presenting key insights from the *Mathematical Time Travel Journal* developed across sessions 2, 4, 6, and 8.

Explain the presentation format (carousel or rotating groups).

2. Presentation Carousel

Groups set up and present their journals to rotating peers (e.g., 3–5 mins per rotation).

Each group should show samples of:

- Geometry sketches or digital designs
- 3D city photo or screenshots
- Cryptographic codes
- Data graphs and predictions
- Reflection quotes or summary sentence

PEER FEEDBACK / VISITOR LOG

Students fill out a feedback form or “visitor log” after each presentation they visit: One thing I learned / One design I liked / One question I have...

3. Whole-Class Reflection

Wrap up with group discussion or individual writing:

- What did we learn from maths about the world?
- What would Tess say if she saw our journals?
- How did the journal help us understand the past, present, and future?

TIPS FOR TEACHERS

1

- Project or display an example layout of the journal with sections: Geometry, 3D Design, Cryptography, Data Modelling.
- Prepare classroom zones or desks for small group “booths” or tables.

2

- Use a timer to manage rotations smoothly.
- Encourage groups to include at least one visual per session and one key “message for the future.”
- Provide a checklist of what to include at their station.
- Ensure that each student has a chance to speak during one round.

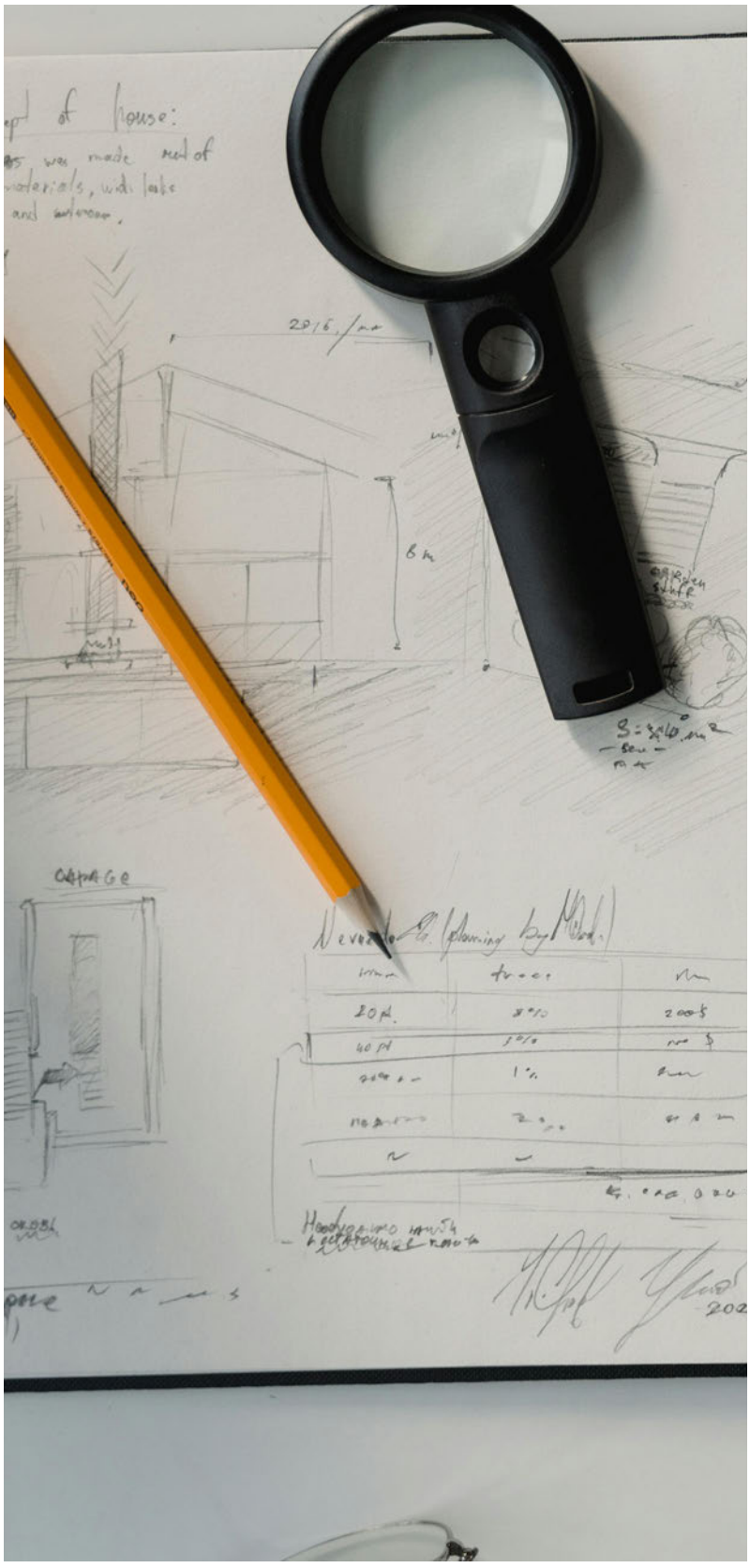
PEER FEEDBACK / VISITOR LOG

- Use simple feedback templates with sentence starters
- Let students add emojis, stars, or stickers for a fun touch.

4. Optional Extension

Compile digital submissions into a shared slide deck or video walkthrough.

Submit or share with another class, school, or parents.



TIPS FOR TEACHERS

3

- Use prompts on the board or display:
  - "Maths helped me see…"
  - "Our best idea was…"
  - "In the future, I would…"
- Option: create a classroom wall display with quotes and visuals from each group.

4

- Create a Padlet, Google Drive folder, or slideshow to showcase the best journal pages.
- Consider nominating creative categories (e.g., "Most Future-Ready City" or "Smartest Cipher").

If there is additional time, students can play the Goose Game.

ADDITIONAL/ OPTIONAL SESSION FOR MATHEMATICS

Story link: Students imagine that Tess walks through the Eloi village, where she begins to notice repeating patterns in the trees, shells, and buildings. These patterns resemble fractals — natural structures that repeat at different scales.

Objectives:

- Recognise fractals and self-similar patterns.
- Explore π and φ and their occurrence in nature and art.
- Create visual representations of fractals.

STEPS

1. Warm-up

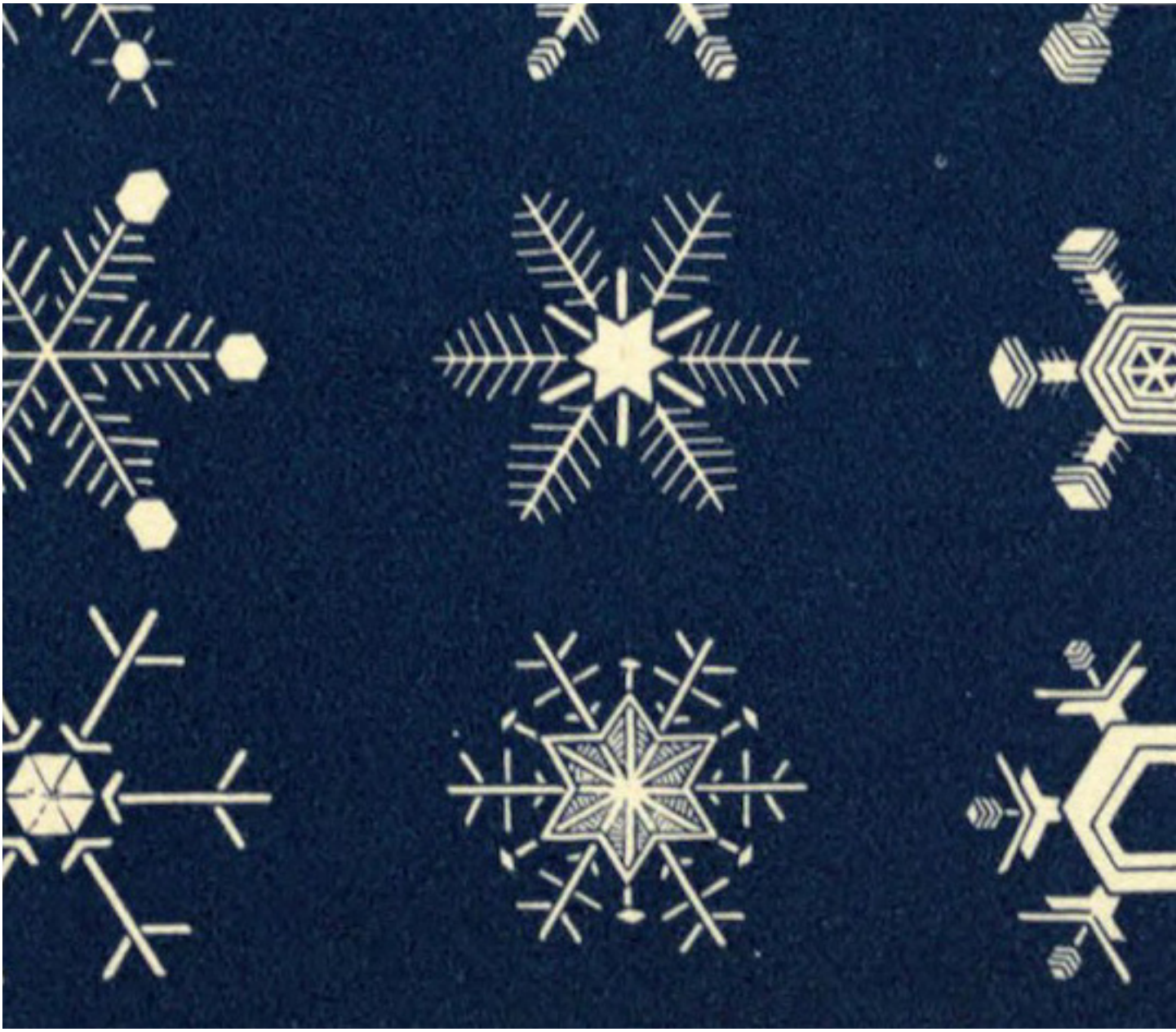
Students see examples of fractals in nature and discuss other possible examples (e.g , Romanesco broccoli, snowflakes, nautilus shells, etc).

EXAMPLE

2. Main Task Cycle

a. Fractal Research & Visual Creation

- Students work in pairs or small groups to research fractals.



- Create a poster or digital infographic showing:
  - Examples from nature.
  - Mathematical characteristics (self-similarity, recursion).
  - Their own fractal drawing or digital design.

b. Golden Ratio & Pi Exploration

- Measure natural objects or images (e.g., leaves, spirals).
- Estimate and compare proportions that approximate:
  - π (circle ratios)
  - φ (the golden ratio)
- Use simple measuring tools and calculators to foster hands-on mathematical inquiry.

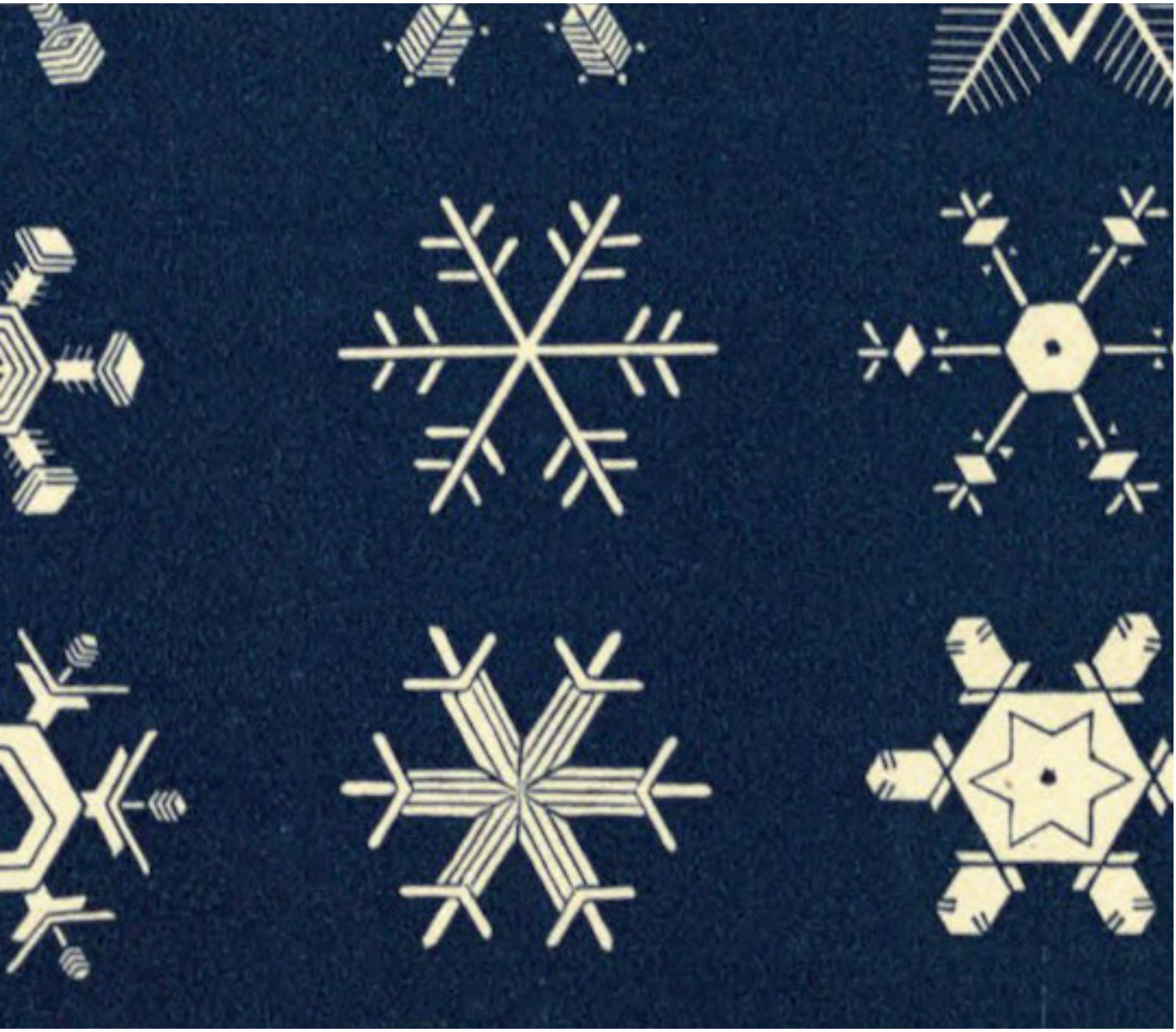
c. 3. Design the Eloi Village

- Use geometric and fractal patterns to draw or build a map of the Eloi village (or part of it).
- Incorporate spirals, tessellations, and natural symmetry.

3. Post-task/Plenary:

Hold a mini-exhibition:

- Posters, infographics, and Eloi village maps are displayed.
- Students do a gallery walk, giving peer feedback.



BREAKING THE TIMELINE WITH TESS

LVL 2

1. SUBJECTS

Level 2 unit with the integration of:

- ***Science***
- ***History***
- ***L2***

Book: *Tess the Time Traveller*
Authors: Stephen P. Hughes, Ana Cristina Martínez Rodríguez, Pavlo Marynenko, Silvia Corral Robles, José Luis Ortega Martín
Year: 2025
Genre: Science Fiction, Teenage Readers, Graphic Novel

2. PROJECT GOALS, LEARNING OBJECTIVES AND FINAL PROJECT

This section describes the overarching goals and specific objectives for this unit. These goals primarily concern the development of skills and competences pertaining to the subjects of foreign language, science and history, but also incorporate wider transversal skills.

General aims

At the end of this unit, students will be able to:

- To communicate effectively in A foreign language (reception production, interaction and mediation) using appropriate vocabulary, grammar, and discourse strategies related to time, identity, and change.
- To interpret scientific and historical sources to understand how environmental and social realities have evolved across time.
- To apply critical thinking and collaboration skills to explore how individual and collective choices impact the future.
- To engage creatively with cross-curricular content through storytelling, inquiry, debate, and project work.
- To use digital tools to gather, present, and reflect on information in meaningful, real-world contexts.
- To demonstrate awareness of sustainability, biodiversity, and historical heritage through discussion, simulation, and creative expression.

Foreign language objectives

- To understand general and specific information in oral, written and audiovisual texts related to the story of Tess and in relation to other receptive subject-specific activities from the unit.
- To produce written texts (e.g., diary entries, reports) and oral outputs (e.g., presentations, reflections) that describe, narrate, or explain aspects of Tess's journey, integrating vocabulary and content from L2, Biology, and History.
- To engage in meaningful pair and group discussions to exchange opinions, negotiate meaning, and build collaborative projects related to futuristic societies, historical events, and environmental challenges.
- To summarise and reframe content from one mode or subject area into another (e.g., turning scientific or historical texts into accessible oral presentations or creative formats), supporting classmates in understanding key ideas.

Objectives for history

- Explore key features of historical societies: Understand how ancient civilisations and later historical periods were structured in terms of daily life, governance, and technology.
- Compare historical periods with the present: Use tools such as Venn diagrams or timelines to identify changes and continuities across time in social, political, and environmental contexts.
- Interpret historical sources and testimonies: Analyse visual, textual, and oral evidence to draw conclusions about past events, people, and movements.
- Understand causes and consequences of revolutions and conflicts: Identify major his-

torical turning points (e.g., Industrial Revolution, civil rights movements) and reflect on their social impact.
- Express historical understanding creatively: Present historical insights through roleplays, timelines, diary entries, or visual projects using both factual knowledge and imagination.

Objectives for science

- Describe the effects of climate change on ecosystems: Understand how rising temperatures, pollution, and deforestation affect biodiversity, species, and habitats.
- Investigate the greenhouse effect through simple experiments: Conduct and explain experiments to model climate phenomena using accessible materials and scientific reasoning.
- Classify endangered species and understand threats to biodiversity: Research causes of species endangerment and suggest actions for conservation and sustainable living.
- Explore ethical questions in biology and biotechnology: Discuss issues such as cloning, GMOs, and the balance between scientific progress and ethical responsibility.
- Communicate scientific knowledge through reports and creative formats: Produce posters, videos, or podcasts to present biological concepts in engaging and accurate ways.

Cooperative learning goals

- To work effectively in mixed-ability groups to analyse information from literature, scientific data, and historical sources.
- To take on different roles within group projects (e.g., speaker, writer, researcher, timekeeper) to promote accountability and shared responsibility.
- To collaborate to create a timeline, skit, report, or oral presentation that combines insights from all three subjects.
- To respect and build on others' ideas during discussions on environmental challenges, historical dilemmas, and speculative futures.
- To use peer feedback constructively to improve group outputs in both written and oral forms.
- To demonstrate empathy and open-mindedness when exploring alternative perspectives across time periods and disciplines.

Critical thinking and reflection

- Analyse connections between historical events, scientific change, and future possibilities.
- Compare perspectives and evaluate consequences of decisions across different time periods.
- Reflect on personal learning through journals, peer feedback, and class discussions.
- Question assumptions and consider ethical dilemmas in science and history.
- Apply reasoning skills to predict, justify, or challenge outcomes in fictional and real-world scenarios.

Final products

Foreign language

A personal, multimedia portfolio created from Tess's perspective, showcasing her emotional journey, discoveries, and growth as she travels through time. It may include:

- Diary entries or letters from key moments in the story, written with emotional depth and personal reflection.
- Visual journal pages combining text with drawings, screenshots, or collages to depict new worlds, characters, and dilemmas.
- Mini reflection pieces comparing Tess's world to the students' own lives and values (e.g., "What would I do in Tess's place?").
- Optional audio or video recordings of Tess explaining what she's learned about history, science, or humanity.

Biology

- A short scientific report or visual poster summarising an investigation or simulation related to climate change, biodiversity, or human environmental impact — reflecting on Tess's observations across time.

History

- A timeline or showing Tess's journey through one or more historical periods, with annotations or a brief script explaining key social, political, and cultural aspects.

3. SDGs

This unit is related to the following SDGs:

4. CROSSCUTTING CONCEPTS

The following crosscutting concepts help students make meaningful connections across L2, Biology, and History, supporting critical thinking and interdisciplinary understanding:

Patterns

Students identify recurring patterns in Tess's observations (temperature trends, social behaviours, historical themes).

Cause and Effect

Learners explain how actions (policy, technology, resource use) produce environmental and social outcomes.

Scale, Proportion and Quantity

Students explore how scientific and social phenomena can look different depending on size, amount, or time span—for example, comparing how heat builds up in a jar versus the planet, or how small community choices scale up to global impact.

Systems and System Models

The jar experiment and story worlds act as models of interacting components (energy, atmosphere, society).

Energy, Matter and Objects

Students track how light/heat enter, transform, and are retained; how materials and organisms move through systems.

Structure and Function

They relate features (e.g., a cover's transparency; social institution rules) to their functions (heat trapping; governance).

Stability and Change

Students examine what remains stable vs. what shifts over time in climates, ecosystems, technologies, and cultures.

5. SKILLS

5.1 STEAM SKILLS

This unit develops students' STEAM (Science, Technology, Engineering, Arts, and Mathematics) competences through the integrated study of language, history, and science using the narrative of Tess the Time Traveller. Students engage in inquiry, collaboration, and creative communication across multiple subjects. Key skills include:

Science

Interpreting data to predict real-world outcomes. Students engage with scientific experiments and environmental case studies, analysing data and evidence to draw conclusions and forecast potential consequences.

Technology

Using digital tools to research and communicate. Learners employ technology for guided research, presentations, and collaborative creations—enhancing their ability to access, process, and share information effectively.

Engineering

Designing solutions through collaborative creation. In teams, students plan and build meaningful learning products that respond to interdisciplinary challenges.

Arts

Expressing complex ideas through creative storytelling. Through diary entries, skits (informal play or dramatic performance), and visual media, students explore and convey emotional, historical, and scientific themes in imaginative, engaging formats.

Mathematics

Analysing patterns and structures across contexts. Learners apply mathematical thinking to identify trends, compare historical data, and understand the impact of social and environmental structures over time.

5.2 DIGITAL SKILLS

In today's digital age, technology plays a key role in research, collaboration, and communication. This unit plan incorporates essential digital skills to support students in their learning and project work.

- Using online sources responsibly: Accessing and evaluating scientific and historical information from trusted websites (e.g., UN, National Geographic, educational portals).
- Collaborative document creation: Working in teams on shared digital presentations, reports, or timelines using tools like Google Docs, Slides, or Canva.
- Digital storytelling and content creatio: Producing creative outputs such as posters, podcasts, or short videos to express insights into Tess's journey, environmental themes, or historical contexts.
- Online self-assessment and quizzes: Completing short comprehension checks, vocabulary quizzes, or reflection forms using tools like Google Forms or Quizizz.
- Using multimedia for communication: Embedding images, graphs, maps, and video in presentations to support oral communication and visual literacy.
- Practicing digital citizenship: Respecting copyright, citing sources, and communicating respectfully in collaborative online tasks.

6. CLIL FRAMEWORK

6.1. THE 4 C'S

The aspects of content, culture, communication and cognition are integrated in all language and non-language subject sessions. From these, the most important areas of the 4 C's are as follows:

4C	DESCRIPTION
CONTENT	• Learn about narrative structure, environmental science, and key historical periods. • Build knowledge on time travel, sustainability, ancient civilisations, and human rights. • Explore scientific phenomena like climate change and biodiversity through experiments and inquiry. • Understand how societies evolve by studying revolutions, conflict, and social movements.
COGNITION	• Solve problems, compare societies, analyse conflict, and evaluate sustainability strategies. • Reflect on ethical decisions, interpret timelines, and synthesise information for creative projects. • Make predictions, categorise information, and sequence historical events. • Apply knowledge to new contexts such as role-plays, debates, or future-focused tasks.
COMMUNICATION	• Engage in discussions, debates, and oral presentations in L2. • Read scientific texts, write reports, and express personal reflections across content areas. • Practice functional language for summarising, comparing, and persuading. • Collaborate in pairs or groups to share findings, ask questions, and clarify understanding.
CULTURE	• Explore future utopias, ancient traditions, and the global impacts of climate change. • Appreciate diverse perspectives on progress, social justice, and environmental responsibility. • Recognise contributions of women and underrepresented groups in science and history. • Compare cultural responses to crises such as war, environmental disaster, or inequality.

6.2 THE LANGUAGE TRIPTYCH

The CLIL language triptych for this unit includes numerous examples of language of, for, and through learning, examples of which are included below:

Language of Learning

- Key subject-specific vocabulary and grammar needed to access and understand content in each subject area.
- L2 (Literature & Expression): narrative voice, diary, emotions, predictions, character traits, identity, timeline, perspective, setting, conflict, resolution.
- Biology (Climate & Ecosystems): climate change, biodiversity, species, extinction, pollution, deforestation, ecosystem, greenhouse gases, sustainability.
- History (Society & Change): civilisation, governance, timeline, era, artefact, citizen, ruler, power structure, social roles, revolution, continuity and change.

Language for Learning

- Language functions and communication skills students need to work effectively with peers, engage in tasks, and participate in the classroom.
- Asking and answering questions, clarifying instructions, and expressing opinions.
- Collaborating in groups, explaining ideas, presenting findings, and giving peer feedback.
- Language for scientific inquiry (e.g. "We predict that…", "Our experiment shows…") and historical comparison (e.g. "Compared to the past…", "This source suggests…").

Language through Learning

- Language that students acquire as they explore content, solve problems, and reflect on new concepts.
- Emergent vocabulary from context, such as abstract or inferential terms (e.g. dilemma, consequence, adaptation, justice).
- Expanded use of connectives, sequencing words, and descriptive or persuasive language as students develop their written and spoken output.
- Grammar structures refined through real use — e.g., past tenses in storytelling, modal verbs in debates ("Tess should…", "We could…"), and conditional forms ("If the future is damaged, then…").

7. UNIVERSAL DESIGN FOR LEARNING (UDL)

Applying Universal Design for Learning (UDL) to this CLIL unit based on Tess the Time Traveller means designing flexible, inclusive learning experiences that support the needs, strengths, and interests of all learners. UDL is structured around three core principles:

- Multiple Means of Engagement (the "why" of learning).
- Multiple Means of Representation (the "what" of learning).
- Multiple Means of Action and Expression (the "how" of learning).

The choice of Tess the Time Traveller as the central text directly supports this approach, as the graphic novel is available in four language levels (A1+, A2+, B1, B2), allowing for language differentiation and access across diverse learner profiles. This scaffolding enables all students to meaningfully engage with content from L2, Biology, and History while working toward shared learning goals.

8. MAIN METHODOLOGICAL CONSIDERATIONS

This unit underscores the importance of the following methodological principles:

- ***Student-Centred Learning***: Activities are designed around students' interests, questions, and active participation, fostering ownership and autonomy.
- ***Story-Based Learning:*** A central narrative (e.g. Tess's journey) provides context and

emotional connection, guiding inquiry across disciplines.

- ***Interdisciplinary Integration:*** Ensure learning activities meaningfully connect Science, Technology, Engineering, Arts, and Mathematics to deepen understanding across subjects.
- ***Inquiry-Based Learning:*** Use questions, problems, and scenarios to drive exploration and student-led discovery.
- ***Collaborative Learning:*** Promote teamwork through group projects, discussions, and peer feedback.
- ***Scaffolded Skill Development:*** Support students with guided tools, models, and gradual release of responsibility.
- ***Authentic Assessment:*** Evaluate through performance tasks, presentations, and reflective writing rather than only tests.
- ***Creative Expression:*** Encourage diverse outputs (e.g. skits, posters, reports) to cater to different learning styles.
- ***Real-World Relevance***: Anchor tasks in current global and local issues to increase engagement and meaning.

9. ASSESSMENT

Assessment will take place throughout the unit, using a variety of tools and strategies to measure progress across language, scientific reasoning, and historical understanding.

Evaluation methods include:

Systematic Observation

Monitoring student participation in group discussions, experiments, and historical analyses, with a focus on collaboration, oral communication, and critical thinking.

Evaluation of Student Work

Assessing written diary entries, scientific reports or posters, and historical timelines or presentations for content accuracy, creativity, and communication effectiveness.

Subject-Specific Tasks and Checkpoints

Using short formative tasks in each subject (e.g., vocabulary quizzes, data interpretation exercises,

historical source analysis) to track individual understanding and skills development.

Rubrics

Applying clear, subject-specific rubrics for writing tasks, oral presentations, and project work to ensure consistency and transparency across disciplines.

Self-Assessment

Encouraging students to reflect on their learning in L2, Biology, and History through guided prompts or personal learning journals.

Peer Assessment

Organising structured peer feedback on presentations and group work, using simplified rubrics to promote constructive evaluation and dialogue.

Digital Tools

Integrating tools such as collaborative slides, online quizzes, Padlet walls, or recorded oral reflections to support multimodal assessment and learner autonomy.

A number of assessment activities (including self and peer assessment) and other evaluation) activities are included in individual sessions

The following pages contain sessions for the subjects of L2, Science, and History. The activities are placed in a suggested and flexible order. The idea behind this type of organisation is to enable participating teachers to see what activities their colleagues are doing and, in this way, be able to draw on common elements as reference points for their classes.

10. DESCRIPTION OF THE SEQUENCE OF ACTIVITIES

The following pages contain sessions for the subjects of L2, Science, and History. The activities are placed in a suggested and flexible order. The idea behind this type of organisation is to enable participating teachers to see what activities their colleagues are doing and, in this way, be able to draw on common elements as reference points for their classes.

Science/Biology activities are marked in teal.

History activities are marked in turquoise.

L2 (English) activities are marked in green.

Activities	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Duration (mins)	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*
Mathematics								
History								
L2								

General tips

- This unit connects storytelling with real problem-solving, using creativity, collaboration, and imagination. While there are a large number of suggested activities, there is a large degree of teacher (and, where possible) student autonomy. The following are some tips which can help you to get the most out of the project:
- Activities can be mixed, adapted, or simplified depending on your group's needs. In class, it is possible to pause, revisit, or skip steps to keep energy and understanding high.
- Many activities combine the subjects of Foreign Language and/or History and/or Biology. These can be approached flexibly—sometimes through storytelling and expression, other times through design, analysis, or building.
- Students take the lead in tasks, working in teams, choosing tools, creating models, and sharing ideas.
- The final projects build on work done throughout the unit. They can be presented in different formats (spoken, written, visual, digital) depending on group goals.
- Tess's journey is also yours: learners take an active role, connect ideas across subjects, and imagine possible futures together.

In addition to these points, we have included a series of suggestions, or non-prescriptive tips which might serve as useful ideas for lesson development.

9	10	11	12	13	14	FP	FP	FP
60	*60*	*60*	*60*	*60*	*60*	*60-120*	*60-120*	*60-120*
								FINAL PROJECT
							FINAL PROJECT	
						FINAL PROJECT		

ACTIVITY 1

Story link: In this session, students read about Tess's invention of the time machine and use it as a springboard to practise comprehension skills and write a diary entry from Tess's perspective before she tests the machine.

MATERIALS

- Chapter 1 of the story
- Images of time machines, scientists, future landscapes (Google Images or Canva)
- Vocabulary cards
- Diary entry template

STEPS

1. Warm-up

- Students look at the title "Tess the Time Traveller" and discuss what they think story is about, what elements might appear etc.
- Students look at images and keywords (time machine, scientist, adventure, future) and guess their relevance to the story.

2. Main Task

Input

- Read Chapter 1: The Strange Machine and the Strange Girl together.
- Students answer comprehension questions. For example:
  - **a.** Why do Tess's classmates laugh at her?
  - **b.** What motivates Tess to build a time machine?
  - **c.** How does her grandmother influence her?
- Extra for higher order thinking:
  - **d.** If you had a time machine, where would you go and why?
  - **e.** What would happen if no one ever had new ideas like Tess? How would the world be different?

Preparation

Students prepare ideas/basic notes for a diary entry from Tess before she tests the Time Machine.

Output

Based on the story, students write a draft diary entry from Tess before she tests the machine for the first time.

TIPS FOR TEACHERS

1

- Let students explore the story title and key visuals and jot down ideas before sharing.

2

- When modelling the diary entry, write an example together with the class using guided questions (e.g., How would Tess feel? What is she worried about?).
- Diary Entry Language Support.

Opening / Date

- Dear Diary,
- Today is … / Tonight I am …

Feelings & Emotions

- I feel … (excited / nervous / proud / worried / curious).
- I can't stop thinking about …
- Sometimes I wonder if …

Motivation & Reasons

- I want to build this machine because …
- My dream is …
- I believe this will …

Events / Plans

- Tomorrow I will …
- Before I test the machine, I need to …
- If it works, then …

Hopes & Fears

- I hope that …
- I am afraid that …
- What if …?

Closing

- That's all for now.
- Wish me luck!
- Goodnight, Diary.

3. Post-task / Consolidation

Focus on language. For example, Past Simple vs. Past Continuous .

EXAMPLE

ADDITIONAL:

Science Connection:

Discuss the basic concept of time as a measurable phenomenon. Students can explore how scientists define time (seconds, hours, years) and how this differs from historical time periods. Simple activities: sequencing daily routines or ordering inventions chronologically.

Homework: Students complete final version of diary entry.

TIPS FOR TEACHERS

3

- During the grammar focus, highlight differences between Past Simple and Past Continuous with colour-coded examples and timelines.
- Pair students for sentence-matching to reinforce learning.

ACTIVITY 2

Story link: In this session, students explore Tess's arrival in the future world and use descriptive language to imagine and present what this strange but beautiful place is like.

MATERIALS

- Chapter 2 of the story
- Ambient nature sounds
- Vocabulary cards with adjectives
- Adjective order tables

STEPS

1. Warm-up

- Students listen to ambient nature sounds (wind, rustling leaves, water flowing).
- Discussion questions and new vocabulary: What do you think Tess sees, hears, and feels when she arrives in the future?

2. Main Task

Read Chapter 2: A Friendly Furry Companion.

Students match words with their descriptions:

- A small, furry creature with floppy ears and a bushy tail ___ (Pip, The Moon, The Eloi)
- A place where everything seems alive and glowing ___ (The Village, The Cave, The Meadow)
- The sky is filled with lines of green and purple light ___ (Aurora Borealis, The Sun, The Ocean)
- The air is difficult to breathe, and Tess starts feeling light-headed ___ (The Cave, The Meadow, The Atmosphere)
- A kind being who helps Tess understand the new world ___ (The Morlocks, Luma, Jamie)

Extra question: Tess arrives in a completely new world that is both beautiful and unfamiliar. How do you think her first impressions of this world affect her decisions and emotions? If you were in her place, would you trust Luma and explore, or try to find a way back immediately? Why?

Preparation

In pairs or small groups, students make notes about the world in 1,000 years. Depending on level, they may discuss this using

TIPS FOR TEACHERS

1

- Use ambient sounds and images as sensory input to trigger creative thinking and vocabulary development.
- Pre-teach or revise descriptive and opinion adjectives. Create a word bank on the board that students can add to throughout the task.

present or future tenses. Students focus on adjectives and their position.

Output
Students present their ideas to one or more groups

Post-task / Consolidation:
Descriptive vs. Opinion Adjectives

EXAMPLE

ADDITIONAL:
Science/History Connection:
Link environmental and social issues from the text to real-world developments. Students identify one historical invention that changed how humans interact with nature (e.g., the steam engine, electric light) and one modern innovation for sustainability. They compare both in simple terms ("In the past… / Today…").

Homework: Students complete their descriptions.

TIPS FOR TEACHERS

2

- Language Support
- Descriptive adjectives (what something is like):
  - tall, bright, glowing, furry, silent, cold, soft, green, enormous, strange
- Opinion adjectives (what you think/feel about it):
  - beautiful, scary, exciting, dangerous, amazing, mysterious, unusual, peaceful, wonderful
- Sentence stems for world description:
  - In the future, the trees are …
  - The air feels …
  - The sky looks …
  - I think this place is … because …
  - This world makes me feel …
- Sentence stems for presentation/discussion:
  - Our group thinks the future world will be …
  - One special thing we imagined is …
  - We believe Tess will … because …
  - In 1,000 years, people might …
- Comparing ideas:
  - Similar to now, … but different because …
  - Unlike today, … in the future …

60′

ACTIVITY 3

TESS IN ANCIENT CIVILISATIONS

Story link: Students imagine Tess lands in a historical civilisation of their class's focus (e.g. Ancient Rome, Ancient Egypt, or another period studied in the curriculum). What does she learn about how that society was organised?

MATERIALS

- Chapter reference or prompt
- Images of historical objects/landscapes
- BBC Bitesize History & Ducksters
- Venn diagram templates

STEPS

1. Warm-up

Guess the era: Show visuals related to the period being studied (e.g. pyramids, togas, factories, steam trains). Students guess the time and place.

Students think of historical examples from the local/national context.

2. Main Task Cycle

In pairs, students explore life in the selected civilisation using suggested websites or similar. For example:

*Students could use a prompt to simplify texts, for example in Open AI: "Please simplify the following text to A2/B1 level L2 and keep the main ideas clear: [PASTE TEXT]"

ANCIENT EGYPT (BBC)

ANCIENT ROME (DUCKSTERS)

INDUSTRIAL REVOLUTION (BBC)

Activity: Complete a Venn diagram comparing aspects of society in the chosen historical period and today.
Suggested categories: Daily life (food, clothing, leisure), Government or leadership, Technology/inventions, etc.

3. Post-task/Plenary

Class discussion comparing daily life then and now, highlighting improvements (e.g. healthcare, technology) and areas where modern life poses new challenges (e.g. pollution, social isolation).

TIPS FOR TEACHERS

1

Cross cutting concept– Systems and System Models: Highlight how daily life, governance, and the environment worked together as parts of an interdependent system.

- Choose civilisations already familiar to students to build on prior knowledge.
- Add a small word bank that they can see before going on to the Venn diagram in the main task (citizen, empire, artisan, agriculture, invention, etc.).
- Language support: Word Bank: citizen · emperor/leader · artisan · agriculture · invention · trade · army · temple · laws · daily life · leisure · farming · transport

ADDITIONAL:

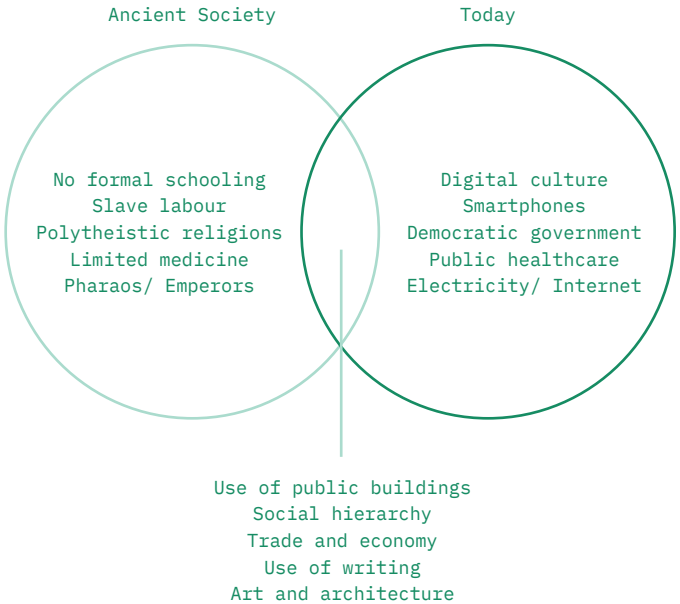
Language Connection:

Students describe the civilisations using descriptive adjectives. They also practise past tenses to narrate historical-style events.

Homework: Write a brief explanation of the Venn diagram

Example of a Venn Diagram

Ancient Society vs Today



TIPS FOR TEACHERS

2

- Offer simplified or curated research materials and model how to use them effectively (e.g., highlighting keywords, summarising information).
- Pair students strategically to support differentiated learning, mixing abilities to foster peer teaching.

Optional/extra: Students create and perform short roleplays (a trader, soldier, inventor, or child) to describe their day in the chosen civilisation.

Language support: Comparing then and now

- In Ancient Rome/Egypt/…, people used to… but today we…
- One similarity is…
- One difference is…
- In the past, daily life included… whereas now…

Venn Diagram Support (categories)

- Daily life: They ate…, they wore…, they enjoyed…
- Government: The leader was…, they had laws about…
- Technology/inventions: They invented…, today we use…

3

Language support

- One improvement in modern life is…
- One challenge in modern life is…
- We can still learn from… because…

60′

ACTIVITY 4

UNDERSTANDING CLIMATE CHANGE

Story link: Students imagine Tess has landed in two time periods on Earth and observes dramatic environmental differences.

MATERIALS

- UN Climate Change website
- Vocabulary wall materials (paper, markers)
- Group worksheet templates

STEPS

1. Warm-up

Students brainstorm possible causes of changes in two time periods of the story (see images from comic version).

Students think of examples of environmental changes from the local/national context (e.g. local deforestation, desertification, etc.).

2. Main Task Cycle

In groups, students explore the UN climate change website (available in multiple languages) and answer guided questions:

Is it true that climate change is happening?
What are the causes and risks?
Which gases contribute?

Groups present one key finding to another group.

3. Post-task/Plenary

Create a classroom "Climate Wall" with key vocabulary and facts extracted from student findings.

TIPS FOR TEACHERS

1

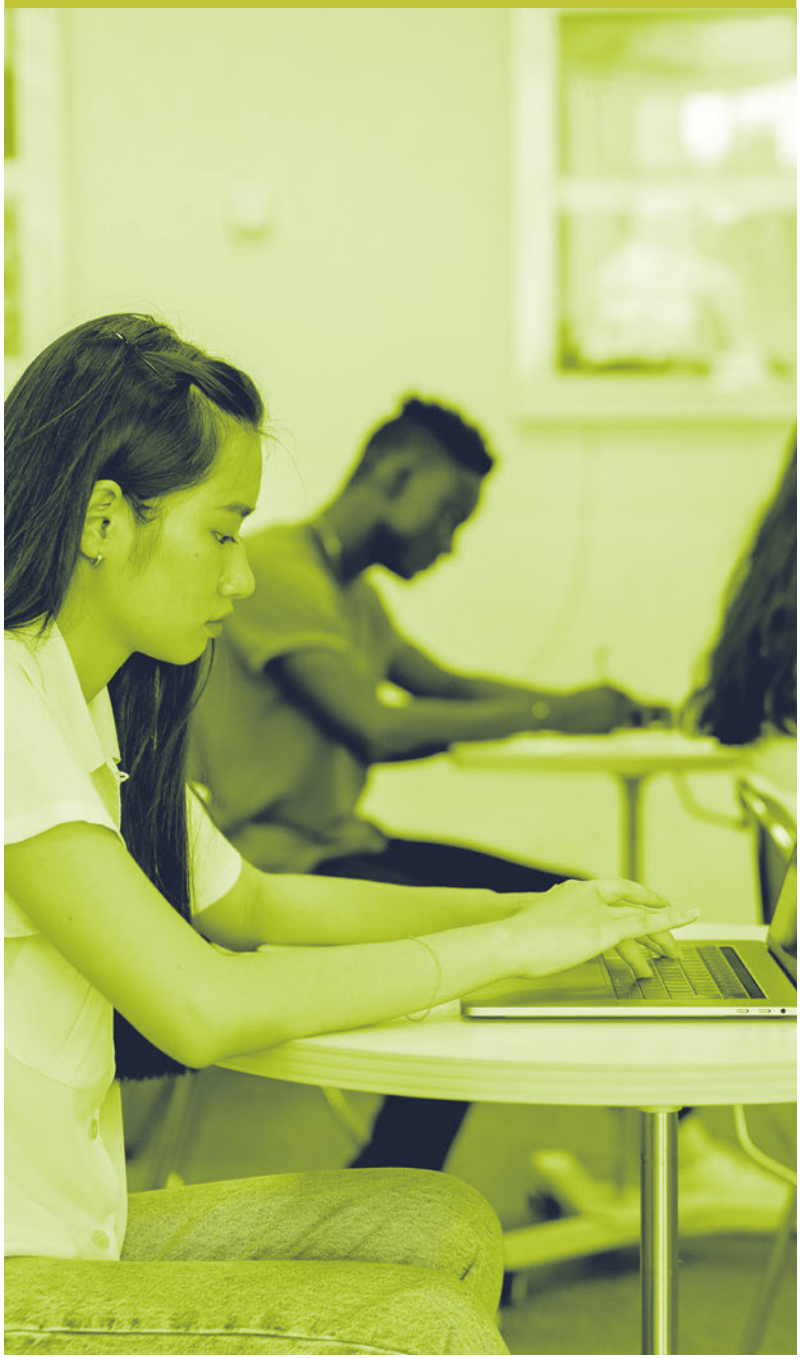
Cross-cutting concepts - Cause and Effect: Draw attention to how specific gases cause warming and what risks follow from these effects.

- Review or teach digital reading strategies before exploring the UN website (e.g., scanning for key words, using headings).
- Language support: Climate, environment, greenhouse gases, carbon dioxide, methane, deforestation, desertification, pollution, global warming, cause, effect, risk, impact.

ADDITIONAL:

Language Connection:

Students present one "Cause → Effect" slide in English using stems: "One cause is... As a result... This matters because...", then do a 60-second stand-up share.



Homework: Students prepare a visual based on one of their findings to display on the Climate Wall.

TIPS FOR TEACHERS

2

- Assign group roles (reader, recorder, presenter, time-keeper) to ensure equal participation.
- Make the concept of Cause and Effect explicit by guiding students to connect human actions (causes) with environmental changes (effects).
- Language support: Provide sentence stems for guided questions ("One cause is… As a result…").
- Language support

Guided Question Stems

- Yes, it is true that climate change is happening because…
- One cause is…
- Another cause is…
- One risk is…
- The gases that contribute are…
- As a result…

Cause and Effect Frames

- Human action: … → Effect: …
- If people…, then… happens.
- When we…, the environment…

Presentation Support

- Our group found that…
- One key fact is…
- This is important because…

3

- Assign group roles (readClimate wall can be a growing display where students add vocabulary, diagrams, or facts throughout the unit.
- Update the "Climate Wall" periodically with newly learned vocabulary – this helps recycle and make language of/for/through learning more visible across lessons.
- Alternative to Climate wall could be individual student glossaries, which can also be updated periodically.

60'

ACTIVITY 5

FUTURE-PROOFING THE PLANT?

Story link: In this session, students read about Tess's visit to the Eloi village and examine how the Eloi live in harmony with nature. They compare this society with their own and practise report writing by drafting notes and structured reflections on sustainable practices.

MATERIALS

- Chapter 3 of the story
- Images of pollution vs. sustainable environments
- Report structure handouts
- Comparison charts

STEPS

1. Warm-up

- Students look at and compare pictures from Tess's present (including examples of pollution) and the future. They predict what types of things people do now or might do in the future to live in harmony with nature.
- Vocabulary focus: key terms (renewable energy, pollution, ecosystem, balance).

2. Main Task Cycle

- Read Chapter 3: Life in the Village and discuss how the Eloi live in harmony with nature.
- Comprehension and discussion:
  - What sustainable practices do the Eloi use?
  - How is their society different from ours?
  - Additional questions.

3. Post-task/Plenary

Tess decides to take notes for a report so she can tell people back home about what she found.

Consolidation: Language of reports - Match the parts of a report with useful expressions.

TIPS FOR TEACHERS

1

- Use then/now images to spark predictions and facilitate comparative language use.

Language support:

- Comparative structures: "In the past…, but now…" / "In the future people might…".
- Sentence starters for predictions: "I think people will…" / "Perhaps in the future…".

2

- Provide a report structure scaffold, including sentence starters and model paragraphs.

3

- Give focused feedback on structure, coherence, and accuracy. Use peer editing with checklists.

ADDITIONAL:

Science/History Connection:

Add a "Then/Now" diagram with one historic local practice vs. a modern sustainable alternative; cite a simple scientific reason for the change in one sentence.

Homework: Read Chapter 4. Write 3-5 sentences explaining what happens in Chapter 4. Think & Reflect.

- What dilemma does Tess face in this chapter?
- Do you think she is making the right decision? Why or why not?

Bring answers to the next class.

60′

ACTIVITY 6

THE GREENHOUSE EFFECT IN ACTION

Story link: Students imagine that Tess takes notes about her surroundings. Like Tess, to understand the cause of global warming, students explore the greenhouse effect and recreate a simple experiment that could help Tess explain it to future generations.

MATERIALS

- Experiment vide (L2)
- Peer feedback rubric
- Materials for greenhouse effect experiment (jars, thermometers, plastic wrap, etc.)

STEPS

1. Warm-up

Quick quiz on gases and their effects on climate.
Possible quiz questions:
Greenhouse Gases & Climate Change Quiz

QUIZ

a. Which gas is the most abundant greenhouse gas in Earth's atmosphere?
Correct answer: D) Water vapor

b. What human activity releases the most carbon dioxide into the atmosphere?
Correct answer: C) Burning fossil fuels

c. Which greenhouse gas is released by livestock farming?
Correct answer: A) Methane

d. What effect do greenhouse gases have on the Earth?
Correct answer: C) Trap heat and warm the planet

e. Which of these gases is NOT a greenhouse gas?
Correct answer: B) Oxygen

2. Students watch one experiment from this playlist or similar:

ENGLISH (FRENCH SUBTITLES)

SPANISH

Then, in groups, they replicate a simple greenhouse effect experiment and record it (video if devices are available or slideshow showing the process).

TIPS FOR TEACHERS

1

Cross-cutting concepts - Patterns / Scale, Proportion and Quantity / Energy, Matter and Objects: Ask students to identify temperature patterns, relate the small jar model to planetary scale, and trace how light energy transforms into heat and becomes trapped.

See example below

Key Vocabulary
greenhouse effect, atmosphere, gases, carbon dioxide (CO_2), methane (CH_4), heat, energy, absorb, reflect, trap, experiment, results, temperature, prediction, conclusion.

2 (PART 1)

- Test the experiment beforehand and ensure you have all necessary materials ready.
- Guide students in forming hypotheses and writing procedural steps in L2.
- Encourage students to follow the research cycle: formulating a research question, predicting outcomes, recording measurements, and drawing conclusions.
- Language support: Provide prompts ("We predict that… First, we… Therefore, we conclude…")

Ask groups to present their findings using a simple lab-report format:

a. Introduction – What question are we asking? (e.g., Does covering a jar change the temperature?)
b. Research questions or hypothesis (e.g. What do we think will happen? If we do X, ... Y will happen).
c. Method – What materials did we use? What steps did we follow?
d. Results – What did we observe/measure? (numbers, charts, photos)
e. Conclusion – What do the results show? Was our prediction correct?

Students present the findings from their experiment.

RUBRIC

3. Post-task/Plenary

Peer feedback using a simple rubric:

TIPS FOR TEACHERS

3

- Use rubrics and peer feedback to promote constructive evaluation. Offer praise for creativity and teamwork.

Peer Feedback Phrases

- One thing you explained clearly was…
- I liked the way your group…
- Next time, you could improve by…

2 (PART 2)

Optional and/or extension:

- To highlight the Engineering part of STEAM, ask students not only to repeat the experiment, but also to make small changes (e.g., test different covers, measure at different times). They then compare results and adjust their design.
- Highlight the concept of Structure and Function by asking how the materials used (e.g., plastic wrap, glass) influence the way heat is retained or released.

Language support

- Introduction / Research Question
  - We want to find out if…
  - We are investigating whether…
  - The aim of this experiment is…
- Hypothesis
  - We predict that…
  - If we do X, then Y will happen…
  - We think the temperature will…
- Method / Procedure
  - First, we…
  - Then / Next, we…
  - Finally, we…
- Results
  - The temperature in the covered jar was…
  - Our results show that…
  - We observed that…
- Conclusion
  - This experiment shows that…
  - Our prediction was correct/incorrect because…
  - This is similar to how greenhouse gases…

ADDITIONAL:

Language Connection:

Require a micro lab-report in English (aim–hypothesis–method–results–conclusion, 5 sentences max).

Homework: Each group uploads their finalised video/slideshow with a one-minute explanation.

60′

ACTIVITY 7

MOMENTS OF CHANGE – REVOLUTIONS IN HISTORY

Story link: Students imagine that Tess lands during a time of great transformation—a revolution. It could be the Industrial Revolution, a political revolution, or a social movement. What changes does she witness, and how do they affect people's lives?

MATERIALS

- Then/Now comparison charts
- Roleplay prompt cards
- Historical video or images

STEPS

1. Warm-up

Brainstorm: "What revolutions have changed the world?" Students share ideas—technological, political, cultural (e.g., Industrial, French, Digital, Civil Rights, etc.). What do these changes have in common?

2. Main Task Cycle

In groups, students explore a selected revolution relevant to their curriculum or interests. Options might include:

- • Industrial Revolution
- • French, American Revolution or revolution from students' home country
- • Civil Rights Movement
- • Technological/Digital Revolution

Using suggested websites or teacher-selected resources (example: https://www.bbc.co.uk/bitesize/topics/zm7qtfr , https://kids.britannica.com/), students examine images, timelines, and testimonies.

BBC BRITANNICA

Students complete a "Then and Now" chart to compare life before and after the revolution in four areas, like this example:

TIPS FOR TEACHERS

1

Cross-cutting concepts - Stability and Change: Encourage students to notice what aspects of society stayed stable and which changed dramatically during revolutions.

Introduce revolutions through visuals or short videos. Use a KWL chart (Know, Want to Know, Learned) to guide inquiry.

Key Vocabulary

revolution, change, protest, rights, technology, industry, invention, citizen, worker, leader, power, freedom, law, movement, transformation, C.E. (Common era – previously A.D.), B.C.E. (Before common era – previously B.C.).

TOPIC	THEN	NOW
Technology	Manual tools	Automated/ digital systems
Communication	Letters/news-print	Instant messaging/ social media
Work of Rights	Child labour/no voting rights	Labour laws/ universal suffrage
Education	Limited to elite	Universal/public education

Generate ideas for a short diary entry or social media post from the perspective of someone living during that revolution (e.g., a factory worker, a student, a protestor, or an inventor).

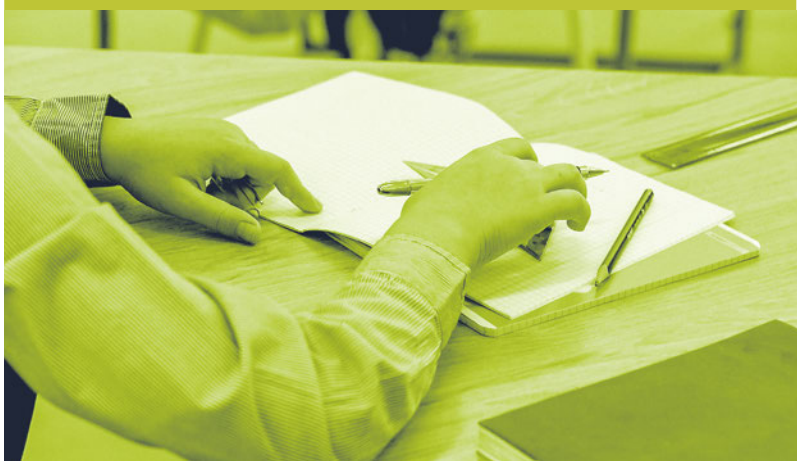
3. Post-task/Plenary

Round up questions and discussion of findings

ADDITIONAL:

Language Connection:

Create short news headlines from the time of the revolution and three modern ones to practice then and now. Each headline could include a cause-effect connector.



Homework: Students finish diary excerpt and add visuals

TIPS FOR TEACHERS

2

- Provide structured comparison charts and support vocabulary (e.g., before/after, cause/effect).
- Scaffold roleplay with scenario cards or speech bubbles to help students express ideas
- If there is time, students share chart and/or diary excerpts with a partner or in small groups.

Language support:

- Comparing Then and Now
  - Before the revolution, people…
  - After the revolution, people…
  - One big change was…
  - The revolution caused…
- Cause and Effect
  - The cause of the revolution was…
  - The effect of this was…
  - This led to…
- Diary or Social Media Entry Frames
  - Today I saw…
  - I feel… because…
  - Life has become…
  - I hope that…

3

- Provide structured com- Some examples of charts and diary ideas can be shared
- Discussion Starters:
  - One important difference between then and now is…
  - This revolution reminds me of…

60′

ACTIVITY 8

GET YOUR (CRITICAL) THINKING CAPS ON!

Story link: In this session, students read about Tess's encounter with the Morlocks and explore different types of conflict. They work in groups to propose peaceful or strategic solutions, practising language for negotiation, persuasion, and decision-making.

MATERIALS

- Chapter 5 of the story
- Images representing types of conflict
- Conflict resolution prompt cards
- Group writing templates

STEPS

1. Warm-up

- Students look at several pictures depicting: human vs. human conflict (e.g. heated debate), human vs, nature conflict (e.g. a ship at sea), human vs. self-conflict (e.g. person looking into a mirror)
- Display three types of conflict (Humans vs. Humans, Humans vs. Nature, Humans vs. Self).
- They answer which type(s) of conflict they think Tess faces?

2. Main Task Cycle

Input

Read Chapter 5: The Morlocks' Secret

- Why do the Morlocks live underground?
- Are they truly "evil," or just different?

Output

- In small groups, students discuss how Tess could solve the problem without fighting using some cues:
  - Summarise the conflict
  - Communication – can she negotiate? What can she say?
  - Persuasion – can she persuade them? Can she offer them anything?
  - Escape and strategy – can she use her intelligence to escape?

The group writes 3 sentences to summarise their best solutions.

TIPS FOR TEACHERS

1

- Use relatable images to teach conflict types. Invite students to act out mini-scenes to identify them.

Language support for identifying conflict:

- This is a conflict between…
- The problem here is…
- I think Tess faces… because…

Post-task / Consolidation

Things I would and wouldn't do

Students make a list of things they would and wouldn't do in this situation.

ADDITIONAL:

History/ Science Connection:

Link each proposed solution to either a historical precedent ("Similar to…") or a simple scientific principle ("Because light/ heat/energy…"), one sentence per group.

Homework: Key Events Summary

- Write 3-5 sentences summarizing what happens in Chapter 6.
- Critical Thinking:
  - Tess manages to escape the Morlocks using intelligence rather than strength. What does this tell us about her character?

TIPS FOR TEACHERS

2

- Offer guided discussion prompts and expressions for negotiation, persuasion, and strategic thinking.

Language support

Guided Discussion Prompts

Negotiation:

- Can we make an agreement?
- What if we…?
- Let's try to find a solution.

- Persuasion:
  - If you help me, I can…
  - It would be better if…
  - Think about the benefits…
- Strategy / Escape:
  - Maybe we can distract them by…
  - Another option is…
  - The safest way could be…

3

Create a class board with "Things I Would/Wouldn't Do" to compare decisions and promote reflection.

60'

ACTIVITY 9

IMPACT OF CLIMATE CHANGE

Story link: Students imagine that in Tess's next stop, she sees how climate change is affecting people, animals, and entire ecosystems. Students explore the wide-reaching consequences of changes that Tess (or they) could encounter in the future.

MATERIALS

- National Geographic site
- EU Climate site
- Mind map materials or digital tools

STEPS

1. Warm-up

Look at photos of different ecosystems. Ask: What might be affecting these areas?

Students think of examples of effects on local/regional or national context from the local/national context (e.g. the lynx in Spain; invasive plant species).

2. Main Task Cycle

Students explore:

NATIONAL GEOGRAPHIC (OR SIMILAR)

EU CLIMATE CHANGE CONSEQUENCES

Students could use a prompt to simplify texts, for example in Open AI: "Please simplify the following text to A2/B1 level L2 and keep the main ideas clear: [PASTE TEXT]"

They complete a chart describing a climate-related issue: Causes/ Effects/Possible Solutions and/or Recommendation.

3. Post-task/Plenary

Create a visual mind-map of the effects of global warming.

FOR TEACHERS TIPS

1

Cross-cutting concepts - Scale, Proportion and Quantity:

- Emphasize how small rises in temperature can have large-scale effects on ecosystems and societies.
- Use real-world images to generate interest. Ask guiding questions like: What's happening here? What caused it?

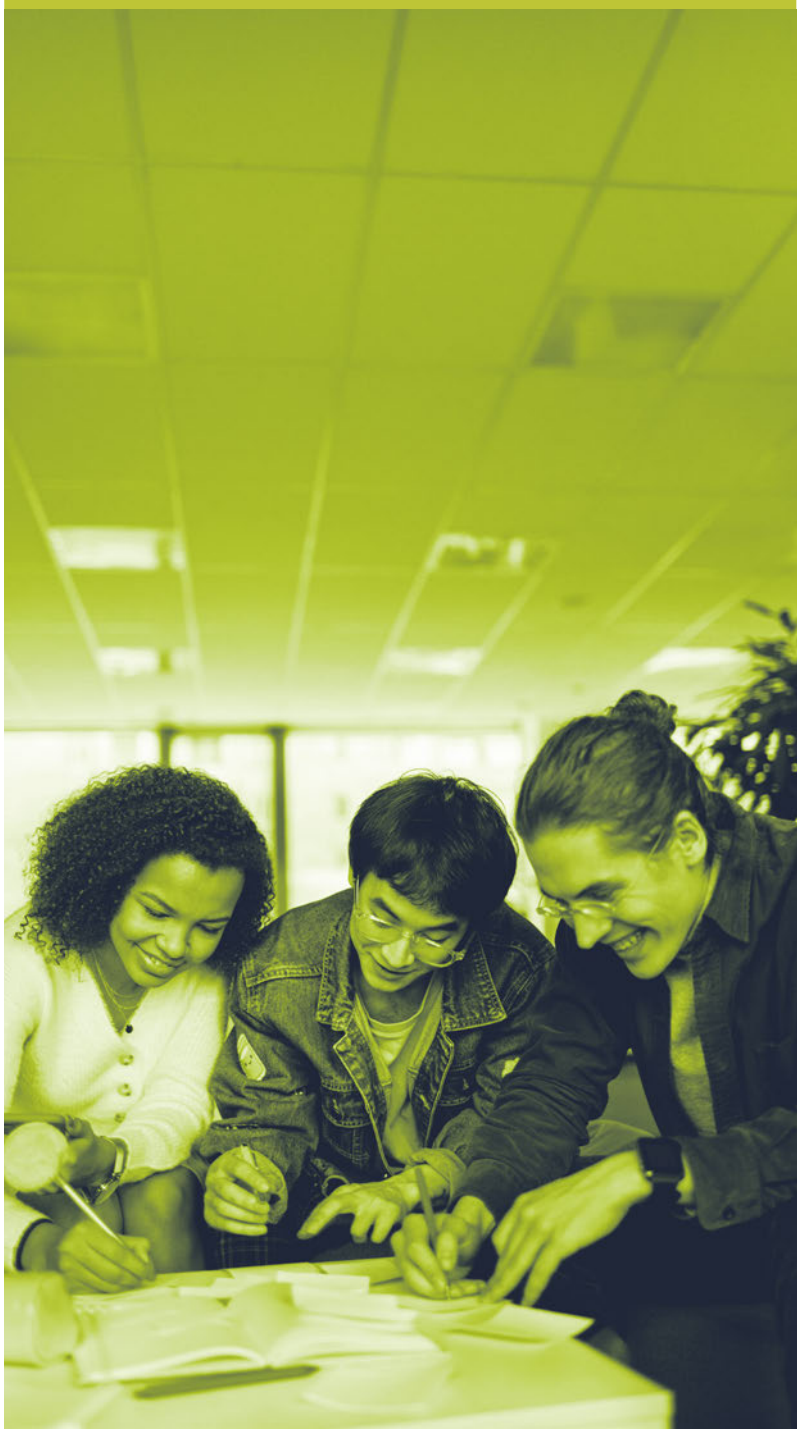
Key Vocabulary

climate change, global warming, greenhouse gases, ecosystem, drought, flood, storm, wildfire, melting ice, sea level, habitat, extinction, adaptation, solution, recommendation

ADDITIONAL:

Language Connection:

Each mind-map branch could include a labelled English mini-caption (cause, effect, recommendation) using modal verbs (should/could/might).



Homework: Complete mind-map and add optional visuals

TIPS FOR TEACHERS

2

- Offer guided discussion Support text analysis with guided worksheets (e.g., identifying main ideas, causes, effects, and possible solutions).
- Draw attention to the concept of Stability and Change by discussing how ecosystems remain balanced or are disrupted over time due to climate change.

Language support:

- Causes
  - One cause of this is …
  - This happens because …
  - … leads to …
  - The main reason is …
- Effects
  - As a result, …
  - This causes …
  - The effect is …
  - This means that …
  - … results in …
- Possible Solutions / Recommendations
  - One possible solution is …
  - We could … to reduce this problem.
  - It would help if …
  - People should …
  - In the future, we must …

3

Encourage creativity in visual mind maps. Assign roles within groups to ensure full participation.

60′

ACTIVITY 10

CONFLICT AND CHANGE IN HISTORY

Story link: Students imagine Tess arrives in a time of conflict or great change. She sees how ordinary people are affected and tries to understand what led to this moment.

MATERIALS

- Timeline templates
- Letter/diary entry scaffolds
- Images or artefacts from historical conflicts

STEPS

1. Warm-up

Show images of tools, clothing, or scenes from a conflict or upheaval (e.g. Roman shields, medieval castles under siege, printing press, ration cards, protest signs). Possible questions:

- What's happening here?
- Who is involved?
- What might have caused this situation?

Students think of links to historical and/or contemporary events in local/national context (e.g. past/recent conflicts in home region or country).

2. Main Task Cycle

Option A: Timeline & Testimony

Students watch or read a short source on a relevant conflict or social change (e.g., peasant revolts, Napoleonic Wars, civil wars, suffrage movements, WWI or WWII).

Suggested universal links (or use localised ones depending on time period).

LIST OF CONFILCTS

Create a simple timeline identifying:

- 2 causes
- 2 key events
- 2 consequences

Then, students take the perspective of someone living during that time (e.g., farmer, worker, soldier, student). They write a short reflection or letter: "How does this conflict/change affect me and my family?"

TIPS FOR TEACHERS

1

Cross-cutting concepts - Stability and Change:

- Ask learners to compare what stayed the same with what changed as a result of historical conflicts.
- Select historical contexts that connect to students' curriculum or background knowledge.

Key Vocabulary

conflict, change, cause, event, consequence, effect, war, protest, revolt, revolution, soldier, citizen, ruler, rights, resistance, survival, family, community

Option B: Problem-Solving Scenario

In groups, students receive a short scenario based on the conflict studied. Example: "You are a family caught in [conflict X]. You have limited resources and must choose how to stay safe or resist."

They make decisions and present their survival strategy or resistance plan.

3. Post-task/Plenary

Groups share one key decision or reflection they made. Discuss:

- What was difficult about their choices
- How do different people experience the same event differently?
- Students link their historical findings with scientific evidence (e.g., impact of war on resources, climate, or health).

ADDITIONAL:

Language Connection:

Timeline captions written in English with fixed frames: "Because... (cause) → Then... (event) → Therefore... (consequence)".

Homework: Students complete final version of timeline and letter

Language support: I feel... because...; This conflict affects my family by...; Life has become...; One thing I hope is...; Every day we must...

TIPS FOR TEACHERS

2

- Provide timeline templates and discuss cause/consequence language.
- Emphasise the concept of Perspectives and Interpretation by showing how historical events can be understood differently depending on the viewpoint (e.g., rulers vs. ordinary citizens).

Language support

- Causes
  - Because of …
  - Due to …
  - One cause was …
  - This happened because …
- Key Events
  - First, … happened in (year).
  - Then, … occurred.
  - During (year/period), … took place.
  - One important event was…
  - Finally, … led to …
- Consequences / Effects
  - As a result …
  - This led to …
  - Therefore …
  - The consequence was …
  - This meant that …

Offer sentence starters for reflective writing. Use emotion cards to help students empathise with historical figures.

3

- Select examples of key decisions and other student responses.
- Linking findings creates a cross-subject connection using both history and science data.

60′

ACTIVITY 11

ON A MISSION!

Story link: In this session, students read about Tess's return journey and her glimpse of the future Earth. They begin preparing a final presentation by choosing a theme (e.g., dilemmas, sustainability, conflict) and gathering evidence from the story to support their ideas.

MATERIALS

- Chapter 7 of the story
- Topic selection sheet
- Presentation planning templates
- Pronunciation practice resources

STEPS

1. Warm-up

Choosing a topic for final presentation. Groups of 3-4 students choose from the following topics or suggest their own (topics could also be repeated among groups):

- Character growth – How does Tess grow/change from chapter 1-8?
- Dilemmas – What dilemmas does Tess have throughout the story and how does she resolve them?
- Sustainability and the future: What can we learn from the Eloi? How does this connect with our world today?
- Conflict and problem-solving - How does Tess navigate different conflicts? What does this teach us?
- Time travel and consequences - Why is Tess's mission important? What could go wrong?

2. Main Task Cycle

Input

Read Chapter 7: A Journey Home?

- Quick comprehension questions
- Where does Tess arrive after using the time machine?
- What is unusual about the moon in this future world?
- How does the environment look different from Tess's present?
- What emotions does Tess feel when she sees the future Earth?
- What does Tess decide to do at the end of the chapter?

TIPS FOR TEACHERS

1

- Help groups choose topics that suit their strengths and interests.
- Monitor brainstorming discussions and offer vocabulary support as needed.

Language support for discussion:

- *I think we should choose… because…*
- *This topic is easier / more interesting for us because…*
- *Maybe we could connect it with…*

Preparation for presentation

- Students brainstorm ideas for their presentation
- Find evidence from book and discuss how they can include in presentation
- Generate own ideas and opinions
- Manage how they will present information

3. Post-task / Consolidation

Focus on pronunciation and error correction from observation of group discussions.

ADDITIONAL:

History/ Science Connection:

Students add one evidence card from a past event or a scientific fact that supports the group's claim.

Homework: Read chapter 8

- Why does Tess feel disconnected from her classmates after returning?
- What does she decide to do next, and why is it important?
- Extra: If you were Tess, would you share what you had seen with others? Why or why not?

TIPS FOR TEACHERS

2

While students read quietly, walk around the room and quietly ask 1–2 quick comprehension or vocabulary questions to individual students ("Who is speaking now?" "What does this word mean?").

Preparation for Presentation

- Sentence starters for gathering evidence:
  - In Chapter X, Tess…
  - This shows that…
  - One example is…
- Useful phrases for giving opinions:
  - In my opinion…
  - I believe this is important because…
  - This could happen in our world too because…

3

Record rehearsals for feedback. Teach pronunciation and stress patterns explicitly during final preparation.

60′

ACTIVITY 12

ENDANGERED SPECIES RESEARCH

Story link: Students imagine that Tess comes across species on the verge of extinction and wonders how many will survive—students research endangered animals to raise awareness and explore how to protect them.

MATERIALS

- World Wildlife Directory
- IUCN Red List
- Fact file templates
- World Wildlife Directory

STEPS

1. Warm-up

Students guess species based on a few clues (from pre-prepared slides or teacher descriptions). Examples can be found here:

WORLD WILDLIFE DIRECTORY

IUCN RED LIST

2. Main Task Cycle

In groups, students choose an endangered species from the above link(s) or similar, and create a fact file:

Name		
Scientific Name		
Habitat		
Diet		
Movement		
Threats		
What we can do		
Additional information		

TIPS FOR TEACHERS

1

Cross-cutting concepts - Systems and System Models:

- Make explicit how species depend on flows of energy and matter within interconnected ecosystems.
- Prepare a short list of animals with example fact files to guide initial research.

Key vocabulary

species, habitat, diet, movement, extinction, endangered, threatened, predator, prey, population, conservation, protection, survival, ecosystem, biodiversity

Begin to create posters to display in the school. Add a QR code linking to student-made video or audio presentation

3. Post-task/Plenary

Discuss initial design ideas for posters

ADDITIONAL:

Language Connection:

Fact files written in clear English with a "Why it matters" closing line using first conditional: "If this species disappears, then…".

Homework: Continue on poster work.

TIPS FOR TEACHERS

2

- Encourage use of graphic organisers to collect and structure information.
- Teach basic poster design principles and how to include QR codes for interactivity.
- Fact File Sentence Starters
  - The name of this species is…
  - Its scientific name is…
  - It lives in…
  - Its diet includes…
  - It moves by…
  - The main threats are…
  - One important fact is…

3

- Encourage sharing of ideas and include possible corrective feedback
- Poster and Awareness Language (in preparation for their presentation)
  - We must protect this species because…
  - One way to help is…
  - This animal is important for the ecosystem because…
  - If this species disappears, then…
  - Everyone can help by…

60’

ACTIVITY 13

RIGHTS AND PROTEST

Story link: Students imagine Tess meets some young Morlocks who are against what the leader is doing.

MATERIALS

- Civil Rights info
- Templates for activist posters
- Research resources on Rosa Parks, Malala, etc.

STEPS

1. Warm-up

Discussion prompt:

- What could the young Morlocks be protesting about?
- What rights do students value most today?

2. Main Task Cycle

Students explore short videos or interactive timelines, for example (QR code):

KIDS BRITANNICA

Create a group poster on one activist (e.g., Rosa Parks, Malala Yousafzai) using resources, for example*.

ROSA PARKS

UN MALALA YOUSAFZAI

(See ‘About’; available in different languages)

*Students could use a prompt to simplify texts, for example in Open AI: “Please simplify the following text to A2/B1 level L2 and keep the main ideas clear: [PASTE TEXT]”

Ask students to complete one of the following sentence prompts, either in writing or as a quick class discussion:

- One way people’s lives changed because of war was...
- One thing that surprised me about war was...
- One lesson we can learn from this part of history is...

TIPS FOR TEACHERS

1

Cross-cutting concepts - Structure and Function:

- Point out how the structure of social movements or institutions shapes their function in driving change.
- Approach activism topics with sensitivity. Use age-appropriate content and encourage respect for diverse opinions.

Key vocabulary

rights, protest, equality, justice, freedom, discrimination, segregation, education, leader, movement, activist, speech, vote, change, peace

3. Post-task/Plenary

Highlight main findings in whole class discussion.

ADDITIONAL:

Language Connection:

Create activist slogans using affirmative or negative imperative forms.

IDEAS FOR POSTER SECTIONS

Title: [Name of Activist]

Who are they?

- Name:
- Lived in:
- Time period:

What did they fight for?

- Main right or cause:
- Key action or protest:

Impact / Achievements

- Because of their actions...
- People's lives changed by...

Key Quote or Message

" "

Why is this important today?

- We can learn that...
- This connects to our world because...

Images / Symbols

[Spaces for drawing, printed picture, and/or symbol]

TIPS FOR TEACHERS

2

- Assign research roles within groups to encourage equitable participation.
- Use gallery walks or peer review activities to encourage engagement with other groups' posters.
- Discussion Prompts
  - The young Morlocks might be protesting because…
  - One right I value most is…
  - It is important to have this right because…

See example of template sections for poster below

- Poster / Activist Project Language
  - This activist is…
  - They lived in…
  - They fought for…
  - One important action was…
  - Because of their actions, people's lives…
  - We can still learn from them because…

3

Ask each group to choose one key fact or one big idea from their poster.

ACTIVITY 14

Story link: In this session, students revisit key events from Chapters 1–8 by sequencing story pictures and reviewing vocabulary. They then rehearse and refine their group presentations, focusing on clarity, delivery, and confidence.

MATERIALS

- Chapters 1-8 storyboard images
- Peer feedback forms
- Presentation checklist

STEPS

1. Warm-up

- Order the pictures of the story from chapters 1-8.
- Discussion on how the story ends with a focus on key vocabulary.

2. Main Task Cycle

- Students finalise the production of presentations
- Rehearsal and confidence boost – students practice among themselves and obtain feedback where necessary

3. Post-task/Plenary

- Discussion: What makes a presentation interesting?
- Final discussion on possible issues, error correction and advice.

3

See ‘example for discussion’ sheet:

ADDITIONAL:

History/Science Connection:

When sequencing story pictures, attach one science or history “anchor” note to any two slides (e.g., “technology changed X”, “law changed Y”), one L2 sentence each.

Homework:

Students put finishing touches to presentations

TIPS FOR TEACHERS

1

- Review story events with visuals or a jumbled storyboard to reinforce chronology.
- Encourage use of sequencing phrases:
  - First… then… after that… finally…
  - At the beginning… later on… in the end…

2

- Teach and model presentation skills (eye contact, voice projection, signposting).
- Use peer and self-assessment tools to guide improvement and reflection:
  - Quick Peer Feedback Routine:
    - After each rehearsal, partners/groups give: Something you did well, Another strong point, One thing to improve
  - Mini Self-Assessment Prompts:
    - Did I speak clearly?
    - Did I look at my audience?
    - Did I explain my ideas in order?
    - What can I do better next time?
- Language support for rehearsals:
  - In our presentation, we will start with…
  - One important point is…
  - To sum up, we believe…

FINAL PROYECT 1

60-120'

Story link: In this session, students bring Tess's journey full circle by preparing and delivering their final presentations. They revisit key themes from Chapters 1–8 (dilemmas, sustainability, conflict, time travel, character growth) and share their insights with classmates, showing how Tess's adventures connect to real-world issues and to their own learning.

MATERIALS

- Sentence-matching warm-up strips
- Feedback forms
- Peer evaluation checklists

STEPS

1. Warm-up

Each student gets a half-sentence or keyword related to the book (e.g., "Tess's time machine..." / "The Eloi's way of life..." / "A lesson from the future is...").

SENTENCE HALVES

- They walk around the class finding the person with the sentence that logically connects to theirs.
- Once matched, pairs discuss their sentence briefly

2. Presentations and audience feedback

Students present their prepared topics to one or more teams, possibly using a carousel technique:

- Character growth – How does Tess grow/change from chapter 1-8?
- Dilemmas – What dilemmas does Tess have throughout the story and how does she resolve them?
- Sustainability and the future: What can we learn from the Eloi? How does this connect with our world today?
- Conflict and problem-solving - How does Tess navigate different conflicts? What does this teach us?
- Time travel and consequences - Why is Tess's mission important? What could go wrong?

3. Post-task

STUDENT SELF-ASSESSMENT

ADDITIONAL:

History/Science Connection:

Students can mention a historical event or scientific fact in L2 (for example, "This protest changed the law" or "Pollution affects the air we breathe").

TIPS FOR TEACHERS

1

- Clarify audience and presenter roles with clear expectations.
- Use sentence-matching warm-up to reinforce content recall.
- See examples of sentence halves

Language Support:

- My card says… What about yours?
- I think they match because…
- Together, our sentence is…

2

- Encourage peer support and praise throughout the carousel format.
- Use feedback sheets
- Language Support for Presenters:
  - Today we are going to talk about…
  - One example is when Tess…
  - This shows that…
  - In conclusion, we believe…
- Language Support for Audience Feedback:
  - I liked the way you…
  - One thing you did well was…
  - Next time, you could improve by…

3

- ECelebrate effort and creativity over perfection.
- Use self-assessment sheet

60-120'

FINAL PROYECT 2

Story link: Students imagine Tess leaves a message: Understand the past, act for the future.

MATERIALS

- Quiz materials
- Timeline templates
- Poster/digital tools for timeline design

STEPS

1. Optional Warm-up

Group quiz on key people, dates and events from previous sessions – depending on topic – examples from different time periods included .

2. Main Task Cycle

Each team prepares a section of a large, illustrated timeline and explores a specific aspect of the time or period they studied. Suggested eras and focus areas:

- Ancient World: daily life, governance, inventions.
- Industrial Age: working conditions, inventions, social impact.
- Wars: life during conflict, causes and consequences, key individuals.
- Civil Rights Movements: key figures, social changes, global impact.
- Present Day: technology, climate activism, youth movements.

In the main task, students can include elements from previous sessions – for example: Activity 7 (Revolutions), Activity 10 (Conflicts and change), etc.

Students options

- A timeline panel (with dates, visuals, quotes, and messages).
- A focused presentation (poster, digital slideshow, mini podcast) on one specific aspect of the period

Optional activity

Students imagine Tess has returned to collect evidence of what today's students know and value about history. Each group selects one object, image, or word from their work that they would place

FOR TEACHERS TIPS

1

- See an example of quiz in this QR

Key Vocabulary

timeline, period, event, invention, cause, consequence, change, rights, protest, technology, conflict, impact, movement, evidence, future, time capsule.

in a Time Capsule for the Future. They explain in one sentence why it represents something important they've learned.

Presentations

Each group presents their timeline section or project (posters, digital exhibits, brief monologues). This can be done in carousel fashion:

- At the start, half of the groups (e.g. 4 out of 8) will be the presenters. They stay at their station or display area.
- The other half will be the audience. They rotate from one station to the next, listening to each presentation for a few minutes.
- After all audience groups have visited each presenter, the roles switch: the first presenters become the audience, and the first audience members now present.
- Audience members can complete a peer feedback form.

3. Post-task/Plenary

Complete a self-assessment form.

SELF-ASSESSMENT

ADDITIONAL:

Each timeline panel includes an English caption with a strong verb and time phrase ("By 1850, factories transformed…").

TIPS FOR TEACHERS

2

- Offer flexible presentation formats to suit student preferences and skills.
- Provide timeline templates and suggested structure.
- Promote collaborative planning.

Presentation Support

- Our group worked on the (Ancient World / Industrial Age / Civil Rights / etc.).
- We focused on…
- One important fact is…
- One key figure was…
- This event changed history because…

Time Capsule Activity

- The object we chose is…
- It represents… because…
- We think future generations should remember this because…
- Optional: Invite guest viewers if possible to increase authenticity
- See example of peer feedback.

3

- See example of self-assessment

Language support

- I contributed to my group by…
- One thing I learned was…
- If I could change one part of my project, I would…

60-120'

FINAL PROYECT 3

Story link: Inspired by her journey, Tess sends a message to today's students: learn, act, and share—students bring together their discoveries to create a campaign that could change the future. Just as Tess travelled through time to witness the impact of human actions on the environment, students now become time messengers themselves—sharing what they've learned to inspire change for the future.

MATERIALS

- Presentation materials (posters, tablets, QR codes)
- Reflection sheets
- Tree of Life display resources

STEPS

1. Preparing the presentation:

Students work in teams to prepare a group presentation (oral, visual or podcast format) for a school exhibition. Examples/Options:

Possible formats	Possible topics
Podcast	Causes and effects of climate change
Video PSA (Public Service Announcement)	The greenhouse effect (experiment and explanation)
Group oral presentation with visuals (PowerPoint, posters, infographics)	Impact of climate change on ecosystems and people
Digital poster or slideshow	Endangered species and conservation strategies
Mini-exhibition station (artefacts, diagrams, QR codes)	Sustainability: what future generations can learn from us
Roleplay or dramatic reading (e.g. diary, testimony, activist speech)	
Creative media (comic strip, social media, etc.)	

TIPS FOR TEACHERS

1

- Set clear project goals and success criteria.
- Encourage use of digital tools while supporting those less confident with tech.
- Students could choose from the format list and the topic list

In the main task, students can include elements from previous sessions – for example: Activity 4 (Climate change), Activity 6 (Greenhouse effects), etc.

Optional Extension

Create a "Tree of Life" display in the school with QR codes linking to all group outputs (videos, audio, posters, etc.).

2. Presenting

Group Presentations (Carousel Style):

- Student teams set up their presentations around the room (posters, tablets with videos/podcasts, visuals).
- Half the class stays at their station to present, while the other half rotates and asks questions. Then they swap roles.
- Optional: Invite teachers, parents, or students from other classes as audience members.

3. Post-task/Plenary

Self-Assessment Activity:

SELF-ASSESSMENT

Students complete a simple reflection form or exit ticket with prompts like:

- What did you learn from preparing your project?
- What would you improve next time?
- What presentation impressed you most and why?

TIPS FOR TEACHERS

2

Facilitate carousel viewing and feedback rounds. Showcase student work publicly if possible.

3

- Use reflection activities to consolidate both content and language learning.
- See example of self-assessment sheet and questions for reflection below.

ADDITIONAL:

Require English visitor cards/QR narrations (≤45 seconds audio or 60 words text) explaining the exhibit's key idea and one actionable recommendation.

APPENDIX: EXTRA IDEAS AND ACTIVITIES

The following activities are suggested as optional or additional learning extensions. These can be used flexibly depending on student interests, available time, and cross-curricular opportunities. Each activity links to the Tess storyline and encourages student-centred, CLIL-aligned learning.

EXTRA ACTIVITY 1: CLONES, GENES & DEBATE – ETHICS AND SCIENCE

Story link: Tess finds herself in a futuristic lab where cloned animals and genetically modified plants are common. She sends a question back: How far should science go? Students explore the science and the ethics of biotechnology.

Warm-up

Slide quiz or image matching: Students guess which items are natural or genetically modified (GMO).

Main Task Cycle

Part 1 – Research & Ethics

In pairs or small groups, students explore safe, simplified sites, such as

BRITANNICA GENOME

to answer:

- What is cloning?
- How are clones made?
- What are the benefits and risks?

Then they complete a simple two-column chart: Scientific Facts | Ethical Questions

Part 2 – Debate Corner

Students prepare answers to questions on the topic: *Are genetically modified foods a helpful innovation or a potential danger?*

After listening to a few peers, students express agreement/disagreement using respectful expressions and logical arguments.

Post-task/Plenary

Reflection journal: What surprised you today? Did your opinion change?

EXTRA ACTIVITY 2 – CRYSTALS AND MINERALS

Tess wore a crystal pendant. What do you know about crystals? Are they minerals?

- What are the properties of minerals?
- What can you say about their chemical composition?
- Where are minerals commonly used?
- What mineral(s) would be useful for Tess to carry on her journey? Justify your choice considering:
  - Physical properties
  - Internal structure and composition
  - Practical applications

Create a fictional mineral and present it in class using this format:

Name:
Scientific Name .
Properties (colour, density, taste, etc.) :
Use:
Composition:
Image:

EXTRA 3 – FEMALE SCIENTISTS THROUGH TIME

Tess is an aspiring scientist. Who are some famous female biologists?

Research a female scientist and create a fact sheet:
Name:
Birthdate and country:
Key life events:
Scientific contributions:
Additional interesting facts:
Photo:
If you met her, what questions would you ask?:

Once prepared, present the fact sheets chronologically in an exhibition.

EXTRA ACTIVITY 4 – FOOD IN DIFFERENT WORLDS

In Eloi's village, Tess ate unfamiliar fruits and vegetables.

- Are they genetically modified or a natural evolution?
- What are the pros and cons of genetically modified food?
- With the Morlocks, Tess had to eat insects.
- Is it possible to eat insects?

Nutrition as a vital function

- • What types of food do you prefer?
- • Research the nutritional value of your favourite foods.
- • Read the World Health Organization's dietary recommendations:

Practical Tips for a Healthy Diet

- Fruits, vegetables, and greens
- Fats
- Salt, sodium, and potassium
- Sugars
- How can we promote healthy eating? What can you do?
- Conduct a survey on classmates' eating habits.
- Observe what foods they bring for lunch or buy at the school cafeteria.
- Reflect on the results. Would you suggest improvements to their diet?

Creative Extension

- Create two drawings: Tess as a healthy eater vs. Tess as a junk food lover. Include a brief description.
- Create two drawings: Eloi's diet vs. Morlock's diet. Reflect on their eating habits.

Sustainable Food Production

- Does food production impact the environment?
- How is diet related to environmental conservation?
- What are the most sustainable foods?
- How would you encourage supermarket customers to buy sustainable foods?

TESS AND THE TIME LAB

LVL 3

1. SUBJECTS

This unit is intended as a whole school project with subjects across the curriculum.

Possible Curricular Links:

- ***Science:*** Future energy, biotechnology, climate solutions.
- ***L2:*** Descriptive writing, speculative fiction, presentations.
- ***ICT:*** Multimedia tools, Artificial Intelligence, prototyping (e.g., 3D modelling, app mock-ups).
- ***Art/Design:*** Visual representation of inventions, future environments.
- ***History/Citizenship:*** Ethical implications of tech, utopias vs dystopias
- ***Mathematics/Technology:*** Design processes, data interpretation.

Book: *Tess the Time Traveller*
Authors: Stephen P. Hughes, Ana Cristina Martínez Rodríguez, Pavlo Marynenko, Silvia Corral Robles, José Luis Ortega Martín
Year: 2025
Genre: Science Fiction, Teenage Readers, Graphic Novel

All participating subjects collaborate toward a unified goal: the creation and presentation of a group inventions/innovations and a class Time Machine that integrate scientific, artistic, and linguistic contributions.

2. PROJECT GOALS, LEARNING OBJECTIVES AND FINAL PROJECT

This section describes the overarching goals and specific objectives for this unit. These goals concern the development of skills and competences across the curriculum.

General aims

At the end of this unit, students will be able to:

- To communicate effectively in L2 (reception production, interaction and mediation) using appropriate vocabulary, grammar, and discourse strategies related to time, identity, and change.
- To interpret scientific and historical sources to understand how environmental and social realities have evolved across time.
- To apply critical thinking and collaboration skills to explore how individual and collective choices impact the future.
- To engage creatively with cross-curricular content through storytelling, inquiry, debate, and project work.
- To use digital tools to gather, present, and reflect on information in meaningful, real-world contexts.
- To demonstrate awareness of sustainability, biodiversity, and historical heritage through discussion, simulation, and creative expression.

Foreign language objectives

- To understand general and specific information in oral, written and audiovisual texts related to the story of Tess and in relation to other receptive subject-specific activities from the unit
- To produce written texts (e.g., diary entries, reports) and oral outputs (e.g., presentations, reflections) that describe, narrate, or explain aspects of Tess's journey, integrating vocabulary and content from subjects across the curriculum.
- To engage in meaningful pair and group discussions to exchange opinions, negotiate meaning, and build collaborative projects related to futuristic societies, historical events, and environmental challenges.
- To summarise and reframe content from one mode or subject area into another (e.g., turning scientific or historical texts into accessible oral presentations or creative formats), supporting classmates in understanding key ideas.

Cooperative Learning Goals

At the end of the Inventing Tomorrow project, students will be able to:

- Enhance language skills through collaboration – Engage in group discussions, writing tasks, and presentations to develop both subject-specific and communicative L2 skills related to future societies, sustainability, and innovation.
- Promote peer interaction and teamwork – Work together in structured roles to co-create inventions, give constructive feedback, and present ideas at the Future World Fair.
- Foster critical thinking and problem-solving – Analyse historical, scientific, and ethical challenges, debate solutions, and evaluate their feasibility for future scenarios.
- Increase motivation through active engagement – Participate in imaginative activities such as time travel role-plays, prototyping, and multimedia storytelling that link learning to real-world and speculative futures.
- Build confidence and social skills – Express ideas clearly, interact respectfully with diverse audiences, and present innovations to peers, staff, and visitors.

Critical Thinking and Reflection

- Analyse how technological innovations, environmental policies, and societal choices can shape different versions of the future.
- Compare utopian and dystopian visions from literature, history, and science to evaluate their underlying values and consequences.
- Reflect on personal growth and group progress through journals, digital portfolios, and structured peer feedback.
- Question the sustainability, ethics, and inclusivity of proposed inventions, considering multiple stakeholder perspectives.
- Apply reasoning and evidence to justify design choices, predict potential impacts, or challenge ideas presented in both fictional and real-world contexts.

Final products

- Students will design and present an original invention set in the future that addresses a pressing global challenge. The invention will be supported by research, a visual or physical model, and a persuasive multimedia pitch presented at the Future World Fair.
- In addition to presenting their group inventions, students will collaboratively design and assemble a full-scale or model Class Time Machine. Each subject area contributes to a component of the structure (design, energy, communication, sustainability), symbolising the integration of science, technology, art, and language. Both the individual inventions and the collective Time Machine will be showcased at the fair, a culminating event open to the school community.

3. SDGs

4. CROSS-CUTTING CONCEPTS

Aligned with the interdisciplinary nature of the project:

- Cause and Effect – How present-day choices influence the future.
- Systems and System Models – Viewing future societies as interconnected systems.

- Energy and Matter – Renewable energy flows and material use.
- Structure and Function – Designing inventions to meet functional needs.
- Stability and Change – Exploring historical shifts and future transformations.

5. SKILLS

5.1 STEAM SKILLS

Students will:

- Ask meaningful questions about the future of technology, society, and the environment.
- Plan and conduct experiments or design tests to evaluate invention feasibility.
- Interpret data from science experiments, historical sources, and environmental reports.
- Apply mathematical reasoning for scaling, measurement, and data visualisation.
- Develop and test models or prototypes.
- Construct evidence-based arguments to support innovation proposals.
- Integrate artistic creativity into visual and multimedia presentations.
- Communicate complex ideas clearly across disciplines.

5.2 DIGITAL SKILLS

- Information and Data Literacy – Research credible future trends and environmental data.
- Digital Communication and Collaboration – Use shared online platforms for co-authoring, discussion, and feedback.
- Digital Content Creation – Produce multimedia pitches, posters, videos, and interactive exhibits.
- Cybersecurity and Responsible Use – Apply safe online practices when researching or sharing work.
- Problem-Solving with Digital Tools –AI-assisted design, data visualisation to enhance invention quality.

6. CLIL FRAMEWORK

6.1. THE 4 C'S

4C	DESCRIPTION
CONTENT	• Investigate scientific, technological, and historical developments that influence future societies. • Build knowledge on sustainability, renewable energy, AI ethics, and urban design. • Explore environmental issues such as climate change, biodiversity loss, and pollution through experiments and research. • Understand how collective decisions in the past have shaped present realities and future possibilities.
COGNITION	• Analyse problems, evaluate solutions, and compare future scenarios from different perspectives. • Reflect on ethical dilemmas related to technology, environment, and social change. • Make evidence-based predictions, categorise innovations, and sequence events on historical–futuristic timelines. • Apply interdisciplinary knowledge to new contexts such as prototypes, role-plays, simulations, or speculative storytelling.
COMMUNICATION	• Analyse problems, evaluate solutions, and compare future scenarios from different perspectives. • Reflect on ethical dilemmas related to technology, environment, and social change. • Make evidence-based predictions, categorise innovations, and sequence events on historical–futuristic timelines. • Apply interdisciplinary knowledge to new contexts such as prototypes, role-plays, simulations, or speculative storytelling.
CULTURE	• Examine global visions of the future and cultural responses to innovation, sustainability, and change. • Appreciate diverse contributions to science, technology, and environmental movements. • Recognise the role of cultural values in shaping environmental priorities and technological ethics. • Compare how different societies might address shared global challenges in 100 years' time.

6.2 STEAM SKILLS

In CLIL, the Language Triptych supports both content and language growth, helping students acquire the vocabulary, structures, and communication skills needed for cross-curricular tasks.

Language of Learning (key concepts & vocabulary)

- Time & change: century, innovation, progress, evolution, prediction, utopia, dystopia
- Science & sustainability: renewable energy, biodiversity, biotechnology, artificial intelligence, climate resilience.
- Design & technology: prototype, scale, dimensions, user, function, feasibility, innovation.
- Civic & ethical terms: responsibility, equity, ethics, policy, global citizenship.

Language for Learning (processes & functional language)

- Expressing predictions: In the future, people will… / By 2125, society may…
- Presenting inventions: Our prototype works by… / This solution addresses the problem of…
- Giving feedback: I like the way you… / You could improve by…
- Negotiating meaning: Do you mean that…? / Can you explain more about…?

Language through Learning (emerging language)

- New vocabulary acquired through research, peer discussion, and cross-subject integration (e.g., AI ethics, green hydrogen, carbon capture).
- Idiomatic expressions and presentation phrases learned in context.
- Reflection language from journals and final reports.

7. UDL

- Multiple Means of Engagement – Use role-play, storytelling, science experiments, and design challenges to keep motivation high for different learner profiles.
- Multiple Means of Representation – Offer content through text, visuals, infographics, simulations, and videos to ensure accessibility.
- Multiple Means of Action & Expression – Allow students to present learning through prototypes, digital media, oral pitches, or creative writing, depending on strengths and preferences.

8. MAIN METHODOLOGICAL CONSIDERATIONS

The project encourages interdisciplinary coordination, where each subject contributes distinct expertise to a shared creative outcome—the construction of a class Time Machine that embodies the unit's central themes of innovation, sustainability, and cooperation.

Grounded in a learner-centred, inquiry-based approach, the unit combines the following methodological principles to promote active engagement and meaningful learning:

- CLIL and project-based learning, fostering language use through content exploration and collaboration.
- STEAM integration, connecting science, technology, engineering, art, and mathematics in real-world problem solving.
- Universal Design for Learning (UDL), ensuring accessibility and inclusion for all learners.
- The 4Cs: Communication, Collaboration, Creativity, and Critical Thinking, guiding all classroom interaction and production.
- Key Competences: Linguistic, Digital, Social and Civic, Learning to Learn, and Sense of Initiative, developed through authentic, interdisciplinary practice.

9. ASSESSMENT

- Systematic observation of collaboration, participation, and problem-solving during project activities.
- Evaluation of student work – assessing prototypes, research quality, and multimedia presentations for creativity, feasibility, and clarity.
- Rubrics for content accuracy, innovation, communication skills, and use of L2.
- Peer and self-assessment – structured feedback on teamwork, creativity, and clarity of ideas.
- Digital portfolio review – compiling research, design drafts, and reflections to track learning progress.

10. SUGGESTED PHASES & ACTIVITIES

ACTIVITY ROADMAP

Activities	Duration	Possible Subjects
Prelaunch reading		L2, other reading spaces, autonomous reading
1. Time Travel Imaginarium – Project launch, class mission.		L2, History, Art, Citizenship.
2. Future Needs & Global Challenges		Science, Geography, ICT, L2
3. Scientific Solutions Lab		Science (physics), Technology, L2
4. Inventing Tomorrow		Design & Technology, Science, Art, L2
5. Designing a Prototype		Science (physics), Technology, ICT, Maths
6. Promoting your prototype		L2, Art, ICT
7. Time-Machine Studio		Technology, Art, ICT
8. Building the Time Machine		Technology, Science, Art, ICT
9. Connecting the Threads		L2 primarily. Other subjects
10. Liftoff: The future world fair		All subjects
Close (optional)		L2 primarily

This flexible whole-school interdisciplinary project contains eight activities and invites students, inspired by Tess the Time Traveller, to travel 100 years into the future and return with a visionary invention that solves a pressing global issue. Combining science, technology, and creative thinking, learners will explore how digitalisation, sustainability, ethics, and innovation shape future societies. The project culminates in a "Future World Fair" exhibition where students present their inventions through multimedia formats, integrating L2 communication, visual design, ICT, and subject knowledge. Activities in this unit are adaptable and may be employed in those subjects in which they are deemed most suitable.

PRELAUNCH READING

1 WEEK

Main Aim: Build narrative context, spark curiosity, and prepare students for the interdisciplinary "Time Machine" project.

DESCRIPTION

Before launching the main project, students immerse themselves in the story Tess the Time Traveller. This week serves as a narrative and conceptual bridge: it introduces the central character, the idea of time travel, and the ethical and environmental themes that later connect with science, history, and technology.

Teachers coordinate so that L2 classes lead the reading work while other subject areas (e.g., Citizenship, Art, Reading Time, etc.) provide complementary spaces for discussion, visualisation, and reflection. Students read partly in class and partly autonomously, ensuring all have read necessary chapters before embarking on linked subject contents.

At this stage, we can cater to learner diversity with a fundamental choice of reading levels. Here, the aim is to provide learners with readers which most closely correspond to their current level in the target language.

For ideas for reading in class, L2 teachers can consult activities from the Level 2 Booklet.

60’

ACTIVITY 1

TIME TRAVEL IMAGINARIUM

Story link: Builds on Tess the Time Traveller (Chapters 1–2), when Tess first tests her invention and experiences the shock of seeing a changed world.

Objective: To launch the “Inventing Tomorrow” project by linking imagination, narrative and inquiry. Students use their reading of Tess to imagine their own time-travel discoveries and begin building the conceptual foundation for designing a time machine later.

MATERIALS

- Short excerpts or quotations from Tess the Time Traveller (especially her reflections before and after travelling).
- Sci-fi or futuristic visuals (printed or digital)
- Large paper or digital boards (Padlet, Genially, Canva).
- Vocabulary wall materials (poster paper or digital).

STEPS

1. Pre-task

- Begin with a brief mission launch: students receive a “Time-Traveller’s Briefing” announcing that they will continue Tess’s work and investigate the world 100 years in the future.
- Revisit what they remember from the story: What surprised Tess? What did she learn about change?
- Introduce speculative fiction using the story excerpts. Discuss how the future is portrayed and what it says about society.
- Brainstorm Stability and Change — what remains constant over time and what transforms?

2. Main task

- Collaborative imagination:
  - In mixed-ability groups, students imagine they have just returned from a journey 100 years into the future.
  - They brainstorm how aspects of life have changed — e.g., food, transport, education, society, ethics, the environment.
- Visual design:
  - Each group selects 3–4 key areas of change and represents them visually (mind map, collage, Genially, etc.).
  - They must include at least one technological innovation linked to time travel or to Tess’s legacy.

TIPS FOR TEACHERS

1

- Focus on cross-cutting concept: Stability and Change – Highlight how societies, technologies, and environments evolve, echoing the themes Tess observed.

Language focus (L2 support):

- Future forms and modals: In the year 2125, there will be … / People might … / I imagine a world where …
- Concept vocabulary: future, past, invention, progress, society, ethics, prediction, technology, change.

- Performance/report:
  - Using their visuals, groups prepare a short "Arrival Report" or Press Briefing from the Future, explaining what they saw, how society changed, and what message they bring back.
  - Reports are presented during a Gallery Walk (visuals displayed, peers circulate and leave feedback).

3. Post-task

- Build a Future Word Wall (digital or physical) with student vocabulary from their reports.
- Debrief on recurring themes — which future visions were optimistic, which dystopian, and why?
- Link discussion to *Tess's message*: what can imagination teach us about shaping a better future?

Homework:

- Finish visual representations for the project portfolio.
- Begin a reflective journal and add entry: If I could change one thing about the future, it would be … because …
- Optional: sketch early ideas for a time-machine prototype

TIPS FOR TEACHERS

2

- Assign clear team roles – Time Analyst (connects past/present/future ideas); Illustrator/Designer (creates visuals or digital elements); Speaker/Reporter (presents group findings); Scribe/Researcher (records ideas, vocabulary, reflections).
- Use peer feedback forms or sticky notes during the gallery walk; prompts can include I liked how your future connects to… or I wonder what would happen if….

Language support

- In the year 2125, there will be… / People might… / I imagine a world where…; highlight future tenses (will, might, going to) and modals for possibility (may, could).

Differentiation

- Offer a Future World Graphic Organiser (People – Technology – Nature – Society) with icons and short text spaces for lower levels; stronger students can extend by sketching an early "time-machine concept" linking their imagined world to Tess's invention.

3

- Discuss what themes reoccurred in different groups' futures.

60’

ACTIVITY 2

TIME TRAVEL IMAGINARIUM

Story link: Reflects Tess observing pollution and questioning humanity’s path (Ch. 1–2).

Objective: To help students identify and understand major global challenges shaping humanity’s future—such as climate change, pollution, and inequality.

MATERIALS

- SDG icons
- Devices or printed infographics
- Padlet/poster tools

UN

NATIONAL GEOGRAPHIC

SDGs

STEPS

1. Pre-task

- Students brainstorm today’s biggest global challenges (linked to the UN SDGs).
- Teacher introduces categories: environmental, technological, societal.
- Students review simplified case studies or infographics.

2. Main task

- In groups, students choose one issue (e.g., clean water, plastic use, food shortages, waste).
- Using the Time Machine Data Log template, they investigate its causes, current impacts, future risks, and possible innovations or solutions.
- Groups create a visual summary of their findings on a poster or Padlet, combining short texts, key words, and visuals (icons, charts, or images).
- Each group presents their findings in a short press briefing (2–3 minutes) where they report the problem, risks, and solutions to the class.
- After all briefings, the class holds a ‘Global Forum’ discussion, comparing the issues and debating which ones are most urgent to address for the future.

TIPS FOR TEACHERS

1

Cross-cutting concept:

- Cause and Effect – Encourage students to make explicit links between present-day actions and future risks or solutions.
- Use visuals or short videos to introduce global problems; highlight key words (environment, pollution, plastic, clean water, health, risk, solution, innovation, global, challenge).

3. Post-task

Students write a short journal reflection on the issue they found most impactful, using the Tess's Time Traveller Log (Diary) examples as models for style and tone.

2

Guide analysis

Help students distinguish between causes and effects; use graphic organisers or the Time Machine Data Log template to structure thinking.

EXAMPLE OF RESEARCH TEMPLATE

Language Support

This happens because… / In the future, this may cause… / A possible solution is… / If this continues, then…

Differentiation

Provide a simplified Press Briefing Script Card with sentence starters (The problem is… / The cause is… / A solution could be…).

Homework: Finish your journal reflection (Tess's Time Traveller Log), ensuring it includes:

- one clear description of the problem,
- one possible solution,
- and a final reflection beginning with "It makes me wonder…" or "In my time…".

TIPS FOR TEACHERS

3

Writing Support

- For journal reflection, provide stems (When I arrived… / People here… / Unless we do something… / It makes me wonder…).
- Use Tess's Time Traveller Log (advanced and simplified) as mentor texts to model narrative reflection and connect scientific awareness with empathy and imagination.

ADVANCED

SIMPLIFIED

- Encourage re-use of the Presentation & Communication Survival Kit throughout the project (for briefings, pitches, and the Future World Fair):

KIT

- Link to next session (Scientific Solutions Lab) by prompting: How could science help solve the challenge you researched?

60′

ACTIVITY 3

SCIENTIFIC SOLUTIONS LAB

Story link: Inspired by Tess's curiosity about how things function in the future (Chapters 2–3).

Objective: To apply scientific inquiry and experimentation to explore real-world problems, allowing students to test simple concepts.

MATERIALS

Lab materials: plastic bottles, sand, charcoal, cotton, water, plant seeds, soil, lamps, foil, thermometers, digital timers, insulation materials, waste samples

Graph templates, observation tables, drawing tools, tablets or laptops for documentation

Research and report templates (see below)

Safety equipment as needed (gloves, goggles)

STEPS

1. Pre-task

- Review the global issue chosen in the previous session (e.g., clean water, food shortages, plastic waste).
- Pose guiding question: How could science help us design a better future?
- Discuss what kind of tests or experiments could help find solutions.
- Brainstorm simple experiments that demonstrate key concepts like energy transfer, filtration, or plant growth.

2. Main task

- In groups, students select a mini-experiment related to their chosen issue (e.g. filtering water, testing insulation, growing plants under different conditions).
- They plan steps, make predictions (hypotheses), and carry out the experiment, recording results through notes, drawings, or photos.
- Students collect data (measurements, visuals, charts) and reflect on what worked, what failed, and what was surprising.
- Each group connects results to their future invention idea, explaining how scientific findings might influence or improve it.
- Groups display their process and conclusions on a shared class science board or digital Padlet.

TIPS FOR TEACHERS

1

- Focus on Cross-cutting Concept: Energy and Matter – guide students to observe how energy or materials change (e.g., filtration, heat transfer, light absorption).
- Start with a simple demo to spark curiosity; show, for example, how different materials insulate heat.
- Use step-by-step visuals or short safety videos to ensure comprehension.
- Key words: experiment, measure, filter, grow, insulate, predict, observe, result, conclusion.

Examples of simple experiments

Problem	Main Experiment
Clean Water	Make a DIY water filter using plastic bottles, sand, charcoal, cloth, and cotton. Test how clean the water becomes (visually or using test strips).
Heat & Energy	Build mini thermal houses using different materials (cardboard, foil, black paper). Place under lamp and measure internal temp. Which insulates best?
Food & Plants	Grow cress or fast-growing seeds in different conditions (light vs dark, different soils). Track growth over 3–5 days.

Alternative activities for Physics

- ***Energy transfer and insulation:*** Test how different materials (foil, cardboard, fabric) retain heat — link to designing sustainable future homes.
- ***Solar power efficiency:*** Measure how angle or colour affects energy absorption with small solar cells or lamps.
- ***Renewable energy demo:*** Build simple wind turbines or waterwheels using recycled materials to explore motion and mechanical energy.
- ***Language focus:*** heat, light, energy, insulation, absorption, reflect, efficiency.

Post-task

- Groups present discoveries in short mini-lab reports to the class, explaining their conclusions.
- Discuss which inventions or ideas seem scientifically feasible and how they could help Tess's world or our own.

Homework:

- Complete unfinished sections of the lab report.
- Optional: bring one photograph or sketch from your experiment to add to the final Future Invention Portfolio.

TIPS FOR TEACHERS

2

- Encourage use of science verbs in the passive voice (e.g., "The water was filtered," "The seeds were observed").

Language support

- Our problem is…
- We predict that… because…
- First, we… Then, we… Finally, we…
- The result was… / Our conclusion is…
- Scaffold with the lab report templates and CLIL sentence frames for lower or higher levels.
- Reinforce connection to Tess's world – how scientific knowledge drives innovation and change in the story.

EXAMPLE OF TEMPLATE FOR REPORT

Differentiation

A2 LEARNERS

B1 LEARNERS

See 'language support' in tips and CLIL language support.

3

- EAllow creativity but link clearly to real-world science. Reinforce vocabulary through visuals. Link science findings back to Tess's journey: how knowledge changes the future.

ACTIVITY 4

Story link: Inspired by Tess's discovery of sustainable technologies used by the Eloi (Chapter 3).

Objective: To design and present an original eco-innovation that could improve future life on Earth, linking scientific creativity and language skills.

MATERIALS

- Invention planner templates
- Sketching tools and markers
- Access to recyclable materials (cardboard, bottles, foil, cloth, etc.)
- Digital design platforms (e.g., Canva, Genially)
- Problem–Solution Matching Cards (see below)
- Real-world eco-innovation examples (e.g., EcoRise stories)
- Pitch templates and language support sheets.

STEPS

1. Pre-task

- Introduce the concept of eco-innovation through short examples (EcoRise stories or visuals).
- Discuss what makes an invention effective: clear purpose, user focus, sustainability, and creativity.
- Review key invention vocabulary: *prototype, function, user, benefit, material, sustainability.*
- Alternative attention-to-diversity activity: Students match *problems* to possible *solutions*[o] using the Problem–Solution Matching sheet:
  - Problem → Possible Solution
  - Plastic waste in oceans → Biodegradable packaging
  - High energy use in homes → Solar panels / insulation materials
  - Lack of clean drinking water → Low-cost water filters
  - Air pollution from cars → Electric or hydrogen-powered vehicles
  - Food shortages → Vertical farming / hydroponics

TIPS FOR TEACHERS

1

- Focus on Cross-cutting Concept: *Structure and Function* – emphasise how each design's materials, shape, and mechanics directly serve its purpose.
- Key words: invention, prototype, function, user, benefit, material, design, sustainability, innovation.
- Use *brainstorming prompts*: "Who will use this?"; "What problem does it solve?"; "What materials are needed?"
- Support planning with invention flowcharts and structured vocabulary sheets.

- Too much waste in cities → Recycling and composting systems
- Climate change (rising CO_2) → Planting trees / carbon capture technologies

2. Main task

- In groups, students invent a solution to the global challenge researched in the previous session.
- Each group gives their invention a name and explains its *purpose, function, materials, users,* and *benefits.*
- Groups create a concept board or prototype using sketches, diagrams, keywords, and short texts.
- They prepare a pitch presentation (2–3 minutes) using model structures and persuasive techniques.
- Optional for L2 subject: Students write a short fictional backstory linking their invention to Tess's journey (e.g., how the idea was discovered in the future).

3. Post-task

- Class feedback session: groups present and answer questions about their inventions.
- Teacher and peers provide constructive comments using sentence starters (e.g., *I liked... / One improvement could be...).*
- Optionally, display invention posters or models around the school as part of a "Future Fair."

Homework: Students complete their pitch templates:

- Complete unfinished sections of the lab report.
- Optional: bring one photograph or sketch from your experiment to add to the final Future Invention Portfolio.

PITCH (ADVANCED)

PITCH (SIMPLIFIED WITH LANGUAGE SUPPORT)

TIPS FOR TEACHERS

2

- Encourage multiple expression modes (sketches, posters, models, slides).
- Support story-writing with sentence frames and sample leads.

Language Support

- *Our invention is called… / It solves the problem of… / It works by…*
- *The main benefit is… / This invention is for…*
- *If we use recycled materials, then… / We must ensure that…*
- *Use modals for obligation (must, should) and conditionals for speculation (if… then…).*

Differentiation

Simplify written tasks for lower levels (labels + keywords instead of full text); offer sentence frames or audio recordings for oral tasks.

3

Reinforce connections between problems and proposed solutions.

60’

ACTIVITY 5

DESIGNING A PROTOTYPE

Story link: Links to how the Morlocks and Eloi use and present technology differently (Chapters 4–5).

Objective: To guide students in transforming their invention ideas into feasible, scaled designs by applying principles of measurement, proportion, and structure—laying the groundwork for the collaborative construction of the class Time Machine.

MATERIALS

- Digital design tools: Tinkercad or SketchUp Free
- Rulers, measuring tape for scaling
- Prototype materials: cardboard, recyclables, glue, scissors, markers
- Graph paper for design sketches

STEPS

1. Pre-task

- Review invention ideas and solutions from the previous class.
- Teach or review the concepts of scale and dimension; demonstrate how to apply them when creating models.
- Show examples of student-made prototypes or digital mock-ups.

Differentiation option: Students label vocabulary and icons before building to reinforce technical terminology.

2. Main task

- In groups, students design and build a prototype of their invention — either a physical model using recyclable materials or a digital version using modelling software.
- They apply realistic scale and dimension concepts to ensure accuracy, label key parts, and explain each function briefly (e.g. height, width, depth).
- Students take photos or screenshots of their prototypes from different angles to document progress and prepare for promotion tasks later.
- Each group writes a short explanation sequence describing their process (for example: First, we built… Next, we added… Finally, we tested…).

TIPS FOR TEACHERS

1

- Focus on cross-cutting concepts: Structure and Function – have students justify how each component, scale, and label contributes to the prototype’s purpose.
- Key words: prototype, scale, dimension, measure, model, label, build, design, feedback, 3D model, render, testing, interactive, simulate.
- Emphasise proportion and scale (e.g. a 3-metre device built as a 30 cm model = 1:10 scale).
- Support measurements with visual or digital examples.

TINKERCAD

Alternative activities:

Physics addition:

When students create their invention prototypes, integrate measurement, forces, motion, and energy principles:

- Apply levers or pulleys in designs for mechanical advantage.
- Calculate scaling ratios and stability (centre of mass, balance) for the time-machine model.
- Use simple circuits or LED power systems (electrical potential, current).

3. Post-task

Groups take part in a quick gallery walk, showing their prototype drafts to another team and receiving brief peer feedback.

Record possible improvements or adjustments for the next session.

Homework:

- Finish model or refine digital mock-up.
- Upload project to class platform (e.g. Google Classroom)

TIPS FOR TEACHERS

2

- Let students work with familiar digital tools; provide short tutorials or tech support sessions.
- Encourage concise explanations and visual clarity.

Language support

- Our prototype shows… / The scale is… / This part represents… / We measured… to be… cm.
- Sequencing: First, Next, Then, After that, Finally.
- Technical verbs: open, select, drag, insert, rotate, resize, label, save, upload, download, animate.
- Explaining procedures: To adjust…, you need to…, By selecting…, we could….

3

Tip

Use "Two Stars and a Wish" Feedback Cards

- Give each visiting group a small card or sticky note.
- They can write two positive points ("stars") about the model and one suggestion ("wish") for improvement.

Example

- "Clear labels make it easy to understand."
- "Good use of recycled materials."
- "Wish: Add a diagram to show how it works inside."

60'

ACTIVITY 6

PROMOTING YOUR PROTOTYPE

Story link: Connects to how the Morlocks and Eloi present and communicate technology differently (Chapters 4–5).

Objective: To help students develop communication and design skills by creating persuasive promotional materials that present their prototype clearly and attractively, highlighting its innovation, benefits, and connection to a sustainable future.

MATERIALS

- Canva or similar design tool
- Devices for video or poster creation
- Short advert examples (e.g., NGO or tech company campaigns)

YOUTUBE VIDEO

STEPS

1. Pre-task

- Watch examples of short adverts and analyse their structure: Hook – Problem – Solution – Call to Action.
- Discuss what makes each advert engaging and memorable (use of visuals, tone, emotion, slogan).
- Create a short list of effective persuasive techniques on the board (e.g., rhetorical questions, strong imagery, emotional appeal).

2. Main task

- In groups, students design a promotional tool to advertise their invention: options include a short video, an advertising poster, or a launch-style social media post (see storyboard template for an example)

EXAMPLE

- Each product must include a clear slogan, the name of the invention, a short problem–solution message, and a strong call to action.
- Groups apply persuasive techniques (emotive language, striking visuals, rhetorical questions) and consider layout/visual hierarchy to make their message memorable.

TIPS FOR TEACHERS

1

- Focus on cross-cutting concepts: Cause and Effect – Guide students to frame their advertisements by showing how adopting their invention leads to positive outcomes and ignoring it may worsen problems.
- Key words: advertisement, slogan, persuasive, poster, video, solution, benefit, call to action.
- Offer phrases for persuasion and visual hierarchy examples.

- Students rehearse their promotion in a mini pitch fair, presenting to classmates in small groups or rotating stations.
- Peers give structured feedback using forms or rubrics that rate persuasiveness, clarity, and creativity.
- Groups note improvements to make before the final Future World Fair presentation.

3. Post-task

Reflect on what they learned about public speaking or visual design.

Homework: Finish promotional video.

TIPS FOR TEACHERS

2

- Have students rotate roles during the pitch fair.
- Use applause tokens or feedback slips to boost engagement.

Language support

- Hook – Imagine if…, What if… Did you know that…
- Problem – The problem is…, This affects….If nothing changes…
- Solution - Our invention is called…, It solves the problem of…, The main benefit is…
- Call to Action – Join us to…, Let's work together to…

Highlight comparatives/superlatives to showcase product advantages (lighter than…, most energy-efficient), and modals (You should choose this because…).

3

Discuss other potential issues in preparation for the 'The Future World Fair'

60′

ACTIVITY 7

TIME-MACHINE STUDIO

Story link: Connects to Tess's creativity and technical skill in building her own time machine (Chapters 1–2).

Objective: To collaboratively construct the class "Time Machine" as the central project artefact.

MATERIALS

- Craft and construction materials (cardboard, wires, recycled plastics, paint, LED lights, foil)
- Digital tools for 3D or visual design (Tinkercad, SketchUp, Canva, Genially)
- Measuring tools, rulers, glue guns, and safety equipment
- Cameras or tablets for documenting progress

STEPS

1. Pre-task

- Revise what a prototype is and how it differs from a final product.
- Show examples of time-travel devices in books or films (from steampunk gears to futuristic pods) and discuss what makes each design believable or imaginative.
- Brainstorm with prompts: What powers the time machine? How does Tess travel safely? What rules must it follow?

2. Main task

- Teams design and assemble the class Time Machine (they can incorporate ideas from previous prototypes if appropriate)
- Each group contributes one feature (energy core, navigation panel, communication hub, safety module, environmental chamber, etc.).
- Combine materials to create a unified structure that demonstrates function as well as form.
- Optional – integrate simple circuits (LED lighting or switches) if facilities allow.
- Photograph or film stages of construction for inclusion in the exhibition.

Additional options for physics

- Require each module to include one energy concept — e.g. how it is powered (solar, kinetic, magnetic field).

TIPS FOR TEACHERS

1

- Emphasise Energy and Matter – prompt explanations of how the machine is powered and its environmental impact.
- Highlight teamwork, measurement accuracy, and safe tool use.
- Key Vocabulary: component, circuit, connection, structure, assemble, framework, energy core, navigation panel, control system, wiring, module, stability, prototype, integrate, function, mechanism, alignment, safety.

- Add simple electronics or motion feature: e.g., a fan-driven rotor powered by batteries.
- Discuss Newton's laws conceptually (e.g. how motion or stability would work in time travel).

3. Post-task

Hold a brief studio reflection: each group explains one design or technical decision and what earlier learning inspired it.

Homework:

- Finalise any decorative or functional adjustments.
- Upload a short (30-second) video or image caption explaining the purpose and function of their component within the time machine.

TIPS FOR TEACHERS

2

- Encourage planning before construction – have groups sketch their component, label its purpose, and decide how it connects physically or conceptually to the other parts of the machine.
- Circulate during assembly to prompt reflection ("How does this part work?", "What problem does it solve?") and ensure safe, cooperative use of materials and tools.

3

Encourage visible connections to earlier learning (scientific principles, ethical choices, sustainability).

60’

ACTIVITY 8

BUILDING THE TIME MACHINE

Story link: Based on Tess’s final preparations and teamwork before her journey (Chapters 6–7).

Objective: Students collaborate to construct the class Time Machine, combining their earlier prototype ideas into one collective design.

MATERIALS

- Collected components and modules from each group (from Session 7)
- Tools and materials for safe assembly (cardboard, wood, glue gun, wire, LED lights, paint, recyclable elements)
- Simple circuit kits or batteries (optional)
- Cameras or tablets for documentation
- Background music or sound effects for atmosphere (optional)

STEPS

1. Pre-task

- Review the purpose of the class Time Machine: how it represents innovation, collaboration, and sustainability.
- Plan assembly sequence together: decide where each module (energy core, navigation panel, communication hub, etc.) will fit.
- Assign rotating roles (builder, designer, fixer, documenter, safety monitor).

2. Main task

- Students physically assemble the class Time Machine by combining the designed components.
- Integrate decoration, structure, and (if possible) simple circuits or moving parts.
- Encourage creative use of recycled materials and visible “eco-engineering” touches (e.g., solar panels made of foil, water-energy modules).
- Students document progress with photos, sketches, or short video clips to include in the final exhibition.
- Optional: test-run presentation — students “demonstrate” how it would work (energy activation, start sequence, travel mode).

TIPS FOR TEACHERS

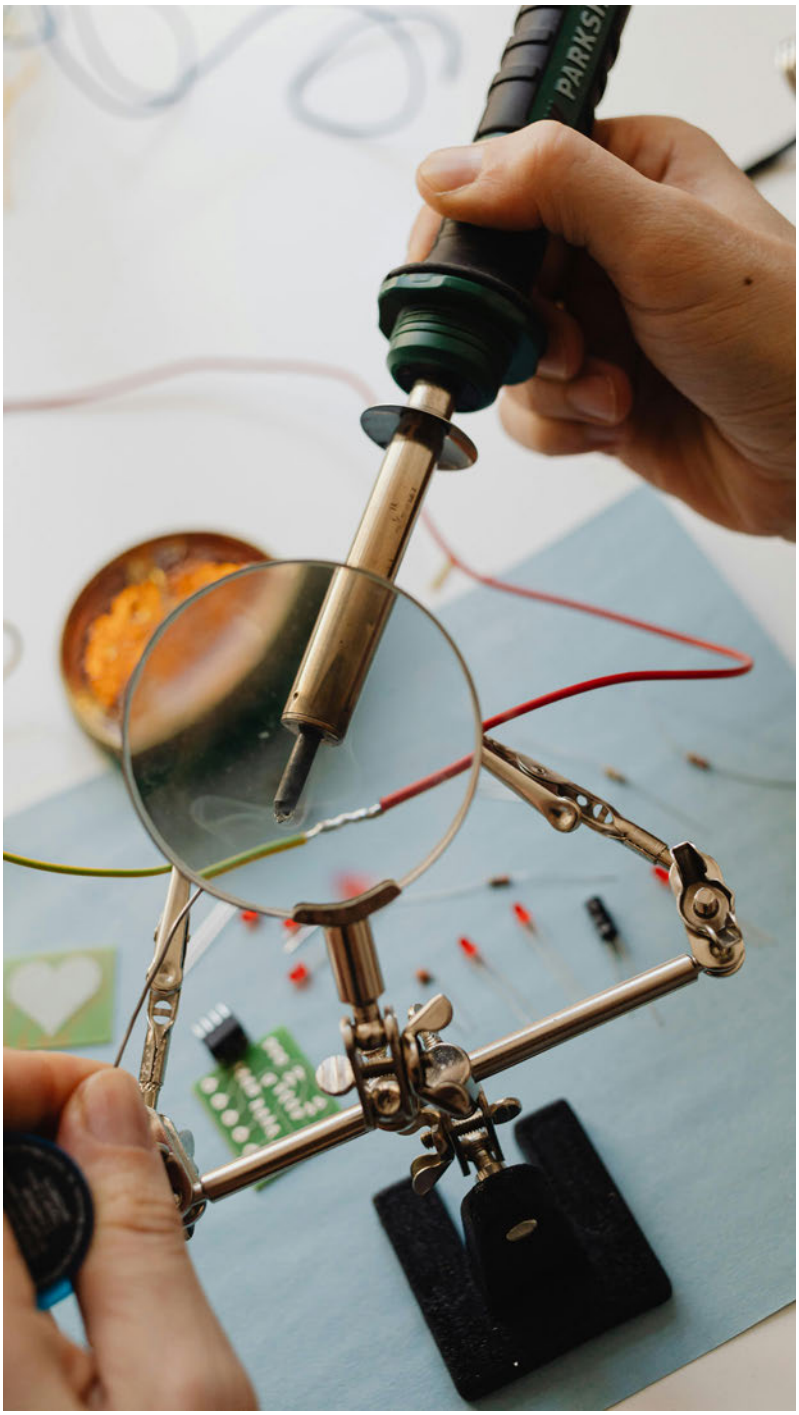
1

- Emphasise Systems Thinking: show how individual parts combine to create a functioning whole.
- Use this as an opportunity to discuss teamwork, safety, and creativity in design.
- Encourage students to plan before they build — sketch assembly order or test connections before fixing them.
- Key Vocabulary: assemble, structure, connect, component, mechanism, framework, reinforce, stability, circuit, activate, construct, integrate, recycle, innovate, sustainable design.

3. Post-task

- Reflection circle: groups explain what part they contributed and what technical or design challenge they solved.
- Take group photos or record a short "launch day" video clip for use in the final exhibition.

Homework: Students complete their project log or visual diary: "Our contribution to the Time Machine." (1–2 photos or sketches + short paragraph describing their role or idea.)



TIPS FOR TEACHERS

2

- Encourage cross-group coordination so each team's component connects logically to others (e.g., power source links to control panel). Emphasise collaboration and clear communication.
- Highlight design thinking: students should explain not only what they built, but why it works that way – focusing on function, sustainability, and creativity.

60′

ACTIVITY 9

CONNECTING THE THREADS

OPTIONAL

Story link: Revisits Tess's journey as students reflect on what they've learned about innovation, ethics, and collaboration before the final exhibition.

Objective: To help students consolidate their learning by connecting the scientific, creative, and ethical dimensions of the project, preparing a coherent presentation that links their inventions and the class Time Machine to lessons from the past and visions for the future.

MATERIALS

- Portfolio checklists and reflection forms
- Timeline templates or mural paper
- Access to prototypes, posters, time-machine photos, and other artefacts
- Digital tools for organising media (Canva, Google Slides, Padlet)

STEPS

1. Pre-task

- Display a timeline of the whole project: Reading → Research → Experiment → Invention → Prototype → Time Machine → Reflection → Fair.
- Ask:
  - How did each step prepare us for the next?
  - What did we learn about working together, solving problems, and imagining the future?
  - What lesson from the past or from Tess's story should guide the future?
- Students jot key points on sticky notes or digital boards.

2. Main task

- Groups curate a "Project Storyboard" combining highlights from all sessions: invention description, prototype images, time-machine photos, and journal reflections.
- They create a short (2–3 minute) presentation or digital summary for the Future World Fair, connecting their invention and the time machine to broader themes:
  - What did we learn from history?
  - How can innovation be sustainable or ethical?
  - What do we imagine for the future?
- Encourage cross-subject input:
  - ICT: format slides or short video.
  - Art: design the layout or colour scheme.

TIPS FOR TEACHERS

1

Focus on cross-cutting concept: Cause and Effect – connect students' inventions and choices to long-term social and environmental consequences.

- Citizenship/History: frame the “lesson for the future.”
- Groups rehearse and give feedback to one another.

3. Post-task

- Hold a short “Mini Reflection Fair” where each group presents their draft storyboard to another team and collects peer comments (clarity, creativity, connection, message).
- Class debrief:
  - “Which ideas connect most strongly to real-world issues?”
  - “What should our Time Machine symbolise for the school community?”

Prompt physics-based reasoning:

- Which scientific principles made our inventions work?
- How do energy efficiency and materials relate to sustainability?

Homework: Finalise integrated presentation and rehearse for the Future World Fair.

TIPS FOR TEACHERS

2

- Encourage concise, visual storytelling rather than lengthy text.
- Provide a presentation checklist (clear message, visuals, teamwork, time).

3

Use simple feedback slips (“Something that inspired me…/ One idea to clarify…”).

60′

ACTIVITY 10

LIFTOFF: THE FUTURE WORLD FAIR

Story link: Mirrors Tess's return from the future and her wish to share innovation and wisdom with her community (Chapters 6–8).

Objective: To celebrate and communicate the outcomes of the entire project, allowing students to showcase their inventions and the collective Time Machine while engaging the school community in a creative, collaborative learning experience.

MATERIALS

- School hall, gym, or large classroom (alternative: outdoor courtyard or multi-purpose room)
- Tables or display panels for group stands
- Posters, prototypes, the class Time Machine, cue cards
- Laptop/tablet stations for digital presentations or videos
- Voting slips, "visitor passports," or digital forms for feedback
- Decorations with a "future-tech" or "time-travel" theme (lights, metallic colours, gears, stars)
- Certificates or small recognition tokens

STEPS

1. Fair Setup and Running Order

- Students and teachers set up stands before the event (each representing one invention).
- The central "Time Machine Hub" is placed prominently, symbolising the collaborative aspect of the project.
- Groups rehearse briefly while final adjustments are made to displays.
- A short opening speech by a teacher or selected student ("Head Time Traveller") welcomes visitors and explains the purpose of the fair.
- Visitors circulate freely among stands, where groups:
  - Present their inventions or innovations using posters, prototypes, or short videos.
  - Demonstrate or explain their invention's function, sustainability, and inspiration from Tess's story.

TIPS FOR TEACHERS

1

- Encourage clear division of roles within each team (greeter, explainer, demonstrator, Q&A host). – Use Student presentation plan as a support.
- Ensure all technical elements (sound, lights, power) are tested beforehand.
- Keep presentations short—1–2 minutes per group—to allow all to participate.
- Promote inclusivity: provide printed visuals or bilingual cue cards for learners needing support.
- Invite other classes, parents, or community guests to create a wider audience and authentic motivation.

CUE CARDS

- Use quick interactive elements (e.g., mini quiz, small demo, or creative challenge) to engage the audience.
- The Time Machine model is demonstrated collectively at intervals (lights or moving parts activated; students explain its components and energy source).

2. Reflection and Closure

- Voting and feedback: Visitors vote in categories such as Most Innovative, Most Sustainable, or Best Presentation.
- A brief closing celebration concludes the event with recognition for all participants (certificates, applause, or a group photo around the Time Machine).
- If time allows, a five-minute class reflection can follow: What did we learn? What would we improve next time?

FUTURE WORLD FAIR FEEDBACK SHEET EXAMPLE

TIPS FOR TEACHERS

2

Language support

- Starting: Welcome to our stand. Our invention is called…
- Explaining: It works by… / The purpose is… / This part represents…
- Inviting: Would you like to test…? / You can participate by…
- Answering: That's a great question. We decided to… because…
- Closing: Thank you for visiting our stand. We hope you enjoyed learning about our invention.

EXAMPLE OF ADAPTABLE ASSESSMENT RUBRIC

60'

CLOSING SESSION (OPTIONAL)

Story link: Connects to Tess's final message to the past and her reflection on what the future taught her (Chapter 8).

Objective: To consolidate and celebrate students' learning by compiling their inventions, reflections, and experiences into a final report or multimedia showcase, connecting their creative work to Tess's final message about responsibility, innovation, and the future.

MATERIALS

- Laptops or tablets, access to presentation software (Google Slides, PowerPoint, Canva)
- rintable checklists and storyboard templates
- Video or audio editing tools for multimedia compilations
- Report templates, self-assessment sheets, certificates of completion, checklists, video/audio editing tools

STEPS

1.Pre-task

- Review all previous outputs: inventions, prototypes, visuals, reports, and reflections.
- Introduce the purpose of the final report – a reflection and synthesis of the entire project.
- Provide a planning checklist or storyboard to help groups structure their final written and digital work.
- Model a short example of how to connect the invention to its social or environmental impact.

2. Main task

In groups, students create a final project package that showcases their learning across the unit.

Each package includes:

- a written report (following the template provided),
- a multimedia piece (slideshow, video, or digital portfolio),
- and, if chosen, a short live or recorded presentation summarising their invention's journey and impact.

TEMPLATE

TIPS FOR TEACHERS

1

- Focus on cross-cutting concepts: Cause and Effect – guide students to connect their invention or learning journey to real-world impact: how today's ideas can change tomorrow.
- Key words: invention, reflection, impact, sustainability, collaboration, presentation, portfolio, improvement, innovation, solution.

Students integrate selected materials from earlier activities (posters, experiment results, prototype photos, reflections) into a coherent narrative.

They edit and polish language, visuals, and audio to ensure clarity and quality.

Each group rehearses and records their final explanation, focusing on teamwork, pronunciation, and confident delivery.

3. Post-task

- Students complete a self-assessment rubric on creativity, clarity, collaboration, and message strength.
- Each team shares highlights of their project with the class or uploads digital versions to the school's shared platform.
- Teachers facilitate a final reflection circle or "Time Capsule" discussion:
  - What did we learn about the future?
  - What have we learned about ourselves as a team?
  - If Tess visited us again, what would we show her now?
- Celebrate completion with certificates or digital badges for creativity and teamwork.

Homework:

- Finalise the written report and submit the full project portfolio.
- Write a short reflective paragraph: "What would Tess think if she saw our time machine and inventions today?"

Optional Extensions:

- Connect with local entrepreneurs or scientists for guest talks
- Link to Erasmus+/eTwinning for international exchange
- Submit inventions to youth competitions

TIPS FOR TEACHERS

2

- Offer digital tools and templates for final presentations (See report template)
- Provide quiet space or breakout groups for focused finalisation.

Language support for report

- Introduction: Our invention is about…We chose this problem because…
- Background Research: We found out that… According to…
- Problem Statement: The problem is…, This affects…, It is important because…
- Proposed Solution: Our invention is called…, It works by…. The main benefit is…
- Method / Prototype Description: First, we… ,Next, we…, Finally, we…, We used… to build/test…
- Expected Impact: This invention will help…, It can reduce…, In the future, it could…,
- Hedging language for predictions and claims (may, might, could, is likely to).
- Conclusion: We learned that…, One challenge was…, Next time, we would…
- References: We used information from…, Our sources were…

Differentiation

A 'Differentiated template report example' is provided with language support

3

- See self-assessment example
- Print certificates of completion.

APPENDIX: IDEAS FOR BUILDING THE CLASS TIME MACHINE – COLLABORATIVE CONSTRUCTION PLAN

SOURCE: CHAT GPT

The class Time Machine serves as the central artefact of the project — a tangible symbol of innovation, sustainability, and teamwork. Each group contributes a specific component, ensuring that all subject areas have a meaningful role. The final model can be physical (classroom display) or hybrid (digital-physical mix).

CONCEPT AND PLANNING PHASE	DESIGN AND PROTOTYPE PHASE	CONSTRUCTION AND ASSEMBLY PHASE	PRESENTATION AND REFLECTION PHASE

1. Concept and Planning Phase

Students define the purpose of the Time Machine (exploration, learning, sustainability, or warning humanity about the future). They assign teams to specific modules and agree on a unifying design theme (e.g. futuristic lab capsule, recycled spacecraft, crystal energy core, etc.).

Possible groups:

- Structure and Framework: main body, supports, door, windows, and overall shape.
- Exterior Design: panels, colours, sustainable materials.
- Control and Navigation: dashboard, levers, monitors, voice interface.
- Energy and Power Core: sustainable or fictional power source (solar, magnetic, water, time crystal).
- Seating and Safety Module: seats, belts, emergency instructions.
- Communication Hub: translator or AI interface.
- Ethics and Mission Panel: purpose, time-travel code, responsible use.
- Documentation and Media: photos, videos, QR-linked posters for the Future World Fair.

2. Design and Prototype Phase

Each group produces a sketch or digital blueprint, a materials list (preferably recycled), and a short function statement (e.g. "This module provides energy through..."). Groups share designs to check scale and create one central diagram showing how all parts connect.

3. Construction and Assembly Phase

Students use cardboard, tubes, bottles, tinfoil, LEDs, recycled electronics, glue, string, and paint. They build the frame, attach panels, install control and power systems, add seating, label components in English, and test for stability. Optional features include hidden lighting or sound effects, transparent "temporal map" screens, or QR codes linking to group explanations.

4. Presentation and Reflection Phase

The completed Time Machine is displayed at the Future World Fair alongside students' individual inventions. Each group explains its section (e.g. "Our team created the Navigation Console. It calculates the time coordinates and ensures safe travel using solar plasma energy."). A short reflection follows: What was most challenging about combining different designs? How did each subject contribute? What would we improve next time?

SOURCE: DALL-E

APPENDICES

APPENDIX A SUGGESTED READING MATERIALS BY CEFR LEVEL

To support the development of each student and adapt reading materials to different language proficiency levels, the following list of recommended books is organised according to the CEFR scale:

- *A2 level: A Planet Full of Plastic* by Layton, N. (2019). Wren & Rook. A visually engaging book that introduces the topic of plastic pollution in simple, accessible language, ideal for early secondary learners.
- *B1 level: Plasticus Maritimus: An Invasive Species* by Pego, A., Carvalho, B. P., & Minhós Martins, I. (2020). Greystone Kids. A semi-narrative, informative text that raises awareness and encourages personal reflection through clear language and real-life connections.
- *B2 level: What a Waste: Trash, Recycling, and Protecting Our Planet* by French, J. (2019). DK Children. A comprehensive resource that explores environmental challenges with rich vocabulary, infographics, and explanatory content suitable for upper-intermediate learners.
- *C1 level: Plastic Soup: An Atlas of Ocean Pollution* by Roscam Abbing, M. (2018). Island Press. An advanced text combining scientific data, global case studies, and persuasive arguments, ideal for learners developing academic reading and critical analysis skills.

APPENDIX B RELATION WITH OTHER SUBJECTS

Throughout the different levels of the project, various subject areas have already been explicitly addressed. The following list outlines additional possible connections with other curricular subjects that may be relevant to this unit. These are not proposed activities, but rather suggestions intended to inspire further interdisciplinary integration where appropriate. Teachers are free to adapt or incorporate these ideas according to their context and objectives. Their inclusion is entirely optional and meant to support flexible implementation of the project.

1. Artistic Expression area

Possible connections:

- Work on visual storytelling and comic design through the final product.
- Use colour and composition to express emotions and contrasts between nature and pollution.
- Create 3D sculptures using plastic waste, developing volume and symbolism.
- Explore how different cultures represent nature and reinterpret traditional styles to address pollution.

2. Music

Possible connections:

- Use environmental songs to reflect on the theme of pollution.
- Create original lyrics or soundtracks inspired by the comic.
- Develop body percussion or performance pieces based on the plastic monster.
- Connect traditional musical expressions from coastal or island cultures with environmental awareness.

3. Physical Education area

Possible connections:

- Organise physical activities that involve collecting and sorting waste outdoors.

- Promote reflection on emotional well-being and eco-anxiety through movement.
- Design choreographies inspired by ocean currents and marine life.
- Link traditional games or sports from island regions with environmental action.

4. Technology and Digitalisation area

Possible connections:

- Apply the engineering design process to build a prototype that filters or collects microplastics from water, using low-cost or recycled materials.
- Investigate how material properties (flexibility, resistance, density) affect the design and function of plastic-based objects and alternatives.
- Design and simulate sustainable transport or packaging systems to replace single-use plastics, working with scale models and physical constraints.
- Analyse technological innovation in environmental protection (e.g., biodegradable materials, ocean-cleaning devices, smart waste systems) and propose improvements.
- Integrate technical drawing and sketching to communicate ideas clearly, followed by digital 3D design (e.g. using Tinkercad or similar platforms).
- Explore the environmental impact of industrial production and product lifecycle, connecting it to responsible consumption and circular economy principles.

APPENDIX C ASSESSMENT RUBRIC OF FINAL PRODUCTS

The following rubric is provided as a flexible and optional tool to support the evaluation of student projects. It is designed to guide assessment through clear, observable criteria while allowing teachers to adapt it to their specific context or needs.

Scan here to download the interactive rubric. You can enter scores directly into the file, and the total will be calculated automatically out of 10.

This resource is intended to simplify assessment, enhance transparency, and encourage consistency. However, its use is not mandatory: teachers are free to adjust the criteria, scoring scale, or final weighting, or to use a different tool altogether, depending on the goals of the project and the characteristics of their classroom.

	CRITERIA	EXCELLENT (4)
STESM skills	**1. Problem identification and model-based thinking**	The product is based on a clearly formulated and relevant real-world problem or question. It includes one or more models (visual, conceptual, physical or symbolic) that effectively represent core concepts or systems and help explain the problem or solution.
	2. Reasoning, planning and structured problem-solving	The product shows a clearly structured approach to problem-solving. Reasoning is logical and well-sequenced, and the proposed solution addresses the problem effectively with justified steps, mechanisms or principles.
	3. Evidence-based argumentation and data interpretation	The product integrates specific data, factual information, or observed evidence to support decisions or claims. Interpretation is accurate and shows clear understanding of relationships, causes or consequences.
	4. Information management and scientific communication	Information is relevant, accurate and well organised. Scientific content is communicated clearly, using appropriate formats (labels, captions, diagrams, visual hierarchies, etc.) and adapted to the intended audience and goal.
	5. Creative and artistic expression	Artistic or design elements are used purposefully to enhance meaning, engagement and communication. Composition, colour, symbolism or other visual resources reflect clear creative intention and coherence.
L2	**6. Accuracy and range of language**	The product demonstrates consistent accuracy in grammar, spelling, punctuation and word choice. A wide range of vocabulary and structures is used appropriately to express meaning with precision and fluency.
	7. Clarity and coherence of message	The message is logically organised and easy to follow. Ideas are clearly connected through effective transitions and the overall structure supports comprehension.

GOOD (3)	SATISFACTORY (2)	NEEDS IMPROVEMENT (1)
The product presents a mostly relevant problem or question, with a model or visual representation that contributes to understanding but may lack precision or completeness.	The problem is present but is poorly defined, generic or only loosely linked to real-world issues. The model is simplistic, underdeveloped or not clearly linked to the problem.	The product lacks a defined problem or guiding question. No meaningful model is used, or the representation is disconnected, unclear or decorative only.
The product includes a mostly logical sequence, with a solution that is appropriate and functional, though not deeply justified or partially disconnected from the problem.	The reasoning or planning is partially evident, but the steps taken are disorganised, oversimplified or contain inconsistencies. The solution is incomplete or vague.	The product lacks visible reasoning or planning. The solution is missing, irrelevant or incoherent in relation to the problem.
The product includes data or information, with basic explanation or justification of its relevance. Interpretation is present but lacks depth or detail.	Limited or superficial use of evidence. Connections between information and conclusions are unclear or weakly reasoned.	No use of data or observable evidence. The product relies on opinions or assumptions without justification.
Information is generally relevant and understandable, though some ideas may lack clarity or structure. Formatting and visual organisation support the message adequately.	Content includes inaccuracies, vague phrasing or lacks coherence. The message is partly understandable, but the structure or design hinders comprehension.	The product is disorganised or contains significant errors. Scientific content is poorly presented, confusing or inappropriate for the audience.
The product includes appropriate and mostly effective artistic or creative elements. Visuals or design contribute to the message, though they may be conventional or uneven.	Some aesthetic elements are present but are poorly developed, unbalanced or lack integration with the message. Creative intent is limited.	Visual or artistic resources are absent, minimal or irrelevant. The product shows little creative effort or visual coherence.
Language is mostly accurate with only occasional minor errors that do not affect understacabulary and structures show some variety and are appropriate to the topic.	Frequent grammatical or lexical errors that occasionally interfere with meaning. Limited range of structures or repetitive vocabulary.	Persistent errors in grammar or vocabulary that significantly hinder comprehension. Very limited or inappropriate use of English.
The message is generally clear and coherent. Some minor lapses in organisation or flow, but the main ideas are still understandable.	The message is unevenly structured or contains unclear sections. Transitions may be missing or poorly used, affecting comprehension.	The message is difficult to follow due to poor organisation, unclear sentence structure or lack of logical progression.

	8. Adequacy to format and audience	The language used is fully appropriate to the type of product (e.g., comic, campaign, report, script) and adapted to its intended audience in tone, register and purpose.
	9. Oral and/or written fluency	Written texts are fluent and natural-sounding, with good rhythm and readability. Oral performance (if present) is confident, intelligible and expressive, with accurate pronunciation and appropriate intonation.
Digital Skills	**10. Purposeful use of digital tools**	Digital tools are used appropriately and effectively to enhance the creation, organisation and/or communication of the product. Tool selection shows autonomy, accuracy and relevance to the task.
	11. Quality of the digital product	The product is technically well-executed: sound, image, layout, transitions and design elements (e.g., fonts, colours, spacing) are coherent, attractive and professional. No technical flaws are present.
Sustainability/ ODS	**12. Understanding of the sustainability issue**	The product demonstrates a deep and accurate understanding of the environmental or social issue addressed. Causes, consequences and connections to the selected SDG are clearly explained or represented.
	13. Proposed action, solution or awareness strategy	The product includes a realistic, well-argued and contextually relevant proposal to address the issue. The action or message is creative, feasible and shows strong commitment to sustainability.
Other	**14. Critical thinking and transfer**	The product demonstrates the ability to apply concepts, methods or content from different areas in a new or real-world context. The ideas show thoughtful reflection, analysis and clear relevance.
	15. Adequacy to product format and purpose	The product fully respects the structural, visual and communicative conventions of the chosen format (e.g., comic, campaign, presentation). It is well adapted to the intended audience and purpose.

The language fits the format and audience in general terms, though some inconsistencies in tone or formality may appear.	The use of English only partially matches the conventions of the format or the expectations of the audience. Inconsistent tone or awkward phrasing.	Language is inappropriate for the format or audience. The tone, formality or structure do not match the task.
Written or spoken English is mostly fluent and understandable. Some hesitation, mispronunciation or unnatural phrasing, but communication is not seriously affected.	Limited fluency with noticeable pauses, mispronunciations or awkward phrasing. Some sections are difficult to follow.	Lack of fluency. Written text is fragmented or confusing. Oral delivery (if applicable) is unclear, monotonous or hard to understand.
Digital tools are used adequately and contribute to the product. Tool choice is mostly appropriate, though not fully optimised or creatively exploited.	Some digital tools are used, but their integration is limited or basic. Tool selection may be partially relevant or show signs of dependency.	Little or no use of digital tools, or tools are misused or irrelevant to the product. Digital integration is weak or absent.
The product is mostly correct in technical terms, with minor flaws (e.g., layout inconsistencies, timing issues, audio clarity) that do not affect overall impact.	The product contains technical issues (e.g., resolution problems, unreadable text, disjointed visuals) that reduce quality or clarity.	The product is technically poor. Major issues in format, visuals, audio or navigation hinder comprehension or presentation.
The product shows a solid understanding of the issue. The SDG is relevant and mostly well linked, though some aspects (causes, impacts, scope) may lack development.	The issue is present but only partially understood. The SDG is included but superficially treated or loosely connected to the content.	The problem is unclear, misunderstood or missing. There is no evident link to an SDG or the reference is incorrect or irrelevant.
A proposal or awareness message is present and relevant, though general, partially developed or lacking in originality or depth.	The proposed action is vague, unrealistic or only loosely connected to the issue. Impact or feasibility is limited or unclear.	No clear proposal or message is included, or the solution is unrelated, impractical or missing entirely.
Evidence of application and reflection is present, with reasonable connections to new contexts. Critical thinking is present but not consistently deep.	Some attempt to apply prior knowledge or reflect on implications, though ideas may be generic, underdeveloped or only partially connected.	No clear evidence of transfer or critical thinking. Ideas are repeated, disconnected or lacking in relevance or depth.
The product mostly fits the chosen format and communicates its purpose clearly, with some minor deviations or inconsistencies.	The product loosely follows the format, but issues in structure, tone or design reduce its effectiveness or clarity.	The product does not respect the basic conventions of the format or fails to convey its purpose effectively. It may appear unfinished or incoherent.

APPENDIX D
SELF-ASSESSMENT

BLOCK	I CAN...
1. Science content	I can explain concepts and ideas related to science, technology, engineering, arts, or maths when relevant I can apply the concepts and ideas worked in the unit to design, test, or improve a product or solution I can connect what I have learned to real-world challenges and reflect on the results
2. English (L2)	I can use English to express my ideas clearly when writing or speaking I can use vocabulary and structures appropriate for the topic and task I can communicate effectively in English during group work and presentations
3. Critical thinking & creativity	I can suggest original or useful ideas to solve a problem or improve a product I can analyse a situation and make thoughtful decisions I can use creative strategies to share what I have learned
4. Teamwork & attitude	I can collaborate with others, listening and contributing respectfully I can stay organised and meet deadlines during the project I can show commitment and a positive attitude throughout the process
5. Digital skills	I can use digital tools to explore, create, or present content I can produce digital materials that are clear, well-designed and adapted to the purpose I can combine different media (text, image, sound...) to improve communication.
6. Sustainability	I can recognise the impact of human actions on the environment and society I can reflect on my role and make choices that promote sustainability I can take part in actions or solutions that contribute to a better future

Score	Description
1 – Strongly disagree	I don't know how to do this yet or I had a lot of trouble
2 – Disagree	I can do it a bit, but I still need help or get confused
3 – Neutral	I can do it sometimes, but I'm not very sure or confident
4 – Agree	I can usually do it well and I feel quite confident
5 – Strongly agree	I can do it very well and feel confident in different situations

APPENDIX E
PEER-ASSESSMENT

I think my teammate(s)/I...	A1	A2	A3	A4	(Myself)
worked well with others and helped the group.					
shared ideas clearly and listened to the group.					
completed their part of the work on time.					
gave original and useful ideas to improve the project.					
had a positive attitude and encouraged others.					
respected other opinions and worked with everyone.					

*Write the name of each group member (including yourself) above A1–A5. Give a score from *1 (Strongly disagree)* to **5** *(Strongly agree)* for each item.

APPENDIX D IMPLEMENTATION ASSESSMENT

Nº	INDICATOR	1	2	3	4	5
1	The project implementation is consistent combining CLIL, STEAM and storytelling in a coherent and integrated way.					
2	Activities foster active student participation and engagement throughout the learning process.					
3	Classroom management is effective, maintaining a positive and inclusive learning environment.					
4	Time is managed efficiently, allowing the planned activities to be completed within the available sessions.					
5	Unexpected challenges are addressed with flexible, reflective, and goal-aligned decisions.					
6	Unexpected challenges are addressed with flexible, reflective, and goal-aligned decisions.					
7	The project encourages interdisciplinary connections and integrates different subjects in a meaningful and functional way.					
8	Co-teaching or interdisciplinary coordination (if applicable) is well-organised and contributes to the success of the project.					
9	Ongoing assessment is integrated into the project using varied tools and includes student self-reflection.					
10	The use of the L2 (if applicable) is consistent and functional across the project, supporting both communication and content learning.					
11	The use of the L2 (if applicable) is consistent and functional across the project, supporting both communication and content learning.					
TOTAL IMPLEMENTATION SCORE: ..... /55						

Note:

Use the following scale to evaluate each indicator:

1 – Strongly disagree 2 – Disagree 3 – Neither agree nor disagree 4 – Agree 5 – Strongly agree

A TIME-TRAVEL STORY TO CONNECT BILINGUAL CLASSROOMS

This booklet, designed to accompany the multi-level graded reader Tess the Time Traveller, invites students on an interdisciplinary journey where the narrative becomes the gateway to meaningful communication, scientific inquiry, mathematical reasoning, digital competence and global citizenship. Adapted at four different language levels, the story allows a wide range of learners to access the same core narrative at an appropriate linguistic stage, ensuring inclusivity and progression. Through the graphic novel format, students engage with real-world challenges linked to sustainability and the digital transition while developing language skills in purposeful and authentic contexts.

The materials integrate STEAM education, CLIL methodology and story-based learning, where each unit begins with a narrative trigger that fosters emotional engagement and cognitive curiosity. From there, students move into inquiry-driven tasks, collaborative problem-solving, mathematical modelling, digital creation and reflective discussion. They analyse patterns, explore cause and effect, interpret data, design solutions and communicate ideas, using the foreign language as a vehicle for learning across disciplines.

This booklet is flexible and adaptable, supporting different levels of implementation and allowing for fully collaborative interdisciplinary projects. The materials also include structured learning sequences, cross-curricular connections, digital tools and assessment guidelines aligned with strategies to ensure accessibility and inclusion.

Tess's journey is not only a story about time travel — it is an invitation for students to imagine, design and build better futures, and the booklet provides support and flexible teaching and learning suggestions to help learners immerse themselves in the journey.

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