A CLIL unit in Textile Design

Bachelor's thesis

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Abstract

This thesis explores how content and language learning can be effectively combined within a CLIL (Content and Language Integrated Learning) framework, using a Textile Design (TD) unit focused on upcycling as a practical teaching example. Drawing on theories such as cognitive apprenticeship, scaffolding, CLIL and task-based language teaching (TBLT), the unit was designed to promote progression in both subject-specific and linguistic competencies. Through structured classroom observation (analyses of video-recordings), qualitative data revealed clear evidence of learning engagement with content-related language in meaningful contexts. Additionally, learning progression in terms of language, content and subject specific skills became visible within the conducted assessments. Key tools such as visual aids, modeling, and scaffolding were shown to support comprehension. While the study confirms the potential of CLIL in creative-practical subjects like TD, it also highlights limitations: findings are context-specific and cannot be generalized beyond this setting. Nonetheless, the project illustrates how integrated approaches can enrich both language and subject learning, offering valuable implications for future classroom practice and research.

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1 Introduction

Context and personal interest

During my studies at PH Bern, I was introduced to the concept of Content and Language Integrated Learning (CLIL) in the English and French modules. From the very beginning, the idea of learning content and language simultaneously caught my attention and absolutely convinced me. Therefore, I developed a personal interest in writing my bachelors' paper in this area.

In my own experience, connecting language learning to meaningful content makes it more effective and memorable. Attending a bilingual class at Gymnasium, where subjects such as biology and history were taught in English, I experienced the immersion effect personally. My confidence in speaking English grew – not through isolated grammar drills, but through using the language in real, subject-based contexts. At some point, I even found it challenging to explain certain processes in German that I had only ever learned in English. These moments revealed to me the deep link between language and content, and studying CLIL theory helped me understand and contextualize this connection.

Over time, I realized that learning a language cannot be effective if words are memorized in isolation, without context or meaningful connections, because they inevitably fade into oblivion. In turn, I realized that learning about content is tightly linked and cannot be separated from language. These insights fascinated me, increasing my motivation and deepening my interest in applying the CLIL approach in the classroom. As a result, my interest in combining language learning with subject teaching deepened, motivating me to explore how CLIL could be implemented in primary school. A unique opportunity arose during the "Technisches und Textiles Gestalten" (TTG) module, where we carried out a unit on upcycling in Textile Desing (TD) ourselves. The topic fascinated me and laid the foundation for my decision to design a CLIL unit in TD focusing on upcycling.

Topic, relevance

The growing importance of CLIL reflects the need for effective, adaptable education in a globalized world (Coyle; Hood & Marsh 2010, pp. 2–3). By combining subject learning with language development, CLIL supports cognitive growth, motivation, and meaningful engagement (ibid., p. 3). Based on constructivist thinking, it offers deep learning beyond memorization. Task-Based Language Teaching (TBLT) complements CLIL by structuring authentic, goal-oriented tasks that strengthen communication and content understanding.

Besides the relevance of CLIL and TBLT, the topic of upcycling proves relevant as well. As outlined in Chapter 2.2.3, upcycling promotes critical engagement with environmental issues. In the context of TD, it connects creativity, sustainability, and practical application skill of the subject. It encourages learners to reflect on their material environment and empowers them to turn waste into something

meaningful - raising awareness for the responsible use of resources and promotes understanding of sustainability issues, aligning with the goals of BNE (Bildung für Nachhaltige Entwicklung) in the curriculum (cf. Bildungs- und Kulturdirektion des Kantons Bern 2016, p. 34–40).

Aim of essay

As I design and teach the CLIL unit on upcycling in TD myself, I am especially interested in the ways I can support learning. Therefore, this paper attempts to show which methodological approaches and didactical tools support the learners to acquire both language as well as content competencies. The following research question emerges:

> *Which methodological approaches and didactical tools in teaching impact and support learning (with)in a CLIL unit in Textile Design on the topic of upcycling?*

As the overarching goal is for learners to progress in both language and subject-specific content related to TD on the topic of upcycling, the following question guides the evaluation of this paper:

> *How can learners' progress be made visible in both language and content within this this context?*

In summary, this paper explores how a CLIL unit in Textile Design can foster both language and subject-specific learning through a project on upcycling. The aim is to examine how methodological approaches and didactical tools can promote and support meaningful learning progression.

Structure of this paper

This paper is structured into a theoretical part that outlines the theoretical foundations related to the topic. These theoretical approaches are subsequently applied in the development of a lesson plan for a CLIL unit in TD. In the following section, selected examples of implementation are presented and analysed according to the methodological procedure described in Chapter 4. The evaluation section illustrates the learning outcomes within this project. In the discussion, implications of the CLIL unit in TD are derived, discussing limits and further potential. Finally, the most important aspects of this paper are summarized in the conclusion.

2 Theoretical Foundations of a CLIL unit in Textile Design

This chapter outlines the theoretical foundations of the CLIL unit in Textile Design (TD). The first two subchapters focus on ELT approaches and support elements relevant to the unit. Next, key aspects of the subject TD are presented. A theoretical view on learning progression follows, which is especially relevant for Chapter 6. Subchapters 2.4 and 2.5 introduce didactical tools that support learning. Finally, the chapter covers planning aspects that lead into the next chapter.

2.1 Methodological approaches in ELT

There are different methods and approaches in ELT. This paper focuses on the two ELT approaches CLIL (Content and Language Integrated Learning) and TBLT-/L (Task-Based Language Teaching and Learning) as they are the primary frameworks used in the implemented unit.

2.1.1 CLIL: Principles and didactic goals

The approach CLIL represents an extensive approach that involves numerous interconnected elements. This chapter highlights the most relevant aspects in relation to the research question and the analysis presented in Chapter 5.

Definition of CLIL

As became clear in the introduction of this paper, CLIL means Content and Language Integrated learning. Coyle; Hood and Marsh (2010, p. 1) describe it as "dual-forced educational approach in which an additional language is used for the learning and teaching of both content *and* language." An additional language is often understood as a learner's "foreign language", but it can also be a second language (ibid.). In the context of this unit, the additional language is English.

In CLIL, the focus is neither just on content or language – it is a fusion of content *and* language learning in which both are interwoven and prioritized together (ibid.). The idea behind CLIL connects to the understanding of "deeper learning", as noted by Coyle, Meyer and Staschen-Dielma (2023, p. 1), that goes beyond superficial levels of learning. Through "deep practice" tasks conceptual knowledge becomes transferable to other contexts.

4Cs framework

The 4Cs framework developed by Coyle provides a basic theoretical framework for the CLIL approach. According to Coyle et al. (2010, p. 41) and Marongiu (2019, p. 87), CLIL equally focuses content, communication and cognition, with culture arising from the way these three elements interact.

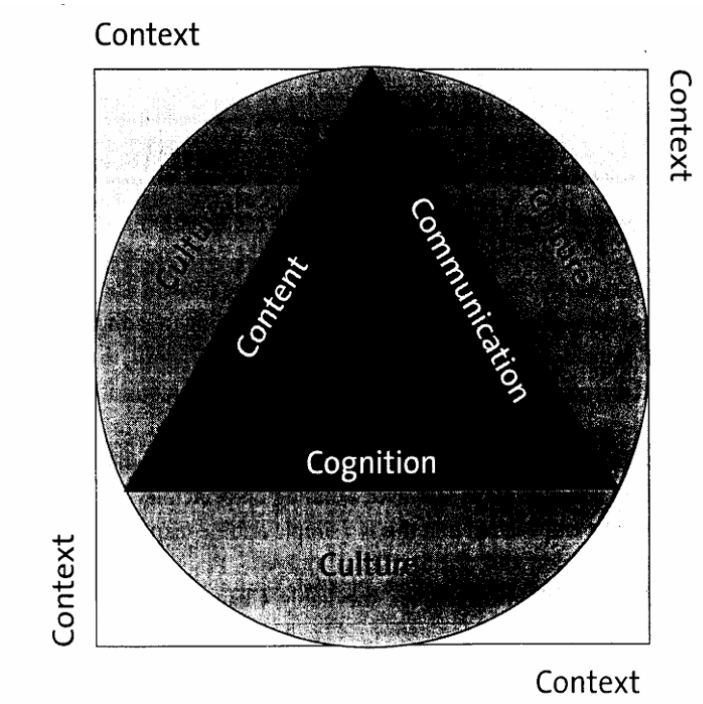


Figure 1 - The 4 Cs Framework (Coyle; Hood & Marsh 2010, p. 41)

Content focuses on developing learners' knowledge, skills, and understanding through meaningful thematic learning – It is emphasizing holistic learning rather than just acquiring facts (Coyle et al. 2010, p. 53). The understanding of *content* in CLIL is not limited to a traditional discipline in the school curriculum – it is much more flexible and offers both “opportunities within and beyond the regular curriculum to initiate and enrich learning, skill acquisition and development” (ibid., p. 27–28).

Cognition refers to the fact that learning – of subject content and language – is conceived as the development of thought processes (Coyle et al. 2010, p. 54). CLIL promotes active engagement in higher- and lower-order thinking by encouraging learners to reflect, solve problems, and build their own understanding. It is not about transferring knowledge but fostering cognitive development. Anderson and Krathwohl’s (2001) taxonomy supports planning by linking thinking processes with content learning (cf. Chapter 2.3.2).

Communication – the real, authentic use of the target language – needs to be tied to the learning context (cf. Coyle et al. 2010, p. 42). It is about learning *through* that language, to reconstructing content, and to related cognitive processes. It goes beyond learning grammar and focuses also on language using (ibid., p. 54).

Finally, CLIL always integrates cultural aspects: Subject and language learning are located in a cultural context in order to promote intercultural understanding and a change of perspective. Culture fosters awareness of self and others, identity, and global citizenship (cf. Coyle et al. 2010, p. 54–55). It involves using authentic, intercultural content to explore cultural differences and similarities,

promoting tolerance and deeper understanding. Culture should be meaningfully integrated into lessons, not added superficially.

The context dimension surrounds all 4Cs (Coyle et al. 2010, p. 41): effective CLIL always takes into account the specific contexts – learning situation and environment, as this shapes the content, interaction and learning.

Together, the 4Cs summarise the principles of CLIL that promote subject knowledge, language development, cognitive challenge and cultural learning.

Coyle's Language Triptych

Closely linked to the 4Cs is the concept of Coyle's Language Triptych, which describes the different roles of language in CLIL lessons. According to this, learners encounter the target language in three ways: as language *of* learning, language *for* learning and language *through* learning (Coyle et a. 2010, pp. 36–38).

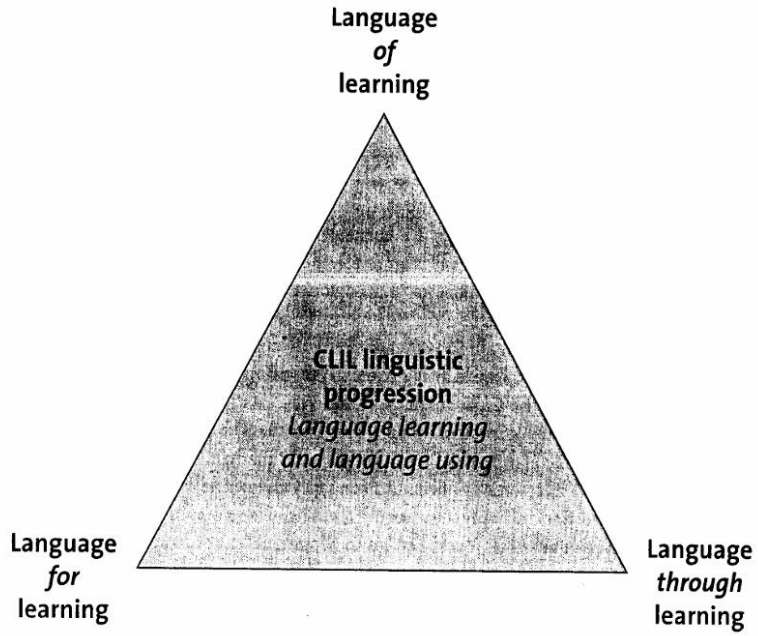


Figure 2 - The Language Triptych (Coyle; Hood & Marsh 2010, p. 36)

Language *of* learning refers to the subject-specific language learners need to understand core content (e.g., scientific terms, academic vocabulary). It goes beyond grammar drills, focusing on language tied to understanding content knowledge and engaging with subject matter (Coyle et al. 2010, p. 37). As CLIL is “content-driven” (ibid., p. 1), CLIL teachers “have to think about language only functionally, since their objective is to provide content in a context that is meaningful and linguistically accessible for the learner” (cf. Marongiu 2019, p. 83).

It is about making the content comprehensible to the learners – As VanPatten (2007, p. 115) stresses, acquisition happens only when learners understand the input. Thus, as noted by Marongiu (2019, p. 86), input has to be "provided through a variety of channels […] that engage learners affectively and cognitively" (Chapter 2.4.2 delights this topic more in depth). To ensure students can make form-meaning connections, process content, and develop cognitive skills, teachers need to use appropriate materials and scaffold subject-specific content (cf. Marongiu 2019, p. 86). This constructivist educational practice CLIL follows can impact conceptualization, enriching the understanding of concepts (ibid., p. 86–87).

Language *for* learning covers the language needed to function in the classroom (e.g., asking questions, group work, discussing and debating). It enables learners to participate actively and use language as a tool for learning, supports classroom interaction and helps learners engage in tasks and communication (Coyle et a. 2010, pp. 36–38).

Language *through* learning emphasizes that language develops and emerges during learning through active use, meaningful interaction and content engagement. As learners express their thinking, they deepen understanding and acquire new language. This language must be supported by the teacher (ibid.)

Growing relevance of CLIL

As outlined in the introduction, the growing importance of CLIL is linked to globalization and the need for adaptable, effective education (ibid., S. 2–3). It responds to global pressures for faster learning, shaped by assessments like PISA. By combining content and language learning, CLIL supports cognitive development and social learning, gaining relevance through constructivist approaches (ibid., S. 3). Grounded in educational theory and neuroscience, it enhances curricular relevance, motivation, and engagement.

As Coyle et al. (2010, p. 3) note, CLIL is about more than behaviour – it is about understanding the 'learning brain'. As a bridge between content and language, CLIL offers a flexible tool to meet global cognitive, social, and economic demands.

The next subchapter presents the TBLT/-L approach and its connection to action orientation, both of which play a key role in the CLIL unit.

2.1.2 TBLT/ -L and action-orientation

TBLT/-L (Task Based Language Teaching/ -Learning) is an approach that assumes that language learning is not a linear process, as noted by Müller-Hartmann and Schocker-von Ditfurth (2006, p. 39), but organizes “activities in which language is used for carrying out meaningful tasks to promote learning” (Richards & Rodgers 2001, p. 161).

A “task” in the sense of TBLT is more than just an activity – it is a goal-oriented work assignment with a communicative purpose. Ellis (2003, p. 16) defines a task as:

> A task is a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed. To this end, it requires them to give primary attention to meaning and to make use of their own linguistic resources, although the design of the task may predispose them to choose particular forms. A task is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world. Like other language activities, a task can engage productive or receptive, and oral or written skills, and also various cognitive processes.

This means that tasks in TBLT activate learners' own linguistic resources, establish a connection to the real world and require the functional use of language to convey meaning. Therefore, TBLL promotes language competence through authentic, targeted tasks that focus on understanding, producing and negotiating meaning – not just form (cf. Müller-Hartmann & Schocker-von Ditfurth 2006, pp. 39–41).

In addition, according to Richards and Rodgers (2004, p. 223), TBLT provides an effective learning environment: “Engaging learners in task work provides a better context for the activation of learning processes.” (cf. Pfenninger 2023, p. 13). Authentic tasks not only promote language production, but also enable cognitive activation, which leads to deeper learning (cf. Chapter 2.1.1).

Swain (2005, pp. 471–483) supplements this understanding with the concept of “pushed output”: Learning processes are stimulated when learners are forced by communication tasks to go beyond their previously available linguistic means: “pushed language production” challenges them to expand their means of expression.

Structure of a task and the Task Cycle

The tasks in the TBLT are typically divided into three phases – a principle that was systematised by Willis' (1996) task cycle model, among others. Müller-Hartmann and Schocker-von Ditfurth (2006, pp. 45-48) take up this model and describe it in three central steps:

1. pre-task: In this phase, learners are prepared for the task, e.g. through vocabulary work, model examples or introductory questions. The aim is to activate the necessary prior knowledge and clarify expectations.

2. task cycle: The actual processing phase of the task. Here the learners work on a problem or product. This also includes a planning and presentation phase.

3. language focus: In the follow-up phase, linguistic forms that were used or required during the task are discussed. This phase is used for conscious language reflection and can include targeted language exercises.

Action-oriented approach (Handlungsorientierung)

A central component of TBLT is the orientation towards the action-oriented approach of the Common European Framework of Reference for Languages (CEFR), which sees learners as social actors who act linguistically in the world (Abendroth-Timmer & Gerlach 2021, p. 4). TBLT is thus closely linked to the 'action-oriented approach', which anchors tasks and communication in real-life and relevant action situations (ibid., p. 2–3).

Bach and Timm (2013, p. 12) define action-orientation as:

> Handlungsorientierter Fremdsprachenunterricht ermöglicht es den Schülerinnen und Schülern, im Rahmen authentischer, d. h. unmittelbar-realer oder als lebensecht akzeptierbarer Situationen inhaltlich engagiert sowie ziel- und partnerorientiert zu kommunizieren, um auf diese Weise fremdsprachliche Handlungskomptenz(en) zu entwickeln.

Language learning focuses on the functional use of language in meaningful contexts, not on isolated structures (Abendroth-Timmer & Gerlach 2021, pp. 2–3). "Meaningful practice" arises when exercises are embedded in action-oriented contexts that lead to communicative use (Sauer & Wolff 2018, p. 252). "Übungen sind sinnvoll, wenn sie einen klaren Bezug zum Ziel = Aufgabe haben" (Funker et al. 2014, p. 14). Deep processing occurs when a real action goal is pursued beyond mere practice (cf. Sauer & Wolff 2018, p. 225–227). Task-based scenarios are central, allowing learners to create personal and purposeful products – such as reports, blogs, role plays, etc (ibid., p. 94). These open-ended tasks foster autonomy, creativity, and interaction, where learners negotiate meaning, collaborate, and give feedback.

Grounded in social constructivism (Vygotsky 1977), "Sprachhandeln" views language acquisition as emerging through social interaction and language use. Learners' co-construct meaning and adjust input in response to communicative needs. Thus, language is learned through "learning by doing" – by actively using the foreign language in realistic communication situations (Sauer & Wolff 2018, pp. 92–93).

Action-orientation and CLIL

Within this action-oriented approach of learning, there is an interplay between action and knowledge in educational contexts (Abendroth-Timmer & Gerlach 2021, S. 9-10). Central to this perspective is the idea, formulated by Aebli (1980, p. 26), that thinking originates in action. Thinking, according to

this view, evolves continuously through doing. Consequently, learning processes are seen as inherently constructive, with learners actively building their understanding of the world through personal experience and interaction.

Moreover, the integration of factual and subject-specific knowledge into action-oriented learning environments is seen as essential – knowledge alone is insufficient unless it is organized around meaningful action (cf. Gudjons 2014, p. 58). At this point, the CLIL approach proves relevant (cf. Chapter 2.1.1), where language learning and subject learning are integrated through authentic, goal-oriented tasks.

In summary, the action-based approach emphasizes that knowledge develops through meaningful action, and effective learning must engage knowledge in communicative and cognitively rich contexts.

The following subchapter presents key approaches and didactic aspects relevant in TD – the subject in which the two described ELT approaches are applied within this unit project.

2.2 Textile Design – key aspects and approaches

As mentioned in the introduction, the CLIL unit is designed in the subject of Textile Design (TD) on the topic of upcycling. This chapter therefore presents key aspects of TD that are particularly relevant to the CLIL unit and provides an overview of the topic of plastic and upcycling (cf. Chapter 2.2.3).

2.2.1 Kompetenzbereiche LP 21

The subject TD, as part of TTG (Technisches und Textiles Gestalten), is structured into three areas of competency, as shown in the figure below: "Wahrnehmung und Kommunikation", "Kontexte und Orientierung" and "Prozesse und Produkte".

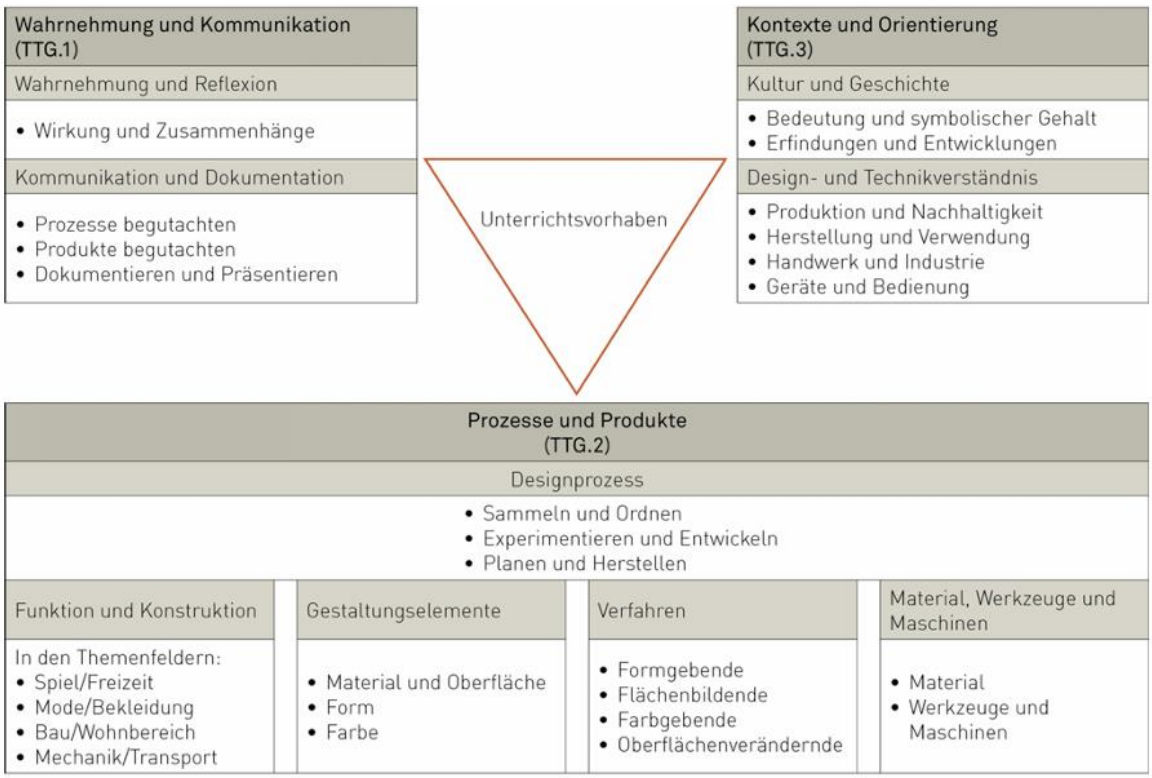


Figure 3 - Struktur Textiles und Technisches Gestalten (Bildungs- und Kulturdirektion des Kantons Bern 2016, p. 383)

These areas are closely interrelated and should be treated in an interlinked manner in lessons (cf. Huber Nievergelt & Marti 2019, p. 10).

According to the Huber Nievergelt and Marti as well as stated in the LP 21 (2016, p. 382), the areas are not to be understood as linear; there are diverse and flexible connections between them. TTG is more than just making products: it is also about a reflective engagement with material culture and the things that surround us – particularly in terms of design, technology and cultural context (cf. Huber Nievergelt & Marti 2019, p. 10).

Usually in a unit, the area 'Prozesse und Produkte' takes more time than the other two areas (cf. LP 21 2016, p. 382).

In this area, the so-called *design process* is particularly important as it allows learners to gain essential subject-specific experiences (cf. Huber Nievergelt & Marti 2019, p. 14–19). It consists out of five steps (see figure below):

Phasen des Gestaltungs- bzw. Designprozesses	Methodische Hinweise
Sammeln und Ordnen	• Verschiedene Inspirationsquellen als Motivation nutzen; • Informationen sammeln und ordnen; • Verschiedene Ideen und Handlungsoptionen skizzieren und analysieren.
Experimentieren und Entwickeln	• Mittels gestalterischer Experimente und technisch-funktionaler Experimente eigene Lösungsvarianten entwickeln; • Entwürfe, Modelle anfertigen und kriterienorientiert optimieren.
Planen und Herstellen	• Experimente, Entwürfe und Modelle anhand von Zielsetzungen beurteilen; • Die gemachten Erfahrungen reflektieren und die Arbeitsschritte zur Durchführung planen und realisieren.
Begutachten und Weiterentwickeln	• Individuelle Lösungswege und Produkte anhand von Kriterien begutachten.
Dokumentieren und Präsentieren	• Prozess und Produkt dokumentieren und präsentieren.

Figure 4 - Der Gestaltungs-, bzw. Designprozess (Bildungs- und Kulturdirektion des Kantons Bern 2016, p. 379)

The phases of this process are important for both the lesson preparation such as conducting content analysis and creating prototypes and for the students' work on the task. The implementation of an assignment should follow these phases and support each step through targeted sub-tasks. To do so effectively, teachers should apply subject-specific teaching methods (cf. Chapter 2.2.2) that are aligned with the nature of the design process. Without following this process, students may simply carry out step-by-step instructions, missing the opportunity to explore and develop their own creative and technical ideas (cf. Huber Nievergelt & Marti 2019, p. 14).

The design process typically follows a cycle of exploring, planning, implementing, reflecting, and presenting. This approach allows learners to make their own decisions, take responsibility, and develop solutions independently or collaboratively. Through this, they gain insights into both creative and technical thinking, which are essential competencies in TTG (ibid., p. 14–19).

It should be noted that design processes are typically not as linear as diagrams may suggest. In practice, they tend to evolve complex interconnections between the individual steps as the figure below depicts (cf. Speiser Niggli; Lunin & Sinner 2004, S. 16):

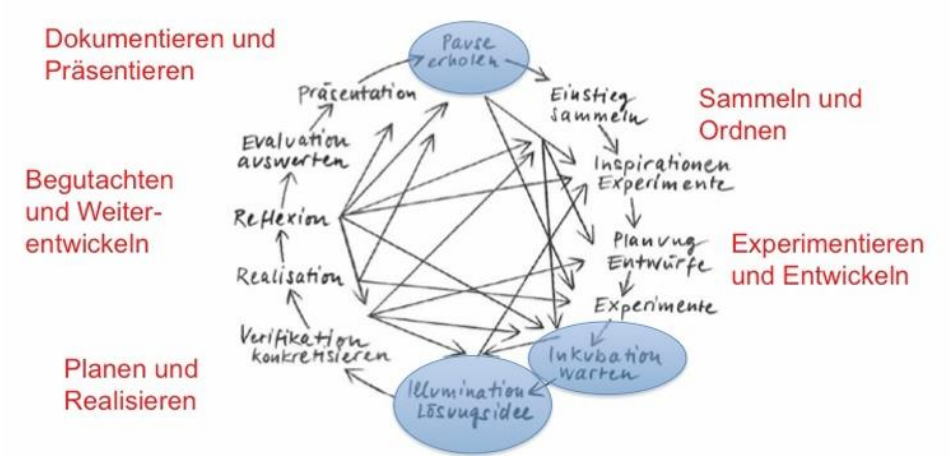


Figure 5 - Grafik zum Verlauf gestalterischer Prozesse (Speiser Niggli; Lunin & Sinner 2004, S. 16; additions by Huber Nievergelt in the Reader TTG 2019, p. 16)

The relevance of the design process lies in supporting problem-solving and personal expression, while also connecting to real-world contexts. It encourages learners to reflect on their own work, adapt their approaches, and value the quality and functionality of what they create. It fosters aesthetic awareness, material understanding, and process-oriented thinking, making it a powerful tool for holistic and competency-based learning (cf. Huber Nievergelt & Marti 2019, p. 14–19).

2.2.2 TTG methods

As noted by Huber Nievergelt & Marti (2019, p. 43), there are different methods that enable focused and purposeful engagement with design and technical content:

Entdeckende Methoden	Nachvollziehende Methoden
Analyse Materialuntersuchung, Produktanalyse, Dekonstruktion, historische oder technische Analyse, Materialprüfung usw. **Experiment** Materialerprobung, gestalterische und technische Experimente. **Intuitive Methoden** Orientierung an spezifischen Merkmalen von Materialien und Objekten z.B. Sammlung oder Museum; Spielen mit Materialien; Sammeln und Anordnen nach individuellen Ordnungskriterien.	**Lehrgang** Reflektiertes Vorzeigen und Nachmachen. Geeignet für die Einführung von Verfahren, Arbeitsabläufen, Bedienung von Maschinen oder Geräten. **Leitprogramm/Stufengang** Selbstständige, vorstrukturierte Erarbeitung mit Unterstützung von Bildern, Texten und Beispielen, welche das Vorgehen in Teilschritten darstellen. **Erkundung** Als Einstieg oder als Vertiefung in eine Thematik: z.B. Betriebsbesichtigung, Exkursion, Museumsbesuch, Expertenbefragung, Technikstudie.

Figure 6 - Entdeckende und nachvollziehende Methoden (Bildungs- und Kulturdirektion des Kantons Bern 2016, p. 380)

Teaching methods in TTG are primarily divided into exploratory and instructive approaches: Exploratory methods include analysis, experimentation, and intuitive techniques, while instructive methods involve structured instruction and step-by-step programs. The choice depends on the task: technical skills may need clear guidance, while creative tasks benefit from open-ended exploration (cf. Huber Nievergelt & Marti 2019, p. 44).

The following section briefly describes the exploratory methods 'analysis & experiment' as well as the instructive method 'Lehrgang', as these are particularly important in this unit. The importance of these methods for the unit becomes clearly evident in the analyses of the video-clips (cf. Chapter 5).

Discovery/ exploratory methods

Product analysis: The product analysis enables learners to examine and reflect on everyday products from multiple perspectives – such as function, form, aesthetics, materials, and construction (cf. Figure 7). It encourages critical thinking about the role of products in our daily lives and promotes awareness of design, sustainability, and usability (cf. Huber Nievergelt & Marti 2019, p. 45).

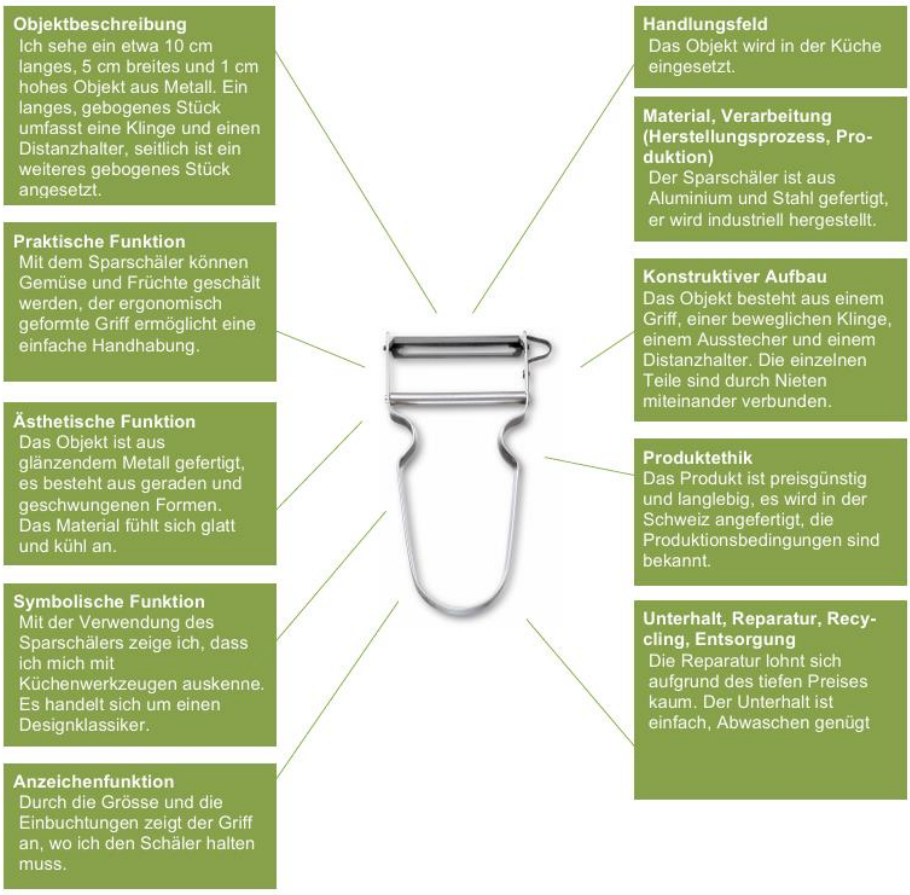


Figure 7 - Der Sparschäler „Rex" unter die Lupe genommen (Huber Nievergelt & Marti 2019, p. 46)

Exploring, testing, and evaluating materials: Encouraging students to explore, test, and evaluate materials through hands-on activities helps them understand material properties such as texture, flexibility, stability, or reaction to stress. Students learn to choose suitable materials for their own

projects based on functionality, sustainability, and aesthetics. Testing materials becomes a form of experiential learning, supporting the design process and promoting informed, responsible decision-making in practical tasks. It is an indispensable step in the design process (ibid., pp. 47–48).

Experiment: Experiments let learners explore materials, techniques, and design possibilities in an open-ended, playful way (cf. Huber Nievergelt & Marti 2019, pp. 49–50). They encourage curiosity, individual solutions, and support both technical understanding and creative development. Design experiments focus on aesthetic effect, while technical experiments address construction and function. With uncertain outcomes, the process becomes central, making experimentation key to design phases (ibid.).

Deductive methods

The 'Lehrgang' is a teacher-centered instructional method used to build foundational technical and procedural skills, which students later apply in problem-based projects (cf. Huber Nievergelt & Marti 2019, pp. 50–51). It involves systematic, step-by-step teaching of functional, constructive, and technological knowledge through demonstration and modeling (cf. Chapter 2.5.1). Students are expected to mentally follow and later imitate the demonstrated procedure. Complex tasks are broken down into clear, manageable steps, supported by visual aids like models, sketches, or tools. After observation, students practice the steps, and the teacher supervises their execution. This method is especially useful for introducing the use of tools, machines (e.g. sewing machine), and specific techniques (ibid.).

2.2.3 Upcycling in TD

This subchapter summarizes key aspects of upcycling (and plastic) relevant to the designed CLIL unit in TD (cf. Chapter 3). It is important to note that this does not go into depth but rather provides a brief overview, as thus is not the main focus in the research question.

Naik, Vanapalli and Dubey (2024, pp. 61–63) highlight the growing significance of upcycling plastic waste as a sustainable solution to the global plastic crisis. Unlike traditional recycling, which often results in downcycling (producing lower-quality materials), upcycling transforms waste into higher-value products, contributing to both waste reduction and resource efficiency.

Plastic waste is a major environmental challenge due to its non-biodegradability, long lifespan, and the volume generated through single-use products (ibid.). Landfilling, "one of the oldest methods of municipal solid waste disposal", as noted by Naik et al. (2024, p. 64), is therefore an unsustainable option, as plastic accumulates over time, pollutes the environment, and occupies valuable land resources. According to scientist plastic pollution is "[…] a planetary boundary danger because of the abundance of micro/ nano plastics and the irreversible effects these materials have on the global environment" (Naik et al., p. 61). Therefore, there is an urgent need to design waste management

technologies based on circular economy principles focusing on reducing, reusing, and recycling materials, while also enabling the recovery of valuable by-products that can be reused (ibid., p. 63).

Upcycling provides a promising approach by extending the life cycle of plastic materials and reducing the demand for virgin plastics, which are typically fossil-based (ibid., p. 65). This makes it a key strategy for addressing environmental plastic pollution (ibid., p. 62).

Connection to the designed unit in TD:

The form of upcycling in the designed unit aligns with the mechanical upcycling (cf. Naik et al., p. 63), as it is about "physical reshaping" through a fusing process (cf. Chapter 5.1.2) – this means that the form is changed but not the chemical structure.

In the context of TTG, upcycling is a valuable approach that integrates design thinking, sustainability, and technical skills. According to the *Reader TTG* (Huber Nievergelt & Marti 2019), such projects align closely with the competence area "Prozesse und Produkte", which focuses on the design and creation of objects through material exploration and process-oriented work (cf. design process).

Upcycling tasks allow learners to creatively transform used materials (e.g., plastic waste) into new, meaningful products (ibid., p. 33). This not only fosters problem-solving and design competencies (ibid., p. 5), but also supports the educational goals of promoting resource awareness and sustainability, belonging to the competence area "Kontexte und Orientierung" (ibid., pp. 31 –33).

Connection to the design process (cf. Chapter 2.2.1):

Upcycling fits well within project-based learning, where students work through phases like exploration, experimentation, and reflection – a structure that mirrors the design process. It encourages learners to engage with their material environment (cf. Huber Nievergelt & Marti 2019, p. 27).

As mentioned in the introduction, the overarching goal is for learners to make progress in their learning. Therefore, the following subchapter outlines important aspects related to learning progression.

2.3 Learning progression

Progression in learning is a highly complex field, involving numerous aspects. In this subchapter, the key aspects in relation to the additional research question (cf. Chapter 6) are explained.

2.3.1 Constructivist understanding of learning

From a constructivist point of view, learning takes place along a Conceptual Change – transforming the preconceptual into a post conceptual construct (cf. Möller 2019, pp. 60–70). As Adamina; Kübler; Kalcsics; Bietenhard & Engeli (2018, p. 9–10) point out, learning in subject-based instruction is to be understood as a process of developing and transforming existing conceptions, with learners' prior ideas forming the foundation for constructing new ones. These conceptions – also referred to as "Schülervorstellungen" or "Präkonzepte" – are not empty vessels but structured or loosely associated prior beliefs and ideas that learners bring with them into the classroom (ibid., pp. 7–8). These ideas stem from everyday experiences and prior socialization and form the cognitive foundation upon which new knowledge is constructed.

If these conceptions are anchored as so-called "deep structures", it can be very difficult for students to acquire new ideas (cf. Möller 2019, p. 62). In such cases, learning may lead to "enrichment" or an expansion of existing cognitive structures, rather than their complete replacement (cf. Adamina et al. 2018, p. 8). Nonetheless, a gradual development and transformation toward more robust conceptual understanding would be desirable (ibid.). However, if students' conceptions are instead "current constructions," formed ad hoc in the moment, conceptual change is usually easier for them to achieve (cf. Möller 2019, p. 62).

Construction of new competences requires cognitive activity of the learner; knowledge cannot be conveyed transmissively (cf. ibid., p. 60).

This aligns with the constructivist understanding of teaching which assumes that each individual constructs their own reality – learning is therefore to be understood as self-active construction and needs to be situated (cf. Drexl 2014, p. 23–24). Scaffolding (cf. Chapter 2.5.1) plays an important role in this as it supports learning.

According to Coyle et al. (2010, p. 29–30), students must be cognitively engaged to support effective learning. It is not just about knowledge or skill acquisition but about applying these through creative thinking, problem solving and cognitive challenge. Learners are considered as "active agents", as noted by Drexl (2014, p. 71), progressing only when they actively and independently construct knowledge (ibid., p. 23).

This constructivist comprehension of learning is the base of both approaches CLIL as well as TBLT/-L as became clear in Chapter 2.1.

2.3.2 Bloom's Taxonomy

In the context of learning progression, Bloom's Taxonomy is highly relevant as it provides a structured framework for the development of thinking skills (cf. Coyle et al. 2010, p. 30). It connects cognitive processes with knowledge construction, thereby supporting conceptual learning.

The revised taxonomy by Krathwohl (2002, pp. 214–215) outlines a two-dimensional model: the Cognitive Process Dimension, which moves from lower- to higher-order thinking – *remember, understand, apply, analyze, evaluate,* and *create*, and the Knowledge Dimension, which differentiates between factual, conceptual, procedural, and metacognitive knowledge (ibid., p. 217). This progression from basic to complex cognitive tasks supports effective learning by addressing both the depth of thinking and the type of knowledge involved.

	The Cognitive Process Dimension					
The Knowledge Dimension	1. ***Remember***	2. ***Understand***	3. ***Apply***	4. ***Analyze***	5. ***Evaluate***	6. ***Create***
A. ***Factual Knowledge***	Objective 1					Objective 3
B. ***Conceptual Knowledge***		Objective 2			Objective 4	Objective 3
C. ***Procedural Knowledge***						
D. ***Metacognitive Knowledge***						

Figure 8 - The Cognitive Process Dimension (Krathwohl 2002, p. 2017)

As Krathwohl (2002, p. 217) notes:

> The Taxonomy Table can also be used to classify the instructional and learning activities used to achieve the objectives, as well as the assessments employed to determine how well the objectives were mastered by the students.

In connection to the CLIL approach, the taxonomy is valuable as students are expected to build subject knowledge and language skills simultaneously.

According to Coyle et al. (2023, p. 9), learning processes do not occur linearly but rather multidimensionally and in various directions. Progress in learning means being able to derive more meaning from the content. This includes gaining a deeper understanding of the subject matter and better applying the methods and strategies of the discipline. Learning and language go hand in hand. Thus, learning progress is reflected in the ability to communicate and present content appropriately.

This explains that the development of language bases rather on an upward spiral than step-by-step grammatical chronology (Coyle et al. 2010, p. 38), again highlighting that knowledge cannot simply be conveyed by the teacher but has to be constructed individually.

In terms of language development, Heitzmann (2019, pp. 75–88) explains that language is not only a tool for communication but also helps with thinking and understanding. It allows learners to express their thoughts. Children build inner models of the world using language and develop these through contact with their environment (ibid., pp. 75–77). This process is closely connected to constructivist learning and cognitive development, such as Piaget’s learning stages.

To sum up, by gradually building from simpler to more complex content (cf. Bloom's Taxonomy), actively engaging learners, and regularly repeating and expanding sequences in meaningful contexts, learning progress is effectively supported.

2.3.3 Assessment of Preconceptions

Understanding learners’ preconceptions is essential for designing effective instruction and promoting conceptual change. It enables teachers to support this process by offering appropriate scaffolding and learning opportunities (Möller 2018, p. 38–39). These preconceptions are the learner’s initial ideas and mental models formed before formal teaching. As outlined above, preconceptions are often shaped by everyday experiences and may differ significantly from scientific or subject-specific concepts (ibid., p. 36).

Capturing Preconceptions

Preconceptions can be accessed in different ways: written texts, oral statements, or drawings (cf. Hartinger & Murmann 2018, p. 57). Often preconceptions are also captured in dialogues. Each mode offers different insights into learners’ thinking and allows for differentiated access to their inner conceptualizations.

Drawings and visualizations may reflect enactive or iconic representations, while oral and written expressions capture symbolic forms of knowledge (Möller 2018, p. 36). This aligns with the idea that conceptions can exist as embodied experiences, mental images, or linguistic structures.

Limits of Oral Assessments

As Hartinger and Murmann (2018, p. 56) point out, oral assessments do not reveal the conceptions themselves, but only their verbal expression. Since the ability to articulate a concept depends on language proficiency, learners with limited language skills may have sophisticated ideas that remain hidden. The better a learner can express themselves linguistically, the more visible their conceptual understanding becomes (ibid.). To grasp underlying conceptions, it helps if statements are detailed and allow for follow-up questions (ibid., p. 53). As the authors emphasize, teachers should not stay

completely neutral but actively support learning through helpful prompts (e.g. ask follow-up questions). However, this limits generalisability. It is important to understand, that any understanding of a statement that reveals a preconception remains a reconstruction (ibid., p. 56).

In order to support and foster linguistic as well as content-based progression, the supportive role and language of the teacher as well as supportive strategies in the classroom are indispensable tools. The following two subchapters underscore this significance.

2.4 Supporting Foreign Language Development

In order for learners to make progress, the teacher's support plays a crucial role. This chapter highlights key points related to supporting the language development.

2.4.1 Teachers' language – functions and L1 & L2 use in CLIL

In foreign language teaching, the teacher's language is both a tool for lesson delivery and a model for language use (cf. Kippel 2020, pp. 115–116). It shapes communication, supports learning, and influences student-teacher relationships. Teachers should be aware of their speaking style, nonverbal communication (voice, gestures, facial expressions), and how they use the target language, as these elements impact the effectiveness of learning (cf. Chapter 2.4.2). Especially in foreign language teaching, it is important that teachers adjust their speaking pace, volume, and especially their language choices to suit the specific learner group and the teaching situation. Additionally, Deters-Philipp (2018, p. 105) explains that linguistic support, such as paraphrasing and rephrasing, helps learners process both the content and the language simultaneously. In paraphrasing, instead of simply repeating something with the same wording, the teacher rephrases the message using different expressions. This approach helps learners understand without the teacher needing to switch to their first language (e.g., German).

According to Deters-Philipp (2018, p. 104), the ELT teacher fulfils four key roles during teaching: *instructor, partner in communication, input provider* and *language model.*

In order to meet these demands, Sárvári (2023, p. 110) highlights the importance of recognizing that teachers act as language role models when using the target language and must therefore demonstrate a high level of proficiency to communicate effectively and respond with flexibility. Nevertheless, the question remains as to whether teachers are truly able to meet the demands of the foreign language classroom (cf. Deters-Philipp 2018, p. 104). This raises the question of whether the teacher is able to manage the given situation in English or whether they immediately switch to German.

L1 & L2 use

The use of the first language (L1) in the foreign language classroom, particularly in primary English instruction, remains a widely debated topic. According to Deters-Philipp (2018, pp. 99–105), different pedagogical approaches offer varying views on how much L1 use is appropriate. These range from the virtual position, which calls for complete exclusion of the L1, to the maximal position, which tolerates occasional L1 use, and the optimal position, which sees strategic L1 use as beneficial for learning.

As Deters-Philipp points out, L1 can play a supportive role in helping learners understand complex content, grammar, and vocabulary – especially when concepts are abstract or difficult to visualize. It can also aid in developing language awareness, for example, through comparisons between English and German.

However, overuse of L1 poses may lead to reduced engagement with English and a reliance on translation, preventing learners from developing strategies to comprehend the target language input.

To balance these factors, it is recommended to use so much English as possible and so much German as necessary (Deters-Philipp 2018, p. 103). Teachers should make thoughtful decisions about when L1 is truly needed, while prioritizing the use of English. Language scaffolding (cf. Chapter 2.2.2) can reduce the need to switch languages, especially in early stages.

L1 / L2 in CLIL: In CLIL, the vehicular language – used to teach subject content (in this context English) – is essential for developing both language skills and subject knowledge (Coyle et al. 2010, pp. 15–16). There are two main models concerning the use of the vehicular language:

- Extensive instruction uses the vehicular language almost entirely, with minimal L1 use, supported by scaffolded teaching and planned language input.
- Partial instruction involves limited use of the vehicular language (e.g., in projects), while still aiming to integrate content, language, and cognition.

Translanguaging – the strategic use of both the target and first language (purposeful switching between the vehicular language and the first language) – can support understanding and confidence. It also addresses the concern that learners may not understand key concepts in the target language.

2.4.2 Language scaffolding

Information or input should always be "provided through a variety of channels (visuals, maps, graphs, tables, soundtracks, etc.) that engage learners affectively and cognitively" (Marongiu 2019, p. 86). Wiater (2001, p. 44) emphasises this:

> Everything should, wherever possible, be presented to the senses: what is visible to the eyes, what is audible to the ears, what is smellable to the nose, what is tasteable to the tongue, what is tangible to the sense of touch; and if something can be perceived through multiple senses, it should be presented to all of them at the same time [translated from German].

In this way, learners are supported to comprehending and making meaningful connections (cf. Marongiu 2019, p. 86).

Visualisation

At this point, the concept of message abundancy, as explained by Pauline Gibbons (2014, p. 42–46), is a key scaffolding strategy that enhances the comprehensibility of teacher talk. It involves conveying

the same message through multiple modes – spoken language, visuals, written text, and gestures – rather than simplifying the language. For example, when explaining a scientific process, a teacher might use a diagram while verbally walking students through each stage. This simultaneous use of visual and verbal modes provides dual channels of input and supports the comprehension. It serves not only to clarify the spoken message but also to reduce the linguistic load, enabling learners to focus more on content and less on decoding unfamiliar language.

Especially during moments of conceptual difficulty, Gibbons recommends slowing the delivery of complex ideas and supplementing verbal explanations with visual aids and repetitions (ibid., p. 43). She illustrates this with a GPS analogy, where directions are offered through spoken prompts, visual cues, and symbols (e.g. charts, timelines) – ensuring the message is accessible even if part of it is missed. Besides visually supporting the oral explanation, Gibbons (2015, p. 25) points out that it is important to "link what you are talking about to what children already know" and to "express the same idea in more than one way". Furthermore, also physical demonstration helps students' understanding of the task as it is enhanced visually through active demonstration of the process (cf. Gibbons 2015, S. 54–55).

In a practical example, a teacher introduces the scientific term "rotate" alongside the everyday term "turn", supporting students' comprehension by drawing on prior knowledge, visual demonstration, written comparison, and discussion of academic language (ibid., p. 45). This not only strengthens content understanding but also supports academic language development.

Gibbons (2015, p. 44) emphasizes that message abundancy amplifies rather than simplifies meaning, offering learners "more than one bite of the apple." It allows multiple entry points into the content and should be a central strategy – not just for EL specialists, but for all educators aiming to support diverse learners.

Nonverbal & Paraverbal Communication

Empirical studies from the U.S. highlight the importance of nonverbal communication in the teaching–learning process. McCroskey et al. (2006, p. 434) emphasize:

> Effective teaching is dependent upon 'appropriate' nonverbal communication of teachers. […] The success of teachers at all levels depends on how they communicate nonverbally.

Visual aid, as described above, already plays an important role in this. Besides visual demonstration, multimodal scaffolding integrates speech, gesture to make input accessible to English learners (cf. Gibbons 2015, p. 44).

Paraverbal elements, such as tone, pitch, speech rate, and the use of pausing, also play a crucial role. Gibbons (2015, p. 44) notes that pausing between chunks of information and emphasizing key

words supports learners in processing new concepts without falling behind. These modifications in teacher talk ensure that learners are not overwhelmed by the speed or density of input, giving them the cognitive space to interpret meaning.

Sárvári (2023, p. 115) echoes these ideas in the context of CLIL: She identifies *sprachunterstützende Instrumente* – language-supportive tools – such as gestures, mimics, posture, and adapted speaking pace as vital for comprehension. These instruments are particularly useful before learners develop the ability to decode and process every word. Sárvári also emphasizes that using written keywords or visual aids activates multiple sensory channels, further supporting understanding (ibid., p. 116). This embodies the symbolic form of representation. It allows us, for example, to grasp concepts that are abstracted from concrete objects (Jank & Meyer 2014, pp. 180–181).

Sárváris' arguments align with Gibbons' argument that language input must be embedded in rich, multimodal contexts.

Moreover, Sárvári (2023, p. 110) stresses that teachers themselves serve as linguistic models. When they use the target language skillfully – combining clarity, responsiveness, and visual reinforcement – they not only facilitate understanding but also demonstrate competent language use for learners.

In the context of nonverbal and paraverbal communication body language is crucial. According to Gröschner (2007, p. 13), body language not only enhances comprehension of verbal explanations but also shapes interpersonal relationships, thereby influencing teaching and learning processes. Facial expressions, gestures, and posture all play a crucial role.

2.4.3 Acquisition of (subject-specific) Vocabulary

In order to support the acquisition of subject-specific vocabulary, the background knowledge presented in this subchapter is essential.

In the chapter *Wortschatz lernen und lehren*, Sauer and Wolff (2018, pp. 212–215) argue that vocabulary learning must be networked and cannot be learned isolated:

> Wortschatzlernen heisst also nicht, isolierte Wörter im Gedächtnis behalten zu wollen. Es heisst vielmehr, bedeutungsmässig zusammengehörende Wörter aufzunehmen und sie durch Wiederverwenden in das sich aufbauende Netzwerk zu integrieren.

This means vocabulary must involve semantically related terms. At this point, the "wortschatzdidaktische Dreischritt" becomes relevant – a structured method of vocabulary acquisition that ensures both comprehension and contextual application, guiding learners from word recognition to meaningful use (cf. Feilke 2009, pp. 4–11). The "Dreischritt" consists of:

1. Semantisation – introducing new vocabulary, e.g. through actions
2. Networking – practising and consolidating through varied usage

3. Reactivation – applying vocabulary in authentic or meaningful contexts

Embedding vocabulary in real, action-oriented contexts promotes deeper semantic processing and makes words functionally accessible in the learner’s linguistic repertoire (ibid., p. 4).

Heitzmann (2019, pp. 75–81) highlights the importance of linking subject-specific terms to concrete meanings to avoid “leere Worthülsen” – terms used without real understanding. Learners must move from vague, everyday language to more precise language, with real learning occurring when terms are meaningfully connected to experience.

Learners need explicit teaching of academic language, as it is not acquired naturally (Gibbons, 2015, p. 28). Teachers play a key role by modeling subject-specific language, rewording student responses, and highlight contextual language shifts (field, tenor, and mode). Grammatical terms should be introduced meaningfully, with joint constructions supporting vocabulary, grammar, and structure. Additionally, according to Sauer and Wolff (2016, p. 218), speaking chunks support students in using the language productively.

Practice is indispensable in this and essential for language learning development. As Sauer and Wolff (2018, pp. 19–21; 212–215) state, structured repetition in varied contexts moves learners from passive recognition to active use, enabling internalisation.

Connection to CLIL (cf. Chapter 2.1.1): This aligns with CLIL, where vocabulary is embedded in content-rich tasks. Coyle et al. (2010, pp. 32–38) emphasise that language must fulfil communicative and cognitive functions. Therefore, combining Feilke’s structured vocabulary work with CLIL strengthens both language and content learning.

2.5 Supportive didactic tools in the classroom

Besides the supportive tools in terms of language development presented in the previous subchapter, there are other didactic tools that play an important role in supporting learning. In this subchapter, those most relevant to the research question are explained. Of course, other aspects such as classroom management and the STR (teacher-student-relationship) would also play an essential role.

The following subchapters outline the cognitive apprenticeship, the key idea of differentiation and the importance of giving feedback and asking questions.

2.5.1 Cognitive apprenticeship

The concept of cognitive apprenticeship (Collins; Brown & Newman, 1989) is a key approach in constructivism, focusing on introducing learners to a subject area through practice-based, guided learning (cf. Seidel & Reiss 2014, p. 261). Much like a traditional apprenticeship, learners begin with simple tasks under close guidance and gradually take on more complex challenges as their skills grow, eventually working independently. This resembles the idea of learning progression in Bloom's Taxonomy (cf. Chapter 2.3.2).

In cognitive apprenticeship, the following didactic methods are important and correspond to the different phases of the learning process.

Modeling

Modeling bases on the social-cognitive learning theory of Albert Bandura (1976) assuming that most of our knowledge is acquired indirectly through social interaction and role models (cf. Städeli et al. 2013, unpag.).

As Collins, Brown and Holum (1991, p. 2) explain:

> In modeling, the apprentice observes the master demonstrating how to do different parts of the task. The master makes the target processes visible, often by explicitly showing the apprentice what to do.

Modeling is an important method that stimulates and accompanies children's learning (Wannack & Herger 2014, p. 20). The teacher demonstrates an activity (e.g. solving a task) and comments on it continuously. According to the authors, the children can develop an idea of how they can approach the task through observation and verbal explanations. The concrete implementation of this modeling approach takes place when the child imitates the steps shown.

How Seidel and Reiss (2014, p. 261) explain, teachers play an active role when modeling, particularly in the beginning of a lesson:

> In ihrer Funktion als »Meister« demonstrieren sie auf exemplarische Weise bestimmte Lernhandlungen, indem sie z. B. bei der Bearbeitung eines Problems laut denkend ihre Lösungsschritte verbalisieren. Auf diese Weise werden die inneren Lernaktivitäten des Elaborierens und Organisierens, wie sie bei Experten stattfinden, für die Lernenden sichtbar und nachvollziehbar.

Coaching

Following the modeling phase, learners work on their own problem tasks (cf. Seidel & Reiss 2014, p. 261). The expert observes the learner's actions and provides targeted support through suggestions, guidance, and feedback (cf. Beck & Bear 2008, p. 60). According to Seidel and Reiss, this support is targeted and the tasks are initially limited in their complexity in order to match the level of the learners.

Scaffolding

Teachers should guide and support learners so that they can acquire interdisciplinary skills and gradually become experts in their own learning (Wannack & Herger 2014, p. 20).

According to Vygotsky (1987, pp. 84–87), teaching should always be organised in the ‘zone of proximal development’ so that the processes that have not yet fully matured, which he compares to ‘ripening fruits’, can develop. These are in contrast to the existing abilities – ‘ripened fruits’ – which a child can already perform without external help. Vygotsky emphasises that activities that a child is not yet able to carry out on its own today, but can do in cooperation with adults or more developed children, it will be able to do on its own tomorrow.

Accordingly, appropriate support should be provided so that learners can work in their zone of next development (cf. Möller 2019, p. 70). Supporting learners in this zone is also referred to as ‘scaffolding’. Here, an adult provides a ‘scaffold’ with assistance so that the learner can master a task and ultimately master it independently (Wannack & Herger 2014, p. 21). In other words, the teacher provides a form of scaffolding (“Gerüst”) – gradually giving learners more freedom to work independently, while remaining available to offer support when needed (cf. Seidel & Reiss 2014, p. 261).

According to Möller (2019, p. 70), it is important to provide an optimal level of support:

> […] so viel Hilfe wie notwendig und so wenig Hilfe wie möglich anzubieten, um konzeptuelle Veränderungen bei den Lernenden zu unterstützen, jedoch auch genügend Möglichkeiten für eigene kognitive Aktivitäten der Lernenden einräumen.

Once a child reaches this level and is now increasingly able to solve the task independently, the framework can be gradually withdrawn again and support can be reduced (fading), as noted by Wannack and Herger (2014, p. 21). The goal is to enable learners to manage independently, without relying on the teacher’s support (cf. Seidel & Reiss 2014, p. 261).

The following figure illustrates the idea behind the cognitive apprenticeship:

Figure 9 - Gestaltung von Lehr-Lern-Prozessen im Cognitive Apprenticeship-Ansatz (Seidel & Reiss 2014, p. 262)

2.5.2 Differentiation

The concept of differentiation in teaching, as presented by Labudde and Bruggmann (2010, pp. 197–203), is a response to the increasing heterogeneity among learners in today's classrooms. It refers pedagogical, didactic, and organizational measures aimed at addressing the diverse needs of students with varying abilities, backgrounds, interests, and learning preconceptions (ibid, p. 198). Differentiation is crucial for creating equal learning opportunities and ensuring that both high-achieving students and those with learning difficulties can progress effectively.

The authors distinguish between external differentiation (e.g., grouping by ability or school type) and internal or classroom-level differentiation, also known as 'Binnendifferenzierung' (ibid., p. 198–199). The latter focuses on varying instructional methods, content, and learning goals within a single class to suit individual needs.

A key goal of internal differentiation is to create optimal learning conditions for as many students as possible (Labudde & Bruggmann 2010, p. 200). This involves adapting the complexity, pace, and structure of tasks, providing varied materials, and allowing students to choose based on their interests and readiness. The method respects students' individual learning speeds and supports both remediation and enrichment. For example, depending on prior knowledge some learners can explore advanced topics, while those needing more support receive targeted assistance (ibid., p. 200–203). This aligns with the concept of scaffolding (cf. Chapter 2.5.1) as it aims to support learners at their individual levels by providing tailored support and gradually increasing independence. Through differentiated tasks and flexible support, teachers can scaffold learning in a way that tries to reach as much students as possible to progress at their own pace – guiding students through personalized pathways (ibid., p. 202).

Effective differentiation also requires diagnosing students' prior knowledge and ongoing learning progress, using tools like formative assessments, as noted by Labudde and Bruggmann (2010, p. 200). Chapter 2.3.3 provides further insight in this topic.

2.5.3 Asking questions & giving feedback

Giving feedback and asking questions are valuable strategies for supporting learning, as they promote active engagement, understanding, and reflection (cf. Lotz and Lipowsky 2015).

Feedback is most effective when it is specific and focused on the learning process (cf. Lotz & Lipowsky 2015, p. 113). It helps students understand what they are doing well and how they can improve. According to the authors, feedback can strongly influence the motivation and learning outcomes (ibid., p. 107). Praising further supports this by engaging students in cognitive and emotional processes (ibid., p. 113–114).

Similarly, asking thoughtful questions, such as “why” or “how” questions, support learning by encouraging students to think more deeply, explain their reasoning, and connect ideas. The authors emphasize that questions also help guide and tailor learning processes (p. 107–109). In addition to teachers asking and students answering, it is also beneficial to encourage students to express their insights and thoughts (cf. Möller 2019, p. 60).

To sum up, both feedback and questioning help create a learning environment where students are supported, challenged, and encouraged to reflect on their learning.

In order to integrate the methodological approaches and supportive tools described in the previous chapters effectively into the teaching unit, careful planning is essential, as underscored in the next chapter.

2.6 Key aspects in planning a unit

There are different points to consider when planning a unit. In this section, key aspects are presented related to the designed lesson plan outlined in Chapter 3.

2.6.1 Backwards design

The backward design approach by Wiggins and McTighe (2011, p. 7) is a clear and practical method for planning lessons by starting with the end in mind: "The most successful teaching begins, therefore, with clarity about desired learning outcomes and about the evidence that will show that learning has occurred." Instead of beginning with activities or materials, teachers start by identifying the desired learning outcomes, determine appropriate assessments, and then design lessons to support those goals. According to the authors, this method avoids two common problems: doing activities that do not lead to real learning, and rushing to cover lots of content without going deep (ibid., p. 9). In this context, is important to understand that "content alone is not of matter. It is more important what students are expected to be able to do with content." (ibid., p. 7).

This aligns with the constructivist view of learning progression (cf. Chapter 2.3.1) as well as the action-oriented approach (cf. Chapter 2.1.2). Connecting content and cognition enables students to actively engage in tasks and thus make progress in learning (cf. Chapter 2.1.1).

Backward design aims to foster deep, transferable understanding by guiding students to make sense of their learning and apply it in new contexts (Wiggins & McTighe 2011, p. 3–9). Learning research supports this approach, showing that students use knowledge more effectively when they recognize connections and engage with it in varied ways (ibid.) – in line what was described in Chapter 2.4.3.

2.6.2 Structure, coherence and flexibility

Coherence and structure are essential not only for language learning but also for content learning. A clear structure and context are important to enable learning in both areas. This aligns with Bloom's taxonomy, which highlights the gradual development of knowledge and skills through active engagement (cf. Krathwohl 2002, pp. 212–213).

To ensure such structure, careful planning of the teaching unit is essential. As Jank and Meyer (2014, p. 55) emphasise, planning is the basis of professional didactic action, allowing teachers to coordinate objectives, content, and methods systematically. It enables focused teaching and supports reflective development (ibid., pp. 92–93). "Gründliche Planung schafft Sicherheit und Flexibilität im Unterricht" und eröffnet so notwendige Handlungsspielräume (ibid., p. 345). This means that planning does not mean to think stubbornly in grids, but provides a framework oriented towards learning outcomes (cf. Chapter 2.6.1), within adjustments can be made any time.

3 Planning the CLIL unit on Upcycling in Textile Design

This Chapter is to be understood as "bridge" between the theory outlined in Chapter 2 and the actual implementation of the unit. As a detailed explanation of the upcycling project and the lesson plan is not the focus in this paper, it is only addressed briefly – providing important information in relation to the theory and analyses of the implemented sequences (cf. Chapter 5).

In this chapter the first-person is used as it shows my derivation related to the unit design.

3.1 Original idea by *Verena Huber Nievergelt*

The idea of the teaching unit in TD on upcycling was originally designed by Huber Nievergelt, the main lecturer of the subject TTG at PH Bern. As mentioned in the introduction, this unit was implemented in the TTG 2 Modul at PH Bern, which I attended personally. We had to create waterproof cases or bags out of old plastic packaging* working along the design process (cf. Chapter 2.2.1). The original assignment given to us in Modul TTG 2 is attached in Appendix 11.3.

* In this paper, the terms *plastic packaging* as well as *plastic-film* are used as synonyms.

Figure 10 - Upcycling bag. Own figure

Seeing Upcycling as a globally relevant term responding to the plastic crisis (cf. Chapter 2.2.3), and being fascinated about the project myself, I decided to plan the CLIL unit on this topic (cf. Chapter 1). So, I used this idea for the CLIL unit and adapted the assignment to the students (6th graders, familiar with usage of the sewing machine) and the learning environment (cf. Appendix 11.4). This assignment was later evaluated based on corresponding criteria (ibid.).

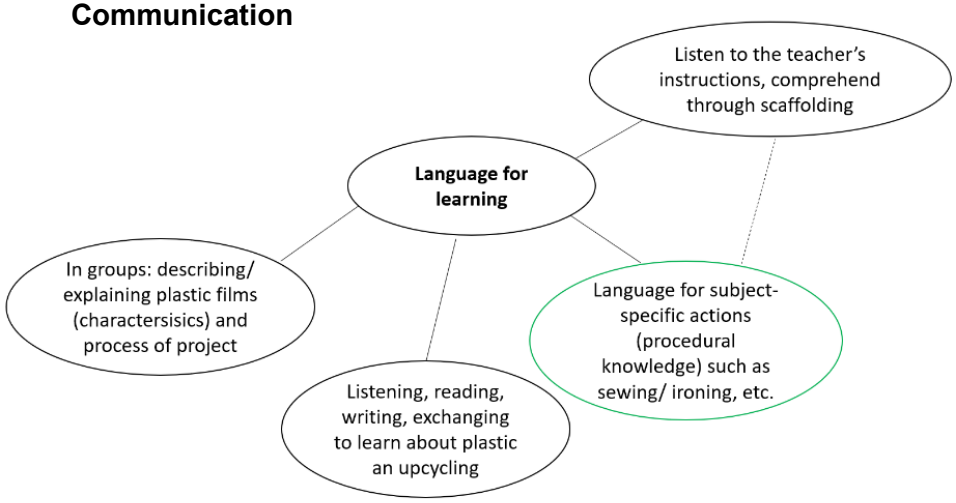
Based on the planned upcycling assignment and the theory outlined in Chapter 2, I designed the lessons by first creating a CLIL mind map and defining the learning objectives for the unit, before I created the lesson plan.

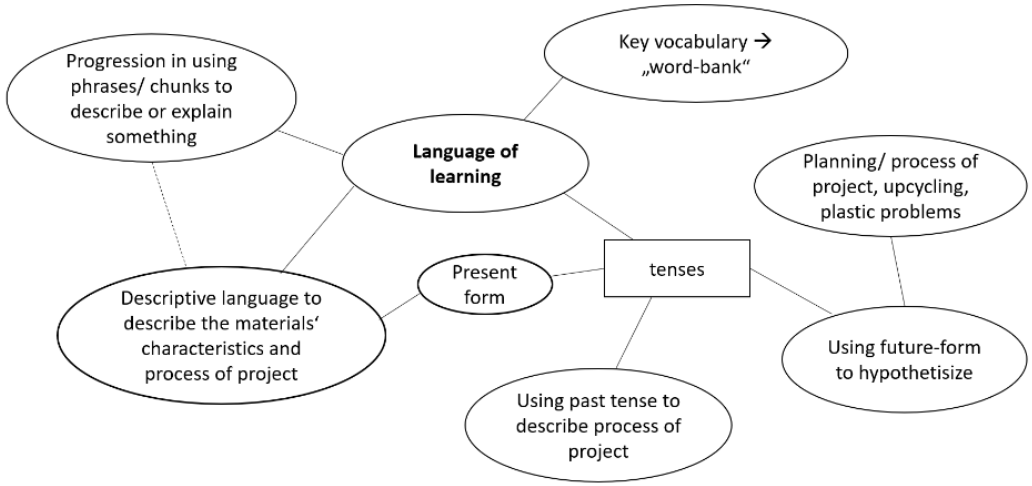
3.2 CLIL-mindmap and learning objectives

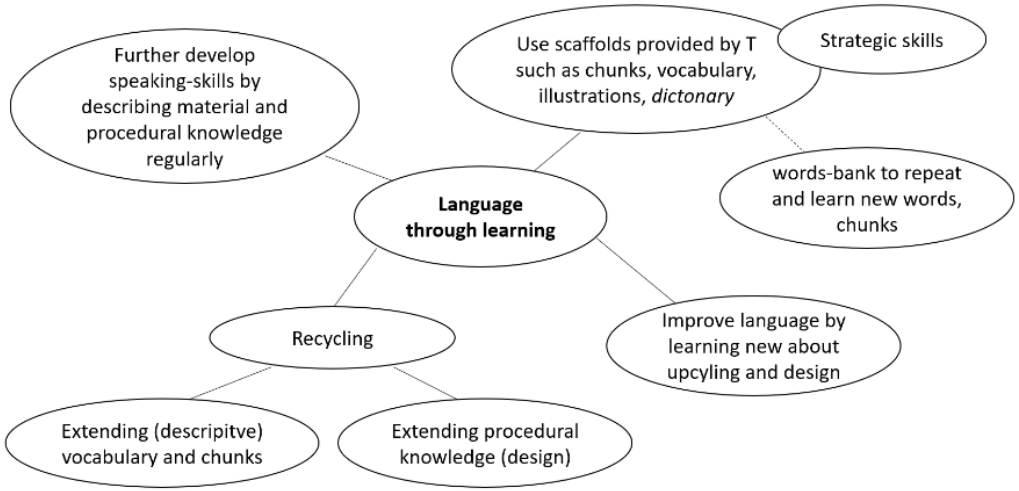
Content, Cognition, Culture

Written in green = refers to subject-specific application knowledge.

Communication







The planning of the teaching unit started with the questions: What do I want the students to be able to do at the end of the six weeks? What is the learning outcome? What are the objectives?

The aim of the teaching unit is to ensure progression in content, language and subject-specific learning. To define the desired outcome of progression, I first created a mind map to link the subject matter of TD with CLIL. The mind map presented above consists of the 4C's as well as the Language Triptych (cf. Chapter 2.1.1). The following objectives therefore refer to subject-specific skill, content and cognition, communication (language), as well as the learning culture emerging form this.

Objectives

Subject-specific skill: Competencies referring to subject-specific skill base on the design process and are therefore anchored in the competencies of the subject TTG in curriculum LP21 (cf. Bildungs- und Kulturdirektion des Kantons Bern 2016, pp. 399–413). To specify competencies for the unit, I picked the relevant ones in the curriculum (cf. Appendix 11.5.1) and formulated more concise expectations (cf. Appendix 11.5.2). These objectives correlate with the green fields in the mind map above.

Content: Based on the upcycling project, I defined content objectives related to upcycling (cf. Appendix 11.5.3) which can be linked with the area of competencies "Kontexte und Orientierung" in the curriculum (cf. Bildungs- und Kulturdirektion des Kantons Bern 2016, p. 383). The content matter is connected to cognition, as students need to actively engage with the content in order to make progress in learning, as explained in Chapter 2.3.

Finally, there are objectives defined in terms of language progression (cf. Appendix 11.5.3), correlating with the second part of the mind map (Communication) above.

The objectives of subject-specific skill, content and cognition, as well as language align with both the assessments (cf. Chapter 6) – what is asked in the assessments basically represents what I wanted the students to make progress in.

3.3 Unit lesson plan

Based on the desired outcomes, I planned the lessons backwards from the end to the beginning (cf. Chapter 2.5.1). The following section provides a brief explanation of the unit lesson plan attached in the Appendix 11.6.

The lesson plan consists of four columns: content/ action, setting, scaffolds, material – which I considered helpful to prepare the teaching and keeping an overview.

The two approaches CLIL and TBLT/-L (cf. Chapter 2.1) are the base on which the lesson plan is built. As becomes evident through the different color keys in the first column 'content/ action', there are sequences explicitly referring to…

- content (written in blue; plastic theory sequences)
- task-based and action-oriented approach (written in black)
- language learning (written in orange and purple)

…aiming to integrate the approaches.

Based on the theory of backward design, I thought of what the students should learn – both in terms of content, subject knowledge, and language – and tried to align the lesson plan accordingly. In connection with backward design, the structure of the unit seemed essential to me in order to provide a clear framework over the unit of these six weeks (cf. Chapter 2.6.2). In doing so, I oriented myself toward Bloom's Taxonomy (cf. Chapter 2.3.2) as well as the design process (cf. Chapter 2.2.1). The unit is therefore divided into three parts (yellow–green–grey), representing the different stages in process.

Summarized, it starts with lower-level content and activities and builds up gradually to create both linguistic and content-related progression. Within each sequence, I also tried to apply the principle of the task cycle – pre-during-post – in order to make not only the unit itself but also each sequence coherent (cf. Chapter 2.1.2). This involved repetitions and practice of certain sequences, which is important in relation to progression (cf. Chapter 2.4.3):

For example, several plastic theory sequences are planned, in which students work on repeated and expanded content related to the topic of plastic, which is relevant to the upcycling project (cf. Appendix 11.7).

Furthermore, everything written in orange in the lesson plan refers to targeted English language training for the students with the help of chunks (cf. Chapter 2.4.3) – in the other sequences, they were free to choose the language, as I could not expect them to speak English without scaffolds. However, I tried to speak consistently in English myself (cf. Chapter 2.4.1).

To support the students as effectively as possible, I planned supportive tools such as modeling, scaffolding, use of visual aids, and nonverbal communication (etc.) (cf. Chapter 2.4.2). This is shown in the lesson plan in the third column, 'Scaffolds'. As outlined in the theoretical part, these are fundamental elements for supporting the learning of both language and new content – the main focus of this paper.

To sum up, the lesson plan tries to integrate the relevant aspects of the theoretical part in this paper, preparing it to be put in practice (cf. Chapter 5).

4 Methodology

In order to examine how the methodological approaches and didactical tools outlined in Chapter 2 support learning, sequences of the implemented unit were recorded and are analysed in Chapter 5 using the methodology presented in this chapter.

4.1 Research Design and data collection

By employing *qualitative modes* of enquiry, I attempt to illuminate key aspects in this paper which support content and language learning in the subject of TD. Qualitative research aims to understand entire cases in context and gain new insights (Roos & Leutwyler 2022, p. 319). It reconstructs meanings, interprets actions, and explores multiple perspectives. Using rich, non-standardised data like interviews or video, it requires systematic procedures to condense complexity while staying connected to the original setting. Data analysis seeks to interpret, organise, and systematise the material (ibid., pp. 318–319).

Applied to this paper, the empirical data includes the videos recorded during the unit on upcycling. In line with qualitative data collection, a systematic procedure must be applied. Thus, the selected video clips are analysed using a step-wise procedure called "systemic observation". Systemic observation is defined as "a planned, targeted and systematic perception of a selected part of reality with the aim of recording it as precisely as possible" (Hobmair et al. 1995, p. 43; cited in Wyrsch 2016, p. 29). Unlike spontaneous "everyday observation", it is guided by a clear question, operationalised through indicators, documented transparently, and interpreted only after the descriptive phase (ibid., p. 29). To avoid subjective distortion (e.g. halo effect), observation and interpretation must be strictly separated.

4.2 Analysis method

According to Wyrsch (2016, p. 35–37), systematic observation consists of eight steps:

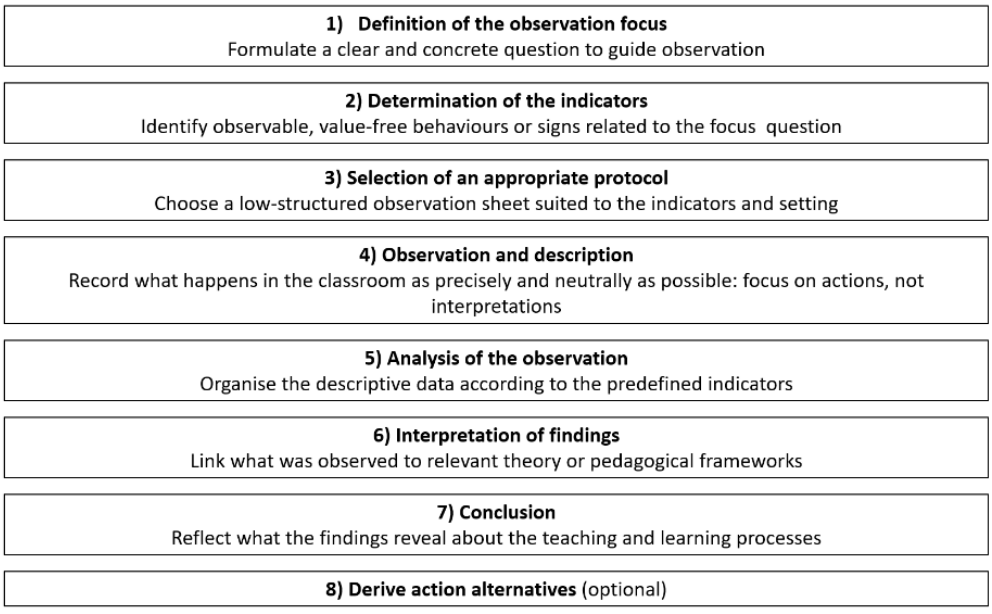


Figure 11 - Steps of systemic observation (Wyrsch 2016, pp. 35–37). Own figure

Furthermore, the three-phase model of video-based case analysis developed at PH Bern (by Conk; adapted from Huber Nievergelt, unpublished; Junker et al., 2022; terminology based on Blömeke et al. 2015) serves as an additional framework that guides my analysis. A video focus is appropriate because professional classroom perception requires teachers to "perceive and analyse the complexity of classroom practice on the basis of research-based knowledge" (Stürmer, Königs & Seidel 2013; cited in Junker et al. 2020, p. 138).

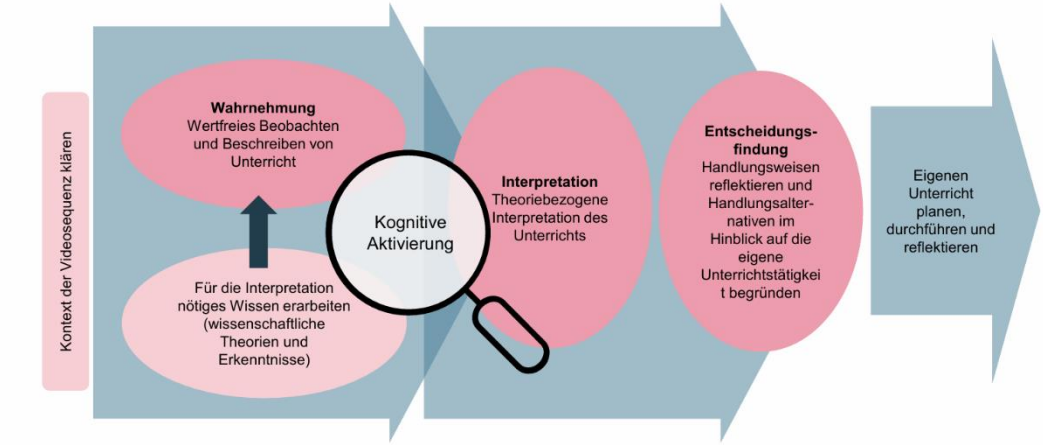


Figure 12 - Video based case analysis. By Conk; adapted from Huber Nievergelt, unpublished; Junker et al., 2022; terminology based on Blömeke et al., 2015.

However, only the first two phases are focused on in the video analyses, because the research question is about revealing effective strategies which are justified with literature rather than suggesting alternatives:

1. Perception – precise, value-free description of classroom actions and talk in each clip.
2. Interpretation – theory-based explanation of how those actions function as methodological or didactical support.

Adapted steps of the analysis method

Based on the procedure of systematic observation, as well as the three-phase model, I will carry out the video analyses (cf. Chapter 5) following the steps outlined below. However, I have made some changes of my own by shortening, adapting or omitting certain steps.

Step	Operationalisation	Theoretical justification
1 Theme definition	For each focal clip, I formulate one open guiding question/ topic.	A precise yet open question/ topic is the first requirement of systematic observation.
2 Indicator selection	Value-free, observable indicators are derived from CLIL/ TBLT theory and or supportive/ didactical tools within the unit.	Indicators operationalise the question, must be measurable and cover relevant corners of the didactic triangle (pupil–content–teacher). A criteria sheet (Wyrsch 2016, p. 35) ensures they meet quality standards (e.g. step 2: "indicators are observable/ measurable").

3 Video observation	Each clip is viewed repeatedly: a low-structured protocol records time-stamped actions and utterances. Notes remain on observable level to avoid premature judgement.	Strict separation of observation and interpretation reduces halo and confirmation bias, a core demand of systematic observation (Wyrsch 2016, pp. 31–34). All subjective evaluations must be deleted.
4 Video interpretation*	The observation is interpreted in a further step.	The observed actions or utterances are interpreted on the predefined indicator(s) (Wyrsch 2016, p. 35).
5 Theory-linked analysis	The descriptive notes (step 3 & 4) are marked with the corresponding indicator and analysed through theoretical foundations given in Chapter 2 to explain why it fosters content and language learning.	Mirrors the qualitative content-analysis cycle: category building → coding → interpretation → synthesis (Mayring & Brunner, 2010). Interpretation remains hypothetic and is anchored in research, meeting criterion 8 of Annen Wyrsch ("interpretation makes didactic references and remains traceable").

Figure 13 - Adapted steps of analysis based on Wyrsch (2016, p. 35–37). Own figure

* in Wyrsch (2016) this step is called "Analyse the observation" – here it is adapted to "video interpretation", as the term "analysis" refers to step 5 in my figure, when a theory-based reference of the indicators (based on observation & interpretation) is performed.

3rd and 4th step as table in the appendices

To generate more structure, the 3rd and 4th step are presented in a tabular form and are attached in Appendix 11.1 as they serve as protocols recording the events (related to the indicators) in the video clips. However, since the analyses in Chapter 5 are based on the observations recorded in these tables, they should be read in conjunction with them. Through this indicator-guided, theoretically anchored observation protocol, the analyses in Chapter 5 illustrate how the approaches and tools in Chapter 2 effectively enhance learning in the context of upcycling.

Ensuring trustworthiness & ethical considerations

All video-clips referred to in the analyses as well as in the evaluation (cf. Chapter 6) are labelled accordingly and deposited in the supplement filed folder of my paper (ensures confirmability).

Parental consent was obtained for all recordings and photographs used in this project. All parents signed the 'Einverständniserklärung' (cf. Appendix 11.2). Parents agreed to the recognition of first names in the videos; however, no names appear in the written part of this paper (ibid.). Additionally, permission was granted for the cover photo showing students.

Methodology in the Evaluation

These steps of analysis are also applied in the evaluation of this paper, comparing the video-recorded pre- and post-Assessment 1 (cf. Chapter 6.1.1). However, the evaluation of Assessment 2 follows another methodology: It compares the results of the pre- and post-test counting the correct answers (cf. Chapter 6.1.2).

5 Implementation and Analysis

This chapter presents examples of implemented sequences using recorded video clips. The aim is to demonstrate key methodological approaches and didactic tools used by the teacher, as well as the learner engagement within task-based learning in a CLIL context.

Selected sequences

In this chapter, only selected video clips are analysed. This selection is based on the observable actions and utterances relevant to the research question and their alignment with the theoretical and didactical concepts discussed in Chapter 2.

The selected examples are organized into the following subchapters, showing

- TBLT and the learners' involvement in the CLIL-setting
- Modeling & Scaffolding content and language

Within these subchapters, selected examples are analysed in detail using the adapted steps of systemic observation (cf. Chapter 4), supported by structured tables attached in Appendix 11.1.

Other examples are described more broadly (without structured tables), as they either serve as additional example (cf. Chapter 5.1.3/ 5.1.4) or because a deeper explanation of certain aspects would go beyond the scope of this paper (cf. Chapter 5.1.5/ 5.2.3).

Although clear indicators are focused on in each analysis, other important aspects such as TSR (teacher-student-relationship) and the teacher's presence, important aspects in classroom management emerge throughout the observation of the sequences. As analysing and explaining these aspects would open up another extensive field, the analyses are limited to the selected indicators while acknowledging that numerous other factors also play a role.

Since I taught these lessons myself, I will use the first-person perspective in the following analyses.

5.1 TBLT and the learners' involvement in the CLIL-setting

The approach of TBLT/-L and CLIL (cf. Chapter 2.1.1/2.1.2) is observable in the majority of the implemented sequences. Besides CLIL, TBLT/-L is the fundamental approach throughout this unit as task-based learning is indispensable in the subject of TD (cf. Chapter 2.4).

In this chapter, some video recorded examples are given, highlighting task-based (language) teaching and learning in the CLIL-setting.

5.1.1 Product Analysis

As pointed out in Chapter (cf. Chapter 2.2.2) the procedure of 'Product Analysis' is an indispensable step in the design process (cf. Huber Nievergelt & Marti 2019, p. 48). In the following analysis, the task given to the students of examining the material along different aspects is illustrated in the video-recording *product_analysis* (Röthlisberger 2025a). Before the students solved this task, I demonstrated it to them, giving an example – similar to the procedure of modeling, presented in Chapter 5.2.1.

The following indicators are recorded in Table 1: Product analysis (cf. Appendix 11.1.1) and analysed below.

- Indicator 1: Description of haptic and aesthetic characteristics (use of subject specific vocabulary); Utterances and actions of students
- Indicator 2: Scaffolding the material analysis
- Indicator 3: Differentiation in the extent of the material analysis

Task-based learning in this sequence connected to theory

In this sequence, the approach of task-based language and content learning becomes clearly apparent.

The sequence shows how the students examine the material – here, different plastic packaging films – along different criteria such as haptic and aesthetic and features (cf. indicator 1). As mentioned in Chapter 2.2.2, the examination of materials is indispensable before used in the production of the actual product (cf. Huber Nievergelt & Marti 2019, p. 48). This is exactly what is done in this sequence: The students looked at and sensed the different plastic films and tried to describe it as accurate as possible. For example, they described the appearance such as colors: "it looks shiny", "It is color green" (00:00:10-00:00:23), "color are white, … pink…" (00:01:25-00:01:35) or examine haptic features: "it's… it's not stretchy." "It's stable" (00:01:45-00:01:52). Knowing the characteristics of the material is essential for the further steps in the design process and production of their bags or cases –

within this procedure, the students are getting familiar with the material they are going to work with (choosing, ironing and sewing plastic films).

In order for this task to be solved, I provided chunks and appropriate vocabulary to the students (cf. Appendix 11.8). As observable in the sequence, the chunks and vocabulary are used to describe the characteristics of the plastic packaging films. For example, this becomes evident during 00:01:19-00:01:22: "Ss 3 holds the plastic packaging in his hands and looks at the vocabulary on the desk and speaks simultaneously" or during 00:01:45-00:01:52: "it's not stretchy" he simultaneously looks at the terms. Then again, he pulls the film apart when saying "It's stable." The latter also shows that the student specifies the description of how the plastic film feels like with the help of the provided chunks and vocabulary. In terms of the TBLT/-L approach, this exemplifies how language is acquired through a task carried out in action (cf. Chapter 2.1.2).

As the chunks and vocabulary support the students in describing features with subject-specific English terms, they can be considered as language as well as content scaffolding (cf. Chapter 2.4.3).

In terms of scaffolding, the actions and utterances of the teacher (myself) are also important to mention (cf. indicator 2). With the questions I ask and comments I give I try to provide scaffolding. For example, this is observable during 00:01:14-00:01:17: "You also have the words here. Maybe this helps" or during 00:01:25-00:01:35, when I support a student to articulate the word "pink". As mentioned in Chapter 2.5.3, it is particularly significant to ask questions as this activates the students to think by themselves (cf. Lotz & Lipowsky 2015, p. 107). Instead of just telling the answer, I try to ask the students to think of the answer (e.g. 00:03:32-00:03:33: "Here you see, what is this?"). In the analysis "Scaffolding within the task" (Chapter 5.1.4) the significance of asking questions is further apparent. Besides asking questions, it is also essential to give feedback. Praise of students' work, observed from 00:02:08 to 00:02:12 enhances both motivation and performance as Lotz & Lipowsky (2015, p. 113) point out (cf. Chapter 2.5.3).

Furthermore, the sequence shows that not only the teacher supports the students but also the students among each other. For example, at 00:01:23, when Student 1 points at a chunk on the desk, it may indicate he is trying to guide Ss 3 on where to continue. At this point, cooperative learning, briefly described in Chapter 2.5.1 gets evident (cf. Vygotsky 1987, pp. 84–87).

To provide differentiation in this activity (cf. Indicator 3), students are free to choose in what extent they want to use the chunks and vocabulary. Furthermore, I provided more or less criteria for the material examination the students should describe or analyse. Thus, the activity was differentiated, considering different needs and learning levels (cf. Chapter 2.5.2). This gets evident especially in last the sequence (00:02:55-00:03:34) in which two students try to analyse also the way of disposal besides aesthetic and haptic characteristics. Knowing about disposal is important in the context of environmental awareness, a relevant matter in the topic of Upcycling (cf. Chapter 2.2.3).

To sum up, students use (new) vocabulary to do the task. This exactly shows how CLIL combines learning the subject and English through task-based activities such as material analysis (cf. Chapter 2.1.1). In other words, it highlights the tight connection between CLIL and TBLT/-L.

5.1.2 Ironing plastic films

The video *ironing_plastic* (Röthlisberger 2025b) shows another meaningful situation of task-based learning. The goal of this task is to experiment which plastic films bond effectively when ironed together and which do not. This is an important step in the design process (cf. Chapter 2.2.2) for this project, as students will later produce a small bag or case using this technique. Of course, the procedure of ironing plastic films was first introduced properly using modeling (cf. Chapter 5.2.1).

In the analysis is subdivided into two parts. The first part focuses on the following indicators, which are captured in detail in Table 2: Ironing plastic films (cf. Appendix 11.1.2) and analysed below:

- Indicator 1: Students' actions and utterances in relation to the task of ironing plastic films (doing experiments).
- Indicator 2: Scaffolding and coaching within the procedure by the teacher.

In the second part (discussion of results), no indicators are used, as this phase focuses on compiling and reviewing the outcomes rather than observing how students solve the task. Instead, the sequence is just described, summarized, and linked to theory in the analysis.

Task-based learning in this sequence connected to theory

Assigning them the task of ironing different plastic films clearly illustrates another example of the task-based approach, focusing on applied technical knowledge in an action-oriented context (cf. Chapter 2.1.2). This becomes evident in almost every situation within the first part of the sequence, showing the students working through the process, actually learning how to implement. For example, when "Ss 3 removes the backing paper and touches the plastic film underneath. Then, he re-covers the film again and continues ironing" (00:00:44-00:00:49). This example as well as the other observations listed above show how the students actively engage in the task (cf. indicator 1). As noted in Chapter 2.3.1, constructivist understanding regards learners as active agents in the learning process (cf. Drexl 2014, p. 71), progressing only when they actively and independently construct knowledge (ibid., p. 23).

Active engagement is omnipresent during this first part of the sequence in which students carry out various experiments of ironing plastic, representing the second step of the design process (cf. Chapter 2.2.1). Such experiments must involve real materials to be meaningful and aim at generating original, student-driven solutions (cf. Huber Nievergelt & Marti 2019, pp. 17–18). By trying things out,

they learn what works and what does not, sometimes even discovering new methods along the way (ibid., p. 49). Thus, conducting experiments is part of TTG's discovery methods (cf. Chapter 2.2.2).

I aimed to put this idea into practice: For example, by pushing their exploration to use three layers (00:01:00–00:01:10), encouraging more experiments and richer results. Or when a student asks me, if she could use this film and I answer with: "Yes, you can. Just any. It doesn't matter." (00:01:11-00:01:16). At this point, it is remarkable that the student asks me the question in German to which I respond in English (cf. Chapter 2.4.1). This demonstrates my effort to speak English as much as possible, in line with the "optimal position" (cf. Deters-Phillip 2018, p. 100). Except for certain planned and scaffolded sequences (cf. Chapter 5.2.3), I could not expect the students to speak only in English, what aligns with the question pointed out in Coyle et al. (2010, S. 33): "How can learners use a second or additional language for this purpose when they do not know *how* to use it? This question and the use of L1/L2 in CLIL classroom is briefly discussed in Chapter 2.4.1.

While the students are doing the experiments, I move around, coach and scaffold them (indicator 2). This can be seen, for example, during 00:00:08-00:00:13, when I cover the plastic all the way with the baking paper, or during 00:00:29-00:00:33, when I place the iron upright. As mentioned in Chapter 2.5.1, it is important to support and advice the learners as less as possible and as much as necessary that there is still enough cognitive activity (cf. Möller 2019, p. 70). To generate more cognitive activity, I could have also asked the student during 00:00:29-00:00:33 for example: "What should you do with the iron when you don't use it?" instead of just doing it for him.

In the second part of the sequence the experiments are then reflected and discussed together (00:01:55-00:06:12). This touches the first Kompetenzbereich "Wahrnehmung und Kommunikation" (cf. Chapter 2.2.1) which includes the competencies to perceive, reflect design-related and technical contexts (TTG.1.A) as well as developing design processes and -products (TTG.1.B). As Huber Nievergelt & Marti (2019, p. 13) empathize the "key to addressing this area in the classroom are structures such as debriefing sessions, interim meetings, and coaching opportunities." In this phase of the sequence, we focus on the key technical aspects, as it is essential for students to understand which materials perform well and which do not. Rather than simply transmitting knowledge (cf. Chapter 2.3.1), the learners conducted their own experiments and were actively engaged, thereby fostering the prospect of a deeper understanding. Knowing about these technical aspects might later support them in choosing the plastic films for their actual product. During the discussion of the experiments, I tried to actively involve the students by occasionally asking questions and encouraging them to share their insights, as this stimulates learning (cf. Chapter 2.3.5).

As the sequence is an example that focuses clearly on application skills, the aspect of language learning is more in the background. Still, it is important to mention that learners develop their linguistic skills most effectively when they engage in authentic, "learning by doing" tasks as highlighted in

Chapter 2.1.2 (cf. Sauer and Wolff, p. 92–93). Therefore, language development might still have occurred, even if only discrete.

5.1.3 Cut & measure

The sequence in which students develop their prototype using table fleece further underscores the task-based approach, highlighting action-orientation (cf. Chapter 2.1.2). Since it illustrates the same principle as the earlier film-ironing sequence, it is not analysed in depth but serves as an additional example of students' ongoing work.

As shown in the video-recording *cut_measure* (Röthlisberger 2025c), the students measure and cut table fleece in order to be sewn later. This serves as their prototype before they start with the actual production – a crucial step in the design process (cf. Chapter 2.2.1).

Before they began producing their own prototypes, I first explained and demonstrated the options with visual support (cf. Chapter 5.2.2) and then modelled the procedure (cf. Chapter 2.5.1). For example, the image below shows how I demonstrate the way to cut the fleece correctly using a concrete example (phone case).

Figure 14 - Modeling the prototype. Own figure

5.1.4 Scaffolding and coaching within the tasks

The video sequence *scaffolding_process* (Röthlisberger 2025d) clearly indicates an example of how I scaffold and coach the students in their working process. As scaffolding was already an indicator in both analyses (5.1.1 & 5.1.2) in this chapter, this video only serves as an additional example showing several scenes in which I scaffold and coach the students. For example, it illustrates how I ask questions (e.g., 00:00:07–00:00:17), provide hints, tips, and feedback, and coach them throughout the process. Here, the teacher's role as a "communication partner" (cf. Chapter 2.4.1) becomes relevant.

5.1.5 Plastic theory sequence(s)

Besides the practical sequences in which the students worked on their upcycling project, there were also some theoretical segments on plastic and upcycling involving different tasks such as watching

videos, answering questions, reading short texts, and peer-discussion (cf. Appendix 11.7). This corresponds to the definition of TBLL, in which learners engage in comprehending, producing or interacting in the target language (cf. Müller-Hartmann & Schocker-von Ditfurth 2006, p. 41). Thus, the task-based approach (cf. Chapter 2.1.2) is present here as well, though focusing on task types such as 'listening', 'ordering and sorting', 'comparing' (ibid., p. 46), rather than on practical tasks connected to the subject of TD such as sewing, ironing, cutting and measuring. As explained in Chapter 3, the main idea of these sequences was to contextualize the topic of upcycling, linked with the Kompetenzbereich "Kontexte und Orientierung" (cf. Chapter 2.2.3).

The video sequence *plastic_theory* (Röthlisberger 2025e) gives a concrete example of how these theoretical segments have looked like. Since this paper focuses rather on the practical sequences directly related to TD (with regard to the research question) and an in-depth analysis would exceed its scope, this topic is not further explained. Nonetheless, it remains essential to the unit's design, as it fosters conceptual understanding.

5.2 Modeling & scaffolding content and language

In this section two examples of modeling and scaffolding language as well as content (subject-specific application-knowledge) are presented.

5.2.1 Modeling a new procedure

When introducing new procedures, modeling becomes important (cf. Chapter 2.3.1). For example, while verbally explaining how the plastic films need to be fused, the procedure is simultaneously demonstrated. This is shown in the video-clip *ironing_procedure* (cf. Röthlisberger 2025f).

Selected parts of this sequence, presented in Table 3: Modeling (cf. Appendix 11.1.3), effectively illustrate the didactical strategy of modeling, focusing on the following indicator: *How does the teacher model the procedure within this sequence?*

Modeling in this sequence connected to theory

This sequence explicitly underlines the didactical strategy of modeling. As mentioned in chapter 2.3.1 modeling makes the "target" visible by demonstrating to the learners what to do (Collins et al. 1991, p. 2). Thus, as Seidel and Reiss (2014, p. 261) state, the teachers' inner activities of organizing and performing the different steps become visible and comprehensible to the learners. Modeling happens often in the beginning of a sequence, introducing into a new procedure or topic (cf. Chapter 2.5.1)

In this sequence, it is about the procedure of ironing two plastic films together to a new designed plastic film. Since the students have never done this before, I model it as an example to show them how to complete the task. This helps students clearly see what is expected and how the task should be done. Fusing plastic is considered as more complex technical procedure which should be introduced properly (cf. Chapter 2.2.2). Thus, in this sequence, I first demonstrate the steps of the task and highlight key considerations, using the appropriate materials as a visual aid. In other words, while verbally explaining the procedural steps, I reinforce the instruction through corresponding physical demonstration. At this point, message abundancy becomes relevant (cf. Chapter 2.4.2). For example, in the same time I say: "…and then we need a fabric on the table" (00:00:08-00:00:12), I lift the fabric when saying "fabric" and touch the table when saying "table". Or when I pronounce "very important" (00:00:26-00:00:33), I raise my finger. This principle is repeated several times throughout this sequence representing the didactical strategy of modeling.

As outlined in Chapter 2.4.2, the physical demonstration helps students' understanding of the task as the verbal instruction given in English is enhanced visually through active demonstration of the process (cf. Gibbons 2015, S. 54–55). Additionally, as Gibbons (2015, p. 25) emphasises the importance of linking to prior knowledge and expressing ideas in multiple ways. By using "sandwich" to describe how the baking paper and plastic films need to be arranged (00:00:51-00:00:53), I try to

clarify the steps "in more than one way" using a familiar analogy. Besides explaining the procedure verbally and physically, I use here another method to scaffold the understanding of the procedure.

Furthermore, the didactical tool of modeling not only helps the students comprehend the procedure of ironing plastic films but also supports language learning by directly linking the relevant vocabulary to the action (cf. Chapter 2.4.3). It is therefore a circular process: The link between language and action (demonstration by the teacher) supports language learning and in retrospect, the action is given meaning through the language (cf. Heizmann 2019).

5.2.2 Scaffolding language and content

The analysis in this subchapter highlights the importance of visualization during oral explanation about the *bag_options* (cf. Röthlisberger 2025g). Although visualization is the primary means of support in this video sequence, other key modes of teacher communication are also at play.

Therefore, the indicators, recorded in Table 4: Visual Aid (cf. Appendix 11.1.4) focus on:

- Indicator 1: Use of visualisation during explanation
- Indicator 2: Nonverbal & paraverbal communication and body-language

Visualisation, nonverbal & paraverbal communication in this sequence connected to theory

Whenever possible, I support verbal instructions visually and through direct action (cf. Indicator 1), ensuring that each explanation is reinforced by an additional sensory channel. As Wiater (2001, p. 44) points out, everything perceptible should, wherever possible, be presented to multiple senses (cf. Chapter 2.4.2). This principle is vividly enacted throughout the video sequence. For example, at 00:00:06-00:00:13 I lay the pattern on the desk, stroke it when saying "flat," and then lift and reach inside it as I explain "you can still put something in there." As explained in Chapter 2.4.2, by synchronizing speech with action, I deliver message abundancy, giving students multiple channels through which to access the same information (cf. Gibbons 2015, p. 44–45).

Between 00:00:28 and 00:00:33, I place a note labelled "flat" on the pattern and later do the same for "bottom," pairing oral introduction of new terms with written labels. In this way, the spoken message is also supported symbolically through an additional channel (cf. Gibbons 2015, p. 44), providing another means of information intake. At this point, the symbolic form of representation becomes relevant (cf. Chapter 2.4.2), as it allows us, for example, to grasp concepts abstracted from the concrete object (cf. Jank & Meyer 2014, pp. 180–181). Sárvári (2023, p. 116) likewise underscores the value of "Sprachunterstützende Instrumente," such as written keywords, to engage multiple sensory channels and scaffold comprehension. The sequence introduces the words *flat, bottom, button and closing* in an interconnected manner, using visual (e.g. Pattern) and symbolic aids (e.g. written terms) in line with the approach to word semantisation, important for vocabulary acquisition (cf.

Chapter 2.4.3). Furthermore, it is important to recognize that when teachers use the target language, they serve as role models and must therefore possess a high level of proficiency to communicate and respond flexibly (cf. Sárvári 2023, p. 110). During 00:01:11-00:01:24, I cannot recall the word “bag flap”, indicating a lack in English proficiency. However, I manage to look up the missing word quickly and stick with English, without automatically switching to German (cf. Chapter 2.4.1).

Mentioned in Chapter 2.4.2, nonverbal and paraverbal communication further enrich the input. At 00:01:36–00:01:38, when showing the problem with the zipper, I grimace, squint, raise a finger, and hold up the zipper (cf. Indicator 2). Gibbons (2015, p. 44) describes this as part of multimodal scaffolding that integrates speech, gesture, and visual demonstration to make input accessible to English learners. Sárvári (2023, p. 115) similarly notes that gestures, posture, and adjustments in speech rate and pausing (Sprechgeschwindigkeit & Sprechpausen) are essential for meaning-making before learners can fully decode every word. Therefore, slowing my speech, extra-pronouncing certain words (e.g., the “n” in “button”), and using hand movements help maintain comprehension.

In sum, by combining direct action, written cues, embodied gestures, and paced speech, I enact part of Gibbons’s and Sárvári’s principles – using purposeful visual and nonverbal supports to scaffold understanding of content in the target language.

5.2.3 Language and Vocabulary Acquisition

Language and vocabulary acquisition are at play, whenever language is used in connection with an activity or task (cf. Chapter 2.4.3). This aligns with the task-based approach (cf. Chapter 2.1.2). The previous analyses provided several examples of language and vocabulary acquisition in action. For example, during the material analysis (cf. Chapter 5.1.1), but also in other sequences such as in Chapter 5.2.2 when new vocabulary is introduced though visual aid.

To further foster language and vocabulary learning, I designed sequences in which the students should explicitly use English (cf. Chapter 3). A detailed analysis of this sequence would open another complex field beyond the scope of this paper. Therefore, it is only briefly explained referring to the implemented examples.

Description and reflexion of the upcycling bag

The sequences, in which the students should speak English were repeated over the six weeks to reinforce key vocabulary and expressions. Considering the question of Coyle et al. (2010, S. 33): “How can learners use a second or additional language for this purpose when they do not know *how* to use it?”, I scaffolded the activity by demonstrating an example and providing speaking chunks. This gets evident in the video sequence *describing_reflecting_1* (Röthlisberger 2025h). First, I show them a possibility how to describe the characteristics (00:00:00-00:00:51). In this part, I take in the function

as language model (cf. Chapter 2.4.1). After, I gave an example, it is the students turn to talk (00:00:52-00:01:58). At this point, it is important to note that, during the first two weeks, the students already practiced describing characteristics according to the material-analysis criteria using chunks (cf. Chapter 5.1.1). As pointed out in Chapter 2.4.3, speaking chunks support students in using the language productively (cf. Sauer & Wolff 2016, p. 218).

Starting the production phase of the design process (cf. Chapter 2.2.1), after every afternoon, additionally, the students were assigned to describe the working process as well as reflecting what was easy or hard to do. The reason behind this was not only to practice the linguistic skills but also to communicate and document the process, an important competency in the subject of TD (cf. Chapter 2.2.1; Kompetenzbereich 1). This is shown in the same video sequence, from 00:02:01-00:05:42 (Röthlisberger 2025h). Here, too, I first provide an example of how they might phrase it, before it is their turn. We repeated this weekly at the end of each afternoon, following a consistent structure and using the same chunks (see figure below), since repetition is crucial for acquiring new vocabulary (cf. Chapter 2.4.3). The video *describing_reflecting_2* (Röthlisberger 2025i) provides another example following the same structure as shown in *describing_reflecting_1.*

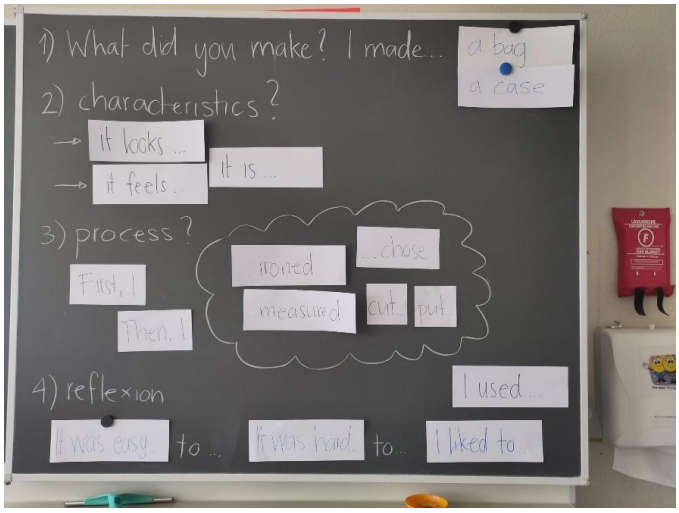


Figure 15 - Speaking Chunks. Own figure

In the end of the project, in week 6, the students then presented their upcycling bags to the others in a *final_presentation* (cf. Röthlisberger 2025j).

Word bank

In addition to the sequences of describing and reflecting the work process, we implemented another activity supporting vocabulary acquisition (cf. Chapter 2.4.3). At the end of each afternoon, we compiled the key words encountered throughout the afternoon and revisited them for further practice. An example of this is given in the video sequence *word_bank* (Röthlisberger 2025k).

5.3 Summary of the analysed examples

The analyses clearly demonstrate how task-based language teaching and learning (TBLT/-L) and the CLIL approach work together to drive both content and language development. Each practical sequence was designed as a meaningful task, guiding students in both language and subject-specific content learning. Some sequences focus on content and action (e.g., ironing, cutting, theoretical plastic tasks), while others require explicit use of English (e.g., material analysis, process description, reflection).

Although emphasis varies, both components remain interconnected and inseparable – as Coyle et al. (2010, p. 1) describe CLIL: "Each [content and language] is interwoven, even if the emphasis is greater on one or the other at a given time."

This integration becomes especially evident in sequences where I model procedures or present patterns visually (cf. Chapter 5.2). Demonstrating how to set up the "sandwich" of baking paper and plastic films or introducing terms like flat, bottom, button links precise language to concrete action. Visualisation techniques (e.g., demonstration, patterns, notes) help make terminology memorable and useful in context (cf. Chapter 2.4.2 & 2.4.3).

Scaffolding supported students through targeted hints, feedback, sentence chunks, and questions, fostering independence. Chunks worked as a "bridge" for expressing content linguistically. Repetition of chunks and in-task speaking moments embedded new language into active use, keeping action, content, and language inseparable.

Overall, the analyses show how task-based activities, modeling, scaffolding, visual support, and regular practice strengthen both subject and language learning.

Other observable aspects in the video-clips, though not the focus here, might also impact learning. The teacher's presence and the TSR play a role: Seeking eye-contact supports the principle of (omni)presence (cf. Seidel 2020, p. 123), while occasional similes reinforce TSR, aligning with Städeli et al. (2013, unpag.): "Humor, joy and confidence are irreplaceable pillars of competence-oriented teaching." These elements enhance motivation and classroom interaction.

6 Evaluation of the Learning Progression

This Chapter presents the learning progression visible within the implemented unit, evaluating what the students have learned. As outlined in the first research question, the methodological approaches and didactical tools used in the unit aimed to support both content and language learning, aligning with the overarching goal of promoting progress in both areas.

At this point, the additional research question of this paper emerges (cf. Chapter 1) – *How can I make learners' progress visible in both language and content within this this setting?*

This question is only addressed briefly, as a deeper analysis would go beyond the scope of this paper. Given the complexity of learning assessment and the evaluation of learning progress, the topic could warrant a separate study. Nevertheless, a brief examination is included, as observable progress offers valuable insight and serves as an indicator to evaluate the effectiveness of the applied approaches and didactical tools (see Chapter 7 for further discussion). It remains essential, however, to consider potential intervening factors that may have influenced the learning progress (cf. Chapter 6.1.4).

Chapter 6.1 presents a formal evaluation of learning progression based on two assessments. Chapter 6.2 highlights practical development through subject-specific application and product work.

In Chapter 7 an attempt to connect and reason the visible progression with the applied and analysed approaches and didactical tools (Chapter 5) is made and further elaborated, connecting the two research questions of this paper.

6.1 Pre- and Post-Assessment

In order to observe the learning progression as clearly as possible after the six-week period, I conducted the same two learning assessments twice: once at the beginning and once at the end of the project. Thus, the evaluation compares content, language and subject-specific pre- and post-concepts.

Since I conducted this assessment personally with the students, I will once again use the first person in the following section.

Design of the assessments

The two assessments were designed based on the learning objectives of the unit (cf. Appendix 11.5). I asked myself how to record and visualise the individual learning progress of the learners on a content-related, linguistic and subject-specific level. Based on the theoretical foundations of preconception assessment (cf. Chapter 2.3.3), I developed a first assessment to cover both content and language components (cf. Chapter 6.1.1), and a second assessment aimed to visualize the level of subject-specific language (cf. Chapter 6.1.2). As explained in the theory of preconception assessment (cf. Chapter 2.3.3), learning conception can be captured either written, orally or in form of

a drawing. In this case, the data of the first assessment was conducted orally, video-recorded, and the data of the second assessment was collected in a written form.

The subsequent chapters offer insight into one specific example (of student A) by comparing the two pre- and post-assessments, making the students' individual learning progress as visible as possible. Due to scope limitation of this paper, I just picked one meaningful example to demonstrate the progression. A brief overview of the other results of the other students is given in Chapter 6.1.3.

6.1.1 Assessment 1: Progression of language and content

The task in the first assessment required the students to assign key terms relevant to the teaching unit to corresponding images and then briefly explain their choices orally in English (cf. Appendix 11.9). This allowed me to identify the prior knowledge they already had – both in terms of content and language. I repeated this exercise at the end of the project to observe what had changed and how.

The first assessment was video recorded and is analysed below following the methodology of systematic observation (cf. Chapter 4). Based on the argument given above, this analysis does not go as deep as the analyses in Chapter 5. Accordingly, no observation table is used. Instead, observations are summarized and interpreted through theory, followed by a pre- and post-comparison.

Student A – Pre-Assessment

Observation:

After Student A arranged the images and assigned the six terms she knew, I started the video *student_a* (Röthlisberger 2025A, 00:00:00-00:01:18) by saying, "You can start". She then looked at the various terms and smiled slightly. I waited a moment and tried to support her in starting by pointing to the term "new idea" and saying: "Maybe with this one – the new idea" (00:00:12-00:00:16). She responded with "uhm" and laughed (00:00:17-00:00:26). After a short pause, I made two other attempts, first with the term "problem", then with the term "ocean". Again, she remained silent, touched her head, and smiled.

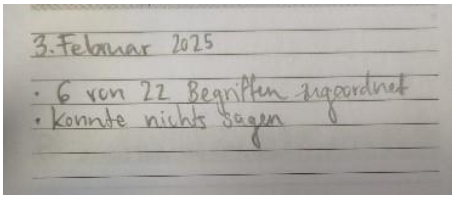

3. Februar 2025
· 6 von 22 Begriffen zugeordnet
· konnte nichts sagen

Figure 16 - Pre-Assessment 3.02.2015. "Terms & explanation". Own figure

Analysis with theory:

This episode illustrates key challenges in eliciting and interpreting students' conceptual understanding (cf. Hartinger & Murmann 2018; Chapter 2.3.3), particularly when it remains implicit or non-verbalised.

Although the student assigned some terms correctly, she was unable to justify or comment on her choices. The task of assigning terms to the images served to activate and partially reveal her existing content knowledge. However, when asked to explain her choices, she appeared overwhelmed and ashamed in that moment, which was evident from her smile and hesitation (e.g., "uhm", simile, silence). This suggests that she may have struggled not with the content itself, but with expressing her ideas in a second language or under performance pressure. The student's difficulty with verbalisation highlights a disconnection between activated understanding and its reconstruction in language. As emphasized in Chapter 2.3.3 "student conceptions cannot be directly accessed, only their expressions can" (cf. Hartinger & Murmann 2018, p. 56). Thus, this situation shows a fundamental gap between inner conceptual structures and their outward articulation.

Additionally, despite language barriers, a lack of conceptual clarity is possible as the student matched less than a third of the terms. Hartinger & Murmann (2018, p. 51–52) refer to this kind of reaction as a "current construction" or "ad hoc construction" with little connection to stable inner concepts, as explained in Chapter 2.3.1.

Even though the teacher tried to support the student with mild scaffolding (e.g., suggesting where to begin), this may not have been sufficient. Scaffolding must be adaptive and responsive to individual learners' needs and levels (cf. Hartinger & Murmann 2018, p. 51). In this situation, my scaffolding given might have not been enough to see into the students' understanding. This aligns with a key point made by the authors, who note the challenge that some conceptions remain implicit and therefore cannot be activated (ibid., p. 52).

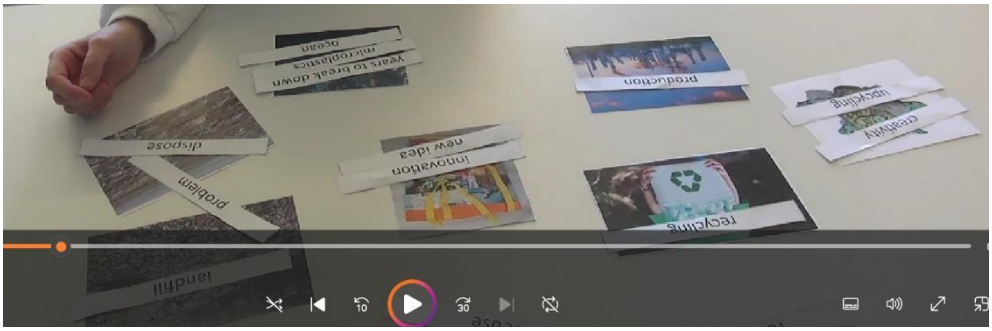
Although this preconception assessment offered me some insight into the student's ideas, it is important to repentantly underline that the learners' conceptions can never be fully accessed – only their verbal expressions can (ibid., p. 56). Thus, any interpretation of what a student truly knows or can do remains a reconstruction, inherently accompanied by uncertainty.

Student A – Post-Assessment & Pre-post-comparison

Observation:

After Student A arranged the images and assigned the 12 terms, she was familiar with, I started the video recording *student_a* (Röthlisberger 2025A, 00:01:25-00:04:38). The student began by pointing to one image and saying, "That is a big problem," then continued with, "That is new idea," while pointing to another image. After a brief moment, I pointed to an image and asked her what it was. She answered with a short sentence: "That is landfill." The rest of the video followed a similar pattern –

sometimes Student A produced short sentences describing an image or term, and at other times I asked her questions to which she attempted to respond successfully: A key moment can be seen between minute 00:03:38 and 00:03:45, when I ask the student, “What can we produce? ”, and she responds with “Plastic”. Shortly after, between 00:03:52 and 00:04:05, I continue by asking, “And then what happens to the plastic? We drink out of the bottle and then…”, to which the student replies, “dispose”.



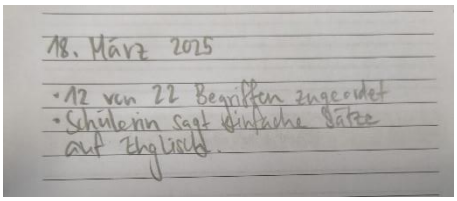


Figure 17 - Post-Assessment 18.03.2025. "Terms & explanation". Own figure

Analysis of the learning progress with theory:

The post-assessment clearly reveals a before-and-after comparison. Overall, the student was able to correctly assign six additional terms during the second assessment. In addition, she was able to produce simple, short sentences in English related to the images and terms, and respond to my questions. While at the beginning of the unit she made no verbal contributions, she can now formulate basic sentences such as “That is a big problem” or “That is landfill.” This suggests both an improved understanding of the key concepts and increased confidence in using the target language. The later already represents a significant step forward – having the courage to speak.

This learning progress illustrates what Adamina et al. (2018, p. 9–10) emphasize in Chapter 2.3.1: learning in subject-based instruction is to be understood as a process of developing and transforming existing conceptions, with learners’ prior ideas forming the foundation for constructing new ones. In this case, prior knowledge was successfully activated and built upon, resulting in the development of new or extended conceptual understanding. This growth can be described as a form of “enrichment,” meaning an expansion of existing conceptual structures (ibid., p. 8). Student A was able to link her prior knowledge with new content and increasingly express this connection through language.

Especially noteworthy in relation to the assessment of conceptions is the student’s growing ability to express herself verbally (cf. Röthlisberger 2025A, 00:01:25-00:04:38). As Hartinger and Murmann

(2018, p. 56) point out, in oral assessments it is not the conception itself that becomes visible, but only its verbal expression. This means that gains in language proficiency also allow for greater visibility of the learner’s conceptions. The observation that the student is now able to independently form short sentences not only indicates linguistic development, but also suggests that what may have previously been “current constructions” (ibid., p. 51–52) have evolved into more stable conceptual understandings.

This aligns with the principle that learning and language go hand in hand (cf. Chapter 2.3.2). Therefore, learning progress is also reflected in the ability to communicate and present subject content appropriately.

To sum up, the pre- and post-assessment comparison reveals a significant development in Students’ A subject understanding as well as in her language proficiency over the six-week period. However, it is important to note that due to various potential influencing factors, the observed learning progress cannot be attributed solely to the teaching unit. Multiple variables must be considered – for instance, the repeated implementation of the same assessment task (cf. Chapter 6.1.4).

Beside this first assessment in terms of content and language, I also attempted to document the students’ progress in terms of subject-specific knowledge and vocabulary in a second assessment presented in the next subchapter.

6.1.2 Assessment 2: Progression of subject-specific knowledge and vocabulary

Unlike the first assessment described in the previous Chapter, the second assessment was conducted in written form – once at the beginning of the teaching unit and again at the end, to allow a before-after comparison by calculating the correct answers each time. As shown in the Appendix 11.10, the assessment consists of two parts: the first part is about matching terms to the corresponding pictures – in the second part, the students had to tick the correct answer out of two possibilities A or B. In total, the assessment consists of 20 questions.

In the following description, the learning progress becomes directly apparent using the example of the same student, A (cf. Appendix 11.11.2):

In the pre-assessment, the student answered 9 out 20 questions correctly (total 11 answers with two mistakes). In the post-assessment, the student answered 17 out of 20 questions correctly (one mistake). This shows an improvement of 8 more terms. While the student solved 45% correctly in the first trial – she solved 85% correctly the second time after six weeks. This comparison shows a huge personal progression in terms of vocabulary and subject-specific knowledge.

Analysis of the learning progress with theory:

In this context, the project led not only to content-related and linguistic progress but also to significant development in terms of applied knowledge, along with the related subject-specific language. The students not only learned how to plan and create a bag made from plastic materials (cf. Chapter 6.2), but they were also able to connect these activities with the appropriate technical vocabulary.

This is where the explanations in Chapter 2.1.2 and 2.4.3 become relevant: according to Sauer and Wolff (p. 92–93), language skills develop particularly well when learners engage in real-world tasks through active participation. Moreover, deeper cognitive processing occurs when learners pursue an authentic task goal that goes beyond mere repetition (ibid., p. 227). This is precisely what happened during the bag-making activity: the students did not merely acquire terminology receptively (through my explanations), but used it actively to plan work processes, ask questions, and describe actions – thereby reinforcing both their linguistic and subject-specific learning.

Furthermore, through the hands-on activities and the direct link to relevant vocabulary, the risk of using empty or meaningless terminology is reduced – instead, terms are filled with concrete meaning (cf. Chapter 2.4.3; Heitzmann 2019).

6.1.3 Additional results of Assessment 1 and 2

The learning progress is exemplified and analysed using the case of student A (cf. Chapter 6.1.1/6.1.2). However, it is also important to consider the results of the other students to evaluate the overall outcome.

Assessment 1

All students demonstrated both linguistic and content-related progress, as can be seen in the comparison of video-clips from the pre- and post-assessment 1 (cf. Röthlisberger 2025A-I). All students were able to match more terms correctly to the according pictures after six weeks (see the exact values in the Appendix 11.11.1). Especially noteworthy is, that no one had understood the term upcycling and, in the end, everyone matched it correctly. On top of this, most of the students were able to explain why a certain term belonged to a specific picture using simple sentences in the post assessment, as becomes evident in the video clips (ibid.).

Assessment 2

In Assessment 2 as well, the number of correct answers increased remarkably in the post-assessment compared to the pre-assessment: in average the students solved 65.625% correctly in the pre-assessment and 91.666 % in the post-assessment (see calculation of the exact values in the Appendix 11.11.2). Also, the number of mistakes done by all students together reduced from 13 to 6 mistakes in total.

In summary, a clear learning progression is evident at both the content and linguistic levels for all students. These results may indicate that the applied approaches and didactical measures used during the learning arrangement were successful and supported the students in their learning – However, it is important to consider that various factor may have influences or interfered the reliability, as described in the following chapter.

6.1.4 Factors interfering the reliability of assessment

It is important to be aware that several factors might influence and interfere the reliability of assessment and need therefore be taken into account. Some of which I consider to be the most important (my own interpretation) are listed below:

Familiarity and Error Culture: By the end of the unit, the students knew me and my way of teaching better than in the beginning. This growing familiarity, combined with a positive error culture (where mistakes are welcomed), likely boosted students' self-confidence in speaking English.

Repeated Performance: As already described, the same two assessments were conducted twice (before and after the unit). Students may remember question formats or answers from the pre-assessment, influencing the post-assessment results.

Assessment Format: The evaluation relied on only two forms of assessments – oral and written form (cf. Chapter 6.1.1/ 6.1.2). A different format could have produced different results.

Developmental and Contextual Factors: The students' cognitive and emotional development over six weeks can also affect performance. Personal maturing and day-depending variations (e.g., sleep quality, mood, class dynamics) might have affected the results.

Cross-Curricular Exposure: During this period, students also studied plastic production and environmental issues in the NMG lessons. Encountering similar terminology and concepts in another subject may have reinforced their understanding, contributing to improved scores.

It must once again be emphasized that a wide range of factors – many of which are invisible may have contributed to this progress. Therefore, no generally valid conclusions can be drawn about the learning process; only what is observable.

6.2 Progression in subject-specific application

Besides the two described assessments, there is progression visible in relation to subject specific application and knowledge.

This kind of progression becomes visible in the practical actions during the design process of the upcycling project itself as well as in the final products of the students (see photo below). For example, after the detailed introduction how to fuse the plastic films (cf. Chapter 5.2.1), the students practicing themselves during experimental phase (cf. Chapter 5.1.2), they were able to apply this procedure for their final products, evident in their final products. And after detailed introduction how to sew the “bottom” of a bag and a practical phase on a testing-object (prototype), the students knew how to sew the bottom applying it on the product. While working along the design process, I coached them more or less depending on their personal development and their needs (cf. Chapter 2.5.1).

Figure 18 - The students' upcycling products. Own figure

7 Discussion

This paper aimed to explore how a CLIL unit in TD on an upcycling project could support subject-specific language development and content learning. The evaluation of the implemented unit revealed multidimensional learning progression, particularly in terms of language, conceptual understanding, and subject-specific design skills (cf. Assessment 1 & 2). This may confirm the relevance and potential of a scaffolded language use in a task-based and practice-oriented setting such as TD.

One of the most essential findings is the learning progress of Student A, which was clearly traceable in the recorded Assessment 1 (cf. Chapter 6.1). As previously analysed, the student increasingly used language more independently and confidently, showing a better understanding of upcycling-related content as well as subject-based vocabulary (cf. Assessment 2).

The comparison between the pre- and post-assessments of other students also indicates visible progress in dimensions of language, content and subject-specific vocabulary (cf. Appendix 11.11). These results reinforce the assumption stated in the research question: that through the combination of CLIL and TBLT approaches and language support strategies, such as modeling, scaffolding (trough visualisation, targeted questions, chunks, etc.) both content and language learning can be fostered. Although general conclusions cannot be drawn due to the small sample size and qualitative data of this paper, the results could be justified within the findings from existing literature (cf. Seidel & Reiss 2014; Sauer & Wolff 2018; Abendroth-Timmer & Gerlach 2021), which emphasize the effectiveness of repeated modeling, cognitive apprenticeship, and the integration of language into meaningful action.

Furthermore, the analyses (cf. Chapter 5) support the argument that language and content development are closely interlinked (cf. Coyle et al. 2010; 2023). In the upcycling unit, the students had the chance to apply newly acquired vocabulary and sentence structures in a meaningful context, supporting both conceptual and linguistic growth, which helped make learning more effective.

7.1 Effectiveness of the applied approaches & tools

Several factors likely contributed to the observable learning progress (cf. Chapter 6). Firstly, modeling of procedures by the teacher (e.g., concrete actions and visual aids; cf. Chapter 5.2.1), paired with oral explanation supported the comprehension of subject-specific terminology and language (cf. Chapter 2.4.2). Also, the modeling of language use might have proved relevant as it gave the learners an example of how to use the chunks and describe the material and processes (cf. Chapter 2.4.1). Secondly, the regular practice of subject-specific terminology and language use with supportive chunks (cf. Chapter 2.4.3), gave students opportunities to refine their language. Third, the scaffolded use of language through visualisation and non-verbal communication in an action-based setting most likely facilitated understanding as findings from literature prove (cf. Chapter 2.4.2). The combination of

visual, verbal, and action-oriented learning allowed students to access content from multiple entry points, accommodating different learning styles (cf. Gibbons 2015).

Moreover, structured feedback, praising and questioning strategies (cf. Chapter 2.5.3) encouraged deeper reflection and helped students formulate their ideas more clearly. Finally, working along the design process itself supported subject-specific learning through experimentation and revision (cf. Huber Nievergelt & Marti 2019, pp. 14–19). Students were engaged both cognitively and practically, making the learning situation highly relevant.

From a methodological point of view, providing all scaffolds and preparing the unit setting requires planning and flexibility on the teacher's part. Therefore, the planification of the unit with all its preparation plays an important role as in my opinion, the effectiveness of supportive tools such as visual aids depends on how they are embedded in the classroom.

7.2 Implications for CLIL and TBLT in connection with TD

This project illustrates that language and content can and should be taught together in practical subjects like TD. As shown in this unit, embedding language into authentic, meaningful and action-oriented tasks supported learners seeing language not as an abstract goal but as a functional tool. Furthermore, the design process in TD encouraged the students to get actively involved in the task. This aligns the TBLT and CLIL approaches discussed in Chapter 2.1. The implication for teaching practice is clear: combining content and language instruction with active engagement strengthens both areas and aligns with the constructivist view of learning explaining that learners need to be actively involved (cf. Chapter 2.3.1).

Another key implication for CLIL and TBLT in TD is the potential for interdisciplinary collaboration. As demonstrated in this unit, learning gains are enhanced when linguistic goals are planned together with content and process goals. CLIL in design-based subjects could also offer valuable insights for broader curriculum development, showing how creative and technical subjects can contribute to cross-curricular language development. However, in my view, successful integration depends on systemic support and team-teaching possibilities, factors that are not always given in school settings.

7.3 Limits of the approach and further potential

Despite the success of the unit, there are limitations to be acknowledged. Firstly, the small group size limits the generalizability of the findings. On top of this, as described in Chapter 6.1.4, several factors (e.g., classroom dynamics, etc.) influencing the reliability of the assessments must be considered. It is not possible to attribute visible learning progression solely to the unit, to the approaches and supporting tools used – more profound investigation would be required in order to make more valuable statements. It is important to recognize that assessing conceptual understanding and linguistic competence remains a challenging and subjective field. Observing student behavior and

language use does not always guarantee access to their true understanding (cf. Chapter 2.3.4). Misinterpretations, hesitation, or personal differences in expression may lead to false conclusions. I find myself questioning how far my observations really reflect what a student knows or can do. This becomes even more complex when considering that my own perception as a teacher is influenced by expectations and previous experiences. The assessment of learning must therefore be seen as an interpretative act, in which caution is needed. This reflection has made me even more aware of the importance of reflective and multi-dimensional evaluation processes.

Secondly, it must be acknowledged that CLIL teaching places high demands on the teacher, particularly in terms of language proficiency (cf. Chapter 2.4.1). It requires a confident and flexible use of the language to accordingly support learners. Not all teachers may feel adequately prepared.

Personal statement on this: As became observable in one video-clip Röthlisberger 2025g (00:01:11-00:01:24), I could not recall the right word and needed to look it up. Watching through the sequences, I also noticed that I made some mistakes in articulation and grammar as English is not my first language either. Trying to keep in mind, that TBLT and CLIL lay the focus on meaning rather than form, helped me to feel more confident in using English even though being aware to make mistakes. However, this could be a point discussed and analysed in detail: How proficiently does a teacher need to know English? Which mistakes are still acceptable – which are not? When does a wrong use of language affect the learners more negatively than positively?

Besides these thoughts about language proficiency, I also want to mention the challenge to stick with L2, especially when students answer or say something in L1. Several times, I unintentionally switched back to L1 in these cases. Depending on the situation, it costs a lot of effort and energy to stick with L2 – switching to L1 sometimes cannot be avoided. Considering these challenges, targeted training in language teaching strategies is therefore essential.

In my view, CLIL places high demands not only on the teacher but also the learners. For certain students, this might be overwhelming. There is a risk that students might struggle to construct conceptual understanding if they do not fully comprehend the language used in instruction (cf. Chapter 2.4.1). This means that not all students might benefit.

Further potential: In further developing the approach, more systematic tools for observing and measuring learning processes could be implemented. Moreover, combining this work with more in-depth subject didactics linked with CLIL could support both teacher reflection and student learning.

There is also potential in looking more closely at student involvement. While this paper has a strong focus on language and method (didactical tools applied by the teacher), the role of students' voice could have been explored further. Understanding how students perceive and experience such an approach would have provided another important perspective. Including student reflections more explicitly in future work could help further validate the findings presented here.

8 Conclusion

Summary of Key Findings

This thesis explored how content and language learning can be meaningfully connected in a CLIL unit within the subject of TD, using upcycling as a project-based assignment. The evaluation revealed that students made noticeable progress in both their subject-specific and linguistic skills (cf. Chapter 6). In particular, Student A demonstrated a clear progression in vocabulary use, conceptual understanding, and task engagement. This progression was supported by methodical planning that combined principles of subject approaches (cf. design process), scaffolding, and multimodal support tools such as visual aids and modeling (cf. Chapter 5). The analyses further showed that even though the language level varied across learners, all students were able to engage meaningfully with both the content and the communicative aspects of the unit.

Answer to the Research Question

The unit showed that by aligning content objectives with language and cognition, and by carefully planning tasks with appropriate scaffolds, learners can engage in meaningful and language-rich subject learning. The combination of visual, verbal, and practical tools proved effective in bridging comprehension gaps and supporting students' learning progression. While not all learners progressed at the same pace or depth, the approach created space for differentiated learning, peer interaction, and learner autonomy. Thus, the findings support the central research question, showing how language and content learning can be effectively supported in a CLIL unit in TD on upcycling. However, these findings are limited to the specific context of this project and cannot be generalized – no universally valid conclusions about CLIL can be drawn from this project. Nevertheless, the results demonstrate that CLIL can be a valuable and effective approach in TD settings.

Outlook for Future Teaching or Research

This project opens up several directions for future classroom practice and research. From a teaching perspective, the unit suggests that embedding CLIL in practical and creative subjects like TD are relevant for the process of language learning. However, successful implementation requires strong language skills on the teacher's part, as well as confidence in subject didactics. Teacher training programs should therefore include CLIL modules. From a research perspective, future studies could explore the long-term effects of such CLIL units, as well as more transparent and holistic assessment methods for CLIL settings. It would also be valuable to investigate how learners themselves perceive the connection between content and language, and how their agency in learning could be strengthened through self-assessment or reflection tools.

Overall, the findings of this paper show that meaningful language and content integration is both possible and beneficial – especially when anchored in authentic, hands-on learning contexts that engage students cognitively, practically, and linguistically.

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9.3 List of video-sequences

Analyses (cf. Chapter 5)

Röthlisberger, Rebecca (2025a). *product_analysis* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025b). *ironing-plastic* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025c). *cut_and_measure* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025d). *scaffolding_process* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025e). *plastic_theory* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025f). *ironing_procedure* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025g). *bag_options* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025h). *describing_reflecting_1* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025i). *describing_reflecting_2* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025j). *final_presentation* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025k). *word_bank* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Evaluation – Assessment 1 (cf. Chapter 6)

Röthlisberger, Rebecca (2025A). *Student_a* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025B). *Student_b* (unpublished video, bachelor's thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025C). *Student_c* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025D). *Student_d* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025E). *Student_e* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025F). *Student_f* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025G). *Student_g* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025H). *Student_h* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

Röthlisberger, Rebecca (2025I). *Student_i* (unpublished video, bachelor’s thesis). Institut Primarstufe (IPS) der Pädagogischen Hochschule PHBern, Bern.

10 Declaration of fairness and integrity

Hiermit bestätige ich, dass die vorliegende Arbeit mit dem Titel

A CLIL unit in Textile Design

nach dem Grundsatz der wissenschaftlichen Lauterkeit und Redlichkeit verfasst, ohne unerlaubte Hilfe ausgeführt und nicht bereits an einem anderen Institut, einer anderen Hochschule oder bei anderen Dozierenden eingereicht ist.

Ort, Datum – Unterschrift: Bern, 29.07.2025 – ……

11 Appendices

11.1 Tables related to the analyses

In the tables below, students are shortened by “ss” and anonymized using numbers. These numbers are reassigned for each analysis, so they are not consistent across tables. Since I taught these lessons myself, the first-person is used.

11.1.1 Table 1: Product Analysis

Time & *indicator*	**Observation: Utterances and actions of the students & teacher**		**Interpretation**
	Utterances	Actions	
00:00:10-00:00:23 *Indicator 1*	Ss 1: “It looks shiny.” Ss 2: “It is color green…” “Green, blue.”	Ss 1 holds and looks at a shiny, turquoise plastic film. Ss 2 adds to the description of the color “green” the color “blue”. Both of them gesture their hands when saying “green, blue…”	The two ss try to describe the appearance of a plastic film as accurately as possible by describing its colors. The hand gesture they make strongly suggests they aren’t entirely sure what color the plastic film actually is or can’t find the English word of it. Green/ blue seem to be their most accurate description.
00:00:24-00:00:25	I: “What about this one?”	I reach another plastic film to the two students.	I give a new input.
00:00:28-00:00:34 *Indicator 1* 00:00:35-00:00:39 00:00:41-00:00:44	Ss 1: “This is non-stable” Ss 2: “Yes” Ss 1: “It feels not stable.” Ss 2: “It feels, ehm, fine” Ss 1: “It look transparent.”	Both students simultaneously touch the plastic film that I reached to them. Ss 1 passes film over to ss 2. Ss 2 touches film with the hands, unfolding it. Ss 2 passes film back to Ss 1. Ss 1 holds plastic film and looks at it.	While sensing the films with their hands, the students try to verbalize how it feels. The shows interaction between the two Ss: Ss 2 agreeing to the description of ss 1 and further describing the film. Together, they describe the film most accurate as possible.
00:00:46-00:00:47 *Indicator 2*	I: “Why? Why is it transparent?”	-	With this question I want to stimulate further thinking.
00:00:48-00:00:53 *Indicator 1*	Both: “We, we can see…” Ss 1: “We can see the other side.”	While saying this, they both make a sign with their hands/ finger pointing in front of the plastic film.	Saying “we” twice, then “…can see…” and not finishing the sentence shows that they struggle in formulating but trying their best to make themselves understandable. The clear gestures support the

			meaning. After a brief moment, Ss 1 successes in giving a more concise answer.
The procedure is repeated once again the week later			
00:01:11-00:01:13 *Indicator 1*	Ss 3: "It's transparent."	Ss 3 holds an Evian plastic packaging in his hands and looks at the blackboard when describing how it looks like.	The ss tries to describe the appearance of the packaging.
00:01:14-00:01:17 *Indicator 2*	I: "You also have the words here. Maybe this helps."	Simultaneously, I point at the words (chunks, vocab) which lay on the desk.	With this hint, I suggest scaffolding. Additionally, my intention is that the ss to uses different vocab/ chunks.
00:01:19-00:01:22 *Indicator 1 + 2*	Ss 3: "It's dull. …it's sometimes transparent."	Ss 3 holds the plastic packaging in his hands and looks at the vocabulary on the desk and speaks simultaneously.	Ss 3 is further specifying the appearance of the plastic packaging. The chunks/ vocab on the desk might assist him in finding the words.
00:01:23 *Indicator 2*	-	Ss 1 points at a chunk on the desk.	Ss1 probably wants to help Ss 3 by pointing at a chunk suggesting where Ss 3 might continue.
00:01:25-00:01:35 *Indicator 1 + 2*	Ss 3: "it's…it is co… color are white, … pink…" I: "pink, yeah"	When saying "white" the Ss 3 points at the white part of the plastic film. When Ss 3 says "pink" I say it simultaneously.	Ss 3 describes the colors of the film. After he said "white", he hesitates a moment, looks at the pink part of the packaging and gets ready to say "pi.." – right there, I help him formulating the word and say "pink" together with him.
00:01:45-00:01:52 *Indicator 1 + 2*	Ss 3: "it's… it's not stretchy." "It's stable."	While saying "it's" Ss 3 pulls the film apart. When saying "it's not stretchy" he simultaneously looks at the terms. Then again, he pulls the film apart when saying "It's stable."	By pulling the film apart, Ss 3 tests the elasticity of the material. He tries to find the most accurate expression and specifies his previous description with the help of the vocab.
00:02:08-00:02:12 *Indicator 2*	I: "Oh, you sort it, that's very good. You organised, I like it."	I walk to two other Ss (4&5) and comment their action.	By praising what the students have done, I want to value their effort.
00:02:13-00:02:15	-	The Ss both look at each other first, then they look at me, smiling.	This might indicate that they were either happy about my compliment or confused about what I said. I kind of sensed the second case.
00:02:16-00:02:23 *Indicator 2*	I: "You put this one to this, then this one to this. This is very nice. Sorting" Ss 4: "Ah". I: "sorting it, yes."	While talking I am pointing with my finger to the packaging piles and the terms. While Ss 4 says "Ah", she nods.	I try to explain with other words and gestures what I've said to them previously. Ss 4 reacts to this with an "ah" and nods – most likely showing me that she understands what I mean.

00:02:55-00:03:02 *Indicator 3*	I: "Okay, for example you two, what is about this? Here."	While saying this to two other Ss (6&7), I point to two chunks laying on the desk.	As these two Ss have a high English level, I gave them an additional aspect (disposal) to focus on in order to generate differentiation.
00:03:03-00:03:05	Ss 6: "You have to… ah".	Both look at the chunks.	They both look at the chunks figuring what it is about. Ss 6 shows me that she understands.
00:03:06-00:03:11 *Indicator 2*	I: "So maybe, if we look at this one, where do we find this information?"	I point to a plastic packaging.	I try to give them a starting point to look for the information.
00:03:12-00:03:16	Ss 7: "I don't know."	Ss 6 takes the packaging in her hands and looks closely at it, smiling a bit.	Ss 7 reacts immediately with resign while Ss 6 tries to find the information. The smile might suggest uncertainty about where to look.
00:03:17-00:03:21 *Indicator 2*	I: "Mhm, or. There is a sign here. You know."	Pointing at a label on the packaging.	I react to the students' uncertainty by showing them where they might find the information.
00:03:21-00:03:22	Ss 7: "Ah, yes yes yes."	Both looking at the sign.	Suddenly, Ss 7 seems to know exactly what it is about.
00:03:25-00:03:31 *Indicator 3*	Ss 7: "This is also recyclable." "This is, I don't think it's recyclable."	Ss 7 says this when looking at the sign of another packaging. Looks at another packaging.	Ss 7 reacts quickly looking for the disposal-sign of another packaging and describing it. She then quickly takes another packaging and analyses also this information. This might indicate that she wants to "prove" me her skill.
00:03:32-00:03:33 *Indicator 2*	I: "Here you see, what is this?"	Pointing at the sign on the packaging.	By asking this question I want to help her specifying how the packaging needs to be disposed.
00:03:34 *Indicator 3*	Ss 7: "Trash"	Ss 7 is simultaneously looking at the sign.	Again, she responds "trash" immediately without hesitation.

11.1.2 Table 2: Ironing Plastic Films

Time & *indicator*	**Observation: Utterances and actions of the students & teacher**		**Interpretation**
	Utterances	Actions	
00:00:00-00:00:07 *Indicator 1*	-	Ss 1 covers the plastic film with a backing paper and holds the iron in the other hand.	Ss 1 prepares the station for ironing the plastic films. I'm observing how he is doing it.
00:00:08-00:00:13 *Indicator 2*	I: "Be careful that all the way. Because otherwise you are going to melt it and then it stinks."	Simultaneously, I pull the backing paper further down.	I am intervening because I see a potential risk that the hot iron might touch the plastic. That's why I step in. I'm explaining my action simultaneously.
00:00:14 *Indicator 1*	Ss 1: "Yeh".	Ss 1 Puts iron on backing paper.	Ss 1 responds to me with "yeh" showing that he understands. Then he starts ironing.
00:00:19 *Indicator 1*	-	Ss 2 is ironing at another station.	I'm observing another student in the process of ironing.
00:00:22 *Indicator 2*	I: "Does it work?"	I am looking at him ironing.	I try to interact with him, asking how it goes.
00:00:23 *Indicator 1*	-	Ss 2 moves iron beside and removes plastic film.	Ss 2 reacts to my question: He removes the backing paper in order to check whether it worked.
00:00:24-00:00:28	I: "Tortilla. Ah, just a small experiment. Ah, this is great."	I am looking at the experiment of Ss 2.	By commenting on the experiment, praising it, I want to value the student's work.
00:00:29-00:00:33 *Indicator 2*	I: "But […], never leave it like that. Always put it up. Okay?"	I am putting the iron upright.	Ss 2 left the iron with its hot side down. Spotting the potential risk, I intervene by placing the iron upright and telling the Ss how to set the iron safely when not in use – without explaining why, assuming Ss understood the reason (might be problematic).
00:00:37 *Indicator 1*	-	Ss 3 is ironing at another station.	
00:00:39-00:00:44 *Indicator 2*	I: "Let me see now. He, now it's better, right? It was just too hot I think."	I am looking at how Ss 3 irons the plastic films.	My comment is connected to a previous happening with the plastic films of this Ss. I'm checking on him again asking if it's working now.
00:00:44-00:00:45 *Indicator 1*	-	Ss 3 removes the backing paper and touches the plastic film underneath. Then, he re-covers the film again.	In reaction with my question Ss 3 checks the plastic film himself, most likely to see how it works. Independently, he decides to re-cover because he might think that is needs more time to fuse.

00:00:46-00:00:49 *Indicator 2*	I: "Yeah, now you have to stay on it even longer."	Ss 3 continues ironing.	I agree with his decision to stay on it longer.
00:00:50-00:01:00 *Indicator 1*		Ss 4 is cutting out a plastic film.	
00:01:00-00:01:10 *Indicator 2*	I: "Maybe try out three layers. Three. So, you take three films. Not just two only but three. One, two, three. Like this.	When saying: "One, two, three", I show three layers to the ss.	I'm giving a new input to the ss, suggesting a new experiment of ironing three plastic-layers. To make myself understandable, I speak up and reinforce my oral explanation visually.
00:01:10 *Indicator 1*	Ss 4: "One, two, three."	Ss 4 shows me the layers.	One of the ss directly reacts on the new input by preparing to do it.
00:01:11	Ss 5: «Kann man dieses nehmen?»	Ss 5 holds a plastic film in the air and looks at me.	Ss 5 asks me a question in German because she most likely doesn't know how to articulate in English.
00:01:12-00:01:16 *Indicator 2*	I: "Yes, you can. Just any. It doesn't matter."	I am looking ss 5.	Although Ss 5 asked me in German, I replied in English to maintain consistent use of English whenever possible.
00:01:17	Ss 6: "I am ready."	Ss 6 shows me the plastic films.	Ss 6 makes this utterance because he might want to get my attention. Maybe he wants my opinion as the two films are remarkably small.
00:01:18-00:01:21	O wow, such a small one. Okay, small test.	I am looking at the films ss 6 shows me.	When Ss 6 approached me with the plastic films he intended to iron, I respond by affirming his plan.
00:01:23-00:01:50 *Indicator 1+2*	-	The ss working: Choosing plastic films, and ironing – I'm coaching/ scaffolding them.	The tables are crowded with plastic films giving the ss different options to test.
Discussion of the results			
00:01:55-00:06:12	Exchange with the ss about the experiments they've ironed.	The experiments all lay on one desk. I'm going through some experiments – mentioning important things and asking questions to the ss.	Discussing the results to guide students in choosing suitable plastic films later enhances understanding through own experimentation and reflection.

11.1.3 Table 3: Modeling

Time & *indicator* *(here just modeling)*	**Observation: Utterances and actions of the teacher**		**Interpretation**
	Utterances	Actions	
00:00:04-00:00:07	"We have these two plastic films"	I simultaneously hold the plastic films in the air showing them to the ss.	By showing the two plastic films in the air, I hope that the ss know what I mean with "plastic-films".
00:00:08-00:00:12	"…and then we need a fabric on the table"	I simultaneously lift the fabric prepared on the table and touch the table.	This action should help the ss understand what the 'table' and the 'fabric' are.
00:00:26-00:00:33	"…then, very important, the baking paper on the fabric, like this"	When saying "very important" I raise my voice and my finger, and I quickly look at the ss. In the mean time when saying "like this" I again look at the students and fulfil the action of laying a baking paper on the fabric.	By extra-pronouncing the words "very important", raising my finger and looking at the ss in the meantime, I want to highlight the importance of this step. "Like this" refers to showing the ss how to lay the baking paper on the fabric.
00:00:34-00:00:42	"…and then you take these two films… You lay it on the baking paper"	I lift the two plastic films in the air, show them to the ss, and then lay it on the baking paper.	Again, I simultaneously verbalize and demonstrate how the ss need to prepare the plastic films on the baking paper in order to be fused later.
00:00:43-00:00:50	"Then, also very important, you take a second baking paper, put it here"	When saying "also very important" I raise my finger and smile. Then, I cover the two plastic films with another baking paper.	By saying "very important" another time I want to enhance the importantly of this step. In addition, raising the finger prompts to the ss to pay attention. I am smiling – maybe because in the same time, I don't want to occur too strict and maintain joy. With the demonstration of placing the other baking paper on the plastic films I want to make sure that they understand this step.

00:00:51-00:00:53	"…like a sandwich, you see?"	I am looking at the ss.	The word "sandwich" is most likely familiar to the ss. To compare the procedure with this term might support the understanding of it. In the meantime, I am looking at the ss in order to see their reactions. How do they look like? I check on them to figure whether they have understood. Of course, I can only estimate a tendency or a feeling when looking at their facial expressions.
00:00:54-00:00:58	"So, baking paper, the two plastic films and again the baking paper."	I touch the lower baking paper, then I lift the upper baking paper and point at the plastic films in between, then I point at the second baking paper.	At this point, I am explaining verbally as well as physically what I meant with "sandwich" by pointing/ touching at the corresponding material. By doing this, I am also repeating the procedure of how to place the baking paper and the plastic films.
00:00:59-00:01:03	"And now what I'm going to do is I'm going to iron this."	I simultaneously lift the iron and look at the ss.	By lifting the iron in the air a bit, I am introducing into the next step of fusing the two films together.

11.1.4 Table 4: Visual Aid

Time & *indicator*	**Observation: Utterances and actions of the teacher**		**Interpretation**
	Utterances	Actions	
00:00:00-00:00:05 *Indicator 2*	"I want to show you the options you have…the options"	While saying I am looking at the ss.	Presenting various options provides ss with a clear framework while still allowing flexibility in the task.
00:00:06-00:00:28 *Indicator 1+2*	"You can do something like this…here. This is very basic, because it is just flat…right, there is no bottom. It is just flat but you can still put something in there, it's practical, no problem."	I lay the pattern on the desk in front of me and stroke it. When I say "flat," I stroke it again with both hands, then look at the ss. When saying "there is no bottom", I lift the pattern in the air showing it to the ss. Simultaneously, as I say "you can still put something in there," I reach into the pattern with my hand.	This shows how I use the pattern to visually support my explanation and gestures to emphasize what I say.
00:00:28-00:00:33 *Indicator 1*	"So, we have here a pattern that is flat."	Taking a note with the word "flat" written on it and laying it on the pattern.	I not only introduce and demonstrate the new term but also present it in written form for symbolic support.
00:00:34-00:01:00 *Indicator 1+2*	"But you can also do…something with a bottom. Like this, right, do you see the difference? It is something different, because there is a… bottom. Right, here. Bottom."	Simultaneously, I reach into another pattern showing the bottom to the ss. When I ask the question, I look at the ss and make a gesture with my hand as I pronounce "difference." When saying "bottom", I take the note with the word "bottom" on it showing it to the students. As I say "here", I am holding the note to the bottom of the bag.	This shows how I use the other pattern to visually support my explanation and gestures to emphasize what I say. Also, for this patter, I provide symbolic support through the note.
	"I also did this pattern here, right. It's the same, I also have a bottom, here. You can also do this design."	I simultaneously lift my own example (product) in the air, look at the ss and touch the bottom.	Actually, lifting my own example while explaining should help the ss understand what I am talking about.
00:01:01-00:01:10 *Indicator 1*	"You can decide whether you want to do it like this. A normal, ehm, closing."	When I say "closing" I pull the zipper closing the bag.	Visually (through direct action) supporting the term "closing".

00:01:11-00:01:24 *Indicator 1*	"Or if you want to…Here is the word…ehm, yeah, if you want to do a bag flap. Like this. Flap it."	I am glimpsing at a note laying on the desk in front of me. When saying "bag flap, like this. "Flap it" I simultaneously flap the pattern and then look at the ss.	Indicates that English isn't my first language either – I'm uncertain about some words. Again, I simultaneously demonstrate my oral explanation.
00:01:24-00:01:35 *Indicator 1*	"So, the, is the options. You can, em, have the fabric the same length on both sides, like here, or you can do a bag flap."	When I say "like here," I touch the pattern at its sides of equal length, and when I say "bag flap," I touch the corresponding other pattern.	I am showing what I say.
00:01:36-00:01:38 *Indicator 1+2*	"And if you do this, you cannot take this one."	When saying "this" I touch the pattern with the bag flap laying in front of me. When I say "cannot" I raise my finger, then, when saying "take this one" I am holding a zipper in the air. Simultaneously, I look at the ss, grimacing and squinting my eyes.	That the ss know what I mean with "this" or "this one" I touch/ show the corresponding object. Raising my finger should increase the ss' attention. By grimacing and squinting my eyes, I hope to signal to the students that they cannot use the zipper.
00:01:38-00:01:43 *Indicator 1+2*	"Because it's a bit hard to put this here inside."	I simultaneously open the bag flap and hold the zipper in the opening, still squinting my eyes and looking at the ss.	Showing what I mean. By squinting my eyes, I hope they get the meaning.
00:02:00-00:02:24 *Indicator 1+2*	"If you choose to do this […], then you need to do either the Velcro fastener, Klettverschluss, like this. Or the button. Button with an "n". This is the bottom, and here we have a button. Button.	When I say "Velcro fastener," I show it to the students. Then, saying "like this," I place the Velcro on the pattern while opening and closing the bag flap. When I say "button," I show it to the students. Then, I repeat the word, extra-pronouncing the "n". I lift the pattern with the bottom, touch it, and then again, I touch the button.	Translating the word Velcro into German as I interpret it to be complicated. I quickly show the ss the function of the Velcro and contextualize it with the pattern of the bag flap. When introducing the word button, I show a button to the ss and try to differ it (trough extra-pronouncing the "n") from bottom as it sounds similar. I repeat the meaning of the two terms by showing what is what.
00:02:38-00:02:49 *Indicator 1+2*	"So, these are the options and you can decide how big it should be. It could also be this size. But it cannot be this size, okay."	I simultaneously gesticulate when saying "how big it should be." When saying "…also be this size", I lift a sheet of paper in the air. When saying "…cannot be this size", I turn around and move my arms apart.	With the gesture and use body language I hope the ss know what I mean.

11.2 Einverständniserklärungen

Rebecca Röthlisberger
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Bern, 08.01.2025

Liebe Eltern und Erziehungsberechtigte

Ich studiere im 5. Semester am Institut Primarstufe der PHBern und schreibe zurzeit meine Bachelorarbeit über das Thema *CLIL* (Content and Language Integrated Learning). In CLIL geht es darum, dass Inhalt und Sprache zusammen gelernt werden. Beispielsweise wird ein bestimmter Inhalt auf Englisch behandelt, um gleichzeitig inhaltliche wie auch sprachliche Lernfortschritte zu fördern.
In Bezug auf meine Bachelorarbeit plane ich deshalb, einige Sequenzen im Textilen Gestalten auf Englisch durchzuführen. Dabei möchte ich den inhaltlichen und sprachlichen Fortschritt Ihrer Kinder über einen Zeitraum von sechs Wochen für meine Arbeit dokumentieren.

Um meine Arbeit optimal dokumentieren und reflektieren zu können, möchte ich die einzelnen Sequenzen gerne aufnehmen. Diese Videoaufnahmen dienen ausschliesslich dazu, meinen Unterricht zu analysieren und zu verbessern. Um den Lernfortschritt der Schülerinnen und Schüler besser sichtbar zu machen, plane ich zudem, zwei Standortbestimmungen durchzuführen, welche ich ebenfalls gerne festhalten (aufnehmen) würde. Weiter möchte ich einige im Unterricht entstandenen Arbeiten fotografieren, um die Dokumentation der einzelnen Sequenzen zu vervollständigen.

Der Name Ihres Kindes wird weder in den Aufnahmen noch auf den Fotos erwähnt, sodass keine persönliche Identifizierung möglich ist. Die Aufnahmen und Fotos werden ausschliesslich für die Analyse und Reflexion meiner Bachelorarbeit verwendet.

Wenn Sie mit den Videoaufnahmen und der fotografischen Dokumentation einverstanden sind, bitte ich Sie, die untenstehende Einverständniserklärung Ihrem Kind ausgefüllt mitzugeben.

Ich danken Ihnen im Voraus herzlich für Ihre Unterstützung und Ihre Bereitschaft, mein Studienprojekt zu unterstützen.

Sollten Sie Fragen haben, zögern Sie bitte nicht, mich über die oben angegebenen Kontaktdaten zu erreichen.

Freundlichen Grüsse

Rebecca Röthlisberger

✂ ----------

Einverständniserklärung

Hiermit stimme ich zu, dass die Videoaufnahmen der einzelnen CLIL-Sequenzen sowie die fotografische Dokumentation für meine Bachelorarbeit am Institut Primarstufe der PHBern genutzt werden können. Ich kann diese Zustimmung jederzeit widerrufen.

_____
Vor- und Nachname des Kindes

_____
Ort, Datum und Unterschrift einer erziehungsberechtigten Person

Rebecca Röthlisberger
076 295 72 99
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Bern, 25.06.2025

Liebe Eltern und Erziehungsberechtigte

Im Februar und März 2025 habe ich an der Klasse 6b mein Abschlusspraktikum absolviert. Es war mir eine grosse Freude, mit Ihren Kindern zusammenzuarbeiten.

Im Textilen Gestalten habe ich mit Ihren Kindern ein Projekt für meine Bachelorarbeit durchgeführt. Wie Sie damals bereits informiert wurden, führte ich das Textile Gestalten über sechs Wochen auf Englisch durch nach dem Ansatz CLIL (content and language integrated learning) – das Projekt war sehr lernreich und es sind viele tolle Arbeiten entstanden (Taschen aus alten Plastikfolien).

Damit ich dieses Projekt für meine Bachelorarbeit optimal dokumentieren konnte, haben Sie eingewilligt, dass ich Sequenzen aus dem Unterricht aufnehmen (Video & Fotodokumentation) darf. Diese Videosequenzen analysiere ich momentan im schriftlichen Teil meiner Arbeit.

Da die Videoaufnahmen während dem Unterricht entstanden sind, ist **der Vorname Ihres Kindes in den Aufnahmen teilweise hörbar/ erkennbar**. In der **schriftlichen Arbeit werden jedoch keine Namen erwähnt** – es wird nur auf die einzelnen Videosequenzen Bezug genommen. Die Aufnahmen und Fotos werden ausschliesslich für die Analyse und Reflexion meiner Bachelorarbeit am Institut der PHBern verwendet.

Wenn Sie damit einverstanden sind, dass der Vorname Ihres Kindes im Videomaterial in gewissen Sequenzen erkennbar ist, bitte ich Sie, die untenstehende Einverständniserklärung Ihrem Kind ausgefüllt mitzugeben.

Ich danken Ihnen im Voraus herzlich für Ihre Unterstützung und Ihre Bereitschaft, mein Studienprojekt zu unterstützen.

Sollten Sie Fragen haben, zögern Sie bitte nicht, mich über die oben angegebenen Kontaktdaten zu erreichen.

Freundlichen Grüsse

Rebecca Röthlisberger

✂ ----------

Einverständniserklärung

Hiermit stimme ich zu, dass der **Vorname Ihres Kindes** in den Videoaufnahmen der einzelnen Sequenzen aus dem Unterricht **erkennbar/ hörbar sein darf**. Die Videos werden nur für die Analyse des Unterrichts und Auswertung des Lernfortschrittes in meiner Bachelorarbeit genutzt – **keine Namen** werden in der schriftlichen Arbeit erwähnt. Ich kann diese Zustimmung jederzeit widerrufen.

_____ _____

Vor- und Nachname des Kindes Vor- und Nachname einer erziehungsberechtigten Person

_____

Ort, Datum und Unterschrift einer erziehungsberechtigten Person

11.3 Aufgabenstellung TTG 2 Modul

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Pädagogische Hochschule

Foto Niki Huwyler. In: WWF Schweiz, Ab in die Natur – draussen unterrichten. Online: https://www.wwf.ch/de/aktiv-werden/ab-in-die-natur-draussen-unterrichten [abgerufen am 19.3.2024].

TTG 2 Zyklus 2 Seminar textil HS24: Draussen zur Schule: Wetterfeste Hüllen

Problemstellung

Unterricht draussen abzuhalten ist keine neue, aber immer wieder eine hochaktuelle Idee. Für die Aufgabenstellung im Seminar gilt es in diesem Sinn, einfache Schutzhüllen für Gegenstände zu entwickeln, die bei der Stadtentdeckungstour, in der Landschulwoche oder beim Waldtag dabei sein müssen. Dies kann zum Beispiel ein Forschungsheft sein, in denen die Lernenden Beobachtungen während den Outdoor-Aktivitäten festhalten können, es könnten aber auch Stifte oder der Znüni oder Zvieri sein. Wichtig ist dabei, dass die ausgewählten Gegenstände vor der Witterung geschützt sind, da es ja um das Unterwegssein draussen geht.

Für die wetterfeste Hülle sollen nicht neu produzierte Kunststoffmaterialien verwendet werden, sondern solche, die bereits vorhanden sind und nicht mehr verwendet werden. Im Alltag begegnen wir beim Einkaufen und im Haushalt immer wieder Kunststofffolien in verschiedenen Formen, Farben und Grössen: Viele Lebensmittel oder andere Produkte stecken in Kunststoffpackungen, wenn wir beim Grossverteiler einkaufen und trotz Gebührenpflicht für „Raschelsäckli", Taschen aus PET-Recyclingmaterial und Baumwollstoff spielen auch Plastiksäcke immer noch eine Rolle beim Verpacken und beim Transport von Waren. Die Kunststoffpackungen werfen wir meist weg, die Säcke sammeln sich oft daheim an – mit einigen sind vielleicht sogar besondere Erinnerungen verknüpft oder sie weisen Motive und Musterungen auf, die einen ästhetisch ansprechen.

Das dünne Folienmaterial dieser Verpackungen und Säcke verschweissen wir zu dickeren, stabileren Flächen, deren Stabilität und schützende, feuchtigkeitsabweisende Eigenschaften wir uns zunutze machen. In einem ersten Schritt nehmen wir eine ausgewählte Verpackung genauer unter die Lupe (Produktanalyse).

Schwerpunkte bei der Produktentwicklung

Im Zentrum der gestalterisch-ästhetischen Auseinandersetzung steht ein exploratives, intuitives Vorgehen bei möglichst vielfältigen Experimenten zur Verarbeitung und zur Kombination der vorhandenen Materialien. Dabei arbeiten wir in einer Art Materiallabor, in dem ein mutiges Vorgehen gefragt ist und die Grenzen der Materialien erprobt werden können.

→ Padlet: Erstellen Sie zu Ihren kleinformatigen gestalterischen Versuchen ein Tableau (A3 oder digital) mit möglichst vielen verschiedenen Variationen (mindestens 10), die sie beschriften und fotografieren.

Nachträglich werden wir die verschiedenen Versuche zu systematisieren versuchen. Aufgrund der Erkenntnisse aus der explorativen Phase (Experimentieren und Entwickeln) wird eine Flächengestaltung und damit eine bestimmte Kombination von Farbe, Form und Oberfläche realisiert. Diese soll ein eindeutig erkennbares gestalterisches Thema aufweisen (z.B. Transparenz, typografische Variationen, Oberflächenveränderung, etc.).

→ Padlet: Begründung Entscheid gestalterisches Vorhaben.

Im Zentrum der technisch-konstruktiven Auseinandersetzung steht in einem ersten Schritt die Erprobung des Verfahrens Schweissen.

→ Padlet: Erstellen Sie ein Tableau (A3 oder direkt digital) mit den systematischen Erprobungen zum Verschweissen der Folien.

In einem weiteren Schritt geht es um die Konstruktion der Hülle inklusive einfachem Verschluss. Was muss die Hülle können, was ist wichtig, wie soll sie funktionieren? Erstellen Sie mindestens drei verschiedene Varianten von Papiermodellen

→ Padlet: Halten Sie die Varianten in einem Bild fotografisch fest. Beschriften Sie wichtige Details und begründen Sie kurz den Entscheid für eine Variante.

In weiterführenden Experimenten zur Gestaltung der Randabschlüsse können gestalterische und technische Aspekte kombiniert werden.

Hinweis: Auf Padlet finden Sie weiterführende Informationen sowie einige Tipps und Tricks: https://phbern.padlet.org/verenahuber_phbern/ttg-2-mst-fs24-wetterfeste-h-lle-auftr-ge-und-informationen-3xxd2a6krzvbw2n

11.4 Upcycling Product Assignment & Criteria

Task	You are going to create a **bag or a case** out of old **plastic-films.** The purpose of the bag or case is to protect something (?) from getting wet.
Conditions	Your bag/ case… - … has to **fulfil** a certain **purpose/ function**. - … needs to be **closable**. It should have a closure such as a zipper, a Velcro-fastening, a button-fastening, etc. - … needs to have a design **out of 3 different plastic films or more.** - … is **not bigger than A4-format.**
Additional ideas/ tasks	Make a cord/ strap, make an inner lining, etc.

Design: Product evaluation criteria

Your Name: _____

	3	2	1	0
Your bag/ case…				
… fulfils a certain purpose (Zweck)/ function: _____				
… has a closure such as a zipper, Velcro, button, etc. and or it has a strap.				
… has a design out of three (or more) different plastic films.				
… was produced carefully and is quite robust/ durable (not falling apart)				

Comment:

_____

_____

Beurteilung:

Punkte: / 12	Note:	Unterschrift:

Punkte	12	11	10-9	8	7	6	5	4>
Note	6	5.5	5	4.5	4	3.5	3	stark ungenügend

11.5 Learning Objectives

11.5.1 Subject-specific competencies

…extracted from LP 21 referring to the Upcycling project in TD (Bildungs- und Kulturdirektion des Kantons Bern 2016, pp. 399–413).

Die Schülerinnen und Schüler können…

Wahrnehmung und Kommunikation

- …Gestaltungs- bzw. Designprozesse und Produkte begutachten und weiterentwickeln. TTG.1.B.1
- …Gestaltungs- bzw. Designprozesse und Produkte dokumentieren und präsentieren. TTG.1.B.2

Prozesse und Produkte

- …eine gestalterische und technische Aufgabenstellung erfassen und dazu Ideen und Informationen sammeln, ordnen und bewerten. TTG.2.A.1
- …experimentieren und können daraus eigene Produktideen entwickeln. TTG.2.A.2
- gestalterische und technische Produkte planen und herstellen. TTG.2.A.3
- …Wirkungen von Materialien und Oberflächen treffend beschreiben und für das eigene Produkt bewusst auswählen. TTG.2.C.1b
- …handwerkliche Verfahren ausführen und bewusst einsetzen. TTG.2.D.1
- …Eigenschaften von Materialien benennen und diese bewusst einsetzen (Holzwerkstoffe, Polystyrol, Draht, dünne Bleche, Leder, textile Materialien). TTG.2.E.1b

Kontexte und Orientierung

- …kennen kulturelle und historische Aspekte von Objekten und können deren Bedeutung für den Alltag abschätzen (z.B. Bekleidung, Wohnen, Spiel, Mobilität, Elektrizität). TTG.3.A.1b
- …kennen ökonomische, ökologische und gesellschaftliche Argumente zu Kauf und Nutzung von Materialien, Rohstoffen und Produkten (Textilien, Holz, Holzwerkstoffe, Kunststoffe). TTG.3.B.1a
- …kennen die Herstellung und die sachgerechte Entsorgung von Materialien und können deren Verwendung begründen. TTG.3.B.2

11.5.2 Specified subject competencies

…in relation with the project along the design process. Own formulation:

Week 1	
Collect & put in order	You can… - … collect different plastic films you like - … sort different plastic films and **describe its characteristics** (with the help of chunks)
Experiment & develop	You do at least… - … **one technical experiment** (ironing different films)
Week 2	
Experiment& develop	You do at least… - …**one technical experiment** (testing tricky part of planned project) - …**two designing experiments** (arrange plastic films in two different ways)
Plan	You make a… - … **sketch of your planned product** - … **a prototype** of your planned product (with table fleece)
Week 3-6	
Produce	You make a… - bag/ case you like
Evaluate & further develop	You can… - … **review your product** during production and **further develop** (adapt/ change things) - … ask for support.
Week 6	
Present & Document	You can… - … **present the steps** (process) of your production to others (describe what you did) → time at the end of each lesson & presentation in the end

11.5.3 Content and language objectives

Content and Cognition (own formulation):

The students…

- …understand what upcycling is.
- …know the difference between upcycling and recycling.
- …understand the problem of single-use plastic (microplastics) and how it pollutes the environment (where it mainly ends up).
- …get acquainted with the terms plastic pollution, environment, sustainability, climate, co 2, threat, ocean, dispose, plastic-waste, recycling, fossils; oil, production… → cf. Assessment 1 (p. X)

Linguistic objectives

The students…

- …acquire new subject-specific vocabulary in doing (such as sewing machine, zipper, clips, etc.)→ cf. Assessment 2 (p. X).
- …acquire new vocabulary in relation with content-matters and can name/ describe or explain it (such as microplastics, landfill, etc.) → cf. Assessment 1
- …(use chunks) to describe the characteristic (haptic and aesthetic features) of material → descriptive language.
- …(use chunks) to describe their working process.

11.6 Unit Lesson Plan

content/ action	setting	scaffolds	material
Week 1			
- **Pre-Assessment 1 (content)**	In beforehand pick out ss individually		- Camera - Pictures, terms (material pre-assessment)
- Context about the coming weeks **2'** - Plastic 1: disposal& problems **30'** - Sort& analyse plastic films **30'** - Tech. Exp. 1 (iron plastic films), reflect/ describe characteristics **45'** **Start of project:** give concrete info * **10'** - What is Upcycling? Brainstorming ideas for bag/ case **30'** - Start with word-bank **5'**	In class T-P-S install 4 iron-stations, instruct how to do it! In class Think about products' purpose? In class	- Word-bank* - Chunks/ words for analysis (template) and to describe characteristics. First, show example! - Brainstorming: Free choice what bag/ case to produce. Except for certain conditions (see Assignment to Ss). Support: **give ideas if needed!** **Always: Work with illustrations (pictures/ graphics) & body language (action)!**	- Camera, station - WS Plastic 1 - Diff. plastic films - Template with chunks (analysis) - Iron, baking paper, fabric - Chunks/ words to describe characteristics - * Evaluation-criteria (assignment to Ss)→ hand out and discuss - WS Upcycling/ Brainstorming - Paper (mind-map) - Poster for word-bank
Week 2			
- Show pics, repeat text about Upcycling (easier version) & collect/add important terms (word-bank) **10'** - Repeat characteristics of plastic-films (product analysis) **10'** - **Pre-Assessment 2 (subject specific voc.) 10'** - Repeat machine-application **10'** - Procedure of prototype/ sketch for product (show example), show options first (ways how to make bottom, closure…) **15'** - Plan (sketch) / sew prototype **30-40'** - Designing-Exp.: create "base" **20'** - (Start production: create& iron* the "base") - Describe characteristics of plastic-films used for the "base" **5-10'** - Word-bank **5'**	In groups In class Individually Show to ss Individually → explain conditions Individually In groups In class	- Product analysis: differentiate - Example procedure: Think about how to create bag for a specific object (show ss what is important), also sketch& write down measures. - Visualize instructions and options! - Base/ underground of plastic-films: should be big enough, cut it straight, iron& sewing allowed (not all plastic films have to be ironed…) - *Repeat steps of ironing plastic films - Ironing: consider lesson learnt during Technical Experiment 1 - Provide chunks/ words to describe! *Goal: every Ss knows what plastic films to take!*	- Camera, station - Chunks/ words to describe characteristics - Simplified text Upcycling - Assessment 2 (Worksheet) - Sewing-machine, material to sew - Closures (Velcro, zipper, button) - Paper, scissors, pencil, ruler - Table-fleece (prototype) - Diff. plastic films/ packaging - Iron, baking paper, fabric - Poster for word-bank
Week 3			
- Warm-up: Repeat words on word-bank (activity) **5'**	In groups	- Support individually	- Camera, station - Sewing-machine, material to sew

- Tech. Exp. 2: testing to sew plastic films **10-15'** - Start/ continue production: iron, cut, start sewing*… **50-60'** - Describe process/ material used so far, reflexion **5'** - Word-bank **5'**	Show to ss, then individually Individually In class In groups In class	- *Think backwards: what to do first (prepare for ss) - ! consider lessons learnt during two Technical Experiments - Model/ give an example of how to describe the process (First I, then I…) *Goal: everybody is done ironing and started sewing!*	- Closures (Velcro, zipper, button) - Iron, baking paper, fabric - Diff. plastic films/ packaging - Chunks/ words to describe characteristics & process - Poster for word-bank
! Tuesday (18.02.) in NMG LESSON: ss learnt about Recycling process and about difference of recycling& upcycling			
Week 4			
- Warm-up: Ss repeat Vocab on word-bank (content-based Vocab.)→ Show pic then they say according word. - Continue production - Describe process/ material used so far, reflexion (what was hard/ easy?) **10'** - Plastic 2: Recycling, discuss difference of Upcycling and Recycling **30'** - Word-bank **5'**	In class Individually T-P-S In class	Support individually	- Word-bank (contend-based Vocab) - Sewing-machine, material to sew - Iron, baking paper, fabric - Diff. plastic films/ packaging - Chunks/ words to describe characteristics & process - WS plastic 2 - Poster for word-bank
Plan-change/ adaption: Some (most) are almost done (one is already done). So, they will finish their project in week 5 and then do/ start another very small bag/case.			
Week 5			
- Plastic 3 – Repetition **10'** - Continue production - Describe process/ material used so far, reflexion (what was hard/ easy?)	In class Individually T-P-S	Support individually *Goal: getting done as far as possible!*	- WS plastic 3 - Sewing-machine, material to sew - closures (Velcro, zipper, button) - Chunks/ words to describe characteristics & process
Week 6			
- Warm-up: Repeating words of word-bank (activity) **5'** - Finish production/ do 2nd project! – Post Assessment records **80'** - Present projects (describe product, characteristics, design, process, reflexion) **20'** - **Post-Assessment 2** (**10'**)	In class Individually In class Individually	Support individually Provide chunks (only if needed!) While ss finish, I pick out separately for **post-assessment 1** *Later:* summative evaluation of bag /case (acc. to evaluation criteria)	- Word-bank - Sewing-machine, material to sew - Closures (Velcro, zipper, button) - Chunks/ words to describe product/ process - **Post-Assessment 1&2**

Pre-Assessment, context, experiments& plan (1st steps of design process: collect & order, experiment& develop, plan)

Project production

Finishing, presenting, post-assessment

*idea of **word-bank:** I start it with important words/ chunks, then it keeps on growing over this six week with words/ chunks we collect. Idea is also to repeat and add words of the word-bank each week. 3 kinds of word-banks'→ subject specific, content, chunks (3 posters)

Written in blue: plastic theory sequences

When Englisch? When German? I speak in English always (exceptions), Written in orange= Students speak in Englisch among each other. We use and repeat same vocab/ chunks over 6 weeks (coherence) → word-bank. Scaffold: give example, chunks, terms or words they can/ should use.

Recording (what? When?)

- Assessments
- Parts in which Ss speak in Engl.
- Parts in which I instruct

Assessments/ Evaluation

- **Pre-Assessment 1:** Show different pictures, Ss match the terms (content) to the pics and tell me why they've put it there. The plastic-film-analysis and description of characteristics is also part of the Pre-Assessment.
- **Pre-Assessment 2:** Ss match objects and names (subj. specific).
- **Post-Assessment of 1&2:** to observe the learning-progress. The presentation of the product is also part of the post-assessment.
- **Evaluation (summative):** product (bag/ case) acc. to criteria

Learning outcome→ Vocab:

Content-wise

- Plastic pollution, environment, sustainability, climate, co 2, threat, ocean, dispose, plastic-waste, recycling, fossils; oil, production…
- Upcycling, creativity, innovation → direct link to subject specific

Subject-specific (during production)

- Explore haptic and aesthetic features/ characteristics of different plastic films/packaging→ see why this is important to know (it helps designing real product; what material to choose, etc.). Voc: stretchy, hard, soft, thin, thick, fine, rough, bendable, stiff, transparent, dull, shiny, sparkling, etc.
- Sewing machine, fabric, pins, clips, plastic, films, iron, process, needle, thread, scissors, cut, measure, mark, set square, ruler, border, edge, seam, allow extra space/ fabric, button, zipper, closure, etc.

Learning progress: Should get visible through the two assessments (pre compared to post) as well as the several oral sequences in English (describing technical& aesthetic characteristics, describing process of action) → record!

11.7 Plastic Theory worksheets & plan

Plastic 1 – Production and Problems of Disposal

Look at the following image of ocean pollution. In small groups, discuss:

- What do you see?
- Why did it end up here?

Video

A. Watch this short video on the problems of single-use plastics: “The Problems with Single-use Plastics”

- What is single-use plastic?

_____

----------*(fold)*----------

- One cause (something that leads to plastic pollution) and one effect (something that happens because of plastic pollution) mentioned in the video.

Cause: _____

Effect: _____

B. The life cycle of plastic. Watch the video again and match the words and pictures. Then arrange in the correct order (1-6).

landfill	consume	dispose	getting oil	production

- Problems of single-use plastic?

_____

----------*(fold)*----------

- What is the problem with landfills?

_____

- What was surprising to you?

_____

Upcycling and Brainstorming Ideas

A. Look at examples of upcycled plastic products.

- What you can use it for:

_____

- A design feature you like (color, shape, pattern, etc.):

_____

- A challenge you see (e.g. sewing thick layers):

_____

B. Read this short text about upcycling.

Upcycling means turning old or unwanted items into something new and useful, like making a reusable bag from an old t-shirt. Or making a bag out of old plastic films. It helps the environment by reducing waste and saving resources like trees and water, so less trash ends up in landfills. Upcycling is a form of innovation that lets us be creative while keeping the planet cleaner and greener.

After reading the text (cf. Upcycling and Brainstorming Ideas, B) with the students, I realized it was too hard, so I adapted it to this: Upcycling is when we make something new out of old material. For example, making a reusable bag from an old t-shirt. Or making a bag out of old plastic. This helps the environment because we reduce waste and we save resources like oil. Less trash is disposed in landfills. Upcycling is a form of innovation because we can be creative and try out a new idea.

- What is the main idea of Upcycling? Choose the correct answer a) b) or c)

a. Upcycling helps us get rid of trash by burning it.
b. Upcycling means turning old things into new useful things to help the environment.
c. Upcycling is a way to throw things away.

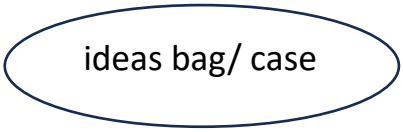
C. Brainstorming ideas for your case/ bag

In your group, brainstorm possible upcycling ideas for a bag or a case using plastic films.

- What function could your upcycled bag/ case have? _____

_____

- Create a mind-map on the next page.



D. Share & Feedback

1. Share your idea with your group.

2. Collect feedback:

- One thing they love about your idea:

_____

- One suggestion to improve it:

_____

Plastic 2 – Journeys of plastic bottles & Recycling

A. Watch the video on what really happens to plastic we throw away. "What really happens to the plastic you throw away".

While watching, take notes on:

- **3 places** plastic might end up.
    1. _____
    2. _____
    3. _____

- What is micro-plastic?

_____

----------*(fold)*----------

- How long does it take for plastic to break down?

_____

- One of the three bottles ends up in the ocean. Why is this a problem?

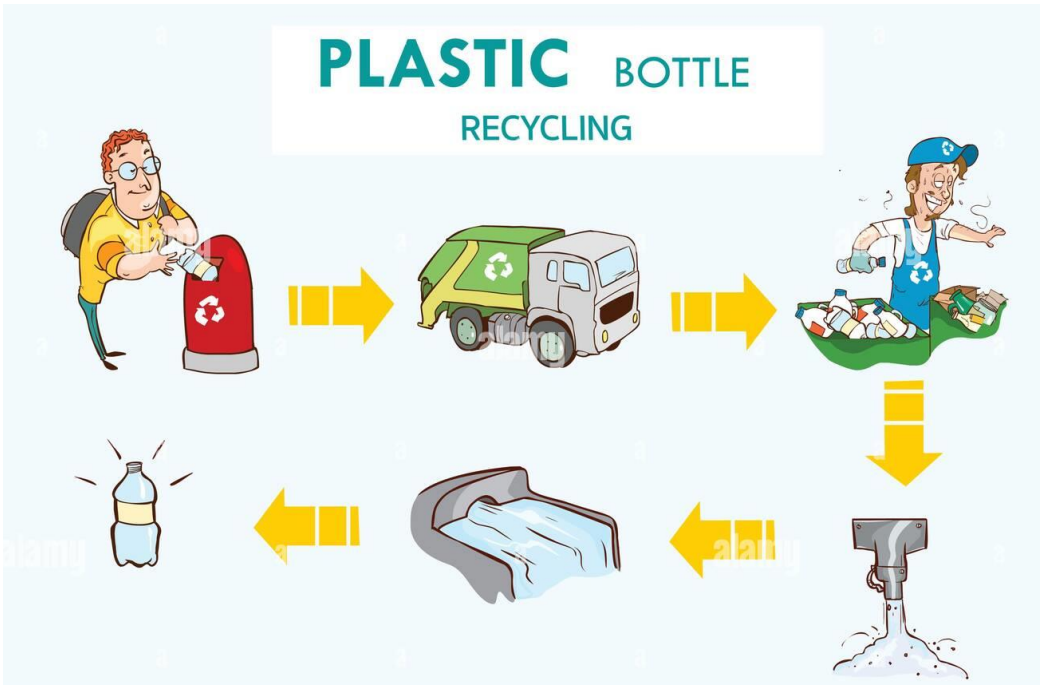
_____

B. Watch the journey of the last bottle again. What does this sign mean?

C. What happens to plastic bottle 3 during the recycling process?

Explain to your neighbour what you see on the image below. The following words might help you:

Trash, recycling place, break down, melt to raw material, create new plastic bottle



D. Why is Recycling important?

It is important because… | it is… | you can…

The following words might help you: *reuse, reduce, save, create, produce, less, environment, waste…*

Plastic 3 - Repetition

A. Below are some key words. Match each to its definition:

1. Microplastics
2. Landfill
3. Upcycling
4. Recycling
5. Disposing
6. Production

Definitions:

A. Transforming waste into something new.

B. Small plastic pieces that pollute water and food.

C. A big place to bury trash.

D. Get rid of something/ throw something away.

E. Put something back in its raw state and reuse it.

F. Make/ create something.

B. Discuss in pairs:

- What is the problem of single-use plastic?
- How is most plastic disposed?
- Why is upcycling important? Why is recycling important?
- In your opinion, what's the biggest advantage of upcycling?
- What is the difference between upcycling and recycling?

Plastic theory plan

Content/ Activity	Scaffolding/ Differentiation	Material
Plastic 1 – dispose& problems (week 1)		
Warm-up/ context: Picture of plastic pollution (same as in pre-assessment), discuss questions **3'** Watch video about single-use plastic and its problems. https://www.youtube.com/watch?v=J8QKy1nh5Ek Ss solve A. Watch video again. Then solve B.	Provide appropriate vocab/ chunks! "folded" part → advanced/ further questions B. arranging pics in correct order might be advanced task. T-P-S!!	- Chunks for Warm-up! - WS, p. 1& 2 (tasks A& B) - Laptop, Beamer→ Video - Pencil
Upcycling and Brainstorming ideas (week 1/ 2)		
Warm-up: Show images of Upcycling ideas to ss Image sources: https://www.pinterest.com/search/pins/?q=upcycled%20plastic%20products https://ch.pinterest.com/pin/563018696399093/ Ss answer questions to images (task A) Ss read short text about Upcycling and mark the correct statement (task B) Ss start brainstorming ideas for their own Upcycling-project (task C). They create a mind-map and think about their products function/ purpose.	T-P-S	- WS, p. 3-4 - Laptop, beamer→ images - pencil https://brightly.eco/upcycling-meaning/?utm_source=chatgpt.com (reference of upcycling text)
Plastic 2 – Recycling (week 3)		

Show video about where plastic end up (1:00-end) https://www.youtube.com/watch?v=_6xlNyWPpB8 Ss solve A. Ss watch journey of last bottle again (3:12-3:52) Then they solve B-D.	"folded" part: additional/ advanced task C& D in pairs.	- WS, p. 5-6 - Laptop, beamer→ video - pencil
Plastic 3 – Repetition (week 4)		
Ss solve p. 7 individually We correct/ discuss it in class. 5' practicing.		- WS, p. 7

11.8 Product Analysis chunks & overview

It looks...
It feels...
transparent
dull
shiny
sparkling
squared
round
It is... color?
soft
hard
thin
thick
light
heavy
rough
fine
slippery

sticky
bendable
stretchy
stiff
robust
stable

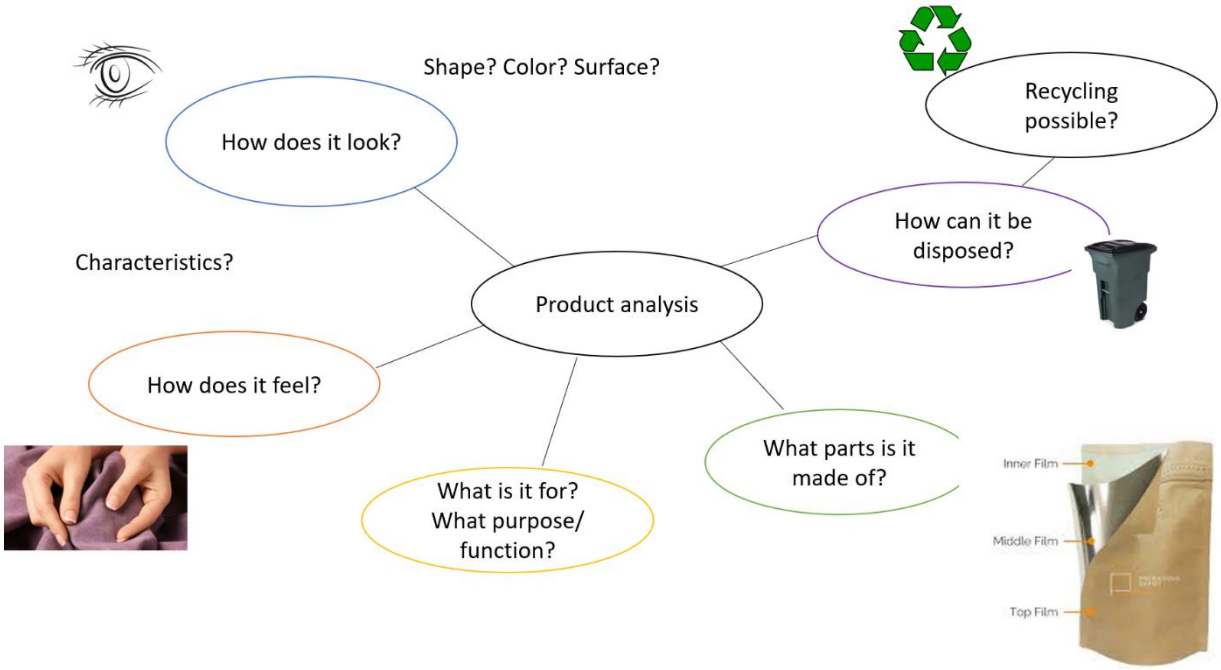
You use this to…
It is to…
…to wrap something (what?)
…to protect something (what?)

It is out of…
It has…

You have to…
You can…

…trash/ dispose it normally
…recycle it

Product analysis overview



11.9 Assessment 1

upcycling
innovation
creativity
new idea
pollution
problem
microplastics
waste
bad for the environment
climate-harming
landfill

ocean
sustainability
melt
dispose
recycling
oil
reuse
reduce
years to break down
resources
production

11.10 Assessment 2

sewing machine | iron fabric | needle | thread | scissors | button | clipps | zipper







cut (out) | measure | fold/ bend | strap/ cord | seam | bottom of bag | closure







Tick the correct answer

1) Sewing something

A) ☐

B) ☐

2) Sewing a straight line

A) ☐

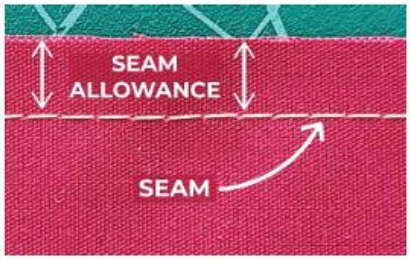
B) ☐

3) Sewing twice, back and forth

A) ☐

B) ☐

4) Leave a space of 1cm from the edge of the fabric



A) ☐

B) ☐

5) sewing a straight line in 3.5 mm long stitches

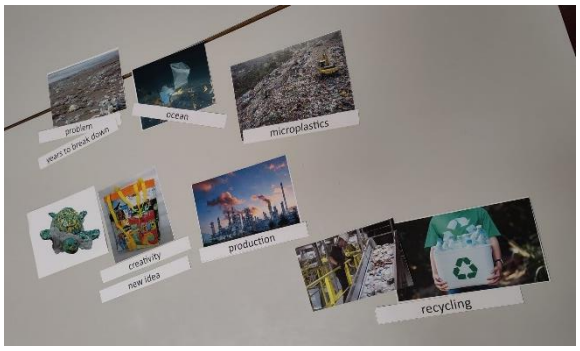
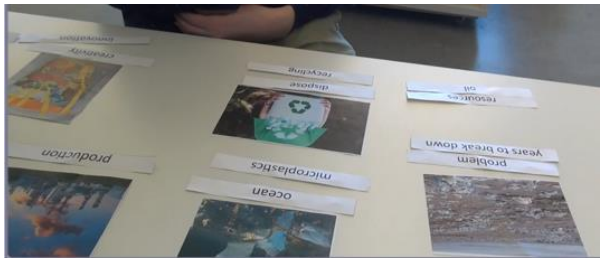
A) ☐

B) ☐

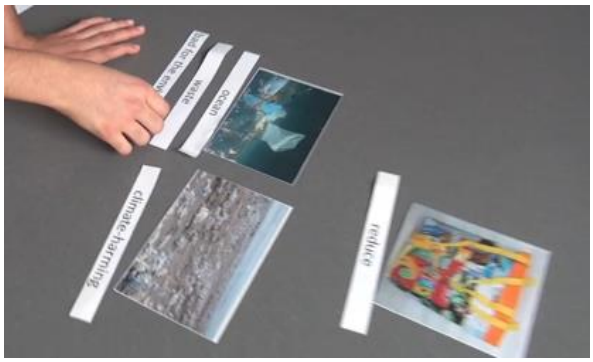
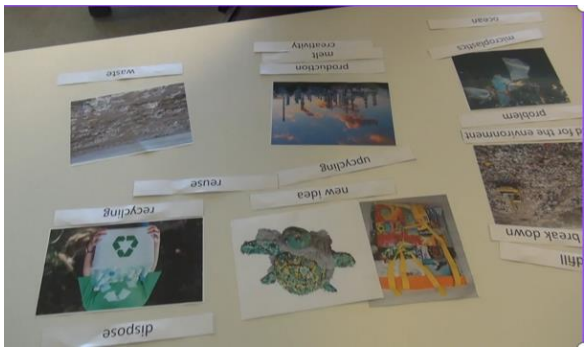
11.11 Evaluation results

11.11.1 Assessment 1: Pre- and post-comparison

Written italicized = Change after 6 weeks (learning progress)

<table>
<tr><th>03.02.2025</th><th>18.03.2015</th></tr>
<tr><td colspan="2">Student B</td></tr>
<tr><td>8 terms: Recycling, Microplastics, Ocean, Problem, New idea, Creativity, Yeas to break down, Production
 
</td><td>14 terms: Recycling, Microplastics, Ocean, Problem, New idea, Creativity, Years to break down, production
New: Dispose, Oil, Resources, Innovation, Upcycling, Landfill
 

 
</td></tr>
<tr><td colspan="2">Student C (native speaker)</td></tr>
<tr><td>17 terms: Landfill, Waste, New idea, Creativity, Sustainability, Innovation, Years to break down, Resources, Bad for the environment, Production, Melt, Recycling, Reuse, Dispose, Microplastics, Problem, Ocean
 
</td><td>22 terms: Landfill, Waste, New idea, Creativity, Sustainability (new, more appropriate position), Innovation (new, more appropriate position), Years to break down, Resources, Bad for the environment, Production, Melt, Recycling, Reuse (new, more appropriate position), Dispose, Microplastics, Problem, Ocean
New: Pollution, Reduce, Oil, Climate-harming, Upcycling
  </td></tr>
</table>

Student D	
10 terms: Production, Landfill, Recycling, New idea, Climate-harming, Creativity, Resources, Microplastic, Problem, Ocean 	**16 terms:** Production, Landfill, Recycling, New idea, Climate-harming, Creativity, Resources, Microplastic, Problem, Ocean *New: Oil, Upcycling, Years to break down, Reduce, Innovation, dispose*  
Student E	
12 terms: Ocean, waste, bad for the environment, reduce, climate-harming, problem, creativity, new idea, upcycling, production, recycling, microplastics  	**15 terms:** Ocean, waste, bad for the environment, problem, creativity, new idea *(new, more appropriate position)*, upcycling, production, recycling, microplastics *(new, more appropriate position)* *New: reuse, dispose, landfill, upcycling, melt* *Omitted: reduce, climate-harming* 
Student F	
10 terms: Problem, new idea, creativity, microplastics, years to break down, ocean, waste, upcycling (wrong position), recycling, production	**13 terms:** Problem, new idea, creativity, microplastics, years to break down, ocean, waste (*new, more appropriate position*), upcycling (*new, more appropriate position*), recycling, production *New: oil, resources, landfill*

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<tr>
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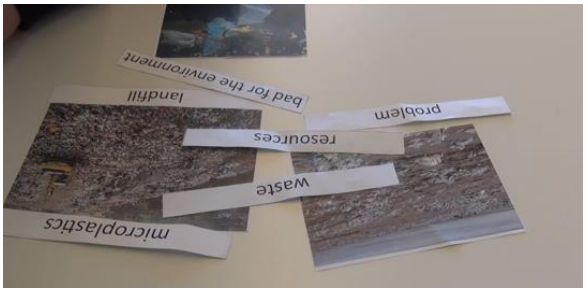
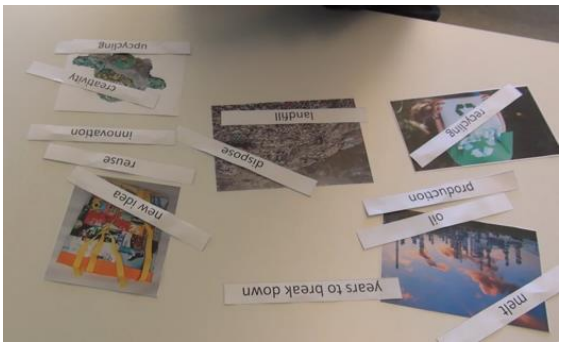
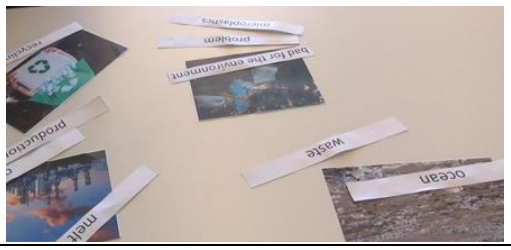
<td> 


</td>
</tr>
<tr><td colspan="2">Student G</td></tr>
<tr>
<td>7 terms: Creativity, production, ocean, microplastics, recycling, new idea, problem

</td>
<td>11 terms: Creativity, production, ocean, microplastics, recycling, new idea (new, more appropriate position), problem
New: landfill, dispose, years to break down, upcycling



</td>
</tr>
<tr><td colspan="2">Student H</td></tr>
<tr>
<td>8 terms: Creativity, new idea, microplastics, ocean, problem, climate-harming, production, recycling</td>
<td>14 terms: Creativity, new idea, microplastics, ocean, problem, climate-harming, production, recycling
New: landfill, dispose, bad for the environment, years to break down, upcycling, oil</td>
</tr>
</table>

	
Student I	
Missing	**16 terms:** upcycling, creativity, reuse, new idea, dispose, landfill, years to break down, melt, oil, production, recycling, ocean, waste, bad for the environment, problem, microplastics  

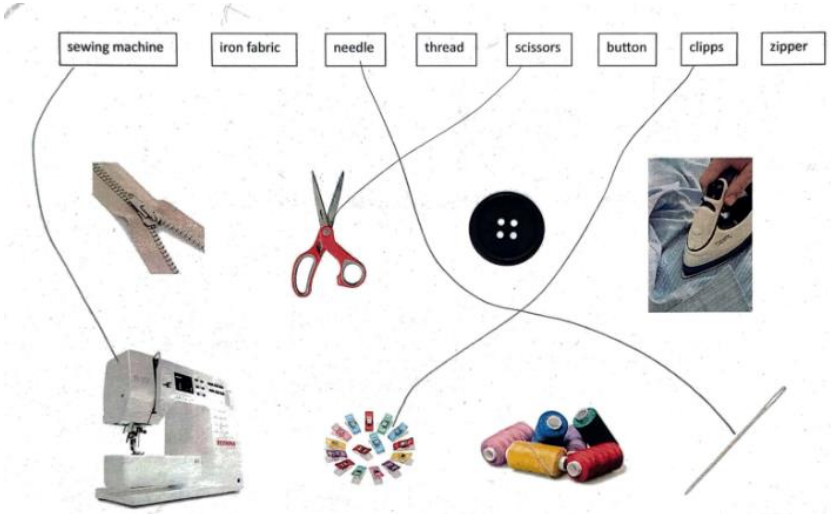
11.11.2 Assessment 2: results

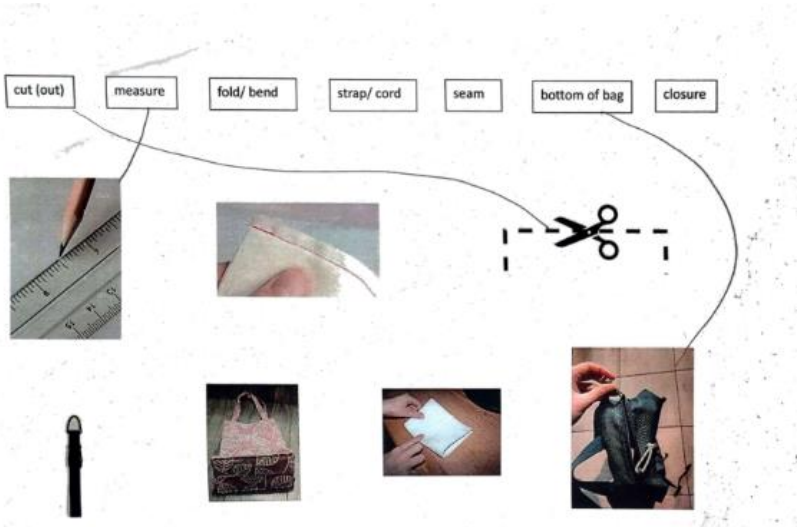
Student	**Correct answers (out of 20)**		**Total answers given (out of 20)**		**mistakes**	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*
A	9	17	11	18	2	1
B	8	20	14	20	6	0
C	19	20	20	20	1	0

D	-	18	-	19	-	1
E	13	18	13	18	0	0
F	14	18	15	20	1	2
G	8	14	10	16	2	2
H	16	20	16	20	0	0
I	18	20	19	20	1	0
	Total:				13	6
	105/8=13.125 In % (13.125/20) = 0.65625	165/9=18.333 In % (18.333/20) = 0.91666				

See detailed results on the following pages.

Student A – Pre





Tick the correct answer

1) Sewing something

A) ☐

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

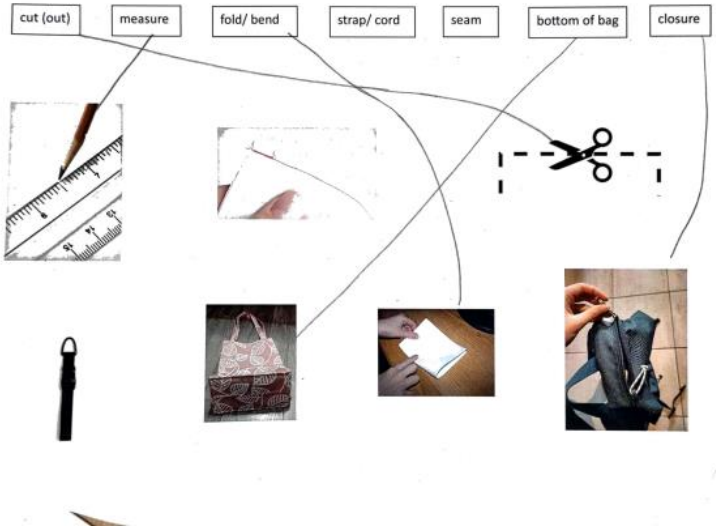
B) ☐

5) sewing a straight line in 3.5 mm long stitches

A) ☐

B) ☒

Student A – Post

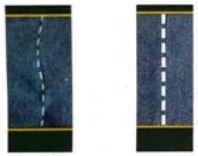


Tick the correct answer

1) Sewing something

A) ☒ B) ☐

2) Sewing a straight line

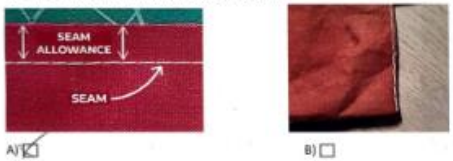


A) ☐ B) ☒

3) Sewing twice, back and forth

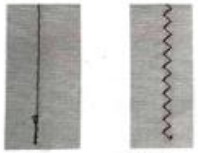
A) ☒ B) ☐

4) Leave a space of 1cm from the edge of the fabric



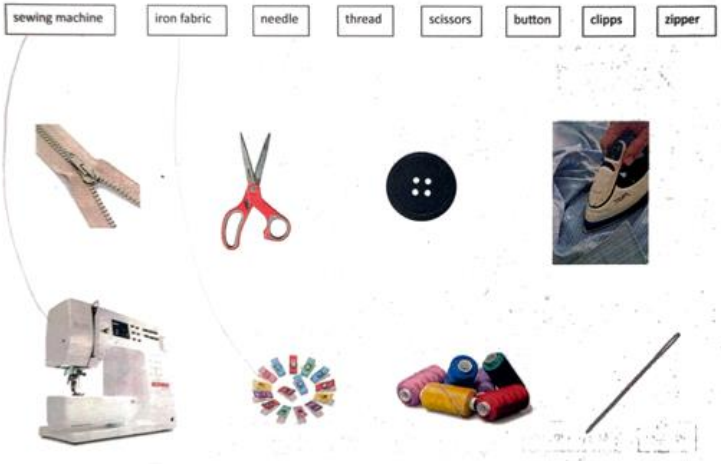
A) ☒ B) ☐

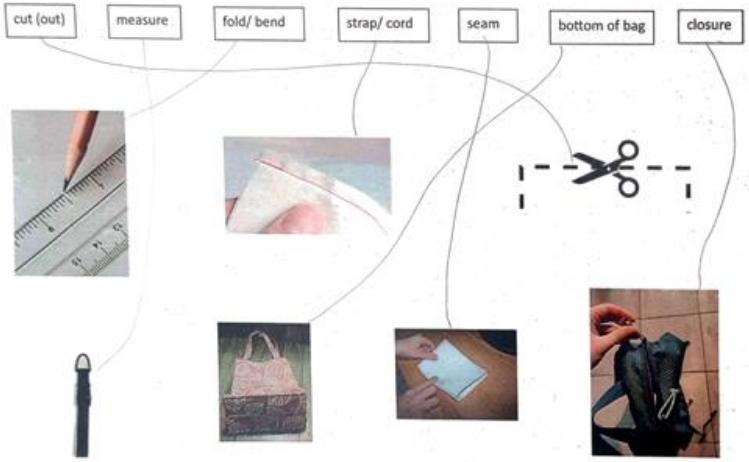
5) sewing a straight line in 3.5 mm long stitches



A) ☐ B) ☒

Student B – Pre



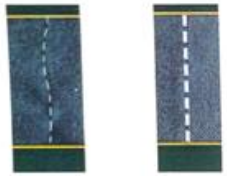


Tick the correct answer

1) Sewing something

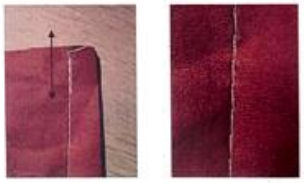
A) ☒ B) ☐

2) Sewing a straight line



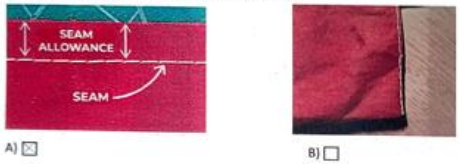
A) ☐ B) ☐

3) Sewing twice, back and forth



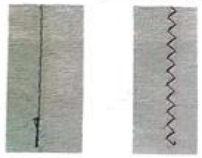
A) ☒ B) ☐

4) Leave a space of 1cm from the edge of the fabric



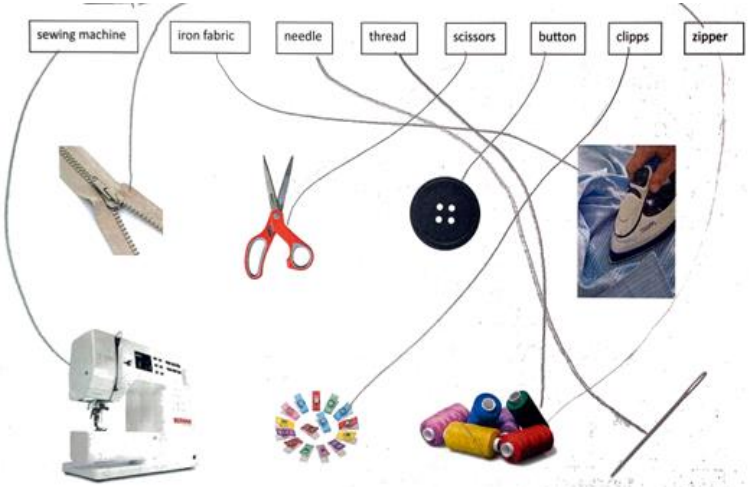
A) ☒ B) ☐

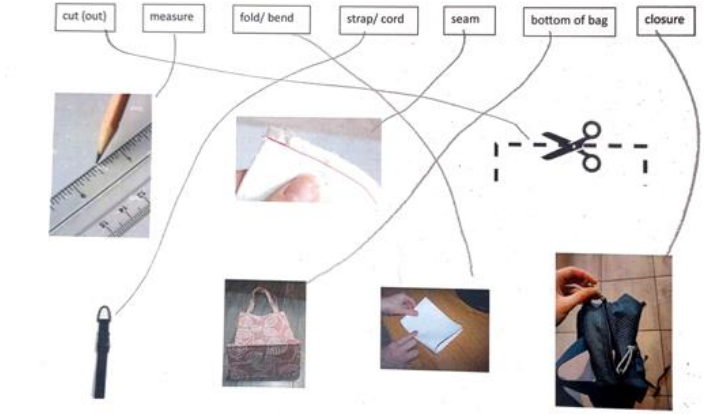
5) sewing a straight line in 3.5 mm long stitches



A) ☐ B) ☒

Student B – Post





Tick the correct answer

1) Sewing something

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

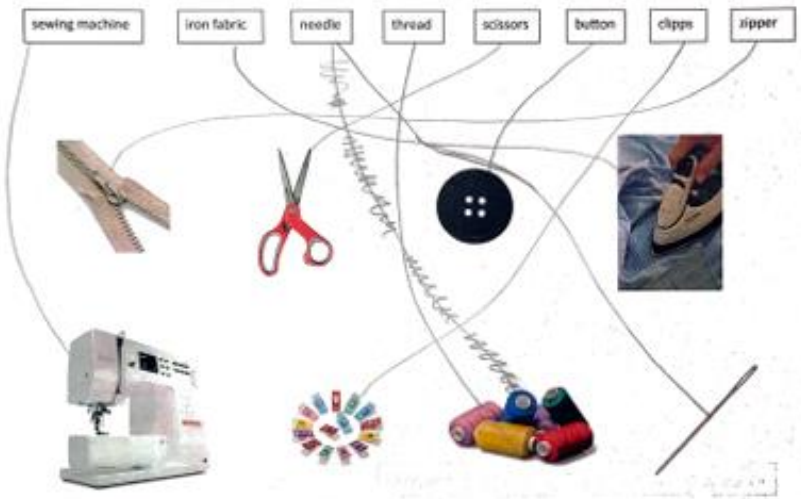
B) ☐

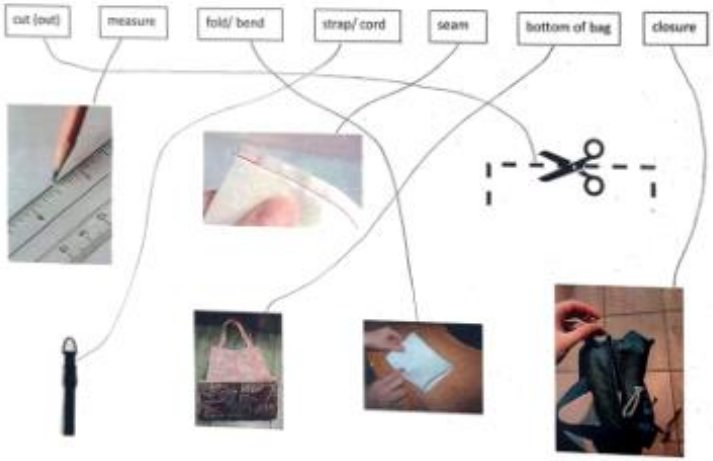
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student C – Pre





Pick the correct answer

1) Sewing something

A) ☑

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

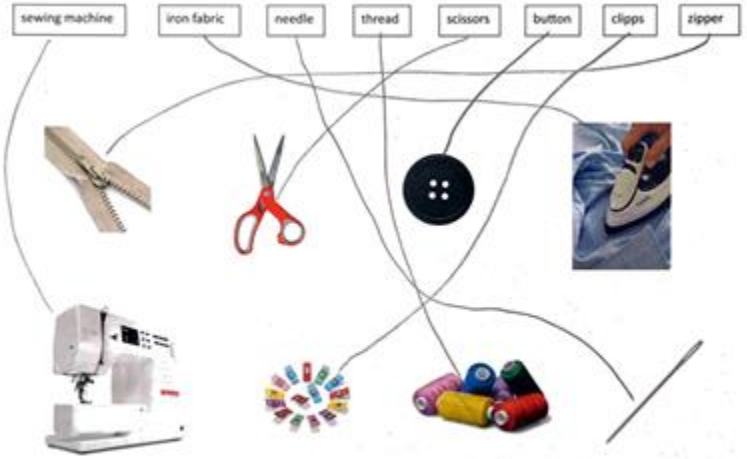
B) ☐

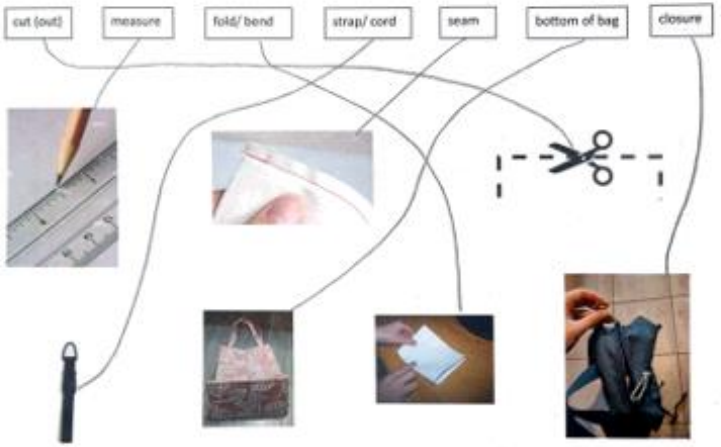
5) sewing a straight line in 3.5 mm long stitches

A) ☐

B) ☒

Student C – Post





Tick the correct answer

1) Sewing something

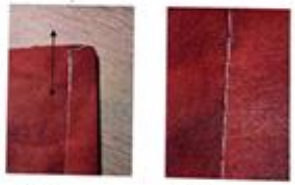
A) ☒

B) ☐

2) Sewing a straight line

A) ☐ B) ☒

3) Sewing twice, back and forth



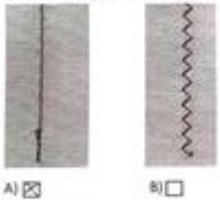
A) ☒ B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

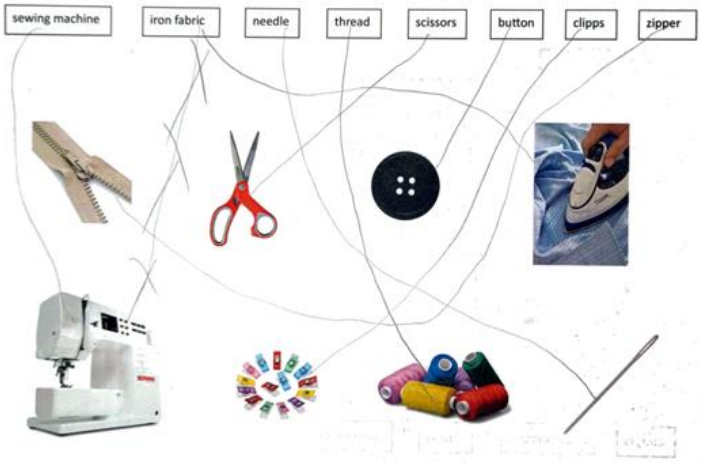
B) ☐

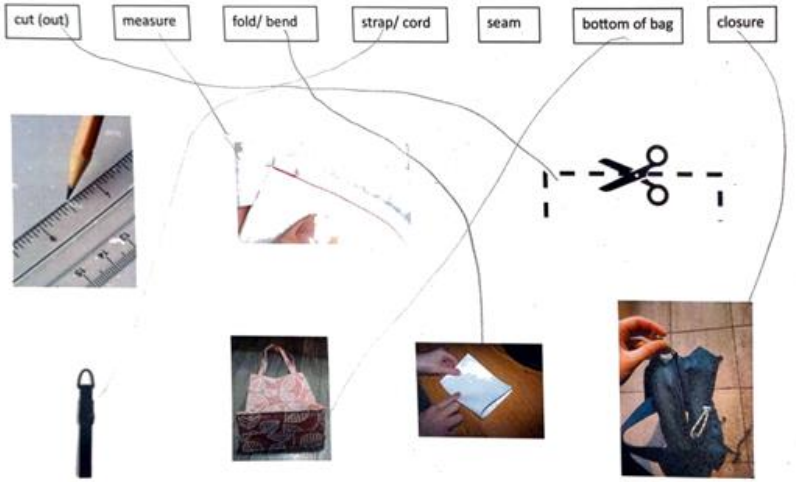
5) sewing a straight line in 3.5 mm long stitches



A) ☒ B) ☐

Student D – Post





Tick the correct answer

1) Sewing something

A) ☐

B) ☒

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

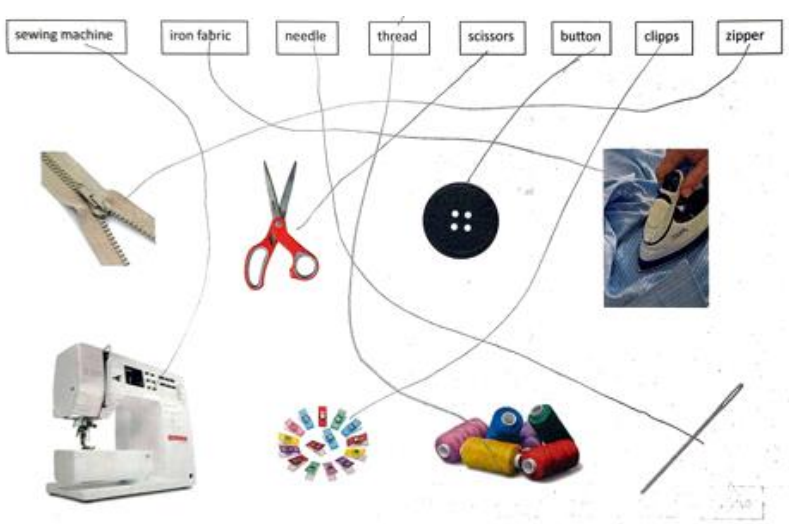
B) ☐

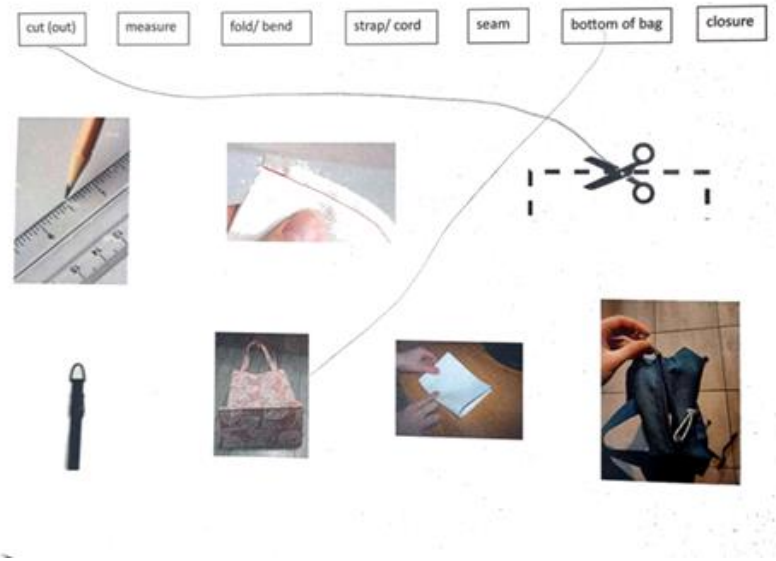
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student E – Pre





Tick the correct answer

1) Sewing something

A) ☒

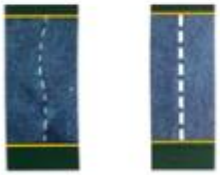
B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☐

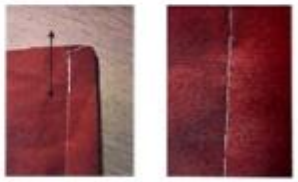
B) ☐

2) Sewing a straight line



A) ☐ B) ☒

3) Sewing twice, back and forth

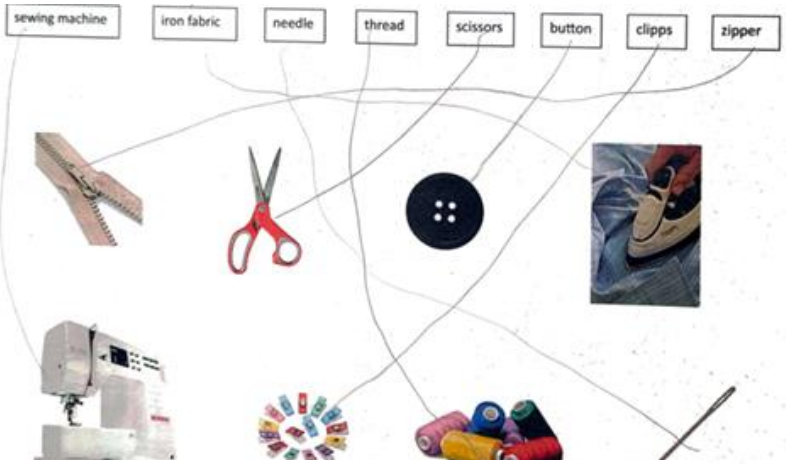


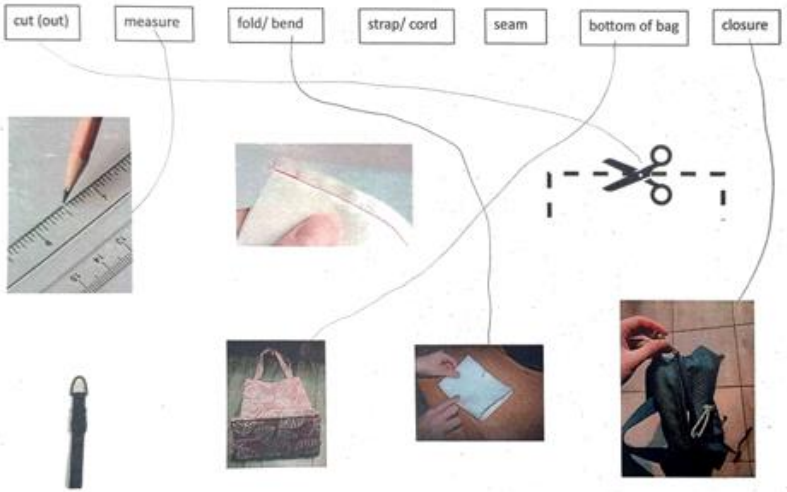
A) ☒ B) ☐

5) sewing a straight line in 3.5 mm long stitches

A) ☐ B) ☐

Student E – Post





Tick the correct answer

1) Sewing something

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

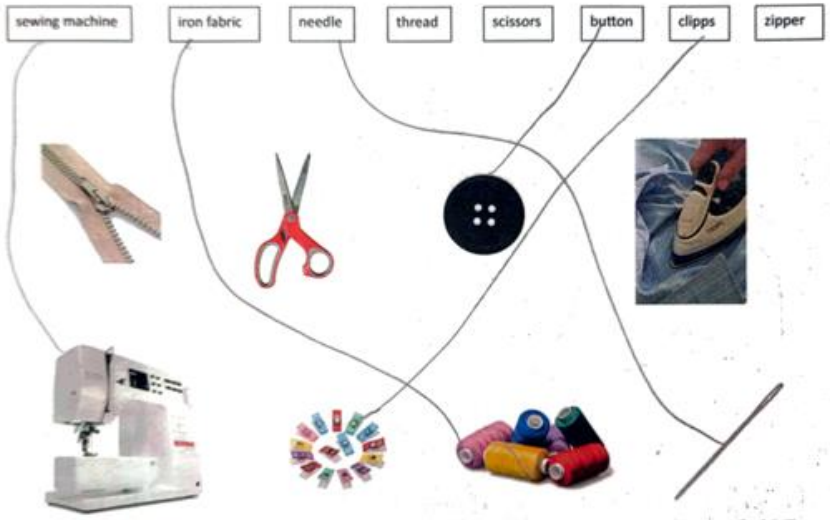
B) ☐

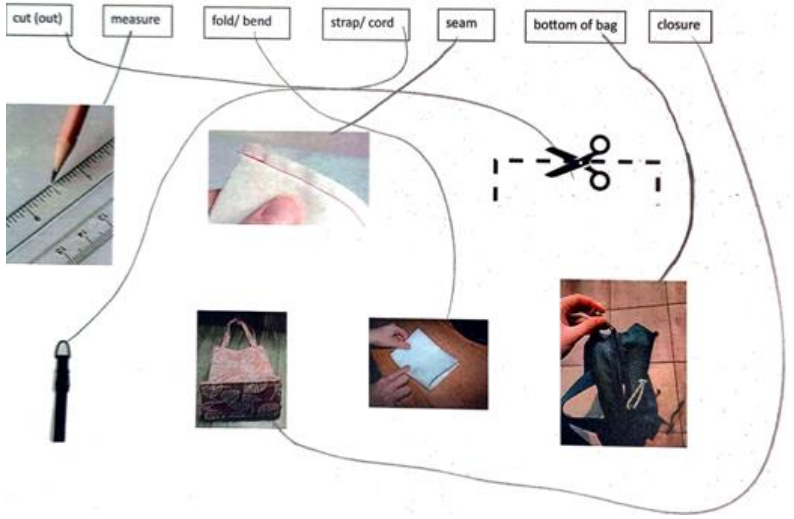
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student F – Pre





1) Sewing something

A) ☐

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☐

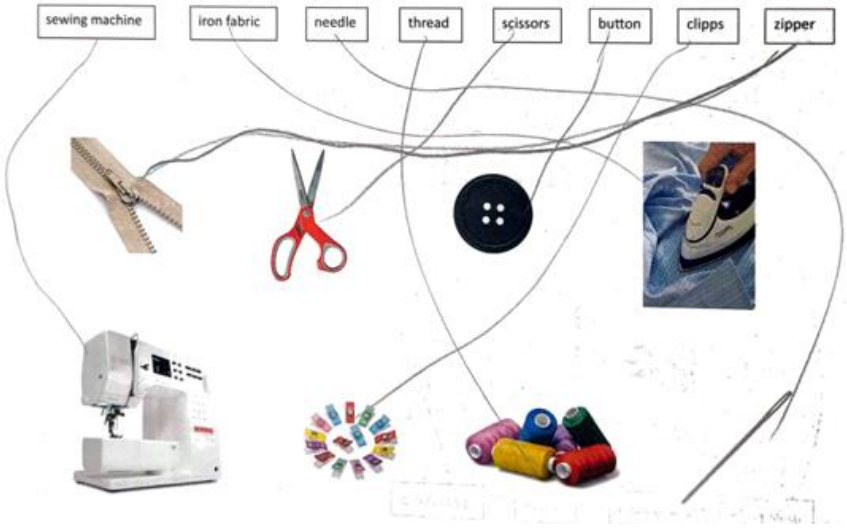
B) ☐

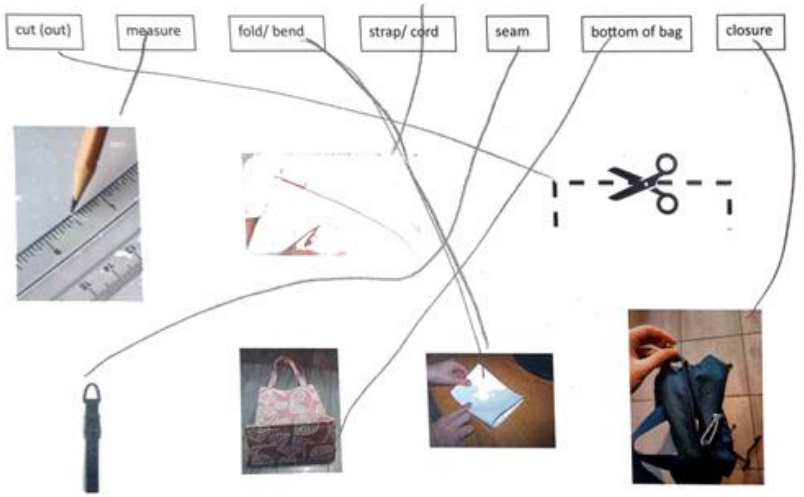
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student F – Post





Tick the correct answer

1) Sewing something

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

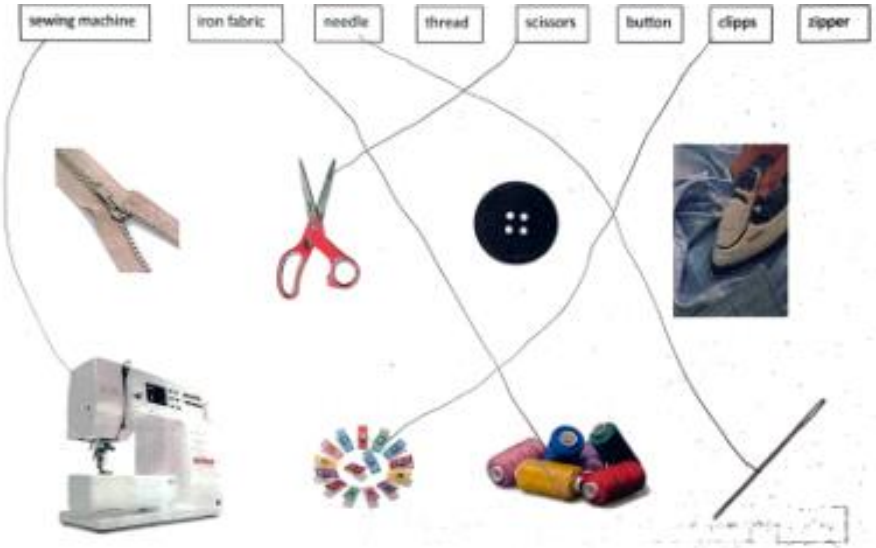
B) ☐

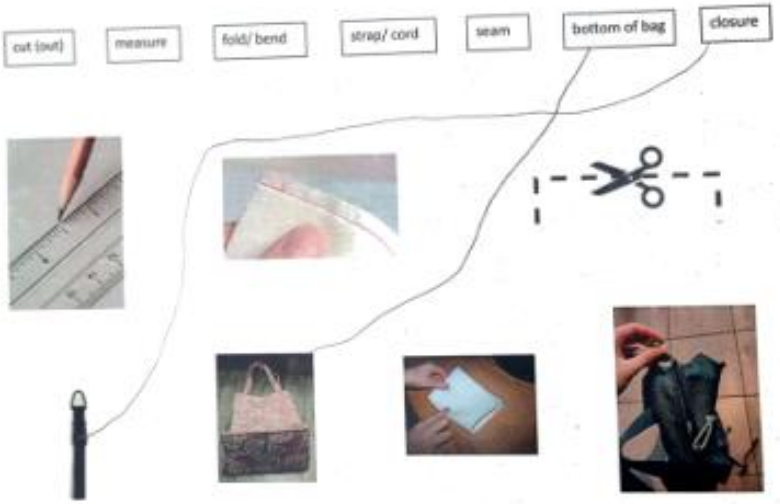
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student G – Pre





Tick the correct answer

1) Sewing something

A) ☐

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☐

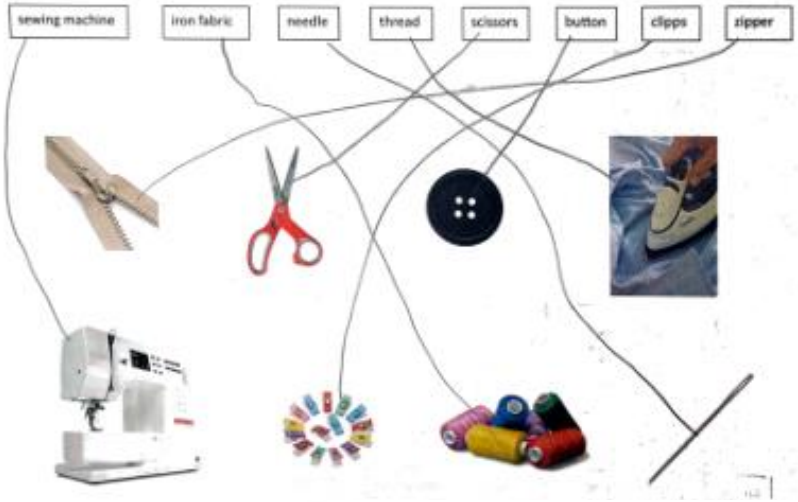
B) ☒

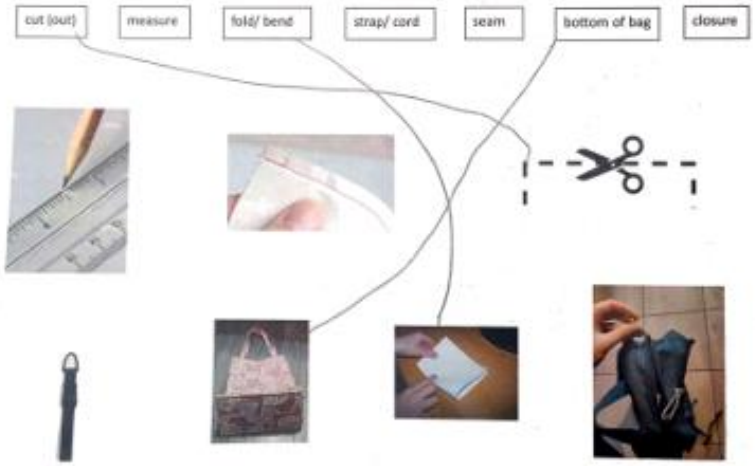
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student G – Post





Tick the correct answer

1) Sewing something

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

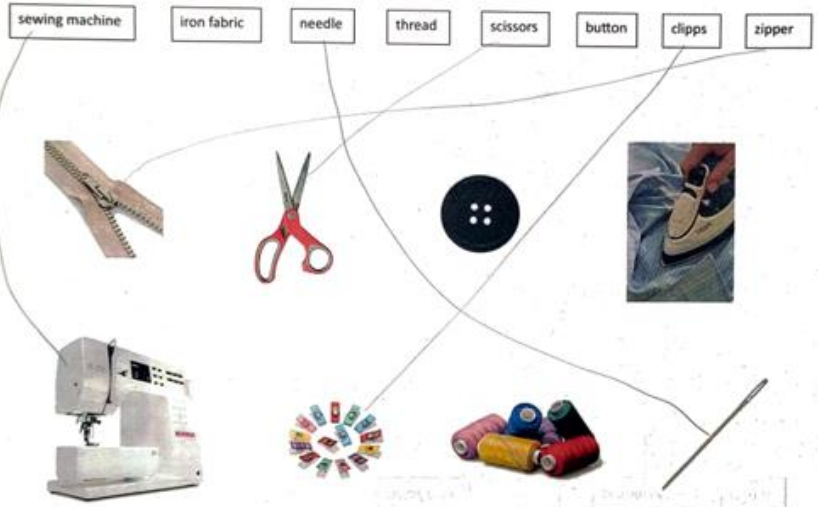
B) ☐

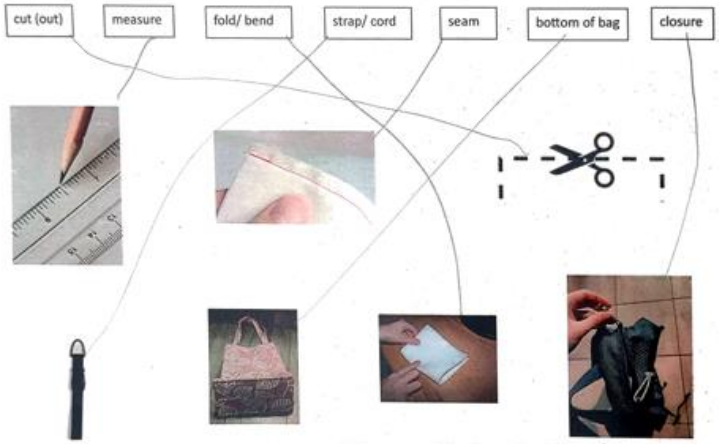
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

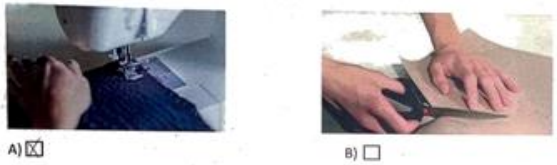
Student H – Pre





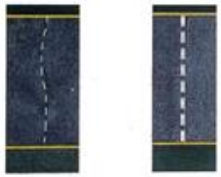
Tick the correct answer

1) Sewing something



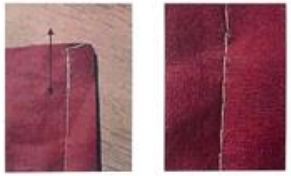
A) ☒ B) ☐

2) Sewing a straight line



A) ☐ B) ☒

3) Sewing twice, back and forth

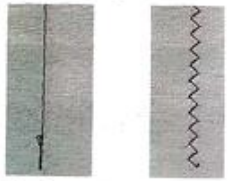


A) ☒ B) ☐

4) Leave a space of 1cm from the edge of the fabric

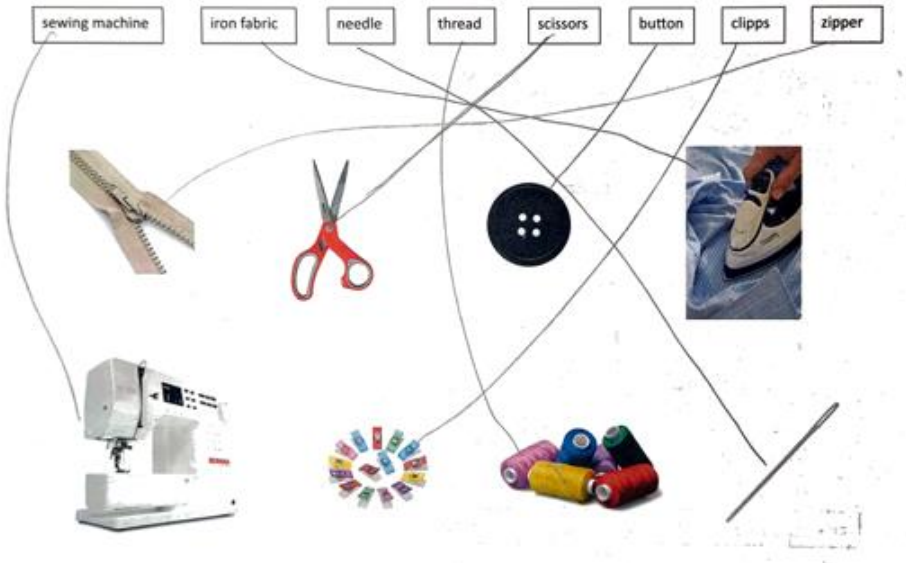
A) ☒ B) ☐

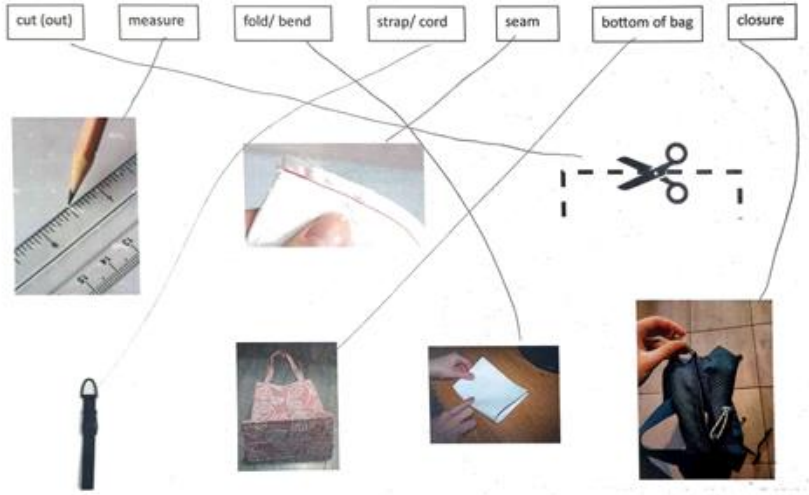
5) sewing a straight line in 3.5 mm long stitches



A) ☒ B) ☐

Student H – Post





Tick the correct answer

1) Sewing something

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

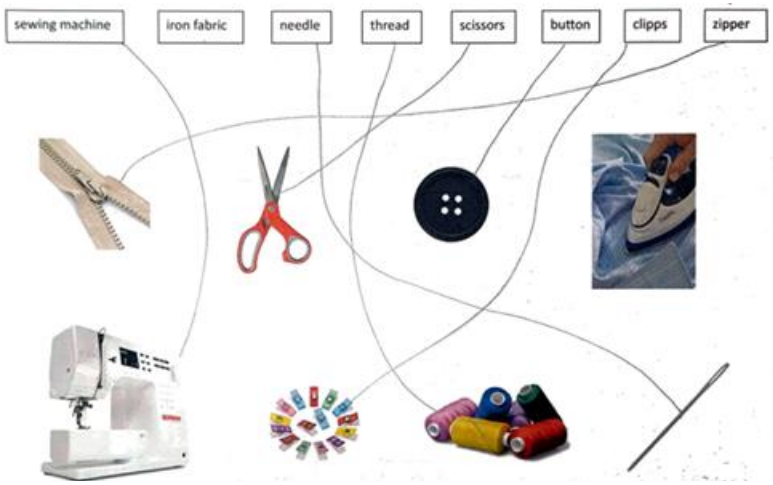
B) ☐

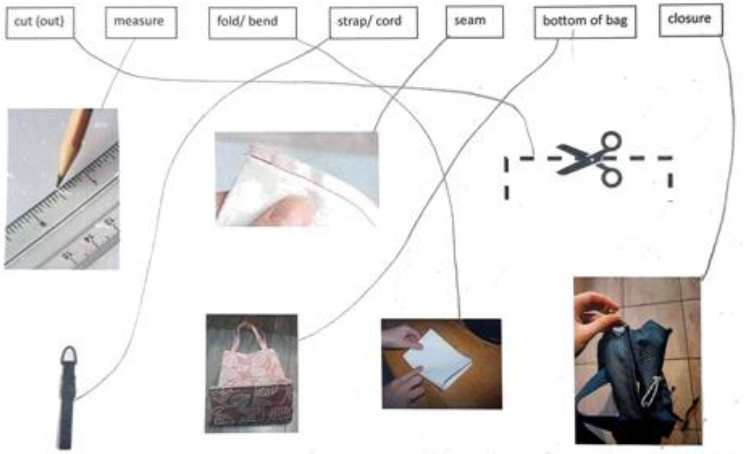
5) sewing a straight line in 3.5 mm long stitches

A) ☒

B) ☐

Student I – Pre





Tick the correct answer

1) Sewing something

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric

A) ☒

B) ☐

2) Sewing a straight line

A) ☐

B) ☒

3) Sewing twice, back and forth

A) ☒

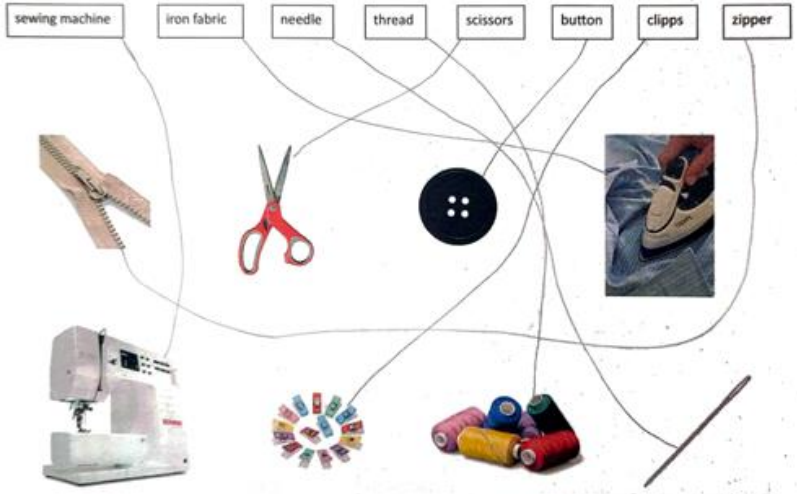
B) ☐

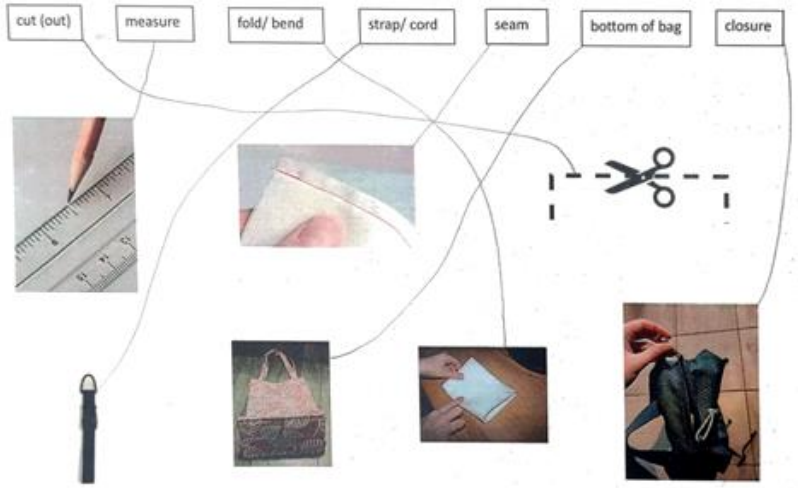
5) sewing a straight line in 3.5 mm long stitches

A) ☐

B) ☒

Student I – Post





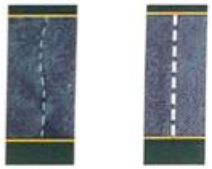
Tick the correct answer

1) Sewing something

A) ☒

B) ☐

2) Sewing a straight line



A) ☐

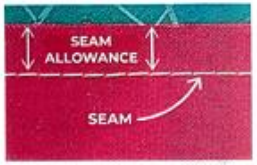
B) ☒

3) Sewing twice, back and forth

A) ☒

B) ☐

4) Leave a space of 1cm from the edge of the fabric



A) ☑

B) ☐

5) sewing a straight line in 3.5 mm long stitches

A) ☐

B) ☐