LESSON PLAN: Packaging technology – PURPOSES

Subject: Technology   **Teacher: Eliana Loss -- a.s. 2016/2017**

General topic of the lessons	The technology programme dedicates a great part to materials, from production to recycling. In this context these lessons are planned to introduce consumerism, marketing and engineering design of packaging because it's a common part of all our lives and its real social use and its influence on the environment are often misunderstood. Students investigate not only marketing features and benefit of products but also the global issues about the science of packaging (raw materials, production, recycle, waste, LCA) The unit is composed of three lessons 1) **What's packaging, packaging today;** 2) **Purpose of packaging;** 3) **Packaging design.**
Topic of the second lesson	This lesson is the second of three and the students learn which are the real purposes of packaging and how to use it in their everyday life. At the end of the lesson, they will be able to judge a packet considering the following aspects: the product's protection, its convenience, and its sustainability according to the environment. Furthermore, the topic focuses on the explanation of package's partition: primary, secondary and tertiary packaging. The lesson consists of two meetings of two hours.
Students' prior knowledge, skills, competences	The teacher plans the lesson for a second class of a middle school. It's a class with different backgrounds; students with special needs are present. Teacher projects a workshop for the students in which everyone can contribute starting from his/her personal experience. Technical competences developed: - To devolp the technological competence using simple tools and materials with experience. - To develop the use of digital tools for information and communication. - To develop citizen's competence and cooperative learning using a foreign language In the previous lesson and experience the pupils studied the cycle of materials: plastic, glass, metal, paper and board, food conservation and production's process and they should be able to draw and to design .

	In particular, after the first lesson most students should know what a packaging is and all the forms of innovation starting from the very beginning (terracotta Vessel) arriving to plastic and new materials.
	The students are able:
	    - to analyse an object/packet with a scientific method
	    - to study and understand labels (imagines, lettering, contents, symbols)
	    - to handle an object to obtain a geometric form
	- To work in a group bringing creative ideas and meaningful experiences
	- To use different resources and media.
	- To understand social reality

Definition of the learning objectives for the lesson	Students will increase awareness of the purpose of packaging through group collaboration, producing documentation.
	As a result of this activity, students should know the packaging purposes and all the available types of packaging
	
	    • **Protection** --f or the product: how to transport the products without risks;
	    • **Convenience** -- ease of use and decision making, simplifies life;
	    • **Image** -shelf- appeal, brand awareness, and product/company/consumer values;
	    • **Sustainability** -- reduction of environmental impact, consumers can make the difference;
	
	    • **Primary Packaging:** packaging that touches the product
	    • **Secondary Packaging:** packaging that does not touch the product itself
	    • **Tertiary Packaging:** packaging that holds together a groups of items
	
	Content-related objectives:
	    - to draw a conclusion about the benefits of packaging as well as about the environmental costs;
	    - to be aware of the advantages to buy packaged products;
	    - to increase technological competences with analyses and manipulation of materials;
	    - to increase the skills of working group, collaboration and communication riguards an inquiry
	    - to increase the skills of using digital tools for communication
	
	Language-related objectives:
	    - to learn new vocabularies about features and property of packaging
	    - to express opinions about the purposes of package's production;
	    - to compare and define different packets;
	    - to discuss with the other people.

Analysis of the lessons in terms of its subject content	The lessons provide the development of technological competences according to the Plan of Studies of Trento regarding the scientific subjects but also the *Common European Framework of Reference for Languages* (CEFR). **The lessons will be organized with the collaboration of other teachers (above all science's teacher).**
	Respect learning outcomes:
	Content – *knowledge and consolidation*: What is packaging The technology workshop – <u>analysis of packets</u> Society and environment linked to technology – <u>revision activities</u>
	Cognition – *enable learners to*: • <u>Information-processing skills:</u> compare and then explain the differences between various packets • <u>Reasoning skills:</u> give reason why a package has particular features and explain the conditioning for men and industry • <u>Analysis and inquiry skills :</u> handle and break on in different parts the packets. Relate the parts of packets • <u>Evaluation skills (evaluation):</u> learn to distinguish, compare and interact; develop critical thinking •
	Culture – *awareness of:* Reflect and value packaging purposes and the possible influence on the consumerism's attitude, marketing and environment.
	Communication/Collaboration • Increase self-awareness • Generate freedom of expression and stimulate creative thinking • Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions • Take responsibility for own contributions and cooperative work • Learn to value team members' individual contributions

Analysis of the lessons in terms of its foreign language content	The aim of the lesson in CLIL is: - to express a simple definition orally (spoken interaction) and write a brief list in order (lexical and grammatical competence); - to use subject-specific language to explain the features of packaging (denotation); - to read, partially comprehend a simple text or video; - to communicate information using simple discussion; **Expressing own opinion:** *In my opinion...* *I think that...* *I do agree with/about...* **General and subject-specific vocabulary (keywords):** General words: *protection, convenience, image, sustainability, safety, product, promotion, environment , shape and form, materials, functions* Subject-specific words: *package, packet, box, label, visual appeal, manufacturing, to recycle, waste,* *Primary Packaging, Secondary Packaging, Tertiary Packaging* **Question by teacher:** *What is...? Can you handle the* *packet? What do you see..?* *Can you find...?* *Can you* *compare...? Can* *you define...?* *Which are the purposes and the feature?*
Didactic and methodological analysis of the lesson respect learning outcomes	The activities are based on workshops and team work. Furthermore, the teacher will apply a scientific method considering the importance of the analysis and of the inquiry. Using the group-work the teacher will communicate the importance of using the packaging to satisfy the human necessities and its impact on the environment.

	Didactic methods and lesson's steps:
	1. Use of different resources: **new technologies/media (videos, internet, smart board)**
	2. Technical and comparative **analysis:** analytic ability allows to identify the elements and processes. Students hypothesize, elaborate data, formulate comparisons and reflect upon process and results. The **workshop** is based on cooperative work (In this situation students analyze different packets and handle the materials and through action and experience).
	3. **Visual organizers** (work cards, charts, mind map): students complete word-cards (flashcard) and create a barchart with a final report (PPT SLIDE) to communicate the purpose and feature of packaging.
	4. Give time to reflect on the **project and then create a handmade product (paperboard, box)** (group work in following lesson).
	5. **Scaffolding and code switching:** In terms of its foreign language content the teacher sometime will use L1 to communicate, a code switching and the learners use L1 to explain or to justify the actions when they encounter difficulties.
Checking the achievement of learning goals and consolidation of the lesson	Continuously monitor the students (formative assessment) and ask probing questions to informally assess their understanding of the activity and the consumer mindsets. Informal assessment of understanding through student responses during the discussion and observation the "consumer mindsets" Checking work card exercises and observe individual contributions
Planning the course of lesson	See below
Homework for consolidation purpose	<u>Action</u>: Packet's analysis on a shopping experience with their parents (reflect upon packaging's main features) <u>Action</u>: To watch two YouTube videos *"A short history of packaging"* https://youtu.be/XrKm4IvRO4c *"What if there was no packaging?"* https://www.youtube.com/watch?v=IYEeNbRWlag <u>Production</u>: to write a report explaining the purpose of packaging and its influence on environment. Students read and complete a simple **word-search (WORKCARD N°1)**

Grid for the planning of the course of the lesson

Phase	Timing	Content and learning objective	Activity	Social form	Materials
1 Introduction and presentation of key words	15 minutes	<u>Content</u>: Activate previous knowledge: what's packaging, LCA of products <u>Language</u>: Use language to discuss using key words. LISTENING/SPEAKING	Students watch a brief video to remind them about timeline packaging and LCA (Life cycle) Brainstorming: students make a simple mind map on the blackboard or LIM to consolidate the fundamental concepts Teacher gives a copy of activity sheet and observes discussion	Whole class	**VIDEO** *"La straordinaria storia degli imballagg* *Riciclo"* <u>https://youtu.be/uH04E_8dXjs</u> (CONAI for Children Park di EXPO Milano 2015) One copy per student of the activity sheet in this lesson plan. Packaging materials **Glossary** with specific word L2
2 Workshop/ Analyze	40 minutes	<u>Content</u>: Understand the purpose and function of packaging. <u>Language</u>: - develop an appropriate vocabulary to packaging - highlight specific word READING/WRITING	Teacher puts on the table a few examples of packages that students may have brought from home. Then, the teacher suggests to observe all the different packets or boxes and gives to student a worksheet to complete (**questions**) and to reflect Students **analyse** in small groups (2/3 students) They: - Observe how packets are made and compare different types (*shape, label, manufacture)* - Analyze the materials - Examine how the packets can be opened	Discussion (whole class) GROUP WORK (Analyze and handle-work)	COLLECT of packaging (can, bag , bottle, packets, take away packets , foil container, food tubes...) **See Attachment 1:** PACKAGING TODAY

3 Workshop/ discussion	40 minutes	Content: students develop four general categories that explain the purposes and functions of packaging: **Protection, Convenience, Image, and Sustainability** Language**:** use language to explain ideas and to write code-switching is allowed WRITING/SPEAKING	Teacher gives a worksheet that represents the four main purposes of packaging (heading of columns). It will enable students to: • understand the purposes for which packaging is used. • Predict and investigate the reason for packaging Students in the same group hypothesize and complete the table (tick on the table that represent the real purpose) Students listen and repeat to the new subject-specific vocabulary	GROUP WORK	Notebook Pen, paper **See Attachment 2:** Worksheet 2 **FOUR PURPOSE OF PACKAGING** **Attachment 3:** Worsksheet 3A (put a tick)
4 Workshop/ research/ hypothesize	30 minutes	Content: Definition of **primary, secondary and tertiary packaging** and distinction between different packets Language**:** use of new specific words READING / SPEAKING	Teacher suggests: **"**_Have the packets / boxes the same purposes and functions?"_ Students reflect and share ideas and continue the discussion. Teacher refer back to specific examples for their prior packaging analysis Students listen and repeat to the new subject-specific vocabulary	GROUP WORK	**Attachment 3:** Worsksheet 3B
5 Production/ explanation	40 minutes	CREATE a product Language :Use simple language to argue a point of view, make decisions (spoken interaction). SPEAKING	STUDENTS combine the different ideas (the table developed) with those of the others and **draw a bar chart** about the using of primary, secondary and tertiary packaging **Homework**: complete the word search on Worksheet 1 Analyze some packaging with their parents	Group work Individual /at home	PRODUCT: **Diagram (pie chart** or bar chart about primary, secondary and tertiary Packaging) Computer

6 Consolidation	50 minutes	Content: Packaging purposes and functions - Influence on consumerism and environment Language: use of language to argue a point of view, make decision (spoken interaction). WRITING/SPEAKING/LISTENING	- Students produce a digital report (PPT) - Communicate the work to the others Peer-assessment: of other's work Teacher gives homework to prepare the next lesson: - watching the videos - web search for information about packaging and environment Students watch a final video and then comment (REFLECT: final VIDEO)	Individual work	Digital tools to communicate ideas: **PowerPoint /padlet** **Homework:** watch the youtube videos "*A short history of packaging*" https://youtu.be/XrKm4IvRO4c "*What if there was no packaging?*" https://www.youtube.com/watch?v=IYEe "*Product packaging*" (final video) https://youtu.be/WyFLfE2PomI
7 **Reflect about the objective following lesson**		Future Project Speaking	In the next lessons according to the curriculum and school's syllabus, students should project and create a model of paperboard packet that respect the environment	Work in pairs	Following lesson worksheet: design two- and three-dimensional figures.
	About 15 minutes				
8 **Assessment**			-- Teacher evaluates -- Students evaluate		**Formative assessment** **Self-assessment**

Resources

Text: Tecnocloud, Pearson Web

Learning and teaching about the environment
http://www.epa.gov/waste/education/quest/index.htm

Packaging and Consumerism Waste-The issue
https://packagingandconsumerism-lucindajones.weebly.com/

CONAI: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwiZ0OytruzTAhXBjSwKHXgZBhQQFg
gqMAE&url=http%3A%2F%2Fwww.expra.eu%2Fmembers-detail%2Fconai%2F66&usg=AFQjCNEfP7k1ho69y_T7GqcFikMuMKYXQA

Video

"A short history of packaging" https://www.youtube.com/watch?v=XrKm4IvRO4c&feature=youtu.be

"What if there was no packaging?" https://www.youtube.com/watch?v=IYEeNbRWlag

"Product packaging" https://youtu.be/WyFLfE2PomI