CLIL Module Plan

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School	Liceo B. Russell Cles (TN)				
School Grade	○ Primary		○ Middle		◉ High
School Year	◉ 1	○ 2	○ 3	○ 4	○ 5
Subject	Fisica	**Topic**	Fluid statics		
CLIL Language	◉ English		○ Deutsch		

Personal and social-cultural preconditions of all people involved	The class is a first class "Liceo scientifico doppia lingua", age 14-15 years, composed by 21 students (4 males and 17 females). For all students, Italian is the mother tongue. All students have a medium-high socio-cultural background, they are particularly motivated and they know how to work in pairs or in group. Neither students with special needs nor with migratory background are present in the class. Many of the students have already taken part in CLIL modules both in the primary school and in the middle school. The average level of students is B1 (according to CEFR). The Physics teacher has known them since the beginning of the school year.

Students' prior knowledge, skills, competencies	Subject	Language
	Main physical quantities. Measuring (procedures, instruments, units of measurement). Unit conversions (multiples and sub-multiples). Basic data processing (average). Diagrams construction and basic interpretation. Linear equations and mathematical expressions. To solve and manipulate simple algebraic formulas.	BICS. Base structures of English language (present tenses, past tenses, future tenses, comparatives, superlatives). General understanding of if-clauses. Passive forms. Use of the modal verbs (must, need..). Students should have the following skills: listen to a teacher’s lesson and understand the general meaning of contents; read meaningful material such as short texts understanding the general meaning; deduce the main information given a written text or a video; speak with teacher or classmates, in pairs or in small groups; ask for help and clarifications if necessary.

Timetable fit	◉ Module	Length 19 lessons each of them consists of 50 minutes

Description of teaching and learning strategies	The teaching strategies involves: Group work and pair work, Task-Based Learning, Project-based learning and cooperative learning, Content and language input, Videos to support content and language scaffolding, Activate prior knowledge, Help learners make links with tasks they have already done before, Allow the use of L1 when necessary. Most of the activities will be designed to involve as many skills as possible (L, S, R, W). They will be chosen to allow the integration of language and content learning by promoting interaction and communication during the lesson involving students, teachers and group work (research activities, presentations, lab reports, discussions). Use of a wide range of different materials: texts, videos, lab activities, presentations, various simulation software in order to meet different learning styles. ICT learning tools are very useful as well as materials to support content and language scaffolding and repeated activities in order to consolidate vocabulary (including games such as flashcards, crossword puzzle). All the materials are shared with the students using Classroom (a communication, collaboration, and learning platform). Learning tools: computers and tablets, projector, Internet, LIM, text, blackboard, slides, learning apps. The teacher acts as facilitator and guide in all student-centered activities. Assessment: Continuous and formative assessment will be used to improve language use, language accuracy and motivation. A final summative assessment will verify the acquisition of content and language of the main topics of the unit.

Overall Module Plan

Unit: 1 State of matter and density **Unit length:** 4	**Lesson 1** State of matter
	Lesson 2 Fluids and density
	Lesson 3 Lab: density of different objects with precise volume
	Lesson 4 Exercises

Unit: 2 Pressure **Unit length:** 4	**Lesson 1** Introduction to pressure
	Lesson 2 Formula and problems about pressure
	Lesson 3 Atmospheric pressure: lab
	Lesson 4 Atmospheric pressure: definition and main characteristics

Unit: 3 Pressure in fluids **Unit length:** 3	**Lesson 1** Pressure in fluids
	Lesson 2 Exploring Pressure Underground Sim Lab
	Lesson 3 Formula and exercises

Unit: 4 Archimedes’ principle and buoyancy **Unit length:** 3	**Lesson 1** Archimedes’ principle
	Lesson 2 Buoyancy
	Lesson 3 Exercises

Unit: 5 Final recap, Test and Correction **Unit length:** 5	**Lesson 1** Group works
	Lesson 2 Group works: oral presentations
	Lesson 3 Final recap
	Lesson 4 Final test
	Lesson 5 Test correction

CLIL Lesson Plan

Unit number	1	**Lesson number**	1	**Title**	State of matter

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	5'	Have an overview of the activities that will be carried out during the module and in particular in this unit.	T introduces and explains the aims, topics and objectives of the module. Ss take notes and ask questions.	**Skills** L S R W **Key vocabulary** Plan, experiment, theory, teamwork, pair/group work, perform/carry out an experiment, fluid, pressure, density, principles. **Communicative structures** We are going to study... Our objective is... If you have any questions...	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	None.	None.

2	5'	Recall concepts from previous knowledge. List the main words related to state of matter.	T must have prepared in advance a page on mentimeter.com with the question “What do you know about state of matter?”. Ss have the possibility to insert up to five words to form a collective wordcloud. T projects the slide on the LIM and invites Ss to visit menti.com using their smartphones, to insert the code given and to answer the question on the website. Ss use their smartphones to visit menti.com and answer the questions. T underlines the main words of the wordcloud.	**Skills** L S R W **Key vocabulary** state of matter **Communicative structures** ... is related to...	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U1_L1_ALL1.pdf	None.

3	10'	Identify the definition of some physical words involved in state of matter in order to memorize them. Acquire specific vocabulary useful to understand the following lessons.	T hands out the worksheets and invites Ss to complete Task1 that consists in matching the words with their definitions. Then T circulates to help Ss if necessary. Ss complete the task in pairs, matching words and their definitions. Since they work in pairs, they are invited to discuss their matching hypotheses with their classmate.	**Skills** L S R W **Key vocabulary** state of matter, solid, liquid, gas, volume, shape **Communicative structures** I think... This could be...	☐ Whole class ☐ Group work ☑ Pair work ☐ Individual work	• U1_L1_ALL2.pdf	Formative: T monitors the general understanding of the definitions and the acquisition of specific terms.
4	5'	Acquire the definitions of solid, liquid and gas and understand the main properties and differences. Apply the learnt definitions.	Ss watch the video and take notes of the main points.	**Skills** L S R W **Key vocabulary** state of matter, solid, liquid, gas, volume, shape **Communicative structures**	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Video: link	None.

5	15'	Understand the main aspects of state of matter and identify similarities and dissimilarities between solid, liquid and gas.	T invites Ss to complete Task 2 and Task 3 of the worksheet. In particular they complete the table with the properties of solids, liquids and gases according to what they have heart in the video. T invites every pair to discuss in order to point out similarities and differences.	**Skills** L S R W **Key vocabulary** state of matter, solid, liquid, gas, volume, shape **Communicative structures** In my opinion ..., The reason why... is... , According to...	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U1_L1_ALL2.pdf	T elicits language.

CLIL Lesson Plan

Unit number	1	**Lesson number**	2	**Title**	Fluids and density

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	15'	Practice and revise vocabulary of solid, liquid and gas. Improve communication skills.	T must have prepared in advance some flashcards with a word about state of matter on one side and the definition on the other. They could be virtual flashcards created for example with Quizlet or other software or flashcard made of paper. Ss work in pairs, one tries to remember the definition of the word written on the card and the other corrects the mistakes. Then Ss swap their role.	**Skills** L S R W **Key vocabulary** state of matter, solid, liquid, gas, volume, shape **Communicative structures** The definition of..... is, we can define this word as..... In my opinion..	☐ Whole class ☐ Group work ☑ Pair work ☐ Individual work	• U1_L2_ALL1.pdf Flashcards: link	Self-test helps SS learn information, and also helps Ss to identify any weak spots they may have with the material. It is better to discover weaknesses while Ss are studying, when they can still improve on them, instead of when they are in the middle of a test.

2	10'	Understand the concept of fluid, describe the physical properties of a fluid.	Ss, in turn, read a sentence of the text projected on the interactive whiteboard and written on the worksheet. All the Ss can interrupt the reading if they do not understand some concepts. At the end of the reading, Ss complete the task on the worksheet.	**Skills** L S R W **Key vocabulary** fluid, flow, fluid mechanics, equilibrium, hydrostatics, aerostatics. **Communicative structures** Is there anybody who didn't understand...? Are there any doubts about...?	☒ Whole class ☐ Group work ☐ Pair work ☒ Individual work	• U1_L2_ALL2.pdf	Formative assessment: during the first part, T checks and corrects Ss' pronunciation, in the second part T checks if the Ss have completed the task with the right words asking one by one to read the whole sentence. One sentence –one student.

3	10'	Understand the concept of density.	T shows the video and stops it every time there is a question in the video. Ss watch the video, try to answer the questions and then check their hypothesis listening to the explanation.	**Skills** L S R W **Key vocabulary** float, sink, mass, density, volume, upthrust **Communicative structures** Do you want to watch the video again? Do you prefer using subtitles?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	video: link	Ongoing assessment: T asks the Ss if they have understood the general meaning of the video.
4	10'	Formulate a formula to express the density of an object and find its units.	T distributes the worksheets and invites Ss to complete them in pairs. They have to remember the main concepts learnt from the previous video. Then T circulates to facilitate.	**Skills** L S R W **Key vocabulary** mass, volume, density, units, formula **Communicative structures** I think that... Why do you say that...? Do you agree on...?	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U1_L2_ALL3.pdf	Formative: T elicits or models language.

5	5'	Compare Ss' ideas to come to a common formalization of density.	T invites every two pairs to join and compare their answers, in order to come to an agreed final answer for each question. Ss are invited to defend their answers providing justification and reasoning.	**Skills** L S R W **Key vocabulary** mass, volume, density, units, formula **Communicative structures** We think that… Our answer is different from yours because… I agree with you up to a point, because… I disagree…	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U1_L2_ALL3.pdf	Peer: Ss compare results, correcting each other. Formative: T circulates and facilitates.

CLIL Lesson Plan

Unit number	1	**Lesson number**	3	**Title**	Lab: density of different objects with precise volume

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	35'	Perform the experiment, measure mass and length and calculate volume in order to find the density of several objects.	T forms small groups (three Ss per group) and distributes materials and instruments per group. Ss follow the instructions in the worksheet, they take the measures and write the collected date. T invites all groups to complete the guided lab report. Following the questions on the worksheet, Ss are led to calculate the density of three objects.	**Skills** L S R W **Key vocabulary** purpose, sensitivity, range, average, cube, parallelepiped, sphere, density **Communicative structures** Can I…? What is the number you found? Could you repeat the reading, please? Let's repeat the measurement one more time, …is calculated by applying…	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U1_L3_ALL1.pdf Physics Lab Experimental apparatus described in the worksheet	Formative: T models content, helping Ss use the experimental material appropriately and paying attention on the table filling.

2	15'	Evaluate one’s own and other Ss’ lab reports and give opinions about possible ways to improve them.	T invites each group to exchange the lab report (A to B, B to C,…) and Ss comment on the received lab report, writing notes about possible ways to improve it and correct it. After about 5 minutes, Ss pass the reports back to the respective original authors, who decide what suggestions to accept and what to ignore, in order to make their lab report more complete and correct. At the end of the lesson Ss give to the T the final versions of the lab reports, to be assessed.	**Skills** L | **S** | **R** | **W** **Key vocabulary** purpose, sensitivity, range, average, cube, parallelepiped, sphere, density **Communicative structures** This part is not correct, because… An improvement could be… To be more precise, you should state that… In my opinion… Are you sure about…?	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U1_L2_ALL3.pdf	Peer and Self: Ss evaluate one’s own and other’s work. Summative: at the end of the lesson, T receives all lab reports, which are evaluated and assessed.

CLIL Lesson Plan

Unit number	1	**Lesson number**	4	**Title**	Exercises

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	20'	Apply what is known to solve basic problems about density. Develop cooperative skills.	T invites Ss to complete the guided exercises they can find on the worksheets (Task 1): they help Ss get confident with the formula of density. Ss complete the guided exercises in their groups. T circulates and monitors general understanding of the guided exercises, which are the basis for the comprehension of the following ones.	**Skills** L S R W **Key vocabulary** mass, volume, density, units, formula **Communicative structures** Let’s consider… According to…	☐ Whole class ☐ Group work ☑ Pair work ☐ Individual work	• U1_L4_ALL1.pdf	Formative: T models content and elicits language.

2	20'	Find out strategies to solve new open problems. Develop problem solving and social skills.	T invites Ss to complete the exercises they can find on the worksheets (Task 2). Ss apply what they have learnt and check their answers and hypotheses with self-correcting and peer-correcting. T circulates to facilitate and monitor general understanding.	**Skills** L S R W **Key vocabulary** mass, volume, density, units, formula **Communicative structures** Let's consider... According to...	☐ Whole class ☐ Group work ▣ Pair work ☐ Individual work	• U1_L4_ALL1.pdf	Formative: T models content and elicits language.

3	10'	Class correction of the problems abou density. Reinforce Ss' knowledge.	T shows the solution of the task 2 on the LIM. Ss check their solutions and ask questions if necessary.	**Skills** L S R W **Key vocabulary** mass, volume, density, units, formula **Communicative structures** Is everything clear?	▣ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U1_L4_ALL1.pdf	Formative: both vocabulary and comprehension of the topic are assessed.

CLIL Lesson Plan

Unit number	2	**Lesson number**	1	**Title**	Introduction to pressure

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	5'	Understand the meaning of the word “pressure” related to the context.	T prints the document U2_L1_ALL1, cuts the sentences and gives one sentence to each pair of students. Every pair is invited to glue the piece of paper to the worksheet U2_L1_ALL2 and to discuss if the sentence received has a scientific meaning or not.	**Skills** L | S | R | W **Key vocabulary** Pressure, support pressure, be under pressure, be pressured by, put pressure, atmospheric pressure **Communicative structures** I think that... I agree with you up to a point because... I disagree...	☐ Whole class ☐ Group work ☑ Pair work ☐ Individual work	• U2_L1_ALL1.pdf • U2_L1_ALL2.pdf	T elicits or models the language.

2	10'	Understand that the word “pressure” can have different meanings; understand the meaning of the word “pressure” related to the context	Every group reads the sentence analyzed before and explains if it has a scientific meaning or a general meaning. Both Ss of the pair speak. The other Ss complete the table with their classmates’ sentences. Ss ask questions if they have doubts.	**Skills** L S R W **Key vocabulary** Pressure, support pressure, be under pressure, be pressured by, put pressure, atmospheric pressure **Communicative structures** Why do you think.... I disagree... In my opinion.....	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U2_L1_ALL2.pdf	Peer: Ss help each other clarify doubts. Formative: T elicits or models the language
3	15'	Understand the concepts of pressure, force and surface and explain specific examples or situations	T must have prepared in advance a quiz on Kahoot. T projects the slide on the LIM and invites Ss to visit www.Kahoot.com using their smartphones, to insert the code given and to answer the questions on the website. After each question, T asks the students why they gave that answer and regulates the discussion.	**Skills** L S R W **Key vocabulary** Pressure, support pressure, be under pressure, be pressured by, put pressure, atmospheric pressure **Communicative structures** Why does it happen? because.... that’s why...	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U2_L1_ALL3.pdf Examples of questions created with Kahoot	Formative assessment, teacher analyses the answers given for every question and listens to students’ answers and corrects

4	20'	Discover the definition of pressure and understand the relationship among pressure, force and surface.	T assigns a new worksheet. Ss operate in pair and complete the tasks reasoning and recalling the main points discussed in the previous activity.	**Skills** L S **R** W **Key vocabulary** To support pressure, to exert pressure, to spread, to concentrate, weight, comparatives (more…than; the smaller…, the higher…),Pressure, force applied, area **Communicative structures** I agree because.., What do you think...?	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U2_L1_ALL4.pdf	Formative assessment, T observes Ss' work. Continuous assessment: T circulates around groups and gives further explanation of task if any S is not able to proceed

CLIL Lesson Plan

Unit number	2	**Lesson number**	2	**Title**	Formula and problems about pressure

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	10'	Recall what learnt about pressure in order to revise them. Identify correct definitions and formula of pressure. Learn the unit of measurement of pressure.	T gives students a worksheet that they have to complete with the missing words (task1). At first, they work individually and then they compare their solutions in pairs.	**Skills** L S R W **Key vocabulary** Pressure, force applied, area, unit of measurement **Communicative structures** Why do you think that...? In my opinion... My conclusion is that...	☐ Whole class ☐ Group work ▣ Pair work ▣ Individual work	• U2_L2_ALL1.pdf	Formative assessment: T observes Ss' work

2	15'	Apply what is known to solve basic guided problems about pressure.	T divides Ss into groups of 3-4 and invites Ss to complete the guided exercises they can find on the worksheet (Task 2): they help Ss get confident with this topic and with some useful techniques to face problems about pressure. T circulates and monitors general understanding of the guided exercises, which are the basis for the comprehension of the following ones.	**Skills** L S R W **Key vocabulary** Area, pressure exerted, weight, density **Communicative structures** Let’s consider… According to… In my opinion the correct method to calculate ….	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U2_L2_ALL1.pdf	The T goes around the class during the written part of the activity, checks the understanding of the keywords and gives advice if needed.

3	15'	Find out strategies to solve new open problems about pressure.	T invites Ss to complete the open exercises the y can find on the worksheets (Task 3). Ss apply the learnt techniques. T circulates to facilitate and monitor general understanding.	**Skills** L S R W **Key vocabulary** Area, pressure exerted, weight, density **Communicative structures** Let’s consider… According to… It is not consistent because… We should calculate…	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U2_L2_ALL1.pdf	Formative: T elicits content and language.

4	10'	Check the solution of exercises, evaluate and correct other Ss' work.	Using the blackboard, pairs of students present the solution of the exercises and give explanation to their classmates who check their own results.	**Skills** L S R W **Key vocabulary** Area, pressure exerted, weight, density **Communicative structures** Why is your result different? How did you get to that solution? How did your group face that problem? Could you tell me how…?	☐ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U2_L2_ALL1.pdf	Peer: Ss compare respective results and correct one another. Formative: T analyzes Ss remaining doubts.

CLIL Lesson Plan

Unit number	2	**Lesson number**	3	**Title**	Atmospheric pressure: lab

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**

1	50'	Perform 5 different experiments, gain an understanding of air pressure, understand the basic principles that describe how air pressure responds to and is responsible for various phenomena.	T divides students in 5 groups (ideally 3-4 students each) and sets up around the room a number of stations equal to the number of the groups. In every station there is the materials to do an experiment. Ss, in group, rotate through the stations, record their observations on their worksheet and complete the exercises cooperatively. T will need to be moving around the room troubleshooting issues with equipment, although most of the materials in this lab are very simple. T should also be aware of how the groups are working together.	**Skills** L S R W **Key vocabulary** Pressure, Atmospheres, Force **Communicative structures** Can I...? What do you think about....? What happens if...? Why could we not...? Another idea could be... I am not sure, but... The reason why...is...	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U2_L3_ALL1.pdf All materials explained in the worksheet.	Formative: T models content, helping Ss use the ex0perimental material appropriately.

CLIL Lesson Plan

Unit number	2	**Lesson number**	4	**Title**	Atmospheric pressure: definition and main characteristics

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	20'	Recap the main concepts learnt with lab activities, check for understanding.	During this activity students create three posters with the following titles: 1) What I understand about air pressure. 2) What I still don't understand about air pressure. 3) What I am wondering about atmospheric pressure. Ss write a response to each prompt on a sticky note and place their response on each poster. Then T asks students to read aloud and guides the discussion.	**Skills** L S R W **Key vocabulary** atmospheric pressure, force, air **Communicative structures** I understand..., I still don’t understand... I am wondering about.....	☐ Whole class ☒ Group work ☐ Pair work ☒ Individual work	Posters, sticky note	Self assesment

2	20'	Interpret the definition of atmospheric pressure. Understand the main characteristics of atmospheric pressure.	T gives the Ss the paper with a short text about atmospheric pressure and its main characteristics. After reading, Ss have to complete 3 tasks in order to handle the main concepts. In the last 10 minutes T provides a comparison in groups of the exercises completed individually.	**Skills** L S R W **Key vocabulary** Pressure, Atmospheres, Force, perpendicularly, balance. **Communicative structures** is measured with... can be represented with...	☐ Whole class ☒ Group work ☐ Pair work ☒ Individual work	• U2_L4_ALL1.pdf	Peer: Ss compare respective results and correct one another. Formative: T analyzes Ss remaining doubts.
3	10'	Recall all learnt concepts about pressure in order to revise them.	T plays the linked video on the smartboard so that all Ss can watch it together. If something is not clear to Ss, T can answer quickly to some questions.	**Skills** L S R W **Key vocabulary** all about pressure **Communicative structures** all about pressure	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Video: link	Formative: T models content and cognition.

CLIL Lesson Plan

Unit number	3	**Lesson number**	1	**Title**	Pressure in fluids

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	15'	Formulate hypotheses and support them justifying some everyday phenomena related to fluid pressure. Apply acquired knowledge in a new situation.	T introduces the objectives of the unit. To introduce the pressure in fluids, T prepares some questions related to real situation. Ss should find the answers to all questions in pairs and then write them on the worksheet.	**Skills** L S R W **Key vocabulary** fluid, pressure, deep **Communicative structures** In this unit we’re going to…	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U3_L1_ALL1.pdf	Peer and self-assessment

2	20'	Know that water pressure increases with depth and how water at a given depth exerts equal pressure in all directions. Analyze the observed phenomenon.	T divides the class into groups of 3-4 Ss and passes out the materials and worksheets to each group. Ss are invited to follow the instructions they find in the worksheet and to perform the experiment. Then Ss answer the questions and complete the exercises in order to analyse the phenomenon.	**Skills** L S R W **Key vocabulary** Pressure, fluids, exert pressure, to spread, to fill, water jet, hole **Communicative structures** Observe that... If... then... We can conclude that... more...than; the smaller..., the higher... What happens?	☐ Whole class ☑ Group work ☐ Pair work ☐ Individual work	• U3_L1_ALL1.pdf All materials needed for the experiment explained in the worksheet (for each group)	Formative: T models language and cognition
3	15'	Know that water pressure increases with depth and how water at a given depth exerts equal pressure in all directions.	Ss watch the video “Do Liquids Exert Pressure” and they check the answers of the questions of the experiment conducted previously. T pauses the video a couple of times to allow the Ss to take notes.	**Skills** L S R W **Key vocabulary** liquids, exert pressure, downwards, sidewards, weight, flow out **Communicative structures** According to the video... We can conclude that... more... than; the smaller..., the higher...	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U3_L1_ALL1.pdf Video: link	Formative: T checks the understanding of the keywords and gives advice if needed. Self-assessment.

CLIL Lesson Plan

Unit number	3	**Lesson number**	2	**Title**	Exploring Pressure Underground Sim Lab

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	50'	Investigate how pressure changes in air and water. Discover how you can change pressure. Predict pressure in a variety of situation.	T divides Ss into small groups and assigns the worksheet with all the instructions the Ss have to follow. Ss explore the simulation to find out how pressure changes in air and water. Ss are invited to describe their findings and to include specific data from their explorations to support their ideas.	**Skills** L S R W **Key vocabulary** tank, pressure, pressure gauge, depth, fluid, density, graph, slope **Communicative structures** Can I...? What is the number you found? Could you repeat the reading, please? Let's repeat the measurement one more time.	☐ Whole class ☑ Group work ☐ Pair work ☐ Individual work	• U3_L2_ALL1.pdf App Phet: link Computers or tablests	Formative: T models content, helping Ss use the simulation appropriately and paying attention on the table filling and on graphs.

CLIL Lesson Plan

Unit number	3	**Lesson number**	3	**Title**	Formula and exercises

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	15'	Find the formula to calculate pressure in a fluid, analyse units of measurement.	Ss read the task and ask for clarification if necessary. T checks if the outcomes are clear. Ss try to order the sentences to find a formula to calculate pressure in a fluid. Ss, in pairs, discuss and try to solve the exercises.	**Skills** L S R W **Key vocabulary** weight, density, mass, volume, cylinder, pressure, depth, surface area **Communicative structures** In my opinion..., Look carefully at..., Why do you think....?	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U3_L3_ALL1.docx	Formative Assessment: T circulates around couples of Ss and gives further explanation of task if any S is not able to proceed.

2	10'	Apply what is known to solve basic problems about pressure in fluids. Develop problem solving skills.	T invites Ss to complete the guided exercises they can find on the worksheets, these exercises are the basis for the comprehension of the following ones. T walks around the class in order to make all parts clear.	**Skills** L S R W **Key vocabulary** pressure, surface, increase in pressure on, deep, density **Communicative structures** Work in pairs and compare your solutions. According to... Is the task clear enough?	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U3_L3_ALL2.pdf	Formative: T circulates and facilitates comprehension.

3	15'	Find out strategies to solve new open problems about pressure in fluids.	T invites Ss to complete the exercises they can find on the worksheets. Ss apply the learnt techniques. T circulates to facilitate and monitor general understanding.	**Skills** L S R W **Key vocabulary** pressure, depth, force exerted on, density **Communicative structures** According to..., Why is your result different? How did you get to that solution?	☐ Whole class ☐ Group work ☒ Pair work ☐ Individual work	• U3_L3_ALL2.pdf	Formative: T elicits content and language.

4	10'	Evaluate and correct Ss' work. Reinforce Ss' knowledge.	T shows the solution of the exercises on the LIM. Ss check their solutions and ask questions if necessary. Ss should share doubts with the classmate.	**Skills** L S R W **Key vocabulary** pressure, depth, force exerted on, density **Communicative structures** Why is the result different? How did you get to that solution? Is everything clear?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U3_L3_ALL2.pdf	Formative: both vocabulary and comprehension of the topic are assessed.

CLIL Lesson Plan

Unit number	4	**Lesson number**	1	**Title**	Archimedes’ principle

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	5'	Have an overview of the activities that will be carried out during this unit. Set the main goals for the unit.	T explains the lesson plan for the present unit and gives a brief overview of the activities. Ss take notes and can ask questions.	**Skills** L S R W **Key vocabulary** Experiment, teamwork, pair work, buoyancy, Archimedes’ principle **Communicative structures** We are going to...	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	None.	None.

2	10'	Analyse two simple experiments about Archimedes' principle and buoyancy. Discuss proposed solutions. Stimulate use of creativity and imagination.	T prepares the necessary materials to make the experiment of the orange and the candle. T asks a student to introduce the orange in the bowl with water and all the class observes what happens. T makes a drawing on the blackboard showing that the water level has risen and writes some vocabulary on the blackboard (container, water, introduce, orange, water level, rise). T asks a second student to read on the graduated cylinder the original water level and the final water level. T makes the same experience with a candle, instead of the orange, with two more students. T asks for reasons of the difference (volume).	**Skills** L S R W **Key vocabulary** Container, water, introduce, orange, water level, rise **Communicative structures** Introduce the ..... in the cylinder, Observe the situation, Read the water level, I believe that this happened because...., I suppose that...	☑ Whole class ☐ Group work ☐ Pair work ☐ Individual work	Graduated cylinder, water, 1 orange, 1 candle	None

3	25'	Discuss and comment the physics behind the phenomena observed during the previous activity. Interpret Archimedes' principle. Particular attention is paid to the correct use of the units of measurement.	Ss work in groups of 3 or 4. Every S receives a printed copy of the file U4_L1_ALL1.pdf and in team Ss work to fill the blank spaces of the document. Ss answer on the basis of the experiment made and of their theoretical knowledge.	**Skills** L S R W **Key vocabulary** Body, immersed, fluid, to experience, upward buoyant force, equal to, weight, displaced fluid; to introduce into, water level, to rise, volume **Communicative structures** I would write...I think that word/formula is right/wrong. I would write ... instead.	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U4_L1_ALL1.pdf	Formative assessment on content and language. T assesses the answers of the Ss. If one or more answers are wrong the teacher asks questions to help the Ss detect and correct their mistakes.

4	10'	Interpret Archimedes' principle. Summarise the key elements about Archimedes' principle.	T and Ss correct these exercises all together. T summarises the key points about Archimedes' principle. Ss can give personal/group comments and opinions.	**Skills** L S R W **Key vocabulary** Body, immersed, fluid, to experience, upward buoyant force, equal to, weight, displaced fluid, to introduce into, water level, to rise, volume **Communicative structures** We observed that... Do you know the value of...? Are you sure that....? Why?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U4_L1_ALL1.pdf	Formative assessment on content and language (in particular listening and speaking skills).

CLIL Lesson Plan

Unit number	4	**Lesson number**	2	**Title**	Buoyancy

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	15'	Understand the main points of a short video about how Archimedes discovered his principle. Identify important data, information and keywords.	T runs a video from TED-ED, pausing it a few times to highlight the most important concepts. Ss answer multiple choice questions. T integrates the videos with additional information and Ss can ask clarifications.	**Skills** L S R W **Key vocabulary** Archimedes' principle, goldsmith, crow, cheat, take a bath, immersed, water displaced **Communicative structures** Could you tell me synonyms or meaning of...?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U4_L2_ALL1.pdf video from: link	None.

2	15'	Consider some real situations and understand why a body sinks or floats. Give opinions/comments. Predict and make hypotheses.	T prepares the necessary materials to make an experience about buoyancy (bring to class some objects that float and some objects that sink). Before doing the experiment, Ss predict if the objects will float or sink in water (task1 of the document U4_L2_ALL2.pdf). Then T asks students to introduce the different objects in the water and observe what happens.	**Skills** L S R W **Key vocabulary** To sink, to float, because, cork, stone, spoon, wood, coin, submarine, boat. **Communicative structures** What happens? what happens is that...	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U4_L2_ALL2.pdf cork, stone, spoon, wood, coin, water, container	T assesses the insight of the hypotheses made by Ss. T informally assesses the language used to formulate the hypotheses.

3	20'	Explain why a body sinks or floats.	Ss work in groups of 3 or 4. Every group receives a printed copy of the file U4_L2_ALL2.pdf and works as a team to complete task 2 and 3 of the document.	**Skills** L S R W **Key vocabulary** To sink, to float, because, cork, stone, spoon, wood, coin, submarine, boat. **Communicative structures** is higher than..., is lower than..., is equal to...	☐ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U4_L2_ALL2.pdf	T goes around the classroom and supervises the work of the groups. The level of participation of Ss is informally assessed, as well as their ability to solve any issues encountered

CLIL Lesson Plan

Unit number	4	**Lesson number**	3	**Title**	Exercises

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	10'	Recall the learnt concepts about the Archimedes' principle and buoyancy. Revise in particular the vocabulary studied in the previous two lessons.	Before listening to the "Archimedes Principle Song", Ss try to complete the song lyrics with the missing words and they ask for clarification of some words if they don't know the meaning. T runs the video and Ss check their hypothesis.	**Skills** L S R W **Key vocabulary** All key vocabulary of the unit **Communicative structures** All structures of the unit	☐ Whole class ☐ Group work ☐ Pair work ☑ Individual work	• U4_L3_ALL1.pdf Song: link	During work activity T goes around the class, checks the understanding of the keywords and gives advice if needed.

2	15'	Use Archimedes' principle to explain specific situations. Employ the knowledge acquired during the previous lessons to solve problems. Make links between theory and concrete situations	Ss solve the guided exercises of the worksheet U4_L3_ALL2. Ss are encouraged to ask questions and clarifications.	**Skills** L S **R** **W** **Key vocabulary** Archimedes Principle, density of, upthrust, buoyant force, weight. **Communicative structures** What is the …? Calculate the ….. Let's consider… According to…	☐ Whole class ☐ Group work ☐ Pair work ☒ Individual work	• U4_L3_ALL2.pdf	During the activity T goes around the class supervising the work of Ss and giving advice if needed.

3	20'	Employ the knowledge acquired during the previous activities. Improve own problem solving skills. Present results to peers. Compare own results with those of peers.	T asks Ss to use the methods learned before to solve new problems about the Archimedes' principle and buoyancy. Ss works in pairs and discuss the solutions with their mate.	**Skills** L S R W **Key vocabulary** Archimedes' principle, density, volume, fluid, float, sink. **Communicative structures** Calculate ....- My result is ... what is yours? - Could you explain how you did that? - I don't think that's correct. Try... instead.	☐ Whole class ☐ Group work ☑ Pair work ☐ Individual work	• U4_L3_ALL2.pdf	During the activity T goes around the class evaluating the level of participation and comprehension of Ss.

4	10'	Compare the results obtained and correct the mistakes. Reflect on different strategies to solve a problem.	T shows how the problems of the previous activity can be easily solved. Ss can give personal/group comments and opinions.	**Skills** L S R W **Key vocabulary** Archimedes' principle, density, volume, fluid, float, sink. **Communicative structures** My result is ... Could you explain how you did that? I don't think that's correct. Why is your result different? How did you get to that solution?	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	None.	Self assessment: Ss can compare their version of the solution to a correct and powerful method.

CLIL Lesson Plan

Unit number	5	**Lesson number**	1	**Title**	Group works

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	50'	Put in practice the concepts studied in all the module, develop summarize skills and cooperative skills.	Ss work in groups (3 Ss for each one) to create a short PP presentation or a poster. In particular, T gives out one of the following questions to each group: 1) Why is the dam much thicker at the bottom than it is at the top? 2) How do submarines survive under ocean water pressure? 3) Why is a house not squashed by the pressure? 4) Why have pressure cookers a mechanism to expel the vapour caused by the pressure? 5) Why does the ship float? 6) Why cannot a diver who dives into the sea exceed fall below a certain depth in the sea? Ss can do a research online and use all the contents and vocabulary learnt during the unit.	**Skills** L S R W **Key vocabulary** all learned during the lessons **Communicative structures** all used before	☐ Whole class ▣ Group work ☐ Pair work ☐ Individual work	Computers.	T walks around the class and monitors the activity. T takes notes about items that need clarifications.

CLIL Lesson Plan

Unit number	5	**Lesson number**	2	**Title**	Group works: oral presentations

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**

1	50'	Develop communication skills and cognitive skills, recap the main points learnt in the unit. Evaluate other groups' works.	Ss in group explain their group work realized in the previous lesson. T distributes one evaluation grid per group and invites Ss to complete them after listening to each presentation. Each group delivers their presentation, while the other groups listen carefully and ask questions. At the end of each presentation, every group fills the evaluation grid. Ss should come to an agreement in each group, since there is only one grid per group. T recalls those concepts that have been confused or not well explained during the oral presentations.	**Skills** L S R W **Key vocabulary** All learnt in the unit **Communicative structures** As you can see … From the point of view of…it appears that… On the other hand … Although …	☒ Whole class ☒ Group work ☐ Pair work ☐ Individual work	• U5_L2_ALL1.pdf • U5_L2_ALL2.pdf Peer Marking Rubric Teacher Rubric for Group Work	Formative: T models content and language after each group's presentation. Peer assessment: when each group presents the work other Ss fill in the peer evaluation grid.

CLIL Lesson Plan

Unit number	5	**Lesson number**	3	**Title**	Final recap

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	10'	Recall the main formula about fluid static and revise them.	In order to recall the main formula learned in the module, T prepares an online activity using LearningApps.org. Ss have to match the physical principles/laws with the correct formula.	**Skills** L S **R** W **Key vocabulary** all vocabulary from the module **Communicative structures** all structures of the module	☐ Whole class ☐ Group work ☐ Pair work ☒ Individual work	Learning app: link Computers or tablets	Self assessment: Ss with the app get immediate feedback about their mistakes.

2	20'	Recall the key vocabulary and revise them. Develop communication skills.	T prepares a Half a Crossword activity. Ss get half a crossword each, split evenly between two students working in a pair. They have to ask each other for missing information and define the words in their crossword. They take it in turn to explain their words which their partner must guess. They are not allowed to say the actual word. T monitors to check that learners understand the activity.	**Skills** L S R W **Key vocabulary** all vocabulary from the module **Communicative structures** Can you say that again? How do you spell that? and Let's What's (5) across? What's (1) down?, move on.	☐ Whole class ☐ Group work ▣ Pair work ☐ Individual work	• U5_L3_ALL1.pdf	Formative: T elicits content. Peer assessment.
3	10'	Recall and summarise the knowledge learnt in order to revise them. Use the correct scientific terms.	Ss work individually and fill the blanks in the text of the document. Then Ss are randomly asked to read aloud fragments of the text and T assesses the answers of Ss. If any answer is wrong the T asks questions to help the Ss detect and correct their own mistakes.	**Skills** L S R W **Key vocabulary** all vocabulary from the module **Communicative structures** all structures of the module	▣ Whole class ☐ Group work ☐ Pair work ▣ Individual work	• U5_L3_ALL2.pdf	Formative evaluation: T evaluates the correctness of the answers

4	10'	Self assessment. Reflect on the learning and levels of understanding. Identify areas that require improvement. Develop judgement skills.	Ss complete the self assessment grid. It can help then to identify gaps in their knowledge.	**Skills** L S **R** W **Key vocabulary** All vocabulary of the module **Communicative structures** All structures of the module	☐ Whole class ☐ Group work ☐ Pair work ☒ Individual work	• U5_L3_ALL3.pdf	Self assessment

CLIL Lesson Plan

Unit number	5	**Lesson number**	4	**Title**	Final test

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	50'	Apply acquired knowledge to new problems and situations about fluid static. Analyse unfamiliar situations to design solving strategies and reason critically. Use appropriate terminology	T hands out the tests and invites Ss to complete them on their own. T reads the questions of the test and asks if everything is clear. Ss take the test. At the end of the lesson, T collects the answer sheets to assess them.	**Skills** L S **R** **W** **Key vocabulary** all vocabulary from the module **Communicative structures** all structures of the module	☐ Whole class ☐ Group work ☐ Pair work ☒ Individual work	• U5_L4_ALL1.pdf	Summative: at the end of the lesson, T collects the tests in order to correct them.

CLIL Lesson Plan

Unit number	5	**Lesson number**	5	**Title**	Test correction

Activity	**Timing**	**Learning Outcomes**	**Activity Procedure**	**Language**	**Interaction**	**Materials**	**Assessment**
1	50'	Evaluate own work. Be aware of the mistakes and inaccuracies made during the class test.	T discusses and corrects on the blackboard the exercises assigned in the unit test. Ss check the class test with the T, they take notes and ask for clarifications where needed.	**Skills** L S R W **Key vocabulary** Specific vocabulary and functional language of the module **Communicative structures** Look at this solution… Is my strategy equivalent to that? Why did you come to this solution…? Could you tell me how…? Is it correct if I…? The easiest way is…	☒ Whole class ☐ Group work ☐ Pair work ☐ Individual work	• U5_L4_ALL1.pdf	Formative: T analyses Ss remaining doubts