CLIL LEARNING UNIT – Lower Secondary School

Title	**The Earth's movements** **Proff. Stefania Formicola, Marilena Genovese, Barbara Paindelli**	**Class**	3 Media
Subject(s) involved	Science	**Number of lessons**	7 lessons of 55 mins
Teaching aims	including • **culture • Language communication • cognition** • To present the content of the unit • To introduce the concept and main features of the content • To make learners aware and build on prior knowledge • To help learners understand that learning can be achieved in a second language • To help learners understand that keeping a record of new words is important		
Learning outcomes	What learners will be able **to know** by the end of the unit	*Learners will be able to know about…..* The Earth's movements and their consequences (day vs night; seasons)	
	What learners will be able **to do** by the end of the unit	*Learners will be able to …* Predict, observe and explain different astronomical phenomena Make models to explain the consequence of Earth's movements Write a lab report on the experiments and demonstrations done in class	
	What learners will be able to **be aware of** by the end of the unit	*Learners will be able to be aware of….* The importance of the phenomena they observe The influence of the earth's movements on daily life (day vs night; seasons)	
Content	CLIL theme with possible crosscurricular links	✓ Science: equinox and solstice ✓ Science: stars and contellations ✓ Science: Moon's movements ✓ Science: Tides ✓ Geography: geostrip	

		✓ Mathematics: time calculation and angles
Communication	Language **of** learning	Vocabulary: basic scientific terms related to astronomy (orbit, rotation, revolution, axis,pattern, day, night, seasons, spin, to revolve, to move around) Structures: present simple; past simple; It takes... (days, hours) to...; conditionals (if...) Functions: Express duration (it takes); make statements about the earth's movements; tell about past theories; make hypothesis.
Cognition	Thinking skills development (LOTS and HOTS)	Asking questions and problem solving, making hypothesis, observing, experimenting, finding differences and analogies, finding key words, reaching conclusions, justifying decision-making with reasoning
Culture	Awareness of topic relevance to daily life	Recognize consequences of astronomic movements in daily life, be aware of the scientific and astronomical language vs our daily language (compare Italian and English).
Materials and resources	Computer, projector, interactive whiteboard, websites, worksheets, realia (lamp, globe), multimedia files	
Assessment	Formative: on-going observation of Ss'learning through questions/feedback, homework correction, step by step Lab reports. Summative: written test.	

Each Learning unit will be divided in single lessons. The steps to follow during the learning unit are the following:

- ACTIVATION
- FIND OUT (INPUT)
- SORT OUT (INPUT PROCESSING)
- OUTPUT (SPEAKING AND WRITING TO PRESENT THE NEW PRODUCT/INDIVIDUAL/GROUPWORK)
- ASSESSMENT (SUMMATIVE ASSESSMENT OF THE UNIT)

These steps will be developed during a certain number of lessons each teacher will plan. An example follows:

LESSON PLAN

Lesson 1 /7 **Title: Introduction**

Timing 55 mins (once a week)

Activation of the unit	*How we create interest and raise motivation* T asks simple questions eg. What time is it? What part of the day is it? What season are we in? How do you know? (elicit: temperature, daylight, hours of light in a day, time of sunset, etc) What happens after the sun sets? Did you see the moon yesterday night? Etc. **Brainstorming (20 mins**): oral interaction on prior knowledge and experiences regarding duration of night and day and four seasons; how the Moon appears periodically in different ways. The teacher draws a spidergram and adds new vocabulary. Ss take notes in their notebook.	**Interactional Pattern*** **W**	**Resources and Materials**
Core activities **Find out (input)**	*A short description of each activity* *(observing, reading, selecting information, note taking, researching, ...)* **Lead-in (15 mins):** The teacher shows video about sunlight on the Earth (stop at minute 1:50 before the demonstration). T stops pauses when necessary. Ss take notes of the main keywords. T plays video again. Ss write 3 simple sentences on what they have understood **(10 mins).** **Feedback (10 mins):** T checks Ss notes/output. **HW:** Weekly observation of daylight changes: fill in the worksheet with your data. NB: the worksheet can be given one week prior to the start of the module so as to have some data available for class analysis at the beginning of the unit.	**W**	**Lim** https://www.youtube.com/watch?v=l64YwNl1wr0&t=1s sunlight_observation_worksheet

LESSON PLAN

Lesson 2 /7 **Title: Earth Rotation part 1**

Timing 55 mins

Lead in of the lesson (warm up)	*How we create interest and raise motivation* **HW check (15 mins):** Ss report the data in their chart and check if they match with the others'. T shows official weekly chart (taken from the web), elicits Ss' observation and results analysis (eg. day and night last 12 hours each; we see the sun shining from different positios; the sunlight movement creates a daily pattern etc.).	**Interactional Pattern*** **W**	**Resources and Materials**
Core activities **Sort out (input processing)**	*A short description of each activity (sequencing, classifying, sorting…)* **EXPERIMENT/DEMONSTRATION (30 mins):** T shows same video as previous lesson, starting from minute 1:50. Using a lamp and a globe, T follows the video instructions (T pre-watches video from minute 1:50, withouth showing the kids at this stage) to show the Earth's movements around the sun. Ss can help with the varoius steps of the demonstation, following T's directions. T elecits Ss' description of the various steps (eg. What are we doing? What are we using?) **LAB REPORT (25 mins):** Ss start filling in the lab report about the demonstration. **HW-Recap:** Ss watch the video again until the end and study the main concepts about earth rotation. Ss check & edit their Lab report if necessary.	**W**	Lamp Globe Curtains Lab_report.pdf

LESSON PLAN

Lesson 3-4 / 7 **Title: Earth Rotation part 2**

Timing 110 mins

Lead in of the lesson (warm up)	*How we create interest and raise motivation* **HW check (15 mins):** T checks the Ss' Lab reports as a recap of the contents of the previou lesson. Ss chorally tell the various info.	**Interactional Pattern*** **W**	**Resources and Materials**
Core activities **Sort out (input processing)**	*A short description of each activity (sequencing, classifying, sorting…)* T shows her own handmade sundial and hands out instructions for Ss to do the same (worksheet Make_your_own_sundial). (20 mins) T brings class to the school playground for the observation: Ss observe the correspondence between the shadow cast by the straw and the time on their watch. Ss mark the hours on their sundial. (90 mins). **HW**: Ss bring their sundial home and continue the observation during the weekend so to mark all the hours of daylight. Ss write the lab report of the experiment.	**W**	See worksheet Make_your_own_sundial A watch Lab_report.pdf

LESSON PLAN

Lesson 5 /7 Title: Revolution

Timing 55 mins

Lead in of the lesson (warm up)	*How we create interest and raise motivation* Review through oral interaction of previous lesson HW check **(15 mins):** Ss show their completed work with the sundials and recall their experience following the steps in their lab report. T takes notes on the Ss learning progress.	**Interactional Pattern***	**Resources and Materials**
Core activities **Sort out 2 (input processing 2 if necessary)**	*A short description of each activity* *(sequencing, classifying, sorting…)* **EXPERIMENT/ DEMONTRATION (40 mins)** Using a chalk or cellotape, T traces an elliptical path on the classroom floor. In turn: Student A is in the centre of the orbit holding a lamp: he represents the sun. Student B walks along the path holding a globe: he represents the earth. Student C-D take pictures/video of the various steps/movements of the earth. Rest of the class observe and take notes. During the experiment T draws Ss' attention on specific countries in different emispheres of the globe asking questions to elicit the key phenomena (eg. Where is Italy now? Is it close to or far from the sun? What season do you think it is? And what about Australia?...) T elicits FEEDBACK from Ss: Different seasons correspond to specific positions of the earth around the sun. **HW**: fill in the lab report on the Demonstration about Revolution.	**W**	a chalk or cellotape lamp globe smart phone or camera

LESSON PLAN

Lesson 6 / 7 Title: Recap

Timing 55 mins

Lead in of the lesson (warm up)	*How we create interest and raise motivation* **HW check:** T collects Ss lab reports for correction.	**Interactional Pattern***	**Resources and Materials**
Output (speaking/writing/presentation of individual or groupwork/product)	**RUNNING DICTATION (50 mins)** T cuts out key words and definitions to form stripes/cards. T forms 6 groups of 4 Ss and gives 2 key words to each group. T sticks Key words cards on classroom walls and assigns jobs in each grp (1 runner, 1 secretary, 1 spelling editor, 1 reader). The runners go around the class and find the correct definition for their assigned key words, try to memorize it, go back to their group and dictate it to the writer, who writes with the help of the spelling editor. When they finish, the reader reads their definition to class. FEEDBACK: See who got them right. T randomly have Ss repeat the definitions and key concepts. **HW:** review of the module through ppt (T will send it home via email), video, lab reports and Ss notes for next lesson test.	**G**	**Ppt Earth_movements_definitions**

LESSON PLAN

Lesson7/7

Assessment	*Summative assessment of the whole learning unit* Review learning of subject content and help teachers know what learners have achieved using standardized tests o Filling the gaps or T/F ro Multiple choice or Matching or Writing. Written test_earth_movements Taken and adapted from: https://www.slideshare.net/MMoiraWhitehouse/solarplanet-rotate-orbit-sponge-2

Whole class: W, groupwork: G, pairwork: P, individual work: I