

# CLIL Module Plan

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<b>School Grade</b>	<input type="radio"/> Primary		<input type="radio"/> Middle		<input checked="" type="radio"/> High
<b>School Year</b>	<input type="radio"/> 1	<input type="radio"/> 2	<input checked="" type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
<b>Subject</b>	Fisica	<b>Topic</b>	Astronomy-gravitation		
<b>CLIL Language</b>	<input checked="" type="radio"/> English			<input type="radio"/> Deutsch	

<b>Personal and social-cultural preconditions of all people involved</b>	<p>The class is formed by students with an almost homogeneous background, both from a social-cultural point of view and from the learning point of view. Learning level is satisfactory/good. Students motivation and willingness to study are in average satisfactory. Average language level: B1/B2. Two students are native English speakers. Number of students: 20 Learning spaces are excellent (classes, laboratories (physics and computer labs available). Subject taught by the teacher both in Italian and in CLIL: physics.</p>
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<b>Students' prior knowledge, skills, competencies</b>	<b>Subject</b>	<b>Language</b>
	<p>Some lessons were taught in CLIL in the previous years. Therefore, students already know a basic specific vocabulary. Students' knowledge acquired in the previous 2 school years allows them to understand the new ideas and concepts presented in this Module. This educational path has been carefully chosen among many other possibilities, because its theoretical basis is simple and it offers the possibility to carry out many experiments . All the students can therefore face both the content and the language involved in the module. I would like to point out that this module is coherent with the two other modules proposed for the classes 4 and 5; all the three modules are meant to introduce the idea of "field" (gravitational, electric and electromagnetic respectively) in a soft, experimental way; moreover, all the three modules give basic information about history of science.</p>	<p><b>SPEAKING SKILLS:</b> students can develop a topic well enough to be followed without difficulty most of the time. They can briefly give reasons and explanations for opinions, plans and actions. <b>WRITING SKILLS:</b> Students can write clear, straightforward texts on a variety of subjects related to their field of interest, synthesising and evaluating information and arguments from a number of sources. They can write a simple review of a film, book or play. <b>LISTENING SKILLS:</b> Students can understand the main ideas of linguistically complex speech on both concrete and abstract topics, including technical discussions in their field of specialisation. They can follow extended speech and complex lines of argument provided the topic is reasonably familiar,</p>

<b>Timetable fit</b>	☉ Module	Length 21 lessons (55 min each)
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<b>Description of teaching and learning strategies</b>	<p>Various strategies are used: Communicative approach; laboratory work; cooperative learning; team work; pairs work; discussions with the whole class; ICT tools</p>
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# Overall Module Plan

**Unit: 1**

Models of the universe: a brief history

**Unit length:** 23

**Lesson 1**

Naked-eye astronomy

**Lesson 2**

Three puzzling problems

**Lesson 3**

Plato

**Lesson 4**

Ptolemy

**Lesson 5**

Copernicus, Brahe, Kepler

**Lesson 6**

COMPUTER SIMULATION

**Lesson 7**

Role game

**Lesson 8**

Galilei Galilei

**Lesson 9**

Galileo Galilei\_videos

**Lesson 10**

NEWTON'S REVOLUTION

**Lesson 11**

Discussion

**Lesson 12**

Isaac Newton

**Lesson 13**

Newton's law of gravitation

**Lesson 14**

EXERCISES

**Lesson 15**

Laboratory

**Lesson 16**

Laboratory report discussion

**Lesson 17**

kahoot!

**Lesson 18**

TEST

**Lesson 19**

Test discussion

**Lesson 20**

EXERCISES

**Lesson 21**

Exhibition

**Lesson 22**

Planetarium

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	1	<b>Title</b>	Naked-eye astronomy
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	25	To know the visible objects in the sky To be aware of how to observe the sky To be able to grasp the main features of heavenly bodies to activate prior knowledge and revision of known content, vocabulary and concepts	Students are asked to describe the heavenly bodies they can see in the sky. They are asked to focus on the bodies they have actually observed Teacher writes key words and concepts on the blackboard	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> heavenly body -planet-comet-sun-moon-phase-Mercury-Venus-Mars-Saturn- Jupiter-brightness</p> <p><b>Communicative structures</b> Can you list.. Could you tell me ... Please, distinguish heavenly bodies ... What can you tell me... How can you describe...</p>	L	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work		Teacher's feedback
L	S	R	W								

2	30	see activity 1	<p>Students are asked to create a worksheet in order to organize their knowledge about the issues arisen in activity 1. Students work in pair. Alternatively, students can complete the worksheet (prepared by the teacher (see "materials"))</p>	<p><b>Skills</b></p> <p>L S R W</p> <p><b>Key vocabulary</b> see activity 1</p> <p><b>Communicative structures</b> can you classify/ sketch/ summarize...</p>	<p><input type="checkbox"/> Whole class</p> <p><input type="checkbox"/> Group work</p> <p><input checked="" type="checkbox"/> Pair work</p> <p><input type="checkbox"/> Individual work</p>	<ul style="list-style-type: none"> <li>• Organizing knowledge.pdf</li> </ul>	<p>Teacher monitors pairs</p>
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# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	2	<b>Title</b>	Three puzzling problems
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55 min	- To identify the main phenomena related to planetary motion - To interpret observations - To be able to distinguish different reference systems	Students summarize and highlight the main points of lesson 1 (5-10 min) Teacher uses slides to describe three peculiarities of planetary motion as seen from an earth based reference system. Students take notes Students read the text "Introduction" in pairs	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> retrograde motion- maximum elongation- eastward/westward motion-</p> <p><b>Communicative structures</b> I shall talk about.. To begin with.. the second/third point ... In conclusion...</p>	L	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>INTRODUCTION.pdf</li> </ul>	teacher feedback pair assessment
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	3	<b>Title</b>	Plato
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	40	-to know the Greeks explanations of planetary motion -to be aware of mathematics as a tool of knowledge - to understand Plato approach	Students read the text in pair. Students underline key words and identify main concepts. Students focus on Plato's role in proposing a cosmological theory. Students discuss Plato's ideas	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td><b>R</b></td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> Uniform speed; apparent position; uniform circular motion; model</p> <p><b>Communicative structures</b> To account for... What are the assumptions...? Plural of nouns coming from Latin (scientific example: phenomena, radii, foci, nuclei)</p>	L	S	<b>R</b>	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>• PLATO.pdf</li> </ul>	teacher monitors students work
L	S	<b>R</b>	W								



2	15	-see previous activity	Teacher proves the existence of only 5 platonic solids. Students work in pairs and build the 5 platonic solids using straws	<p><b>Skills</b></p> <table border="1" data-bbox="1115 167 1456 215"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> tetrahedron, octahedron, dodecahedron, cube, icosahedron</p> <p><b>Communicative structures</b></p>	L	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	straws (or geomag )	Pair assessment
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	4	<b>Title</b>	Ptolemy
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	45	<p>- To cope with a complicated model of universe - To be aware of the advantages and disadvantages of Ptolemy system</p> <p>- To know the role of the Ptolemaic system in the history of science - To develop question skills</p>	<p>Teacher uses slides to presents the main features of Ptolemaic system. Students take notes</p>	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> Epicycle;deferent;uniform motion; earth-centred</p> <p><b>Communicative structures</b> see lesson 3</p>	L	S	R	W	<p><input checked="" type="checkbox"/> Whole class</p> <p><input type="checkbox"/> Group work</p> <p><input type="checkbox"/> Pair work</p> <p><input type="checkbox"/> Individual work</p>		teacher feedback
L	S	R	W								

2	10	- To understand that any curve can be traced by composing appropriate circular motions	Students divided in groups trace tracks with a spirograph	<p><b>Skills</b></p> <table border="1" data-bbox="1167 165 1520 212"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> spirograph</p> <p><b>Communicative structures</b></p>	L	<b>S</b>	R	W	<input type="checkbox"/> Whole class <input checked="" type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work	Spirograph (this toy can be easily found in any toy shop)	
L	<b>S</b>	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	5	<b>Title</b>	Copernicus, Brahe, Kepler
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	<ul style="list-style-type: none"> <li>- To comprehend Copernicus model of the cosmos. A theory with new and old ideas</li> <li>- To recognize the work of two major astronomers (Brahe and Kepler) - To be able to describe the systems proposed by the three astronomers</li> </ul>	<p>Teacher presents the Copernican system. Teacher uses slides to describe Tycho Brahe's work; teacher describes the curious system proposed by Brahe.</p> <p>Teacher uses slides to describe Kepler's work; teacher describes the curious system proposed by Kepler. Teachers stimulates questions and discussion</p>	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> Ellipse; sun-centred-period of revolution</p> <p><b>Communicative structures</b> This physical law states that...</p>	L	S	R	W	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Whole class</li> <li><input type="checkbox"/> Group work</li> <li><input type="checkbox"/> Pair work</li> <li><input type="checkbox"/> Individual work</li> </ul>		teacher feedback
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	6	<b>Title</b>	COMPUTER SIMULATION
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	- to master the models of the cosmos described in the previous lessons - to motivate students using computer-based learning	Teacher explains how to use the software. Students work in pairs. Students check their knowledge using the computer simulations and discussing in pairs PLEASE NOTE: THE FOLLOWING LESSON IS LESSON NUMBER 20	<b>Skills</b> <table border="1" style="margin-left: 20px;"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <b>Key vocabulary</b>  <b>Communicative structures</b>	L	<b>S</b>	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>• Copernico.exe.zip</li> <li>• Tolomeo.exe.zip</li> <li>• Tycho.exe.zip</li> </ul>	Pair assessment
L	<b>S</b>	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	7	<b>Title</b>	Role game
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	- To foster speaking skills - To deepen understanding of the sun-centred and earth-centred systems	Teacher divides students in two groups. One group plays the role of Ptolemy; the second group plays the role of Copernicus. Students debate the issues outlined in the previous lessons; groups explain and uphold either the sun-centred or the earth-centred theory	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> See previous lessons</p> <p><b>Communicative structures</b> I'm not sure I agree with that because.. I don't think that is right because.. My point/argument is.. Because of this... What you're saying contradicts with.. We believe that.. I see your point, but... We'd like to focus on..</p>	L	<b>S</b>	R	W	<input type="checkbox"/> Whole class <input checked="" type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work		Teacher monitors the debate
L	<b>S</b>	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	8	<b>Title</b>	Galilei Galilei
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	25	- To grasp the contribution of Galilei in the astronomical field - To activate prior knowledge and revise known content	Teacher uses slides to describe Galileo's work Teachers lists and explains the discoveries of Galileo in the astronomical field	<p><b>Skills</b></p> <table border="1"> <tr> <td><b>L</b></td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> Satellite-sunspot-rotation period-telescope</p> <p><b>Communicative structures</b> see lesson 3</p>	<b>L</b>	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work		teacher feedback
<b>L</b>	S	R	W								

2	30	see activity 1	<p>Teacher assigns a text to students divided in pairs. Students identify in the text the topics previously presented by the teacher. Students read and discuss the text. Students underline key words and concepts. Students identify Galileo's role in astronomy.</p>	<p><b>Skills</b></p> <table border="1" data-bbox="1108 167 1451 215"> <tr> <td>L</td> <td><b>S</b></td> <td><b>R</b></td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see activity 1</p> <p><b>Communicative structures</b></p>	L	<b>S</b>	<b>R</b>	W	<p><input type="checkbox"/> Whole class</p> <p><input type="checkbox"/> Group work</p> <p><input checked="" type="checkbox"/> Pair work</p> <p><input type="checkbox"/> Individual work</p>	<ul style="list-style-type: none"> <li>Galileo.pdf</li> </ul>	<p>pair assessment</p>
L	<b>S</b>	<b>R</b>	W								



# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	9	<b>Title</b>	Galileo Galilei_videos
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	35	see lesson 8	Students watch the brief videos created by the Museo Galileo in Florence. Students stop video and ask for help when needed. Students take notes	<b>Skills</b> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <b>Key vocabulary</b> see previous lessons  <b>Communicative structures</b>	L	S	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	videos: <a href="#">link</a>	Pair assessment
L	S	R	W								
2	30	- To stimulate speaking skills - To foster summarizing skills - To revise content	Students summarize the short videos Discussion is encouraged	<b>Skills</b> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <b>Key vocabulary</b>  <b>Communicative structures</b>	L	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work		ongoing assessment
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	10	<b>Title</b>	NEWTON'S REVOLUTION
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	25	- To deepen the contributions of Aristotle, Galileo and Newton to science understanding - To activate prior knowledge and revise known content	Students watch the film Students stop the video and ask for help when needed students take notes	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> gravitational force logic-natural place- parabola-horizontal motion-universal law- constant speed- acceleration-force</p> <p><b>Communicative structures</b> ..in consequence.. if..than... the likes of..</p>	L	S	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	FILM: <a href="#">link</a>	teacher monitors students
L	S	R	W								

2	30	<p>- To stimulate speaking skills - To foster summarizing skills - To revise content</p>	<p>Students summarize the main issues of the film. They focus on the three different vision of the Universe Discussion is encouraged and stimulated</p>	<p><b>Skills</b></p> <table border="1" data-bbox="1019 164 1364 212"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous activity</p> <p><b>Communicative structures</b> When ...lived? What can you tell me about...? What is the main idea of...? Who demonstrated that...? How does he justify....?</p>	L	<b>S</b>	R	W	<p><input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work</p>	<p>• NEWTON'S REVOLUTION.pdf</p> <p>homework: students watch the film "Newton's revolution" ; students check the words listed in the file "Newton's revolution"</p>	<p>pair assessment</p>
L	<b>S</b>	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	11	<b>Title</b>	Discussion
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	30	- To improve scientific writing skills - To revise content	Students answer to the questions on the worksheet "Newton's revolution"	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lesson</p> <p><b>Communicative structures</b> see previous lesson</p>	L	<b>S</b>	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>• NEWTON'S REVOLUTION.pdf</li> </ul>	pair assessment
L	<b>S</b>	R	W								

2	25	-To improve and stimulate speaking skills - To revise content	Students read and discuss the answers written in the worksheet	<p><b>Skills</b></p> <table border="1" data-bbox="1021 164 1361 212"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lessons/activities</p> <p><b>Communicative structures</b></p>	L	<b>S</b>	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>• NEWTON'S REVOLUTION.pdf</li> </ul>	teacher feedback
L	<b>S</b>	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	12	<b>Title</b>	Isaac Newton
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<b>Activity</b>	<b>Timing</b>	<b>Learning Outcomes</b>	<b>Activity Procedure</b>	<b>Language</b>	<b>Interaction</b>	<b>Materials</b>	<b>Assessment</b>
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1	55	<p>- To learn about Newton's difficulties in discovering the fundamental laws describing nature - To be aware of the difficulties in the scientific process - To know about Newton's life</p>	<p>Students watch the film in pairs Students stop video and ask for help when needed Teacher asks to focus mainly on concepts showed from from minute 30 onwards</p>	<p><b>Skills</b></p> <table border="1" data-bbox="1146 167 1491 212"> <tr> <td style="background-color: black; color: white;">L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> Average speed - calculus-prism-spectrum- reflector telescope-philosopher's stone-claim-keystone-inverse square law-Thought experiment Figure out</p> <p><b>Communicative structures</b> If..., than... This ... easily follows from ... This I... can account for... idiomatic expressions used in the film To bring on the stage To shoot off the hip</p>	L	S	R	W	<p><input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work</p>	<p>BBC Documentary <a href="#">link</a></p>	<p>Teacher monitors students</p>
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	13	<b>Title</b>	Newton's law of gravitation
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	15	- To revise content	Students summarize key ideas of Newton's work	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lesson</p> <p><b>Communicative structures</b></p>	L	<b>S</b>	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work		teacher monitors discussion
L	<b>S</b>	R	W								



2	40	<p>- to understand the inverse square law - to be able to apply the gravitational law -to acquire specific scientific language</p>	<p>Teacher shows few slides in order to focus on Newton's three principia and gravitational law. Teacher explains the mathematical and physical issues of the inverse square law. Teacher gives examples Teacher asks students to state the law using the appropriate specific language</p>	<p><b>Skills</b></p> <table border="1" data-bbox="1189 169 1532 212"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> inverse square law infinity</p> <p><b>Communicative structures</b> Please, state... What do you mean by ... What is the importance of Can you provide an example..?</p>	L	S	R	W	<p><input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work</p>	<p>teacher feedback</p>
L	S	R	W							

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	14	<b>Title</b>	EXERCISES
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	110	- To be able to apply Newton's gravitational law - To be aware of the different situations where gravitational law can be applied - To develop specific skills in problem solving (the questions proposed in the worksheet differ in typology) - To develop specific language	Teacher provides each pair with a worksheet. Students solve problems and answer questions. They discuss the chosen procedure. Teacher monitors students' work	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lessons</p> <p><b>Communicative structures</b> Assume that... if...then.. describe... Prove, derive... In order to...</p>	L	S	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>exercises_Newton's_gravitational_law.pdf</li> </ul>	pair assessment
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	15	<b>Title</b>	Laboratory
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<b>Activity</b>	<b>Timing</b>	<b>Learning Outcomes</b>	<b>Activity Procedure</b>	<b>Language</b>	<b>Interaction</b>	<b>Materials</b>	<b>Assessment</b>
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1	55	<p>- to be aware of the idea of apparent size  - to understand a technique to find Earth's orbit - to use the computer to carry out an indirect measurement  - to learn about the characteristics of Earth's orbit</p>	<p>-Students work in pair - Students use computer to carry out on an online experiment - students follows the suggested steps - students take notes - students answer to the question posed on the web - students are asked to write a report on the experiment, to be concluded at home (students follow the tips given in file Laboratory_reports). Students will draw Earth's orbit on a paper sheet. They are asked to find: - the position of the Sun (the focus of the ellipse); - the eccentricity of the orbit</p>	<p><b>Skills</b></p> <table border="1" data-bbox="949 164 1209 212"> <tr> <td>L</td> <td>S</td> <td><b>R</b></td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b>  apparent size- sunspots-regular pattern- aphelion-perihelion-plot-ellipse-focus-eccentricity</p> <p><b>Communicative structures</b>  one month apart... How well does it match....?  When does .. (aphelion) ..occur?</p>	L	S	<b>R</b>	W	<p><input type="checkbox"/> Whole class  <input type="checkbox"/> Group work  <input checked="" type="checkbox"/> Pair work  <input type="checkbox"/> Individual work</p>	<p>• LABORATORY_REPORTS.pdf  <a href="#">link</a> (ES 2603 A year of the Sun)</p>	<p>pair assessment</p>
L	S	<b>R</b>	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	16	<b>Title</b>	Laboratory report discussion
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<b>Activity</b>	<b>Timing</b>	<b>Learning Outcomes</b>	<b>Activity Procedure</b>	<b>Language</b>	<b>Interaction</b>	<b>Materials</b>	<b>Assessment</b>
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1	55	<p>- to strengthen skills in writing a scientific report (students learnt how to write a lab report in the previous two school years) - to be able to analyze the experimental results -to be able to compare results with theory and with the results found in literature</p>	<p>- Teachers asks students to read their laboratory reports - teacher and students discuss the procedure - teacher and students analyze and discuss results - teacher and students check if the procedure given in file "Laboratory_reports" has been correctly followed</p>	<p><b>Skills</b></p> <p>L S R W</p> <p><b>Key vocabulary</b> see previous lesson</p> <p><b>Communicative structures</b> see file "laboratory_reports"</p>	<p><input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work</p>	<p>• LABORATORY_REPORTS.pdf</p>	<p>Teacher monitors the discussion Teacher grades the reports</p>
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# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	17	<b>Title</b>	kahoot!
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	- To review ideas acquired so far - To motivate students - To revise contents	Students are asked to connect their mobiles to KAHOOT! site. Questions are projected on a screen and students answer by clicking on their device	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td><b>R</b></td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lessons</p> <p><b>Communicative structures</b> see previous lessons</p>	L	S	<b>R</b>	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input checked="" type="checkbox"/> Individual work	<a href="#">link</a> (skip questions 20 and 21)	Self assessment Performance ranking is produced by the software
L	S	<b>R</b>	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	18	<b>Title</b>	TEST
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	- to know the main scientific issues of this Unit - to be able to distinguish the main characteristics of heliocentric and geocentric theories - to be able to describe the work of the scientists discussed in this Unit - to know how to solve simple exercises - To use appropriate vocabulary - To test content and language acquired so far	Students are given a worksheet Students work individually	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lessons</p> <p><b>Communicative structures</b></p>	L	S	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input checked="" type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>• TEST.pdf</li> </ul>	Teacher grades the tests.
L	S	R	W								



# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	19	<b>Title</b>	Test discussion
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	see previous lesson	Graded tests are given to the students. Students discuss in pair their performance. Students try to complete information gaps If needed, teacher completes information gaps	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td><b>S</b></td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lessons</p> <p><b>Communicative structures</b></p>	L	<b>S</b>	R	W	<input type="checkbox"/> Whole class <input type="checkbox"/> Group work <input checked="" type="checkbox"/> Pair work <input type="checkbox"/> Individual work	<ul style="list-style-type: none"> <li>• TEST.pdf</li> </ul>	Pair assessment: students compare their tests and grades.
L	<b>S</b>	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	20	<b>Title</b>	EXERCISES
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	<ul style="list-style-type: none"> <li>- to be able to apply Kepler's laws</li> <li>- to be able to describe the heliocentric and geocentric systems</li> <li>- to revise the work of the scientists discussed so far</li> <li>- to develop specific skills in problem solving (the questions proposed in the worksheet differ in typology)</li> <li>- to use specific language</li> </ul>	<p>PLEASE NOTE: THIS LESSON SHOULD FOLLOW LESSON 6</p> <p>Teacher provides each pair with a worksheet. Students solve problems and answer questions. They discuss the chosen procedure. Teacher monitors students' work</p>	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td><b>R</b></td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see previous lessons</p> <p><b>Communicative structures</b></p>	L	S	<b>R</b>	W	<ul style="list-style-type: none"> <li><input type="checkbox"/> Whole class</li> <li><input type="checkbox"/> Group work</li> <li><input checked="" type="checkbox"/> Pair work</li> <li><input type="checkbox"/> Individual work</li> </ul>	<ul style="list-style-type: none"> <li>• Exercises_history of astronomy_Kepler's laws.pdf</li> </ul>	Pair assessment
L	S	<b>R</b>	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	21	<b>Title</b>	Exhibition
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	NOTE: This lesson is optional, since it could be difficult to organize it. Students visit the permanent exhibition "La casa di Galileo" located at Liceo scientifico Galilei -Trento. Or, even better, class can have a school trip to Florence and visit the Museo Galileo (Visits are also offered in English). A virtual visit to this Museum is possible. This lesson should follow lesson number 10, but it can also be offered at the end of the module - to deepen the knowledge about Galileo Galilei - -to revise content and language	Teacher (or guide) shows and describes the instruments used by Galileo Galilei Teacher (or guide) illustrates the discovery made by Galileo and the procedures used by the scientist Students can take notes	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see lessons 10-11</p> <p><b>Communicative structures</b></p>	L	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work	Museum in Florence: <a href="#">link</a> museum at Liceo Galilei - Trento: <a href="#">link</a>	teacher feedback
L	S	R	W								

# CLIL Lesson Plan

<b>Unit number</b>	1	<b>Lesson number</b>	22	<b>Title</b>	Planetarium
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Activity	Timing	Learning Outcomes	Activity Procedure	Language	Interaction	Materials	Assessment				
1	55	NOTE: This lesson is optional, since it could be difficult to organize it. Students visit the planetarium located at Liceo scientifico Galilei - Trento. Or, class can have a school trip to the Planetarium of Rovereto or in another town . This lesson should follow lesson number 1, but it can also be offered at the end of the module - to deepen the knowledge about the heavenly bodies seen with the unaided eye -to revise content and language	Teacher (or guide) explains the motion of the stars, the constellation, the motion of planets. Students asks questions	<p><b>Skills</b></p> <table border="1"> <tr> <td>L</td> <td>S</td> <td>R</td> <td>W</td> </tr> </table> <p><b>Key vocabulary</b> see lesson 1</p> <p><b>Communicative structures</b></p>	L	S	R	W	<input checked="" type="checkbox"/> Whole class <input type="checkbox"/> Group work <input type="checkbox"/> Pair work <input type="checkbox"/> Individual work		Teacher feedback
L	S	R	W								