

STATES OF MATTER

School	<input checked="" type="radio"/> Primary <input type="radio"/> Middle <input type="radio"/> High
Year / Class	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
Subject :	Science Topic: Water cycle
CLIL language	English

Teacher / Teaching team profile	Teacher's role: <input checked="" type="radio"/> Main Teacher <input type="radio"/> Co-teacher <input type="radio"/> Other: _____ Subject taught: English
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Student group profile (general)	CEFR Level: <input type="radio"/> A1 <input type="radio"/> A2 <input type="radio"/> C1 <input type="radio"/> B1 <input type="radio"/> B2 <input type="radio"/> C2
	<input checked="" type="radio"/> Experiences of CLIL: previous year <input type="radio"/> Migrant background: Morocco, Pakistan, Kosovo <input type="radio"/> Italian mother tongue <input type="radio"/> Special Educational Needs : No <input type="radio"/> Other mother tongue <input type="radio"/> Other: _____

Timetable fit	<input type="radio"/> Module <input checked="" type="radio"/> Lesson	Previous lessons: Weather and Climate
		Future lessons: Changing of states and The Water cycle

Resources & tools	realia (objects in the school and garden) ice, water, steam and kettle flashcards worksheets online games online gifts (video) binary key tabel
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Students' prior knowledge, skills, competencies	Subject	Language
	About temperature: - know how do feelings of being cool or warm correspond to measured temperatures; - know basic definitions and concepts; what is the temperature of our classroom, lava from a volcano, a melting ice cube; etc.);	- <u>Vocabulary</u> about temperature and weather - <u>Grammar structures</u> : <i>It's hot/warm/cool/cold/freezing</i>

<p>Learning Outcomes expected for this lesson</p>	<p>Teaching objectives:</p> <ul style="list-style-type: none"> - to enable learners to classify items as being solids, liquids or gases; - to enable pupils to explain why an item is solid/liquid/gas; - to arouse children's interest in state of matter; - to encourage autonomy in working; - to develop critical thinking and inductive reasoning. <p>Learning outcomes:</p> <p>Content:</p> <ul style="list-style-type: none"> - to know the name of the states of matter and their properties; - to know the different particle model of matter; <p>Cognition:</p> <ul style="list-style-type: none"> - to think of examples of solids, liquids and gases; - to classify items as being solids, liquids or gases; - to compare different states of matter; - to identify some properties of matter; - to be able to create a binary key and a table; <p>Communication:</p> <ul style="list-style-type: none"> - to use new and revisited vocabulary; - to be able to use grammar structures in an effective way; - to formulate questions and give short answers; - to explain why an item is a solid, liquid or gas; <p>Culture:</p> <ul style="list-style-type: none"> - to be aware that everything (also human beings) is made up of matter and that differences depend on the way the atoms are packed together.
<p>Methodology</p>	<p>Content</p> <p>The two lessons start with a warm up activity thanks to which prior knowledge is activated and vocabulary revisited. The new language and content are introduced gradually and activities are planned so that intuitive reasoning is developed. By observing and experiencing the reality, pupils discover the world around them. Then teacher provides them with tools (e.g. binary key) that support them in classifying and explaining world phenomena. Other tools include: realia, pictures, tables and animated gifs. In order to support different intelligences and learning styles, the lessons provide different types of activities. Learners work individually, in groups and in plenary, so that both autonomy and cooperation are fostered. Moreover, the TPR technique is employed to encourage embodied cognition of reality. Through movements and body positions, learners represent and understand atoms arrangement in solids, liquids and gases.</p>

Language

To support language learning, the teacher adopts different scaffolding strategies, including:

- visual aids
- writing prompts
- familiar chunks
- corrective feedback techniques (e.g. recast, repetition, elicitation)
- effective use of wait time
- grouping children so that experienced and less experienced pupils work and communicate together.

During the lessons, teacher observes and monitors pupils' task achievement, language, effort and collaboration with classmates. In doing this, teacher uses an evaluation rubric for each student, with the aim of being as objective as possible.

At the end of the activities learners' knowledge and abilities are evaluated through a written test.

In this lesson, assessment is both formative and summative.

Activity	Timing	Activity Procedure	Activity aims	Language	Interaction	Materials	Assessment
1st Part: States of matter							
1	15 min	<p>Sensorial exploration</p> <p>Show children three examples of water states (ice, water, steam) and ask them to describe each state using the vocabulary given (word cards are stuck on the blackboard).</p> <p>Explain that each object around us is made up of matter; we can classify the objects in three classes:</p> <ul style="list-style-type: none"> □ solids: have got a firm shape □ liquids: take the shape of their container □ gases: fill completely their container 	<p>To introduce vocabulary about states of matter</p> <p>To arouse children's interest in states of matter</p> <p>To develop inductive reasoning</p> <p>To be aware that everything (also human beings) is made up of matter</p>	<p>Vocabulary: <u>New:</u> <i>hard, firm, soft, transparent, invisible, warm, rough, wobbly, smooth, heavy and loose</i> (adjectives)</p> <p><i>solid, liquid, gas</i></p> <p><u>Revisited:</u> <i>cold, hot, cool, freezing</i></p> <p>Structures: <i>It changes shape</i></p> <p><i>It doesn't change shape</i></p>	Whole class	<p>Ice, water, steam, kettle to create steam</p> <p>The teacher prepares flashcards with pictures of the new and revisited vocabulary and grammar to provide adequate scaffolding</p>	<p>Teacher observes:</p> <ol style="list-style-type: none"> 1. Task achievement 2. Communication 3. Effort <p>Evaluation rubric (<i>Attachment8</i>)</p>
2	10 min	<p>Classification</p> <p>Ask children to classify some objects, playing a game on the IWB.</p>	<p>To classify items as being solid, liquid or gas</p> <p>To use new and revisited vocabulary</p> <p>To use grammar structures</p>	<p>Vocabulary: <u>New:</u> <i>solid, liquid, gas</i></p> <p>Structures: <i>(I think) It is _____</i></p>	Whole class	<p>http://www.sciencekids.co.nz/games_activities/gases.html</p>	<p>Teacher observes:</p> <ol style="list-style-type: none"> 1. Task achievement 2. Communication 3. Effort <p>Evaluation rubric (<i>Attachment8</i>)</p>

Activity	Timing	Activity Procedure	Activity aims	Language	Interaction	Materials	Assessment
3	15 min	<p>How to classify</p> <p>Ask children to remember the questions they made (consciously or unconsciously) during the classification tasks.</p> <p>Suggest children to create a tool with which to classify objects and phenomena, using these questions as a starting point.</p> <p>Provide an incomplete binary key and ask groups to fill it up, sticking labels in the correct place.</p>	<p>To be able to create a binary key</p> <p>To develop critical thinking</p> <p>To encourage autonomy in working</p> <p>To make questions and give short answers</p>	<p>Structures: Question forms and short answers</p>	Group work	<p>Binary key (full and empty) (Attachment 1)</p>	<p>Teacher observes:</p> <ol style="list-style-type: none"> 1. Task achievement 2. Communication 3. Collaboration 4. Effort <p>Evaluation rubric (Attachment 8)</p>
4	15 min	<p>Classification using binary key</p> <p>Let children practice with the binary key individually on a worksheet.</p>	<p>To classify items as solid, liquid, gas with the help of the binary key</p> <p>To encourage autonomy in working</p> <p>To explain why an item is a solid, liquid or gas</p>	<p>Vocabulary: <u>New:</u> solid, liquid, gas</p> <p>Structures: Question forms and short answers</p> <p>It's _____ because _____</p>	Individual work	<p>Worksheet (Attachment 2)</p>	<p>Teacher observes:</p> <ol style="list-style-type: none"> 1. Task achievement 2. Communication 3. Effort <p>Evaluation rubric (Attachment 8)</p>

Activity	Timing	Activity Procedure	Activity aims	Language	Interaction	Materials	Assessment
2nd Part: Particle models							
5	5 min	Warm up activity Show some objects and ask children to classify them, justifying their answers.	To recall knowledge acquired in the previous lesson To use new and revisited vocabulary To explain why an item is a solid, liquid or gas	Vocabulary: <u>New:</u> <i>solid, liquid, gas</i> Structures: Question forms and short answers <i>It's _____ because _____</i>	Whole class	Real examples of solids liquids and gases (realia) or pictures Substitution table (<i>Attachment3</i>)	Teacher observes: 1. Task achievement 2. Communication 3. Effort Evaluation rubric (<i>Attachment8</i>)
6	20 min	TPR activity Suggest a TPR activity to support comprehension. In the first phase children stand up in an empty space. Each pupil holds the hands of two different classmates and keeps the arms outstretched. Ask children to tense the body as they were snowflakes. In the second phase pupils are still holding the hands each other, but the arms are loosed. Ask children to move in the space as they were water of the ocean (or waves). In the third phase pupils are far apart and move freely in the space. Ask children to move around the space, floating as a bubble in the air.	To arouse children's interest in states of matter To compare different states of matter To identify some properties of matter	Vocabulary: <u>New:</u> <i>solid, liquid, gas, loose, wobbly, firm, be far apart</i> Structure: Imperative form	Whole class	Wide space	Teacher observes: 1. Task achievement 2. Communication 3. Effort Evaluation rubric (<i>Attachment8</i>)

Activity	Timing	Activity Procedure	Activity aims	Language	Interaction	Materials	Assessment
7	10 min	<p>Discussion</p> <p>Discuss on the previous activity with the whole class. Provide language support through word cards.</p> <p>Ask children to reflect on their body positions, movements and how they occupied the space in the different phases.</p> <p>In the first phase children could not move around because they were fixed together.</p> <p>In the second phase, they could move close or walk away, occupying space differently.</p> <p>In the third phase pupils could reach each part of the room, moving in all directions.</p>	<p>To develop critical thinking and inductive reasoning</p> <p>To compare different states of matter</p> <p>To identify some properties of matter</p> <p>To know the different particle model of matter</p> <p>To use grammar structures in an effective way</p>	<p>Vocabulary: <u>New:</u> <i>solid, liquid, gas, loose, wobbly, firm</i></p> <p>Structures: <i>don't move/ move around each other/ move freely</i> (in all directions) <i>be/don't be compressed</i> <i>be very close together/be close together/be far apart</i></p>	Whole class	Flashcards (used in the first activity)	<p>Teacher observes:</p> <ol style="list-style-type: none"> 1. Task achievement 2. Communication 3. Effort <p>Evaluation rubric (Attachment8)</p>

Activity	Timing	Activity Procedure	Activity aims	Language	Interaction	Materials	Assessment
8	30 min	<p>Particle model animated gifs</p> <p>Show children particle behavior animated gifs.</p> <p>Guide children to associate each body-position and movement to a specific state of matter.</p> <ul style="list-style-type: none"> - In a solid state the atoms are very close together. They have a fixed position: a solid is firm (doesn't change shape). The children experience that in the first phase. - The atoms in a liquid state are close together and move around each other. The pupils experience that in the second phase. - The atoms in a gas are far apart and move freely. The class experiences that in the third phase. <p>Provide children with a table to sum up the new knowledge and read it (<i>Attachment5</i>).</p>	<p>To be aware that everything (also human beings) is made up of matter and that differences depend on the way the atoms are packed together</p> <p>To know the different particle model of matter</p> <p>To use grammar structures in an effective way</p>	<p>Vocabulary: <u>New:</u> <i>solid, liquid, gas, loose, wobbly, firm</i></p> <p>Structures: <i>don't move/ move around each other/ move freely (in all directions)</i></p> <p><i>be/don't be compressed</i></p> <p><i>be very close together/be close together/be far apart</i></p>	Whole class	<p>http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/particle_model/revision/2/</p> <p>Table (<i>Attachment5</i>)</p>	<p>Teacher observes:</p> <ol style="list-style-type: none"> 1. Task achievement 2. Communication 3. Effort <p>Evaluation rubric (<i>Attachment8</i>)</p>

Activity	Timing	Activity Procedure	Activity aims	Language	Interaction	Materials	Assessment
9	20 min	<p>Particle model representation</p> <p>Provide children with a mini book template to complete. Individually, children draw the different particle models of the three states of matter, under the correct description.</p>	<p>To explain why an item is a solid, liquid or gas</p> <p>To identify some properties of matter</p> <p>To compare different states of matter</p> <p>To use new and revisited vocabulary</p>	<p>Vocabulary: <u>New:</u> <i>solid, liquid, gas, loose, wobbly, firm</i></p> <p>Structures: <i>-don't move/ move around each other/ move freely (in all directions)</i></p> <p><i>-be/don't be compressed</i></p> <p><i>-be very close together/be close together/be far apart</i></p> <p>-It's _____ <i>because</i></p>	Individual work	Minibook (Attachment 6)	<p>Teacher observes:</p> <p>4. Task achievement 5. Communication 6. Effort</p> <p>Evaluation rubric (Attachment 8)</p>
Assessment	40 min	Summative assessment				Test (Attachment 7)	