CLIL EXCELLENCE for PRIMARY SCHOOLS

LEARNING UNIT FORMAT

Subject Area: Science. Topic: Water Properties

Class 4 Number of *lessons 3*

***WALT* - We are Learning To-:**
During the learning unit
Children will be able to know: what water is and its properties.

Children will be able to do: listen, repeat, read, write and use specific scientific vocabulary related to water. They will also be able to describe the properties of water, to do experiments, to predict, to make a record of observations and to interpret the results.

Children will be be aware of the difference between cohesion and adhesion. They also will be aware of the relationship between buoyancy and the force of gravity, of the importance of water in our lives.

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

- ACTIVATION
- CORE ACTIVITIES DIVIDED IN
    - FIND OUT (INPUT PHASE)
    - SORT OUT (INPUT PROCESSING PHASE)
    - OUTPUT (SPEAKING AND WRITING PRESENTING A PERSONAL OR GROUP PRODUCT)
- Final ASSESSMENT

These steps will be developed during a certain number of lessons each teacher will plan.

LESSON 1

Steps	Lesson description	CONTENT OBJECTIVES	LANGUAGE OBJECTIVES	RESOURCES	TYPE of INTERACTION*	TIMING
ACTIVATION of the learning unit	Activity 1: Let's brainstorm "What about water?" The teacher captures children's interest and activates knowledge about water through a brainstorming. The pupils sit on the floor in a circle. She asks them the following questions to lay the basics of the topic. *What is water?* *What do you already know about water?* *What is the shape of water?* *What do you want to know about water?* Children are taught the importance of water. Finalĺy the teacher writes the answers of each pupil on the whiteboard.	○ To activate and assess prior knowledge about water. ○ To express water origins: water comes from streams, rivers, lakes, seas, oceans. ○ To describe water main characteristics related to the five senses: odorless, colourless, tasteless. ○ To compare different types of water: fresh water/salt water, still water, mineral water, sparkling water... ○ To identify the state of matter related to water: liquid, solid, gas ○ To describe the water cycle	Let' s brainstorm. What do you know about water? "Wh" question words Verb " to be "simple present: water is … Third person singular present simple Adjectives of description: fresh, salty, gaseous, liquid, solid, sparkling, still , mineral, odorless, colourless, tasteless.	Whiteboard Picture 1 Power Point	Whole class Individual	**15 m**
CORE ACTIVITIES	Activity 2: Words in a drop of water	Water is an important source of energy.	Verb *to be*	Power Point	Individual	**15 m**

	The teacher asks children to read the main definitions of water on the whiteboard.	It is essential for our life.	simple present third person singular			
	Then she shows picture 2 and asks children to work in small groups in the computer Lab and to draw a big drop of water. Finally the children will copy the words related to water inside it using different fonts and styles	To draw a drop of water and use different fonts to write the main definitions of water	Vocabulary of water Synonyms related to water	Picture 2 Power Point Worksheet 1 Computer Lab Sheets of paper	Group	30 m
	The teacher asks the pupils to print their work, cut out the drops and sticks them with glue on a big poster. At the end each group presents the work. The teacher observes, checks, gets and gives feedback about learning.				Group	30 m

*__Type of interaction__:: **I**- Individual;; **P**- Pair Group; **G**- Group; **W**- WHOLE CLASS

LESSON 2

Steps	**Lesson description**	**CONTENT OBJECTIVES**	**LANGUAGE OBJECTIVES**	**RESOURCES**	**TYPE of INTERACTION***	**TIMING**
Warm up of the lesson:	**Activity 1: Water Experiment 1** The teacher introduces the topic and asks the pupils simple questions "What happens if you put a drop of water on a sheet of wax paper? After the pupils try to do some hypotheses, she shows the experiments and invites the pupils to observe the behaviour of the single drops carefully.	To make hypotheses and find conclusions. To describe water properties: Cohesion: Water is attracted to water Adhesion: Water is attracted to other substances: glass, cloth, paper, organic matter	Passive form third person simple present It is attracted to… Future simple Vocabulary on materials: glass, paper, cloth	Sheets of wax paper Coins Pipettes Some water Science Lab Whiteboard Power Point	Whole class	**15 m**

	Then she invites the pupils to repeat the same experiment using a coin and a pipette. She tells them “Try to guess How many drops of water fit on a coin? After the experiment she writes the conclusions on the whiteboard “Water is attracted to water. This is the cohesion property of water.” Then she explains “But not only water is attracted to water, it is also attracted to other substances: glass, clothe, paper, organic matter. This is the adhesion property of water.” The pupils are asked to rewrite the definitions of water and its properties in their exercise books.	Surface tension		Exercise books		
CORE ACTIVITIES:	**Activity 2: H2O** The teacher writes on the blackboard the chemical formula of water: H2O She explains that water is made up of two gases: Oxygen and Hydrogen She divides the class in small groups and gives them a box with a 3D model of molecules. Then she asks them to read the instructions and to make a molecule of water using an atom of oxygen and two atoms of hydrogen. The pupils make their own model of a molecule of water and the teacher shows picture 4 and invites the groups to check.	To use specific language of the topic: Chemical symbol of H2O Oxygen, Hydrogen, bonds	To follow instructions: Oxygen is red Hydrogen is White Use bonds 1 cm long	A box with a 3D model of mokecules Pictures 3 and 4	Group	**15 m**
	Activity 3: The Walking water The teacher shows the first part of the video “ The walking water” . She divides the class in small groups and asks them to follow the instructions	To make hypothesis To record data To write conclusions about Capillary action.	To read and follow instructions: You need… Verbs: Imperative form: Put...Fill, Fold, Mix	Whiteboard Video https://youtu.be/s2Jud7F478I Power Point Picture 5		30 m

	of picture 5 and to make the experiment. The pupils make hypotheses about what they think will happen in each glass and record their observations. The teacher asks the children to watch closely and to record the results after 1 hour. They watch the water mix forms new colours: green and orange. The experiment will explain and demonstrate that water molecules move through the paper fibers thanks to the adhesion and the capillary property of water.	To use specific vocabulary: molecules, fibers	Wait… Adverbs: First, Second, Before, After, Next At the end	Experiment "The Walking water" Four glasses, some water, food coloring red, yellow, blue, folded paper towel		
	Activity 4 Capillary in plants The teacher explains that capillary is very important for plants. She shows pictures 6, 7 and 8 with the drawings of a tree and asks: " What happens inside?" She divides the class in small groups and invites the children to put some white carnations into different container filled with a solution of colored water. After two hours each group have to record the results of the experiment. At the end of experiment, the teacher explains the pupils that they have to reflect upon their learning process and the skills they have learnt		Opposites: Up down	Science Lab LIM Whiteboard Pictures 6, 7, 8 Power Point Containers white carnations, Food colouring: yellow, red and blue.	Group	
	Activity 4 "The floating flowers. The teacher gives the pupils photocopies of Worksheet 2 and ask them to to do the experiment and write their conclusion.			Science Lab Worksheet 2 Sheets of paper Scissors A bowl of water		30 min.

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LESSON 3

Steps	Lesson description	CONTENT OBJECTIVES	LANGUAGE OBJECTIVES	RESOURCES	TYPE of INTERACTION*	TIMING
Warm up of the lesson:	**Activity 1 Float** The teacher captures children' s interest about buoyancy and introduces the topic through storytelling. She reads "Float", a book by Daniel Miyares. The book tells the story of a little boy who made a paper boat and the adventures he had with it. Then she asks children to work together to create their own paper boat.	To compare two different forces: Gravity force vs buoyancy force	Synonyms: rivers, streem, pool, pond Opposites: Verbs: float, sink	Book: *Float* by Daniel Miyares A newspaper Picture 9	Whole class Group	**30 m**
CORE ACTIVITIES:	**Activity 2 "Will it Sink or Float?** The teacher asks the children: " What is buoyancy?" "Why do some objects sink while other objects float?" The teacher shows some objects: a sponge, a nail, a brick of lego, a rubber, a stone, a piece of pomice, some seashells. She divides the class in small groups and asks them to fill the first column of Worksheet 3 "Sink or float?" writing their hypotheses Then she tells them to put each object into a container of water and record the results. After that she writes the conclusion and invites to think about the data.	Buoyancy Density Shape Amount of water dislpaced	Adjective: dense Comparative Superlative Verbs: to lay, To pour Adverbs: slowly, quickly	Science Lab: A container Some objects: stone, seashells, pomice, rubber, bricks of Lego, nails,, sponge Worksheet 3 "Will it sink or float? " Whiteboard	Individual Group	**30 m**

	She writes on the board that buoyancy depends on 1 the shape of the object, 2 the density of each object and 3 the amount of water that each object displaced. **Activity 3 The Tower of liquids** The teacher introduces the topic about density in the Science Lab. She asks the pupils: “Have you ever seen an ice cube in a glass of water? “. The teacher shows the experiment and invites a child to observe what happens. After the child has answered, she explains that the ice cube floats because it is less dense than water. She explains that the density of water at 4 degrees Celsius is different from other liquids such as olive oil, alchool, maple syrup, honey, milk, dish soap. She asks the children to do an experiment called the *Tower of liquids* The teacher divides the class in small groups and gives them the materials to carry out the experiments. She asks the children to slowly layer the honey and then the maple syrup in the container. She explains that it is very important not to touch its sides while pouring. The children use the turkey baster to layer the rest of the liquids in the container. At the end she invites each group to show and explain the results.	Liquids: alchool, olive oil Density Layers		Scienze Lab A glass of water An ice cube Whiteboard Video: The tower of liquids https://youtu.be/-CDkJuo_LYs 5 Graduated containers Some water, olive oil, maple syrup, honey, alcool, dish soap, milk food colouring Turkey baster		

	Activity 4 "buoyance force vs force of gravity" The teacher introduces the topic, she asks pupils a question: "Who is Archimedes? After the children have answered, she tells them that Archimedes is a Greek mathematician that discovered the hydrostatic push. She shows an experiment and asks a question: "What happens if you put a stone in a graduated cointainer full of water?" She invites the children to record the level of water before and after the experiment. She explains that the amount of water dispaced is equal to the weight of the stone. She gives some spring scales and invites the children to weigh the stone using the spring scale and to record the data. She explains that the newton is the unit of measurement of weight. She shows the correspondence in grams on the spring scale.	Hydrostatic push Archimedes Force of Gravity Water displaced Volume Units of measuraments Kilograms newton Weight	Simple Future of verbs	Science Lab iwb Whiteboard Spring scale Pictures 18 - 19 A stone		30 min
	The teacher gives photocopies of Worksheet 5			Worksheet 5		15 min

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ASSESSMENT	
	FORMATIVE ASSESSMENT (on going process): **At the end of the unit the teacher observes the children during the lesson. She checks gets and gives feedback about learning.** **The teacher helps the children to create a poster about Water properties, which can be shown to other classes and parents during the Exhibition "Science UNDER 18". Each child writes a brief text on each poster illustrated with drawings or photographs. The teacher observes the children during the presentations.** **At the end of the presentation children will be invited to evaluate their own work and their group work. The teacher gives the children a photocopy of a self – assessment and explains them that they have to reflect upon their learning process and the skills they have learnt filling in the questionnaire.** **The children should decide whether they are skilled or not and colour the traffic lights: green (confident), yellow (I feel Ok about this) or red (non Confident at all) accordingly.** **……** **SUMMATIVE ASSESSMENT:** **The teacher gives Test 1a True or FALSE quiz.**