

Integrated lesson plan by sySTEAM

School	Teachers	Grade	Duration
Vilnius Zemynos gymnasium	Audronė Sadonienė, Alina Suchodolska, Ana Lavrinovič	1F	45 min

Subjects

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|--------------------------------------|---|--------------------------------------|---|---|--------------------------------------|----------------------------------|
| <input type="checkbox"/> Lithuanian | <input checked="" type="checkbox"/> English | <input type="checkbox"/> Geography | <input type="checkbox"/> Physics | <input type="checkbox"/> Religion | <input type="checkbox"/> Arts | <input type="checkbox"/> Theatre |
| <input type="checkbox"/> Mathematics | <input type="checkbox"/> Russian | <input type="checkbox"/> Citizenship | <input checked="" type="checkbox"/> Chemistry | <input type="checkbox"/> Ethics | <input type="checkbox"/> Photography | <input type="checkbox"/> Others |
| <input type="checkbox"/> German | <input type="checkbox"/> History | <input type="checkbox"/> Biology | <input type="checkbox"/> Technologies | <input type="checkbox"/> Physical Education | <input type="checkbox"/> Dance | |

Skills and competencies

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|--|---|--|---|
| <input type="checkbox"/> Initiative | <input type="checkbox"/> Leadership | <input type="checkbox"/> Creativity | <input type="checkbox"/> Complex problem solving |
| <input type="checkbox"/> Responsibility | <input checked="" type="checkbox"/> Cooperation | <input checked="" type="checkbox"/> Communication | <input checked="" type="checkbox"/> Cognitive flexibility |
| <input checked="" type="checkbox"/> Autonomy | <input checked="" type="checkbox"/> Critical thinking | <input checked="" type="checkbox"/> Emotional intelligence | <input type="checkbox"/> Others |




Lesson/Project topic
Metals in our bodies and plants

Task/problem to solve
To find out what metals exist in plants and human bodies

Assessment methods
Informal assessment; later formal assessment after completing the unit

Notes

Lesson structure	Activity description	Time	Teacher	Resources	Inclusive teaching	Teachers' notes
	Introduction	<ul style="list-style-type: none"> Aims of the lesson; Steps of the lesson; 	2 min	Presents the aims and the steps of the lesson	<ul style="list-style-type: none"> Text book on Chemistry(grade 1) Youtube channel Extra handouts 	
Teaching/development	Short video about metals in human bodies and in food Youtube https://youtu.be/I3njtAwWm6k	6-8 min	Lead- in activities(questions about elements in bodies)short discussion	Basic students' knowledge on the topic 		Handouts were adapted according to students' abilities. Differentiation of the tasks
	Handouts in English with 2 exercises.	10 min	Gap filling exercises	https://www.mendability.com		Group work, monitoring, mingling around the
	Handouts in Lithuanian (quiz)	17 min	Quiz – 8 questions			



What is a Metal?

Our body is composed of almost every natural element found in nature. This is as true for metals as it is for water or carbon.

Metals in our body enable the healthy function of the brain and organs.

Metals are elements that are required for several purposes, such as the formation of blood, bones, teeth and other tissues; osmoregulation of body fluids, and the control of physicochemical processes. Some of these metals are only needed in trace amounts.

These metals are generally found in a typical, diverse diet. If a person is low in specific metals, this deficiency can create different types of problems and diseases. Excess metals, caused by supplementation, can also cause health problems.

Here is a review of the roles of some minerals:

Macro Elements

Task 1: Match the elements to the sentences.

Potassium (K)	Calcium (Ca)
Magnesium (Mg)	Chlorine (Cl)
Phosphorous (Ph)	
Sodium (Na)	Sulfur (S)

1. Structure of bone and teeth. Also plays a role in the growth of nerve cells.

2. Structure of bone and teeth. Required for ATP, the energy carrier in



	<p>Conclusions</p> <p>Output:</p> <ul style="list-style-type: none"> • Students have learned the names of chemical elements in English equivalent; • Revised the names of the foods they can be found in; • Found out about the consequences of the shortage of the elements; 	8 min	Concludes the lesson evaluating students' input			Reflections of the lesson
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Feedback	How?	When?
	Test / quiz	After finishing the unit

Self-evaluation	<p>Handouts on self-evaluation</p> <p>Students evaluate the lesson using different colours.</p> <p>Green – understand very well</p> <p>Yellow – need some practice</p> <p>Red- have not learned anything</p>
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