Lesson Title: Metals and Non Metals	**TIME** [140 mins]

OVERVIEW
Teacher would use Google Earth as a teaching tool to enhance learner's ability and will engage them throughout the process. this real-life connection would give them a practical approach towards their learning. Students would use expedition for understanding the various elements and categorize them as metals and non-metals.

SUBJECT/TOPIC **Metal and Non metal** **Periodic Table**	**AGE LEVEL (13 - 15 years)**
Learning Objectives The objectives are: 1. The learners would understand the periodic table design and how it is formulated. 2. Identify various elements as metals and non-metals	**Inquiry** Discuss the various factors on which elements are placed in the periodic table and also identify the criteria on the basis of which they are placed in periods and groups.
Materials Needed [List of all the materials and resources needed for the lesson.] Periodic Table Chart colour pens placards charts Access to Google Expeditions Access to internet facility	**Lesson Summary** [Brief description of each part of the lesson.] • Engage: Examine the difference between elements, compounds and mixtures. • Explore: Understands the composition and atom structure of the elements • Explain: To identify various elements under the category of metals and non-metals and discuss on what factors they are placed in

	the periodic table. formulate the valency and electronic configuration of elements. ● Revise: Discuss electronic configuration and valency of the first 20 elements. ● Apply: Identifying the various properties of the metals and non metals and there uses.
Sustainable Development Goals [One or more Sustainable Development Goals addressed in this lesson.] SDG 9 SDG 7	**Culminating Task/Assessment** Create a table of first 20 elements on the basis of metals and non metals and write their electronic configuration, atomic number, valency ,element name.

Textbook Chapter Metals and Non Metal (Grade VIII Science)

Engage (5 minutes)

- The learners are now asked to explain why and how they categorised the objects into Metals and Non Metals.
- Classify them - classify materials into metals and non metals.
- The learners presented and classified materials around them as metals and non metals.
- Introduced the term periodic table to the learners.

Explore (25 minutes)

- Introduced Expedition periodic table.

- learners watched all periodic elements along with their atomic number and atomic mass.
- learners would record elements names, symbols, numbers and mass.
- Students identify the relation between elements arrangement and form a hypothesis that how they are formed and are they natural or man-made.
- The teacher asked learners to define elements. (previous knowledge).The teacher classified elements as METALS,NON - METALS and METALLOIDS and discussed the differences between them with the help of the inputs given by the learners in the starter activity.

Explain (20 minutes)

- Teachers organize students into small groups or partners.
- Students share the first "hypothesis" with small group or a partner.
- Teachers facilitate whole group discussion in which students share their hypotheses and evidence.
- learners analyses the properties of metals, non-metal and metaloids
- Students test hypotheses and record findings.

Revise (10 minutes)

learners would be able to identify the various elements on the basis of different categories like metals, non metal and metalloids. learners would discuss on the formation of these elements and found that 28 elements are artificially prepared.

Apply (80 minutes)

Students will reflect on the outcomes and communicate findings by a presentation.

Evaluate: Exemplar Response and/or Rubric

- Tools for assessing mastery of learning objectives to be used by teachers and for peer assessment.
- Rubric for presentation

Content	Preparedness	Uniqueness	Scientific skill	Investigation

Additional Resources

- https://www.britannica.com/science/metal-chemistry
- https://kids.britannica.com/students/article/metal/275805

Credits

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