

## MINERAL WEALTH IN INDIA

**TIME** :80 minutes

**OVERVIEW** : Students will use Google Earth creation Tool to see the places which are rich in mineral resources in India.

**SUBJECT/TOPIC** : : Mineral wealth in India

**AGE LEVEL** : GRADE 8 to 10

### Learning Objectives :

1. Students will analyze the significance of minerals for various metallurgical processes.
2. Students will deepen their understanding about uneven nature of distribution of minerals in India.
3. Students will be able to differentiate between various types of minerals and different methods of extraction of minerals.

### Inquiry :

What is the best method to extract metals from ore?  
How to test soil for minerals?



### Materials Needed :

- Access to [Google Earth](#).
- Link for Mineral Wealth in India with Google My Map

<https://www.google.com/maps/d/edit?mid=1LuuJGVMvxm4IQGW07aXWtpMrODh2RSZR&usp=sharing>

- Link for Mineral wealth of India with Google Earth Creation Tool
- <https://earth.google.com/earth/rpc/cc/drive?state=%7B%22ids%22%3A%5B%2211W406FuK7wQFYOKbp1o1jGKDYvX6sAxw%22%5D%2C%22action%22%3A%22open%22%2C%22useId%22%3A%22104891647035000594916%22%7D&usp=sharing>
- Student internet access.

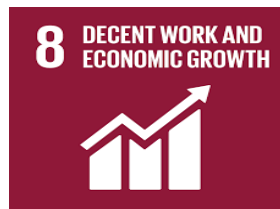


### Lesson Summary:

- **Engage:** Examine variety of minerals and their properties and classification of minerals.
- **Explore:** To understand the meaning of mineral and relationship between mineral, ore and compound.
- **Explain:** Different types of minerals and their extraction depending upon the nature of ore.
- **Revise:** Different types of ores and extraction of metals from ore.
- **Apply:** Identify properties and uses of minerals for industries and create presentation to encourage others to support it.



### Sustainable Development Goals :



### Culminating Task/Assessment :

- Students will identify the best metallurgical process to extract metals from ore.
- Students will identify Eco-friendly Technologies in mining and mineral processing for sustainable mining of the ore.



## Textbook Chapter :

**CLASS : VIII NCERT SOCIAL SCIENCE: MINERALS AND POWER RESOURCES**

**CLASS : X NCERT GEOGRAPHY : MINERALS AND ENERGY RESOURCES**

### Engage (5 minutes)

1. Share Map of India using Google My Maps showing mineral rich states in India.
2. Ask students what they observe in Google my Maps.
3. Introduce the essential question that will guide enquiry. Why minerals need to undergo some chemical steps to get pure metals?

### Explore (25 minutes)

1. Present the first source of information on Mineral wealth in India using Google Earth Creation tool and highlight the areas which are rich in mineral resources.
2. Ask students to record observations or evidence as it relates to the inquiry.
3. Students identify relationship between mineral and ore and the methods to extract metal from ore.

### Explain (20 minutes)

1. Teachers organize students into small groups or partners to share observations featured in Google Earth Tool.
2. Ask Students share first “hypothesis” with small group or a partner. What are different ways to concentrate the ore.
3. Teachers facilitate whole group discussion in which students share their evidences and explain various ways to concentrate the ore like Magnetic separation, Froth floatation method.
4. Allow time for students to share their ideas with class and ask to record their observations.

### Revise (10 minutes)

1. Students will update their hypothesis based on information gained in discussion or test findings and record their observations about various methods to concentrate the ore.

### Apply (60 minutes)

1. Organize Students reflect on outcomes and also discuss about various metallurgical processes to get pure metal from ore.
2. Students use findings to identify the properties and various uses of minerals.

### Evaluate: Exemplar Response and/or Rubric

- Tools for assessing mastery of learning objectives to be used by teachers or students for self or peer assessment.

### Additional Resources

- Natural Resources in India – Wikipedia
- Google Earth Creation Tool on Mineral wealth of India
- Mineral and Power resources: Class VIII NCERT

### Options for Differentiation

- Provide options for presentation format (video, audio, visual, etc).
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### Credits

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