

CLASS – X
LESSON PLAN GEOGRAPHY
Ch. 5 MINERALS AND ENERGY RESOURCES.

Unit	GEOGRAPHY
Class Transaction	Total: 8 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge about minerals . 2. Knowledge of difference between metallic and non metallic minerals 3. Knowledge that all are not harmful
Assessment of qualifying knowledge	1. Written test 2. Group Discussion 3. HW notebook 4. Map Activity
Objective	Students would be able to various types of minerals and its uneven distribution..
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand</i> • Uneven distribution of minerals • List benefits of minerals for human life. • Discuss various types of minerals as well as the uneven nature of distribution and explain the need for their judicious utilization • Minerals are indispensable part of our life. • Why we should conserve minerals . • Discuss various types of conventional resources and utilization with 95% accuracy. • Awareness towards use of non conventional sources of energy instead of conventional sources of energy. <u>SKILLS</u>- <i>Students would be able to</i> • <i>Students will critically think why the distribution of minerals are uneven.</i> • Students will develop citizenship through awareness towards use of non-conventional sources of energy instead of conventional sources of energy to protect environment from pollution and ecological crises.

	• <i>Students would be able to enhance their creativity by creating mind map for entire chapter and map work</i> • <i>Students would be able to enhance their collaborative skills by presenting presentation on different minerals.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- <i>Introduction of the topic-</i> Warming up questions, PPT and Digital Content would be shared for building up of concept and then various active learning and collaborative strategies will be followed during the transaction of lesson plan. After student -teacher interaction and explanation by the teacher, following strategies will be followed for concept building Active learning-1. <i>Frayer Model</i> on distribution of minerals . (Critical thinking) Students will study the different groups of minerals silently and then facilitator will build the concept with frayer model. This is a graphical organizer where four square model prompt students to think about : In this model , four squares will be importance of mineral, distribution, formation and general characteristics Group learning- Questioning- <i>Pose, pause, pounce and bounce-</i> Teacher will prepare a list of question about the conservation of minerals resources and will ask these questions during discussions by posing the question to the entire class, pause for 30 seconds and then pounce the question and facilitator can bounce it as well to other students.. (Critical thinking, Communication) Demonstration- Marking of distribution of minerals on political map of India. Think-pair -share- Students in group of two will read the topic again after teacher explanation, think for a minute and then discuss in pair. <i>Guided practice followed by Independent Practice-</i> NCERT questions to be discussed in the classroom. Inside outside circle: This activity will take place for recap of previous class. Students will stand in two concentric circles with students facing each other. Students are paired up with someone directly across from them in the other circle. Pairs discuss questions and when the facilitator indicates to move on , the students in the outside circle take one step to the right and make new partners with the participate across from them in the

inside circle . a new question is asked , and new partners discuss until the next time to move . when everyone has had a chance to talk to each person around the circle

Transaction would proceed in the following manner

Active Learning and Group Learning:

(Competencies: Critical thinking and problem solving)

- Students will be critically think and analyses why conservation of minerals is the need of an hour. Students will critically think use of non conventional sources of energy instead of conventional sources of energy.

(Competencies: Critical thinking and collaborative)

Students will be divided into 6 groups (6 x 5). Each group will study.

Analysis will be done by groups, followed by cross questioning.

Class will be divided into eight. groups.

Group 1 – Mode of occurrence of minerals

Group 2 Distribution of minerals : Iron ore , iron ore belts.

Group 3 Distribution of minerals: Non ferrous minerals : bauxite, copper

Group 4 Distribution of minerals :**non mettalic minerals.**

Group 5 hazards of mining and conservation of minerals

Group 6 Conventional energy resources : coal

Group 7 Conventional energy resources: Petroleum, natural gas, electricity.

Group 8 Non Conventional energy resources :solar, wind , nuclear, geo thermal , tidal ,bio gas.

students will sit together and in Collaboration they will discuss the topic given to them

Differentiation

- **Topic- conservation of minerals , conventional and non conventional sources of energy.**

(Competencies: Citizenship, Critical thinking)

Students will get aware through discussion about that minerals are indispensable part of our life and that's why we should conserve minerals Hence, students will analyse the whys to conserve and the distribution of minerals .

(Competencies: Citizenship ,Critical thinking, Collaborative)

Students will work in group and will critically analyses the role of minerals in human life.

	• Topic -Revision of chapter Students <i>would be able to enhance their creativity</i> by creating mind map for entire chapter using topics and subtopics for each. Techniques to be used: Think pair share Discussion Group work Mind Map Map work Flow charts
Resources	Text Book: NCERT text book for geography
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebook. HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 marks On time submission.....1 mark Presentation/ Neatness.....1 mark Content.....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Assessments	3 UNIT TESTS (critical thinking)5-7 Marks each HALF YEARLY EXAMINATION (critical thinking) 20 Marks ANNUAL BOARD EXAMINATION (critical thinking) 20 Marks INTERNAL ASSESSMENT 20 Marks • Subject Enrichment Activity 5 Marks (creativity and collaboration) • Note Book Submission 05 Marks + HW Notebook 05 marks Through various test students critical thinking, creativity and collaboration skills will be enhanced.
Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligences, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i>

	• High order thinking questions to be done • Encouragement for referring other resources <i>For weak students:</i> • Basic questions to be completed • Buddy help to be provided • Provide grade-up classes <i>For differently abled students:</i> • Ignore spelling mistakes and formulae, if not written • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.
Assessment questions	1.How can we say that minerals are an indispensable part of our lives? 2.Differentiate between hydroelectricity and thermal electricity. 3.Differentiate between Ferrous and nonferrous minerals 4.Differentiate between conventional and non-conventional sources of energy. 5.Why do think that solar energy has a bright future in India. 6.Explain the four major iron ore belts in India.

CLASS – X
DAY WISE CONSOLIDATED LESSON PLAN
CHAPTER-5: MINERALS AND ENERGY RESOURCES.
SUBJECT: GEOGRAPHY
SESSION: 2019-20

DAY	ONE
Objective	Students will be able Understand that minerals are indispensable part of our life
Assessment of qualifying knowledge	Basic question from the whole class 1. Which is the hardest and softest mineral? 2. What is the different between rock and minerals. 3. Do we require minerals for the growth of human and plants? 4. What type of minerals we require to construct our house?
Dimensions of Learning	DOL 1, 2, 3

Learning Outcomes	• <u>KNOWLEDGE</u>- <i>Students will know</i> that minerals are indispensable part of our life <u>SKILLS and COMPETENCIES</u> <i>Students would be able critically analyse why minerals are indispensable part of our life.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: <u>10 min</u> Facilitator will ask few questions to introduce the topic • What are the things which we use in our daily life made of metals • From where we get these metals. • Do we require different minerals in our daily life. Activity : Introduction of minerals with the help of interactions with student through Brain storming’ and by asking questions based on their previous knowledge and formation of groups and assigning their topics. So that discussion of the topics (group wise) will take place. Class will be divided into eight groups . Group 1 – Mode of occurrence of minerals Group 2 Distribution of minerals : Iron ore , iron ore belts. Group 3 Distribution of minerals: Non ferrous minerals : bauxite, copper Group 4 Distribution of minerals :non metallic minerals. Group 5 hazards of mining and conservation of minerals Group 6 Conventional energy resources : coal Group 7 Conventional energy resources: Petroleum, natural gas, electricity. Group 8 Non Conventional energy resources :solar, wind , nuclear, geo thermal , tidal ,bio gas. Discussion of topic through Collaborative Learning: <u>15 min</u> Students will sit together and in Collaboration they will discuss the topic given to them • Independent Practice: Students will go through NCERT text book - preparation of group presentation Closure: <u>5 min</u> A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for geography

Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook.
Assessments	Oral Test (5 minutes)

DAY	TWO
Objective	To understand different mode of occurrence of minerals. with 90% accuracy.
Assessment of qualifying knowledge	Questions from importance of minerals from the whole class group.
Learning Outcomes	• <u>KNOWLEDGE</u>- <i>Students will know</i> different mode of occurrence of minerals. with 90% accuracy. <u>SKILLS and COMPETENCIES</u> <i>Students would be able to critically</i> how different minerals occur in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set- Recapitulation of the previous day. Activity- Activity- Class presentation by • Discussion of occurrence of minerals by group no -1 • Discussion of the different types of mining : shaft mining, rat hole mining, shaft mining, open pit mining by the teacher . After discussion The following questions will be asked to check their understanding: • What are placer deposits? • In which part of India rat hole mining is done? • Mention the factor responsible for the Variation in the distribution of minerals . • Name the mineral which is formed due to decomposition of rocks, leaving a residual mass of weathered material. • How mineral occur in igneous and metamorphic rocks? • • Topic- Discussion of occurrence of minerals by group no -1 Discussion of the different types of mining : shaft mining, rat hole mining, shaft mining, open pit mining by the teacher . • • (Competencies: Critical Thinking and problem solving

	Collaboration) Students will be divided into 9 groups (6 x 5). Each group will study different types of mining. Analysis will be done by groups, followed by cross questioning. . Independent Practice: Students will go through NCERT text book - After discussion All the students will write different mode of occurrence of minerals in their notebooks on their own. Closure: 5 min Closure- Summarization by students with the help of muddiest point
Resources	Text Book: NCERT text book for Geography
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook.
Assessments	Oral Test (5 minutes)

DAY	THREE
Objective	Objective : Understand Discuss various types of iron ore and as well as the uneven nature of distribution . with 95% accuracy
Assessment of qualifying knowledge	Questions from previous class with help of active learning strategy : Inside outside circle.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know</i> various types of iron ore and as well as the uneven nature of distribution . with 95% accuracy <u>SKILLS and COMPETENCIES</u> <i>Students would be able to creatively</i> Locate various types of iron ore and their as uneven nature of distribution with 95% accuracy in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 10 min Day 3 Sub topic Group 2 Anticipatory Set- Recapitulation of the previous day.

	Activity Group presentation Group 2 Distribution of minerals : Iron ore , iron ore belts. and compilation will be done teacher Guided Practice After discussion • All the students will write about major iron ore belts in their note books • Map activity : children will mark iron ore mines on political map of India.. The following questions will be asked to check their understanding: • Name the finest quality of iron ore with a very high content of iron. • Name the iron ore which is the most important industrial iron ore in term of the quantity used. • Describe the features of iron –ore found in the Bailadila hills in the Bastar districts of Chhattisgarh. • Name the countries to which iron ores from Baildila are exported. • Which are the iron-ore mines of Karnataka ? • How the iron –ore in Kudremukh deposits is transported ? Topic- Distribution of minerals : Iron ore , iron ore belts. • .(Competencies: Creatively and collaboration) Students will work in groups and will locate all iron ore mines creatively on the political map of India. • Independent Practice: Students will go through NCERT text book And map work of iron ore . Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed. • Closure- Summarization by students with the help of mind map
Resources	Text Book: NCERT text book for geography
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook.
Assessments	Oral Test (5 minutes)

DAY	FOUR
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Objective	Objective: Understand Discuss various types of nonferrous minerals and as well as the uneven nature of distribution
Assessment of qualifying knowledge	Questions from previous class
Learning Outcomes	• <u>KNOWLEDGE</u>- <i>Students will know</i> various types of non ferrous minerals and as well as the uneven nature of distribution <u>SKILLS and COMPETENCIES</u> <i>Students would be able to creatively</i> Locate various types of non ferrous minerals and their as uneven nature of distribution . with 95% accuracy in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner Anticipatory Set- Recapitulation of the previous day. Activity- Group presentation by Group 3 Distribution of minerals: Non ferrous minerals : bauxite, copper ,Group 4 Distribution of minerals :non mettalic minerals. and compilation will be done teacher. The following map questions will be asked to check their understanding: • Which rock mineral is the basic raw material for cement industry? Where is it found? • How Bauxite is formed, and which metal is obtained from it? • Write the importance of aluminum. Which properties make Aluminium an important metal? Map activity: Students will locate bauxite deposits and mica deposits on political map of India. After discussion All the students will complete the table of minerals having attributes like uses and distribution. • Topic- Subtopic- Distribution of minerals: Non ferrous minerals : bauxite, copper , non mettalic minerals .(Competencies: Creatively and collaboration) Students will work in groups and will locate all nonferrous minerals creatively by using different colours on the political map of India. Independent Practice: Students will go through NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed. • Closure- Summarization by students with the help of flow chart

Resources	Text Book: NCERT text book for Geography
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook.
Assessments	Oral Test (5 minutes)

DAY	FIVE
Objective	Objective: Understand the difference between conventional and non conventional sources of energy. • Understand why we should conserve minerals • To develop awareness towards use of non conventional sources of energy instead of conventional sources of energy.
Assessment of qualifying knowledge	Questions from previous class with the help of map
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know</i> the difference between conventional and non conventional sources of energy. • Hazards of mining • To develop awareness towards use of non conventional sources of energy instead of conventional sources of energy. <u>SKILLS and COMPETENCIES</u> <i>Students would be critically analyses</i> use of non conventional sources of energy instead of conventional sources of energy in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: <u>10 min</u> Recapitulation of the previous day. Activity- Group presentation of Group 5 hazards of mining and conservation of minerals and Group 6 Conventional energy resources : coal to develop awareness towards non conventional energy resources The following questions will be asked to check their understanding: • Mention the problems faced by miners and environment during mining activity. • Why mining industry is becoming killer industry? • Why do we need to conserve minerals?

	- Is there any need to shift from conventional to non- conventional sources of energy. Independent Practice- map activity : Students will mark different coal mines on the political map of India Topic-5 Hazards of mining and conservation of minerals and Conventional energy resources : coal to develop awareness towards non conventional energy resources - Competency : (Critical Thinking and problem solving Citizenship ,Collaboration) Students will work ingroup and critically analyses why to use of non conventional sources of energy instead of conventional sources of energy Independent Practice: Students will go through NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed. Closure- Summarization by students with the help of mind map
Resources	Text Book: NCERT text book for Geography
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook.
Assessments	Oral Test (5 minutes)

DAY	SIX
Objective	Understand Discuss various types of conventional and non-conventional sources of energy
Assessment of qualifying knowledge	Questions from the whole class group.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know about</i> various types of conventional and non conventional sources of energy <u>SKILLS and COMPETENCIES</u> <i>Students would be able to compare</i> various types of conventional and non conventional sources of energy in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned	Transaction would proceed in the following manner- Anticipatory Set: 10 min - Recapitulation of the previous day

techniques, wherever applicable, and can use any other too.)	Activity- Group presentation by Group 7 Conventional energy resources: Petroleum, natural gas, electricity. Group 8 Non Conventional energy resources :solar, wind , nuclear, geo thermal , tidal ,bio gas. and compilation will be done teacher.. The following questions will be asked to check their understanding: 1.Name the oldest oil-producing state in India. 2.Describe the major oil-producing state in India. 3.Describe Hazira- Bijaipur – Jagdishpur cross country gas pipeline. 4.Define tidal and geo thermal energy .Also mention two projects which have been set in India to harness geothermal energy. Discussion of topic through Collaborative Learning: <u>15 min</u> Students will collaboratively sit together and understand different conventional and non conventional Sources of energy. Independent Practice: Students will go through NCERT text book. Closure: <u>5 min</u> A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Geography .
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook
Assessments	Oral Test (5 minutes)

DAY	SEVEN
Objective	Students would be able to solve NCERT Questions and level 3 questions of spiral
Learning Outcomes	• <u>KNOWLEDGE</u>- Students will know answers of NCERT questions <u>SKILLS and COMPETENCIES</u> Students would be able to critically analyses different questions.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Written work in notebook Independent Practice: Students will go through NCERT text book. Closure: <u>5 min</u> A short oral test would be taken to check proper assimilation of the topic discussed.

Resources	Text Book: NCERT text book for geography
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebook.
Assessments	Oral Test (5 minutes)

Day 8

Class Test and doubt clarification class.