

CLASS-10
PHYSICAL SCIENCE
LESSON PLAN
CHAPTER: 13 – PRINCIPLES OF METALLURGY

PERIOD NUMBER	CONCEPTS / TEACHING POINTS	PAGES IN TEXT BOOK		TEACHING PROCEDURE	TEACHING LEARNING MATERIAL	EVALUATION
		FROM	TO			
1.	Metals – properties	286	288	Conversation	Chart, Video clips of Ores, Minerals and series of reactivity of metals	Name the ore of Aluminium ?
	Mineral – Ores			Conversation		What is the difference between mineral and ore ?
	Some ores and their formulas			Conversation		Which metals present in Carnallite ore ?
	Ores – metals present in the ores			Conversation		
	Reactivity of metals			Conversation		
2.	Steps involved in extraction of metal from ore	288	290	Conversation	Chart, Video clips of Concentration methods of ores	Which process is suitable for dressing of sulphide ore ?
	Concentration of ore – methods			Conversation		What are the main steps in extraction of metals from their ores ?
	(Hand picking, washing, froth floatation, magnetic separation)			Conversation		
				Conversation		What is gangue ?

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3.	Reactivity of metals	291	291	Conversation	Chart, Video clips of reactivity of metals	Which metal is highly reactive ?
	Reaction with oxygen, cold water, water vapour, strong dilute acids and chlorine			Conversation		Name two metals having very less reactivity ?
4.	Extraction of crude metal from the ore	292	294	Conversation	Chart, Video clips of reactivity of metals	Which method is suitable for extraction of Sodium metal from its ore ?
	Reduction of the ore to the purified metal as per the reactivity of the metal					Which is the main metal used in Thermite process ?
5.	Purification of crude metal – methods	294	295	Conversation	Chart, Video clips of purification of crude metals	What is distillation ?
	Distillation			Conversation		Which method is used to purify copper crude metal ?
	Poling			Conversation		What is electrolytic refining ?
	Liquation			Conversation		
	Electrolytic refining			Conversation		

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6.	Corrosion	296	297	Conversation	Chart, Video clips of corrosion Corroded articles like rusted Iron, Magnesium. And Copper with patina.	What is the colour of rust of Iron ?
	Experiment – corrosion of iron			Activity	Test tubes-3, Water, Hot water, Oil, Iron nails-6, Rubber corks-3, Anhydrous CaCl ₂	Name two metals which do not get rust ?
	Preventive methods of corrosion			Conversation	Chart, Video clips of preventive methods of Corrosion	What are essential factors for corrosion of Iron ?
	Alloys			Conversation	Chart, Video clips of Alloys and composition	Name any two preventive methods for corrosion ?
7.	Important methods used in metallurgy	298	299	Conversation	Chart, Video clips of furnaces and their uses	What is the composition of Brass ?
	Smelting – blast furnace			Conversation		What is smelting ?
	Roasting – calcinations			Conversation		What is the difference between roasting and Calcination ?
	Reverberatory furnace			Conversation		What are the main parts in Furnace ?
	Retort furnace			Conversation		

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