



**WEEK ENDING.....07/10/2022.....**

**SUBJECT...PRE-TECHNICAL SKILLS**

**REFERENCE...SYLLABUS(CRDD,2007), PRE-TECH FOR JHS .....**

**FORM.....BASIC 8.....WEEK.....4.....**

<b><u>DAY/DURATION</u></b>	<b><u>TOPIC/SUB-TOPIC/ASPECT</u></b>	<b><u>OBJECTIVES/R.P. K</u></b>	<b><u>TEACHER-LEARNER ACTIVITIES</u></b>	<b><u>T/L MATERIALS</u></b>	<b><u>CORE POINTS</u></b>	<b><u>EVALUATION AND REMARKS</u></b>
<b>TUESDAY</b> <b>04-10-2022</b>  <b>1:20PM –</b> <b>2:40PM</b> <b>80min</b>	<b>Topic;</b>  <b>Metals</b>  <b>Sub-Topic;</b>  <b>Uses of Medium Carbon steel</b>	By the end of the lesson the Pupil will be able to;  state the uses of medium carbon steel.  <b>RPK</b> Pupils have seen pictures of Medium Carbon steel in the previous lesson.	<b>Introduction</b> Review Pupils knowledge on the previous lesson.  <b>Activities</b> <ol style="list-style-type: none"> <li>1. Discuss the uses of medium Carbon steel with the Pupils.</li> <li>2. Pupils brainstorm to explain the uses of medium carbon steel.</li> </ol> <b>Closure</b>	<b>Nails, knife, Steels and iron.</b>	<p style="text-align: center;"><b>Medium carbon steels</b></p> <ul style="list-style-type: none"> <li>❖ Also known as machinery steels</li> <li>❖ % C = 0.3 – 0.6</li> <li>❖ <b>Properties:</b> <ul style="list-style-type: none"> <li>➢ Intermediate to low and high carbon steels</li> <li>➢ Medium hard, Not so ductile and malleable, medium tough, slightly difficult to machine, weld and harden</li> <li>➢ Difficult to cold work and hence hot worked</li> <li>❖ Least expensive</li> <li>❖ <b>Applications:</b> Bolts, axles, springs, wheels, wheel spokes, rods, hammers, lock washers, crankpins, turbine rotors, railway rails, railway tyres, cylinder liners etc.</li> </ul> </li> </ul>  <p><b>Uses of Medium Carbon steel;</b></p> <ol style="list-style-type: none"> <li>i. for making shafts, axles, gears, crankshafts, couplings, and forgings.</li> <li>ii. Steels with carbon ranging from 0.40% to 0.60% are used for rails, railway wheels, and rail axles.</li> <li>iii. The use for medium-carbon steel are characterized by the necessity for a high elasticity and malleability that, in spite of its fragility when</li> </ol>	<b>Exercise;</b> <ol style="list-style-type: none"> <li>1. State 4 uses of Medium Carbon steel.</li> <li>2. Explain 3 uses of Medium Carbon steel.</li> </ol>

			Through questions and answers, conclude the lesson		<p>contrasted with different types of steel, settle on it the favored decision.</p> <p>iv. In the vicinity of 0.3 and 0.7 percent carbon is added amid the assembling procedure to make a medium or mid-run steel item. This particular scope of carbon is joined with a procedure of extinguishing (i.e., cooling the steel from the external surface to the internal) and treating to make a structure that has a reliable rigidity (alluded to as Martensite) all through the body.</p>	
<p><b>THURSDAY</b> <b>06-10-2022</b> <b>8:05AM – 9:15AM</b> <b>70min</b></p>	<p><b>Topic;</b> <b>Metal</b> <b>Sub-Topic;</b> <b>Non-ferrous alloys</b></p>	<p><b>Objective;</b> By the end of the lesson the Pupil will be able to;</p> <ol style="list-style-type: none"> <li>i. identify non-ferrous alloys.</li> <li>ii. state the basic composition of non-ferrous alloys.</li> <li>iii. state the uses of non-ferrous alloys.</li> </ol>	<p><b>Introduction</b> Show Pupils pictures of Non-ferrous alloys.</p> <p><b>Activities</b></p> <ol style="list-style-type: none"> <li>1. Discuss examples of Non-ferrous alloys with the Pupils.</li> <li>2. Pupils in small groups to discuss about the</li> </ol>		<p>There are a large number of non-ferrous materials, covering every metal and alloy that does not contain iron. Non-ferrous metals include aluminium, copper, lead, nickel, tin, titanium and zinc, as well as copper alloys like brass and bronze.</p> 	<p><b>Exercise;</b></p> <ol style="list-style-type: none"> <li>1. State 4 uses of Non-ferrous alloys.</li> <li>2. Explain the compositions of non-ferrous alloys</li> <li>3. Write 4 uses of non-ferrous alloys.</li> </ol>

**RPK**  
Pupils have been talk lessons on Medium Carbon Steel.

composition of non-ferrous alloys.  
3. Assist Pupils to explain the uses of non-ferrous alloys.

**Closure;**  
Through questions and answers, conclude the lesson

Name	Composition	Properties and characteristics
Cast iron	Alloy of iron and 2.5% carbon, 1-3% silicon and traces of magnesium, sulphur and phosphorus.	Hard skin, softer underneath, but brittle. It corrodes by rusting.
Mild steel	Alloy of iron and 0.15 - 0.3% carbon	Tough, ductile and malleable. Good tensile strength, poor resistance to corrosion.
Medium carbon steel	Alloy of iron and 0.35 - 0.7% carbon	Strong, hard and tough, with a high tensile strength, but less ductile than mild steel.
High carbon steel	Alloy of iron and carbon: 0.7 - 1.5% carbon	Even harder than medium carbon steel, and more brittle. Can be heat-treated to make it harder and tougher.
Stainless steel	Alloy of iron and carbon with 16-20% chromium, 8-22% nickel and 8% magnesium	Hard and tough, resists wear and corrosion.
High speed steel	Alloy of iron and 0.35 - 0.7% carbon (medium carbon steel) with tungsten, chromium, vanadium, and sometimes cobalt.	Very hard, high abrasion- and heat-resistance.

**Uses of Non-ferrous alloys;**

1. Used to manufacture automotive parts like cylinder heads and engine blocks as well as, machinery, pipes, construction
2. Some non-ferrous materials are used in the iron and steel industries, such as bauxite, which is used for flux in blast furnaces.
3. Other non-ferrous metals, including chromite, pyrolusite and wolframite, are used to make ferrous alloys.
4. other engineering purposes.

**REMARKS**

