

PRIVATE SECONDARY EDUCATION AUTHORITY

MONITORING OF NORMS AND STANDARDS IN A FACILITY RECKONED AS:

DESIGN & TECHNOLOGY JUNIOR WORKSHOP–Year 2021/2022

Subject Appellation and Level:

- **DESIGN AND TECHNOLOGY – Up to Grade 9 & 9+(EP) – NCF (Compulsory Core)**

Name of School : _____ Date of Verification : _____

Is the Workshop a separate facility? _____ If no, where is the equipment provided? _____

Is the facility New / Relocated / Existing? _____

Number of sections and students using the Junior Workshop:

Grade	No. of Sections	No. of Students	No. of Groups
Ext. Prg. 7			
Ext. Prg. 8			
Ext. Prg. 9			
Ext. Prg. 9 +			
Reg. 7			
Reg. 8			
Reg. 9			

Educator in Charge: _____ Qualifications: _____

Specialist room
Attendant: _____ Qualifications: _____

IMPORTANT NOTES:

The following conditions should be fulfilled to ensure a reasonable standard:

- The room and floor area provided should be appropriate.
- A minimum score of 75 % should be obtained in each of the four Sections A to D.
- Compulsory items in Section D, highlighted in bold characters, should be provided.
- Record of use of the Workshop should be kept as required.

Minimum requirements for a class of 20 students are specified. However, in case of need provision should be made to accommodate up to 4 additional students.

Item	Description	Requirements	Marks per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
A. PHYSICAL FACILITIES (weightage: 30%) - A typical lay-out plan is annexed.						
<p>1. Floor Area and Room</p> <p>*NOTES:</p> <p>i) For existing Junior Workshops, the previously approved Floor Area shall be accepted and rated pro-rata.</p> <p>ii) For new Workshops, the specified floor area shall be required.</p>	<p>Concrete Building</p> <p>CONDITIONS OF ROOM:</p> <p>Ceiling</p> <p>Walls</p> <p>Flooring</p> <p>Set Up</p> <p>Shape</p> <p>Cleanliness</p> <p>Proper Storage and Classification</p> <p>Lighting</p> <p>Ventilation</p> <p>Utilities</p>	<p>An area of 60 m² required* <i>*Re. side note</i></p> <p>Plastered & painted</p> <p>Flat & tiled /appropriate</p> <p>Conducive</p> <p>Convenient</p> <p>Maintained</p> <p>Indexing & Accessibility</p> <p>Adequate Natural/ Assisted</p> <p>Water/ Electricity</p>	<p>50 mks/m²</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p> <p>10%</p>	<p>3000</p> <p>1000</p> <p>(Rated pro-rata on area)</p>		
			Sub-Total (Item 1)	4 000		

Item	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
<p>2. Furniture and accessories</p> <p>NOTES:</p> <p>a) Item (ii) – 4 Workbenches+ 8 Engineer’s vices</p> <p>4 Workbenches+ 8 Woodworker’s vices – preferably ‘quick-release’</p> <p>Bench size:W60cm xL105cmxH85cm</p> <p>b) Item (xiv): May be a single unit (see Plan) or otherwise.</p> <p>*NOTE :</p> <p>Conditions Problems identified with the conditions of Furniture and Accessories, if any, shall be evaluated on how far they affect teaching and learning on a scale of 1 to 10 before effecting deductions on marks for conditions. The marks may be totally forfeited in case of even a single grave problem with conditions.</p>	(i) Table & chair for teacher (table: 1.25x0.75m)	1 set	100	100		
	(ii) Rigid workbench fitted with vices(re: Notes)	8 Benches 16 vices 8 bench-hooks	25 25 10	200 400 80		
	(iii) Tables (0.3 m ² per pupil) (re item iv)	20	6	120		
	(iv) In-built drawing boards – adjustable or inclined if separate (re: Notes)	20	5	100		
	(v) Stools	20	6	120		
	(vi) Modelling /Assembly Table (2m x 1m)	1	80	80		
	(vii) Whiteboard (243 cms X 106 cms)	1	80	80		
	(viii) Storage Cabinets	2	45	90		
	(ix) Wall Clock	1	60	60		
	(x) PowerPoints	Total 12	10	120		
	(xi) Tap and sink	1 set	50+50	100		
	(xii) Shelf / Racks for displaying models & projects	Storage space:5m longx0.3m deep	60	60		
	(xiii) Tool racks	2	50	100		
	(xiv) Rigid worktable/s for equipment (note b)	Total surface area min. 2.5 m ²	30.4	76		
	<i>Conditions of items (i to xiv)*</i>			300		
			Total Section A	6 186		

B. INSTRUCTIONAL TOOLS & RECORDS weightage: 30%								
3. Practicals Number of sessions	20 practical sessions per class in the academic year spread over all three school terms. <i>(Records to be kept class-wise and signed by teachers)</i>				20	150	3000	<i>Average for all sections reckoned:</i> -----
GRADE	Extended Program				Regular			
	7	8	9	9+	7	8	9	
Class/Group A								
B								
C								
D								
E								
F								
Total								
NOTE: To be reckoned pro-rata for the current academic year - max. 20 per class or group on 8.5 months.								
4. Audio-Visual lessons <i>(Records to be kept class-wise and in the wkshp)</i>	A minimum of 10 lessons per class over a period of 12 months (video lessons, Computer Assisted Learning)				10	100	1000	<i>Average for all sections reckoned:</i> -----
GRADE	Extended Program				Regular			
	7	8	9	9+	7	8	9	
Class/Group A								
B								
C								
D								
E								
F								
Total								
NOTE: To be reckoned pro-rata for the current academic year - max. 20 per class or group on 8.5 months.								
5. Time-Table	Time-Table of practicals (with school seal and year)	1 (displayed)			40	40		
6. Stock-Book	Up to date& signed. New items indicated.	1			60	60		

<p>7.Teaching and Learning Aids</p> <p>NOTES :</p> <p>Items (i& ii) Published in the past 5 years (books) and 2 years (magazines).</p> <p>Items (iii to v) To include: - Geom. Shapes - Colours - Drawing Systems - Design Process - Rendering media &Techniques - Simple Jointing in model making & projects. - Smart Materials - Syllabus topics</p> <p>Item (ix) Geometrical Solids: - Cylinder - Crate - Cube - Cone - Pyramids - Prisms</p> <p>Item (xi) To include: Pens, Racks, Toothbrush, Pencil box, Puzzle game, Packaging items, etc</p> <p>*Item (xii): A <i>connectable LED TV of 55" may replace items c) and d)</i></p>	(i) Reference Books (<i>pub.in the past 3 years</i>)	5	25	125		
	(ii) Magazines (<i>pub.in the past 2 years</i>)	5	25	125		
	(iii) Wall-charts	7	20	140		
	(iv) Project models for Grades 7-9	5	20	100		
	(v) Teaching models on syllabus topics	10	10	100		
	(vi) Isometric grid Board – 1 m ²	1	120	120		
	(vii) Orthographic Grid board – 1 m ²	1	120	120		
	(viii)Whiteboard demonstration equipment:					
	• Protractor	1	60	60		
	• Compasses	1pair	60	60		
	• Ruler	1	60	60		
	• Set Squares – 45 ^o and 60 ^o	1 pair	60	60		
(ix) Geometrical Solids(<i>see note</i>)	8	12	96			
(x) Samples of Materials	10	10	100			
(xi) Simple consumer products	10	12	120			
(xii) Multimedia						
a) PC/Laptop	1	100	100			
b) Colour Printer	1	100	100			
c) LCD Projector*	1	100	100			
d) Screen*	1	100	100			
Conditions of items (i to xii) (<i>Re Note on p.3</i>)				300		
			TOTAL Section B	6 186		

C. SAFETY ITEMS weightage: 10%	DESCRIPTION	QTY.	Marks Per Unit	Marks Item-wise	Existing	Score <i>(for PSEA use only)</i>
1. First Aid Kit	Equipped to treat cuts, burns and eye problems	1	250	250		
2. Fire Extinguisher	Capacity: 2 L or 2Kg(serviced on time)	1	260	260		
3. Fire Blanket		1	200	200		
4. Emergency Exit (clearly indicated)	Additional door for quick exit in case of emergency	1	260	260		
5. Safety Charts	Clear instructions about safety.(permanently affixed at appropriateplaces)	Min. 5	50	250		
6. i) Main Switch/ Circuit Breaker	Separate for the Workshop and inside the Workshop	1	125	125		
ii) ELCB/RCD		1	125	125		
7. Protective equipment	<ul style="list-style-type: none"> • gloves • eye goggles • face shields or clear spectacles • respirator mask (polystyrene) • ear muffs • aprons (flammable materials not accepted) 	5 pairs 1 pair 5 20 5 pairs 5	10 50 10 2.5 10 10	50 50 50 50 50 50		
8. Cleaning equipment:						
• Vacuum cleaner	(heavy duty)	1	200	200		
• Detergents	Liquid soap	250 ml	30	30		
• Brushes	For cleaning benches	2	15	30		
• Brooms		2	16	32		
			Sub-Total Section C	2 062		

CAUTION: No student should be allowed to operate any hazardous power equipment. Safe power equipment and sharp hand tools may be operated under close teacher supervision and while observing all precautions - like wearing appropriate protective equipment.

D	EQUIPMENT AND CONSUMABLES – weightage: 30%					
Item No.	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score <i>For PSEA use only</i>
D1	TOOLS & EQUIPMENT					
1	Artist paintbrush	20	2	40		
2	Cutting Pad (A3 size)	6	10	60		
3	Flexi or French Curve	5	8	40		
4	Glue Gun	3	20	60		
5	Guillotine	1	60	60		
6	Hand drill	1	60	60		
7	Lettering Stencils – assorted sizes and styles	20	2	40		
8	Pencil Compasses	20	3	60		
9	Protractor	20	3	60		
10	Sanding Pad	5	8	40		
11	Scissors – General purpose	20 pairs	3	60		
12	Scoring Tool or Alternative	4	10	40		
13	Scroll Saw	1	60	60		
14	Set Square – 45° ~ 200mm	20	3	60		
15	Set Square – 60° ~ 200mm	20	3	60		
16	Stapler	2	30	60		
17	Steel rule (1 m – graduated)	1	60	60		
18	Table-mounted pencil sharpener	2	30	60		
19	Trimming Knife (metal cast body)	2	30	60		
20	Trimming Knife (plastic body)	6	10	60		
21	Try Square – blade 150 mm	10	6	60		
22	Bench mounted drilling machine + Machine vice	1 1	60 60	60 60		
23	Band saw – small and table-mounted	1	60	60		
24	Bradawl	5	8	40		
25	Coping Saw	2	30	60		
26	Construction components /Demonstration kits for experiments with basic: a) Linkages b) Mechanisms c) Structures d) Hydraulics e) Pneumatics	2 sets Each - Total 10 sets (May be home-made)	20	200		

Item No.	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score For PSEA use only
27	Construction components for simple Electrical and Electronic Circuits: a) Multimeter (analogue) b) Multimeter (digital) c) Resistor – asstd. values d) Capacitor - asstd. values e) Sensors - asstd. values f) Battery – 9 volts g) L E D – asstd. h) Transistor	3 3 60 30 12 6 20 20	12 13 0.7 1.3 3 7 2 2	36 39 42 39 36 42 40 40		
28	Desoldering pump	5	8	40		
29	Drawing Stencils – assorted types and sizes	5	8	40		
30	Drills (1 to 10 mm X 0.5 mm) • for wood • for metal	set of 10 sizes set of 10 sizes	4/unit 4/unit	40 40		
31	Engineer's square	10	4	40		
32	Electric extension lead + stand	1	60	60		
33	Files – assorted sizes and sections	12	5	60		
34	Folding bars	1 pair	40	40		
35	G-Cramp (small) (big)	6 4	7 3	42 12		
36	Hole Punch – 4 diameters	1	20	20		
37	Hammers – assorted types and weights	10	6	60		
38	Hot-wire Cutter	1	40	40		
39	Hacksaw	10	6	60		
40	Junior Hacksaw	10	6	60		
41	Jigsaw + cutter blades	2	30	60		
42	Metal Ruler (stainless) - metric	10	6	60		
43	Marking knives	6	10	60		
44	Marking gauge	6	10	60		
45	Mitre block	1	40	40		
46	Needle Files	2 sets	20	40		
47	Portable Sander (any model)	1	60	60		
48	Portable power drill – variable speed	1	60	60		
49	Portable cordless power screwdriver	1	60	60		
50	Pop riveter + nozzles	1	40	40		

Item No.	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score For PSEA use only
51	Pliers: • Combination • Round nose	2	20	40		
		2	10	20		
52	Pincers	2	20	40		
53	Saw – crosscut Rip saw	1	40	40		
		1	40	40		
54	Screwdriver -Standard	Set of 6	10	60		
55	Screwdriver -Phillips	Set of 6	10	60		
56	Strip Bender	1	40	40		
57	Scriber	10	6	60		
58	Sliding bevel	4	5	20		
59	Soft Soldering Iron	6	7	42		
	Core solder	5 reels	8	40		
	Stand	6	6	36		
60	Smoothing planes	5	12	60		
61	T-Square	20	3	60		
62	Tenon saw (200 mm) (250 mm)	3	13	39		
		3	13	39		
63	Tinman's snips – straight curved blade	10	6	60		
		2	10	20		
64	Wire Cutter	4	5	20		
65	Wooden Mallet	6	7	42		
66	Woodworking Chisel – various types and sizes	10 asstd.	6	60		
			Sub-Total D1	4086		
D2.	CONSUMABLES (stock to be continually replenished)					
1.	Acrylic (Perspex) – 4 mm thick – clear & coloured	2 sheets or equivalent off-cuts	30	60		
2.	Bifurcated Rivets & Pop Rivets (small)	1 box each	10 + 10	20		
3.	Bristol Paper – assorted colours – A ₂ Size	60 sheets	1	60		
4.	Contact adhesive	6 tubes or 250 ml	10	60		
5.	Carton Sheet – smooth white surface – A ₂ Size	20 sheets	3	60		
6.	Carton Sheet – thick- A ₂	20 sheets	3	60		
7.	Contact Paper – assorted colours and textures-A ₂	20 sheets	3	60		
8.	Copper/aluminium and Soft Steel wires – asstd.thickness	4 reels asstd.	15	60		

Item No.	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score For PSEA use only
9.	Drawing paper A ₃ size A ₄ size	100 sheets	0.6	60		
		100 sheets	0.6	60		
10.	Dowels – asstd. diameters	20 m	3	60		
11.	Expanded Polystyrene	10 sheets	4	40		
		10 blocks	4	40		
12.	Elastic Band – flat type	1 box	20	20		
13.	Glue gun stick	20	3	60		
14.	Glue stick	20 tubes	3	60		
15.	Staples	1 box each	20	20		
16.	Thumb tacks - coloured	4 boxes	15	60		
17.	Galvanized mild steel sheet (Gauge 22)	6 sheets	10	60		
18.	Masking Tape	2 reels	30	60		
19.	MDF boards – 6 to 9 mm	2 sheets or equivalent off-cuts	30	60		
20.	Mild steel sections: • round 6-8 mm dia. • flat 3-4 mm thick	6 bars 6 ft.	10	60		
		6 bars 6 ft.	10	60		
21.	Nails – 1 inch	Adequate	60	60		
22.	Plywood – 4 mm thick	2 sheets or equivalent off-cuts	30	60		
23.	PVA or Cascamite Glue	Adequate	60	60		
24.	a) Sand paper	15 sheets	15			
	b) Emery Paper – (assorted grades)	15 sheets	2	60		
25.	Screws – self tapping – asst - brass – asstd.	100	0.4	40		
		100	0.4	40		
26.	Textured and Corrugated Paper/Carton A ₄ /A ₃ size	20 sheets	2	40		
27.	Timber (pine & meranti) planks/ sections already planed and converted	10 m plank p	3	30		
		10 m plank m	3	30		
		10 m sect. p	3	30		
		10 m sect. m	3	30		
			Sub-Total D2	1700		
			Total Section D (excluding conditions)	5786		

CRITERIA FOR MARKING CONDITIONS AND QUALITY OF EQUIPMENT AND CONSUMABLES

	CRITERIA	Max. Marks	Rating on a scale 1-10	SCORE
1.	Conditions of light power tools listed below: <i>Portable Sander</i> <i>Power Drill</i> <i>Portable Power Drill</i> <i>Scroll Saw</i> <i>Bench Drilling Machine</i> <i>Glue Gun</i> <i>Hot Wire Cutter</i> <i>Band Saw</i> <i>Soft Soldering Iron</i> <i>Strip Bender</i> <i>Extension Leads</i> <i>Machine Cutter Blades</i> <i>Portable Cordless Power Screwdriver</i>	100		
2.	Maintenance of cutting/marketing/driving tools listed below: <i>Woodworking Chisels</i> <i>Planes</i> <i>Centre Punches</i> <i>Scribers</i> <i>Hacksaw Blades</i> <i>Saw Teeth</i> <i>Files with handles</i> <i>Drills</i> <i>Marking Knives</i> <i>Cutter Blades</i> <i>Screwdriver Bits</i> <i>Tinman's Snips</i>	100		
3.	Conditions of the drawing equipment listed below: <i>Set Squares</i> <i>Paintbrushes</i> <i>Compasses</i> <i>Lettering Stencils</i> <i>Drawing Stencils</i> <i>T-Squares</i> <i>Protractors</i> <i>Pencil Sharpener</i>	100		
4.	All power tools listed at 1 above provided with good electrical cords & fittings.	100		
	TOTAL	400		

MARK SCHEME AND SCORE

		TOTAL MARKS AND SCORE		
SECTION	WEIGH-TAGE	MAX. MARKS	Score	% Score Section-wise
A. Physical Facilities	30%	6 186		
B. Records and Instructional Tools	30%	6 186		
C. Safety	10%	2 062		
D. Equipment and Consumables	30%	5 786 + 400 (conditions) = 6 186		
OVERALL	100%	20 620		

REMARKS AND SHORTCOMINGS

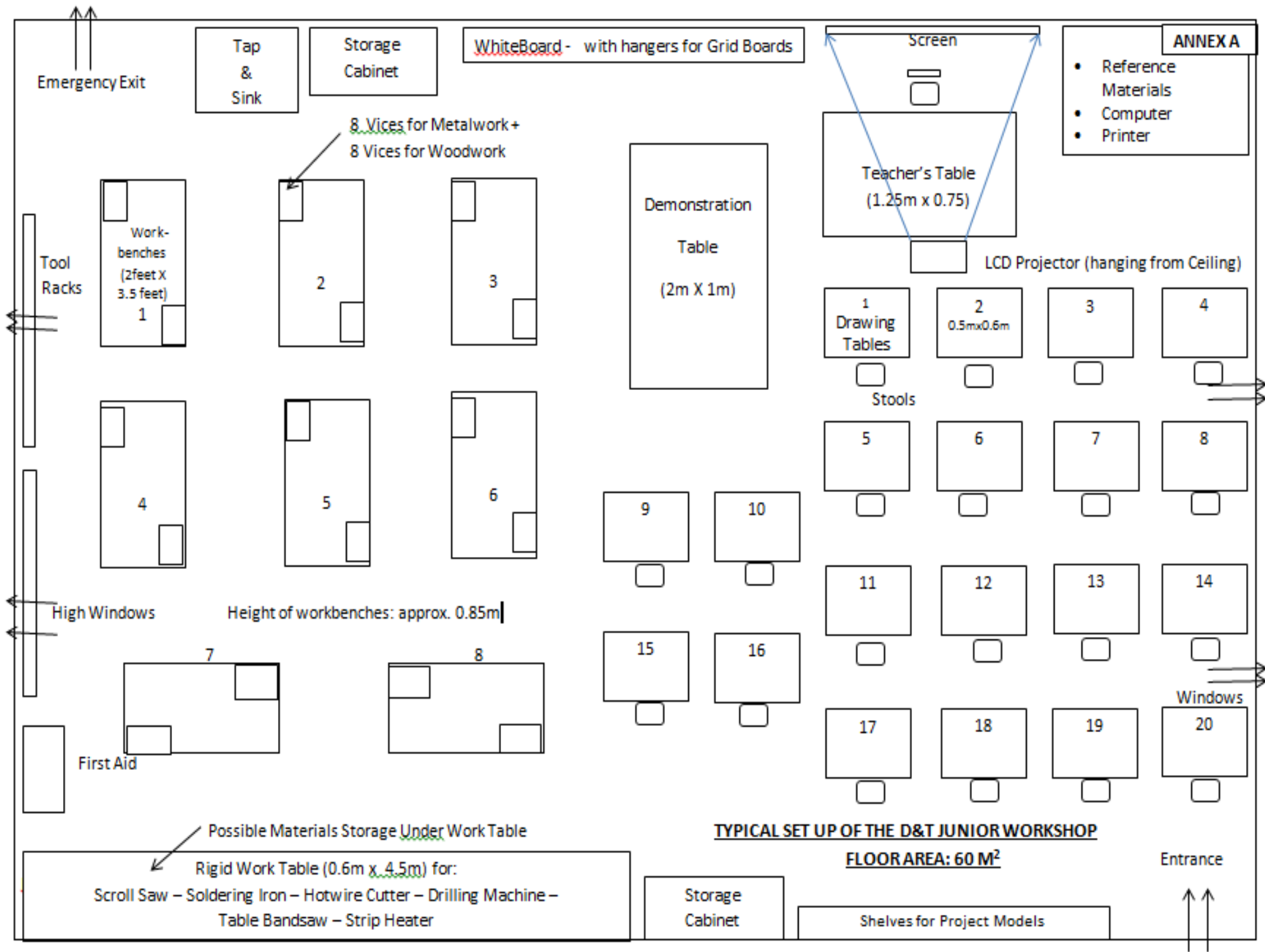
(With particular reference to conditions at page 1 and score obtained)

Signature of PSEA Supervisor / Senior Supervisor (s)

Signature of Manager

Date:-----

Date:-----



TYPICAL SET UP OF THE D&T JUNIOR WORKSHOP

FLOOR AREA: 60 M²