

Qualification Pack



Sports Goods Craftsperson

QP Code: SPF/Q8107

QP Version: 1.0

NSQF Level: 4

Sports, Physical Education, Fitness and Leisure Sector Skill Council
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New Delhi

Qualification Pack

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SPF/Q8107: Sports Goods Craftsperson

Brief Job Description

Sports goods craftsperson produce, assemble, and finish multiple varieties of sports equipment such as balls, bats and racquets of all types and categories. They have the experience of working with different types of materials like rubber, leather, wood, plastic, etc. used in the production of popular sports equipment.

Personal Attributes

Individuals in this role should be creative, detail-oriented, self-motivated and energetic. They should have excellent interpersonal skills, communication skills, and the ability to work with other team members.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. SPF/N8118: Plan manufacturing of sports goods
2. SPF/N8114: Maintain Health and safety at workplace
3. SPF/N1169: Improve workplace resource usage
4. DGT/VSQ/N0102: Employability Skills (60 Hours)

Electives(mandatory to select at least one):

Elective 1: Sports ball

1. SPF/N8119: Manufacture a variety of sports ball

Electives(mandatory to select at least one)

Elective 2: Sports bats and racquets

1. SPF/N8120: Manufacture variety of sports bats and racquets

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Qualification Pack (QP) Parameters

Sector	Sports
Sub-Sector	Sports Manufacturing
Occupation	Sports Manufacturing
Country	India
NSQF Level	4
Credits	15
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7522.1804
Minimum Educational Qualification & Experience	12th Class with 1 Year of relevant experience OR 10th Class with 2 Years of relevant experience OR 10th grade pass with two years of any combination of NTC/NAC/CITS or in relevant trade OR Certificate-NSQF (Level 3- Sports Bat & Racquet Craftsperson (Junior) / Sports Ball Craftsperson (Junior)with 3 years of relevant experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	29/09/2023
Next Review Date	29/09/2026
NSQC Approval Date	29/09/2023
Version	1.0
Reference code on NQR	QG-04-SP-01018-2023-V1-SPEFLSC
NQR Version	1

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SPF/N8118: Plan Manufacturing of Sports Goods

Description

This unit is about planning for the production of sports goods in a factory

Scope

This unit/task covers the following

- Prepare equipment for the production of multi-sport goods
- Select materials for the production of multi-sport goods
- Ensure hygiene and sanitation at the production area

Elements and Performance Criteria

Prepare equipment for the production of multi-sports goods

To be competent, the user/individual on the job must be able to:

- PC1. ensure the availability of all required equipment and tools for the production
- PC2. use the correct tools and equipment
- PC3. check that equipment is safe and set up in readiness for use
- PC4. select the correct component parts for the style being worked on
- PC5. conform to production quality standards
- PC6. report any damaged equipment to the supervisor
- PC7. follow company reporting procedures about defective tools and machines which affect work and are risks/ problems
- PC8. sort and place work to assist the next stage of production and minimise the risk of damage

Select materials for the production of multi-sports goods

To be competent, the user/individual on the job must be able to:

- PC9. select materials to manufacture sports ball (football, basketball, volleyball, handball, tennis ball, cricket ball)
- PC10. identify the materials used to produce sports ball
- PC11. identify the properties of leather and synthetic leather: Animal skin, PU (polyurethane) TPU (thermoplastic polyurethane) PVC (Polyvinyl Chloride)
- PC12. select type of leather or synthetic material based on the product to be manufactured
- PC13. select the leather that can be used in making leather-based cricket ball, football, basketball, etc.
- PC14. ensure coloring of the leather material before it is put in use
- PC15. identify the process in coloring the material
- PC16. select materials to manufacture sports Bat and Racquet (Cricket, Baseball, Hockey, Lawn Tennis, Table Tennis)
- PC17. identify the properties of wood.
- PC18. select a type of wood based on the product to be manufactured
- PC19. select the wood that can be used in making cricket bats, baseball bats, table tennis racquets, etc.
- PC20. identify the process of grading wood
- PC21. select types of tools and equipment that should be used for shaping the wood

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PC22. ensure correct wood is selected before it is put in use

PC23. check quality of wood and maintain its standards

PC24. identify the process of drying of wood

Ensure hygiene and sanitation at the production area

To be competent, the user/individual on the job must be able to:

PC25. ensure personal hygiene

PC26. ensure equipment, workshop, etc. are sanitized before and after the usage

PC27. guide others about hygiene and sanitation workplace requirements

PC28. report advanced hygiene and sanitation issues to appropriate authority

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Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. different hand tools used for different leather goods
- KU2. different types of cutting Tools – stitching awls, stitch components
- KU3. leather quality and properties
- KU4. plating and evaluations of leather quality and appropriate uses
- KU5. types of needles & scissors, knives etc. & their utility
- KU6. measuring and layout for different shape & sizes of different leather goods
- KU7. different machines used in manufacturing of leather goods
- KU8. basic concept of leather goods, kinds, uses, names, functions of hand tools and other holding devices
- KU9. use and function of different measuring instruments and gauges
- KU10. process of leather treatment
- KU11. types of materials aluminum, composite used for crafting racquets
- KU12. characteristics of wood, moisture, density, etc.
- KU13. operating procedures to carry out colouring, cleaning, lamping, thread trimming, and packaging
- KU14. styles/ design of the products currently being produced
- KU15. method of interpreting product specifications
- KU16. method of safely setting up and closing cutting and other equipment in the workstation
- KU17. equipment needed for the moulding, shaping, sanding, cutting activity
- KU18. implications of using defective tools and machines on the materials
- KU19. administration of basic first aid

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1. read and interpret production documents such as list, bill etc.
- GS2. read and interpret technical drawings
- GS3. identify parts, hardware and tooling required
- GS4. identify technical requirements and challenges
- GS5. facilitate process improvements
- GS6. prepare report

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare equipment for the production of multi-sports goods</i>	8	24	-	-
PC1. ensure the availability of all required equipment and tools for the production	1	3	-	-
PC2. use the correct tools and equipment	1	3	-	-
PC3. check that equipment is safe and set up in readiness for use	1	3	-	-
PC4. select the correct component parts for the style being worked on	1	3	-	-
PC5. conform to production quality standards	1	3	-	-
PC6. report any damaged equipment to the supervisor	1	3	-	-
PC7. follow company reporting procedures about defective tools and machines which affect work and are risks/ problems	1	3	-	-
PC8. sort and place work to assist the next stage of production and minimise the risk of damage	1	3	-	-
<i>Select materials for the production of multi-sports goods</i>	16	40	-	-
PC9. select materials to manufacture sports ball (football, basketball, volleyball, handball, tennis ball, cricket ball)	1	3	-	-
PC10. identify the materials used to produce sports ball	1	3	-	-
PC11. identify the properties of leather and synthetic leather: Animal skin, PU (polyurethane) TPU (thermoplastic polyurethane) PVC (Polyvinyl Chloride)	1	3	-	-
PC12. select type of leather or synthetic material based on the product to be manufactured	1	3	-	-
PC13. select the leather that can be used in making leather-based cricket ball, football, basketball, etc.	1	3	-	-
PC14. ensure coloring of the leather material before it is put in use	1	3	-	-
PC15. identify the process in coloring the material	1	3	-	-

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PC16. select materials to manufacture sports Bat and Racquet (Cricket, Baseball, Hockey, Lawn Tennis, Table Tennis)	1	3	-	-
PC17. identify the properties of wood	1	2	-	-
PC18. select a type of wood based on the product to be manufactured	1	2	-	-
PC19. select the wood that can be used in making cricket bats, baseball bats, table tennis racquets, etc.	1	2	-	-
PC20. identify the process of grading wood	1	2	-	-
PC21. select types of tools and equipment that should be used for shaping the wood	1	2	-	-
PC22. ensure correct wood is selected before it is put in use	1	2	-	-
PC23. check quality of wood and maintain its standards	1	2	-	-
PC24. identify the process of drying of wood	1	2	-	-
<i>Ensure hygiene and sanitation at the production area</i>	4	8	-	-
PC25. ensure personal hygiene	1	2	-	-
PC26. ensure equipment, workshop, etc. are sanitized before and after the usage	1	2	-	-
PC27. guide others about hygiene and sanitation workplace requirements	1	2	-	-
PC28. report advanced hygiene and sanitation issues to appropriate authority	1	2	-	-
NOS Total	28	72	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SPF/N8118
NOS Name	Plan Manufacturing of Sports Goods
Sector	Sports
Sub-Sector	Sports Manufacturing
Occupation	Sports Manufacturing
NSQF Level	4
Credits	5
Version	1.0
Last Reviewed Date	29/09/2023
Next Review Date	29/09/2026
NSQC Clearance Date	29/09/2023

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SPF/N8114: Maintain Health and Safety at manufacturing workplace

Description

This unit is about Ensure the production of goods and services while observing safety, hygiene and sanitation practices for operations.

Scope

This unit covers the following

- Develop safety measures at manufacturing processes
- Maintain personal hygiene and safety
- Maintain safety and efficiency of equipment

Elements and Performance Criteria

Develop safety measures at manufacturing processes

To be competent, the user/individual on the job must be able to:

apply suitable measures for protection of workers from chemicals, sharp objects, rotating machines, and loose items

perform visual checks to the safety components (such as protective clothing, machine leakages, gangways, electrical fittings.) prior to their use for concealed wiring purposes in order to ascertain their appropriate specifications and usability

demonstrate necessary checks around the workplace to ensure that the workplace is safe to conduct work

mark clearly on walls and floors where concealed hazards could be posing danger to workers

Assist in planning and mark locations of gangways and electrical fixtures/fittings to be installed on walls

Arrange machines in the workshop in a logical sequence to promote safe movement between workstations.

Design safety and healthy schedule for specific workplaces

Maintain personal hygiene and safety

To be competent, the user/individual on the job must be able to:

contamination by humans operating in workshops

PC1: Create effective routines to ensure healthy and hygienic conditions during all workshop practice processes including transportation of materials within.

PC2: Design work premises that are constantly monitored/inspected for undesirable breaches in the protection provided by health and hygiene measures

PC3: Perform safety checks before operation of any equipment

PC4: Wear protective clothing and gear as and when required and ensure adherence to safety guidelines

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- PC5: Report potential hazards to the manager immediately
- PC6: Create standard procedures to deal with accidents and emergency situations
- PC7: Use first aid kit as and when required and provide appropriate treatment in case of any injuries

Maintain safety and efficiency of equipment

To be competent, the user/individual on the job must be able to:

- PC8: Identify recyclable and non-recyclable, and hazardous waste generated
- PC9: Analyse workshop equipment so that it is maintained to specifications at all times with frequent tests
- PC10: Perform routine checks/tests for occupational related infections
- PC11: Examine all equipment and tools used so that they are decontaminated, cleaned and switched off after use.
- PC12: Restrict access only to authorised personnel
- PC13: Implement effective security measures for prevention of theft/sabotage

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Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1: potential hazards, risks and threats based on the nature of work
- KU2: Organisation standards and procedures followed safety, hygiene and sanitation
- KU3: Personal hygiene and fitness requirements
- KU4: Job responsibilities/duties for following work place safety, hygiene and sanitation
- KU5: Personal protective equipment and clothing to be used
- KU6: Safe methods to use in materials and equipment handling
- KU7: Housekeeping methods and importance
- KU8: Safe disposal methods for waste
- KU9: Methods for minimising environmental damage
- KU10: categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU11: waste management and methods of waste disposal
- KU12: common sources of pollution and ways to minimize it
- KU13: Different safety units/specifications like wattage, resistance, voltage, frequency, current, kWh, electrical systems, water pressure and their specifications etc.
- KU14: Sketches and diagrams for safety symbols and procedures on the equipment installation
- KU15: Different types of tools and electrical equipment
- KU16: Different types of measuring equipment and techniques
- KU17: Statutory provisions under relevant safety laws, environmental laws, electrical laws and rules prescribed by relevant authorities
- KU18: Hazards and safety aspects involved, and usage of relevant personal protective equipment
- KU19: Selection of appropriate equipment to work with Fire precautions such as fire drills
- KU20: Applicable rules set by the Government regulatory agencies
- KU21: Types of machines used in the in an organisation
- KU22: Types of lubricants and their recommended usage

Generic Skills (GS)

The user/ individual on the job needs to know and understand how to

- GS1: record data on waste disposal at workplace
- GS2: complete statutory documents relevant to safety and hygiene
- GS3: read Standard Operating Practices (SOP) documents
- GS4: make timely decisions for efficient utilization of resources
- GS5: complete tasks efficiently and accurately within stipulated time
- GS6: work with supervisors/team members to carry out work related tasks

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Develop safety measures at manufacturing processes	14	21	-	-
PC1. apply suitable measures for protection of workers from chemicals, sharp objects, rotating machines, and loose items	2	3	-	-
PC2. perform visual checks to the safety components (such as protective clothing, machine leakages, gangways, electrical fittings.) prior to their use for concealed wiring purposes in order to ascertain their appropriate specifications and usability	2	3	-	-
PC3. demonstrate necessary checks around the workplace to ensure that the workplace is safe to conduct work	2	3	-	-
PC4. mark clearly on walls and floors where concealed hazards could be posing danger to workers	2	3	-	-
PC5. assist in planning and mark locations of gangways and electrical fixtures/fittings to be installed on walls	2	3	-	-
PC6. arrange machines in the workshop in a logical sequence to promote safe movement between workstations	2	3	-	-
PC7. design safety and healthy schedule for specific workplaces	2	3	-	-
Maintain personal hygiene and safety	14	21	-	-
PC8. create effective routines to ensure healthy and hygienic conditions during all workshop practice	2	3	-	-
PC9. design work premises that are constantly monitored/inspected for undesirable breaches in the protection provided by health and hygiene measures	2	3	-	-
PC10. perform safety checks before operation of any equipment	2	3	-	-
PC11. wear protective clothing and gear as and when required and ensure adherence to safety guidelines	2	3	-	-
PC12. report potential hazards to the manager immediately	2	3	-	-
PC13. create standard procedures to deal with accidents and emergency situations	2	3	-	-

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PC14. use first aid kit as and when required and provide appropriate treatment in case of any injuries	2	3	-	-
<i>Maintain safety and efficiency of equipment</i>	12	18	-	-
PC15. identify recyclable and non-recyclable, and hazardous waste generated	2	3	-	-
PC16. analyse workshop equipment so that it is maintained to specifications at all times with frequent test	2	3	-	-
PC17. perform routine checks/tests for occupational related infections	2	3	-	-
PC18. examine all equipment and tools used so that they are decontaminated, cleaned and switched off after use	2	3	-	-
PC19. restrict access only to authorised personnel	2	3	-	-
PC20. implement effective security measures for prevention of theft/sabotage	2	3	-	-
NOS Total	40	60	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SPF/N8114
NOS Name	Maintain Health and Safety at manufacturing workplace
Sector	Sports
Sub-Sector	Sports Manufacturing
Occupation	Sports Manufacturing
NSQF Level	5
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	23/06/2026
NSQC Clearance Date	23/06/2023

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SPF/N1169: Improve workplace resource usage

Description

This unit is about increasing efficiencies and maximizing the use of materials, particularly resources, energy, and trash, in workplace operations.

Scope

This unit covers the following

- conservation procedures for materials
- power conservation methods
- waste management/recycling procedures

Elements and Performance Criteria

conservation procedures for materials

To be competent, the user/individual on the job must be able to:

PC1: determine ways to optimize usage of material including water in various tasks/activities/processes

PC2: examine various tasks/activities/processes for spills/leaks

PC3: eliminate spills/leaks and escalate to appropriate authorities if they cannot be corrected

PC4: conduct routine cleaning of tools, machines, and equipment

power conservation practices

To be competent, the user/individual on the job must be able to:

PC5: determine ways to optimize usage of electricity/energy in various tasks/activities/processes

PC6: ensure if the equipment/machine is functioning normally before commencing work and rectify wherever required

PC7: report equipment malfunctions (fumes/sparks/emission/vibration/noise) and lapses in maintenance

PC8: ensure that all electrical equipment and appliances are correctly connected and turned off when not in use

waste management/recycling procedures

To be competent, the user/individual on the job must be able to:

PC9: determine recyclable and non-recyclable, and hazardous waste generated

PC10: separate waste into different categories

PC11: discard non-recyclable waste appropriately

PC12: store recyclable and reusable materials in a designated spot

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Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1: potential hazards, risks and threats based on the nature of work
- KU2: layout of the workstation and electrical and thermal equipment used
- KU3: organization's procedures for minimizing waste
- KU4: efficient and inefficient utilization of material and water
- KU5: ways of efficiently managing material and water in the process
- KU6: basics of electricity and prevalent energy efficient devices
- KU7: ways to recognize common electrical problems
- KU8: common practices of conserving electricity
- KU9: usage of different colours of dustbins
- KU10: categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU11: waste management and methods of waste disposal
- KU12: common sources of pollution and ways to minimize it

Generic Skills (GS)

The user/ individual on the job needs to know and understand how to

- GS7: record data on waste disposal at workplace
- GS8: complete statutory documents relevant to safety and hygiene
- GS9: read Standard Operating Practices (SOP) documents
- GS10: communicate with colleagues on the significance of greening of jobs
- GS11: make timely decisions for efficient utilization of resources
- GS12: complete tasks efficiently and accurately within stipulated time
- GS13: work with supervisors/team members to carry out work related tasks
- GS14: identify cause and effect of greening of jobs

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
conservation procedures for materials	4	12	-	-
PC1. determine ways to optimize usage of material including water in various tasks/activities/processes	1	3	-	-
PC2. examine various tasks/activities/processes for spills/leaks	1	3	-	-
PC3. eliminate spills/leaks and escalate to appropriate authorities if they cannot be corrected	1	3	-	-
PC4. conduct routine cleaning of tools, machines, and equipment	1	3	-	-
power conservation practices	8	10	-	-
PC5. determine ways to optimize usage of electricity/energy in various tasks/activities/processes	2	3	-	-
PC6. ensure if the equipment/machine is functioning normally before commencing work and rectify wherever required	2	2	-	-
PC7. report equipment malfunctions (fumes/sparks/emission/vibration/noise) and lapses in maintenance)	2	2	-	-
PC8. ensure that all electrical equipment and appliances are correctly connected and turned off when not in use	2	2	-	-
waste management/recycling procedures	8	8	-	-
PC9. determine recyclable and non-recyclable, and hazardous waste generated	2	2	-	-
PC10. separate waste into different categories	2	2	-	-
PC11. discard non-recyclable waste appropriately	2	2	-	-
PC12. store recyclable and reusable materials in a designated spot	2	2	-	-
NOS Total	20	30	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SPF/N1169
NOS Name	Improve workplace resource usage
Sector	Sports
Sub-Sector	Sports
Occupation	Sports Coaching
NSQF Level	3
Credits	1
Version	1.0
Last Reviewed Date	NA
Next Review Date	23/06/2026
NSQC Clearance Date	23/06/2023

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DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. identify employability skills required for jobs in various industries

PC2. identify and explore learning and employability portals

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC5. recognize the significance of 21st Century Skills for employment

PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

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Basic English Skills

To be competent, the user/individual on the job must be able to:

PC7. use basic English for everyday conversation in different contexts, in person and over the Telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

PC12. follow verbal and non-verbal communication etiquette while communicating in professional and public settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC16. select financial institutions, products and services as per requirement

PC21. carry out offline and online financial transactions, safely and securely

PC22. identify common components of salary and compute income, expenses, taxes, investments etc

PC23. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentation

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the

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potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

The user/ individual on the job needs to know and understand how to:

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- GS1. read and write different types of documents/instructions/correspondence
- GS2. communicate effectively using appropriate language in formal and informal settings
- GS3. behave politely and appropriately with all
- GS4. how to work in a virtual mode
- GS5. perform calculations efficiently
- GS6. solve problems effectively
- GS7. pay attention to details
- GS8. manage time efficiently
- GS9. maintain hygiene and sanitization to avoid infectio

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self Awareness, Behaviour Skills, time management,	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-
PC10. understand the difference between job and career stretcher, etc.)	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-

Qualification Pack

<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3		
PC16. select financial institutions, products and services as per requirement	-	-		
PC17. carry out offline and online financial transactions, safely and securely	-	-		
PC18. identify common components of salary and compute income, expenses, taxes, investments	-	-		
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-		
<i>Essential Digital Skills</i>	3	4		
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-		
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-		
PC22. use basic features of word processor, spreadsheets, and presentations	-	-		
<i>Entrepreneurship</i>	2	3		
PC23. identify different types of Entrepreneurships and Enterprises and assess opportunities for	-	-		
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price,	-	-		
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the	-	-		
<i>Customer Service</i>	1	2		
PC26. identify different types of customers	-	-		
PC27. identify and respond to customer requests and needs in a professional manner.	-	-		
PC28. follow appropriate hygiene and grooming standards	-	-		
<i>Getting ready for apprenticeship & Jobs</i>	2	3		
PC29. create a professional Curriculum vitae (Résumé)	-	-		
PC30. search for suitable jobs using reliable offline and online sources such as Employment	-	-		

Qualification Pack

PC31. apply to identified job openings using offline /online methods as per requirement	-	-		
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-		
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-		
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	23/06/2026
NSQC Clearance Date	23/06/2023

Qualification Pack

SPF/N8119: Manufacture a variety of sports ball

Description

This unit is about manufacturing of different sports balls.

Scope

This unit/task covers the following

- Manufacture football, basketball, volleyball, handball, cricket ball, tennis ball
- Perform final assembly to produce sports ball
- Carry out final quality and standards check
- Work effectively with others

Elements and Performance Criteria

Manufacture football, basketball, volleyball, handball, cricket ball, tennis ball

To be competent, the user/individual on the job must be able to:

- PC1. select the tools and materials for the work
- PC2. check the quality and characteristics of the material
- PC3. match the required standards before starting to cut
- PC4. identify defects on the material if any
- PC5. calculate the number of components needed for production
- PC6. use scissors or cutting knife to cut the leather piece as per the markings given on the components
- PC7. use clicking machine or dyes to cut the batch of materials
- PC8. ensure safety during cutting of materials
- PC9. organize the cut materials into bundles, batches or groups
- PC10. utilize materials efficiently to get maximum cut pieces with minimum wastage
- PC11. ensure the number of cut pieces are as per the requirement
- PC12. identify any imperfections in the material when cutting
- PC13. agree and review the agreed upon work targets with the supervisor
- PC14. produce the required batch of components to match the production targets
- PC15. dispose of waste materials safely and return re-useable materials
- PC16. work in conformance to legal requirements, organizational policies and procedures
- PC17. select the quantity of rubber to be used for the batch of balls
- PC18. identify any imperfections in the material, if any, before using
- PC19. use rollers to kneed and thin the rubber
- PC20. identify the process, duration, techniques required to flatten
- PC21. cut the flattened rubber using hand or clipping machine into slugs
- PC22. use heat molds to create half-shells
- PC23. check the temperature and pressure of the moulds to ensure perfection
- PC24. cut, trim the extra rubber from the half-shells to get perfect semi-circle balls
- PC25. buff the half-shell seams using sanding paper
- PC26. glue the two half-shells together using an adhesive
- PC27. load the glued half-shells into the hydraulic molds to create a solid core
- PC28. rough the surface of the balls using a sanding drum
- PC29. apply uniform amount of rubber adhesive to the rough balls through tumbling operation
- PC30. cut the nylon/woolen felts into 'dogbones' shape and stack them
- PC31. dip the stacked felt to the vat of adhesive to adhere it to the core
- PC32. use hand or ball-covering machine to apply two felts to the rubber core (2in wide, 6in long)

Qualification Pack

PC33. use roll-down conveyor to remove any lumps or wrinkles along the sim

Perform final assembly of sports ball

To be competent, the user/individual on the job must be able to:

- PC34. identify the points of inspection of the assembling goods
- PC35. ensure the quantity of cut items meet specifications
- PC36. organise and prepare components for sewing
- PC37. execute the process for Inner and outer joint sewing
- PC38. carry out test sews
- PC39. sew cut items to specifications and in the correct sequence
- PC40. assemble the balls by stitching the panels together
- PC41. identify if sewn product conforms to shape and size requirements
- PC42. inspect sewn products against specification
- PC43. identify, mark and place rejects in the designated location
- PC44. use tools and equipment correctly, efficiently and safely
- PC45. prepare sewn work for transfer on to the next stage of the process
- PC46. complete and store accurate records and documentation
- PC47. identify the type of balls and their final assembly process – ball with bladder, hollow rubber ball, cricket ball
- PC48. inspect bladders after removing from the molds
- PC49. perform visual inspection to identify the faulty printed panels if any
- PC50. identify missed stitches if any
- PC51. ensure bladder of the ball is glued to the air valve panel before final stitching
- PC52. inflate the ball to ensure that the bladder has not been punctured by a needle during stitching
- PC53. use vulcanizing machine to heat the bladder to make it more flexible, durable and stronger
- PC54. use twining or winding machines to wrap polyester or nylon threads around the inner bladder, to prevent the ball from being deformed
- PC55. ensure the shape, size and weight of the ball is as per the manufacturing standards
- PC56. identify the use of core in leather-based cricket ball
- PC57. identify the characteristics of core used in leather-based cricket ball
- PC58. differentiate cork and the wool
- PC59. check quality of the cork and wool
- PC60. identify ratio of the cork to the wool
- PC61. measure weight to be maintained for preparation of core
- PC62. perform final stitching of the outer layer of the ball

Carry out final quality and standards check of sports ball

To be competent, the user/individual on the job must be able to:

- PC63. trim excess threads from the article
- PC64. check for any incorrect/ damaged stitch/design embroidery
- PC65. handover to alteration section to mend minor defects
- PC66. minimise waste and dispose of all waste materials in the approved manner
- PC67. sort and place work to assist the next stage of production and to minimise the risk of damage
- PC68. check if the final product meets the standards and international specification
- PC69. attach brand labels, barcodes/price tags on the article
- PC70. clean the final article to remove all residue, dirt, adhesive or any other contamination by hand/ machine

Qualification Pack

PC71. wrap the article in paper and prepare for packing in boxes

Work effectively with others

To be competent, the user/individual on the job must be able to:

PC72. interact (verbal, non-verbal and written) in a gender, disability, and culturally sensitive manner

PC73. promote a safe and interactive environment

Qualification Pack

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. types of leather goods requiring stitching by hand or machine stitching
- KU2. range of techniques most suited to the different types of leather goods construction
- KU3. sources of updates on leather goods and garments and other related areas
- KU4. common factors affect stitching
- KU5. broken needle procedure
- KU6. thread thickness, shade and needle sizes
- KU7. different seams and used in leather goods /garments- Edge binding, reverse stitch, French seam top stitch
- KU8. variations in stitch types - darts, tucks, pleats, piping, gathering, etc.
- KU9. setting up and adjusting machine controls
- KU10. the typical faults of stitching machines and methods to rectify them
- KU11. the problems encountered when stitching different constructions
- KU12. usage, application and storage of adhesives
- KU13. maintenance, adjustment and replacement of worn parts on the machines required for different types of attachment
- KU14. the manufacturers' instructions for setting up, adjusting and operating the equipment
- KU15. the manufacturers' specifications and instructions for maintenance of equipment
- KU16. proper sequence of shutting down the machine
- KU17. types of tools and equipment should be used for finishing
- KU18. describe to know the BIS and International standards
- KU19. explain the Standard applicable for manufacturing a Cricket Ball of International Label
- KU20. follow and maintain the BIS and International standards during process of cricket ball manufacturing
- KU21. potential faults in the various processes and methods to avoid them
- KU22. process for obtaining replacements for worn, faulty or defective tools
- KU23. importance of gender and its related concepts such as gender roles, gender equality, gender power relations etc.
- KU24. POSH (Prevention of Sexual Harassment) Act

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1. read and interpret production plans
- GS2. identify technical specification issues
- GS3. Identify solutions to production issues, customer complaints
- GS4. communicate with team members, staff, production managers and other supervisors to solve production issues
- GS5. organize personnel and tasks according to production needs
- GS6. handle complaints
- GS7. be organized

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manufacture football, basketball, volleyball, handball, cricket ball, tennis ball</i>	33	66	-	-
PC1. select the tools and materials for the work	1	2	-	-
PC2. check the quality and characteristics of the material	1	2	-	-
PC3. match the required standards before starting to cut	1	2	-	-
PC4. identify defects on the material if any	1	2	-	-
PC5. calculate the number of components needed for production	1	2	-	-
PC6. use scissors or cutting knife to cut the leather piece as per the markings given on the components	1	2	-	-
PC7. use clicking machine or dyes to cut the batch of materials	1	2	-	-
PC8. ensure safety during cutting of materials	1	2	-	-
PC9. organize the cut materials into bundles, batches or groups	1	2	-	-
PC10. utilize materials efficiently to get maximum cut pieces with minimum wastage	1	2	-	-
PC11. ensure the number of cut pieces are as per the requirement	1	2	-	-
PC12. identify any imperfections in the material when cutting	1	2	-	-
PC13. agree and review the agreed upon work targets with the supervisor	1	2	-	-
PC14. produce the required batch of components to match the production targets	1	2	-	-
PC15. dispose of waste materials safely and return re-useable materials	1	2	-	-
PC16. work in conformance to legal requirements, organizational policies and procedures	1	2	-	-
PC17. select the quantity of rubber to be used for the batch of balls	1	2	-	-
PC18. identify any imperfections in the material, if any, before using	1	2	-	-

Qualification Pack

PC19. use rollers to kneed and thin the rubber	1	2	-	-
PC20. identify the process, duration, techniques required to flatten	1	2	-	-
PC21. cut the flattened rubber using hand or clipping machine into slugs	1	2	-	-
PC22. use heat molds to create half-shells	1	2	-	-
PC23. check the temperature and pressure of the moulds to ensure perfection	1	2	-	-
PC24. cut, trim the extra rubber from the half-shells to get perfect semi-circle balls	1	2	-	-
PC25. buff the half-shell seams using sanding paper	1	2	-	-
PC26. glue the two half-shells together using an adhesive	1	2	-	-
PC27. load the glued half-shells into the hydraulic molds to create a solid core	1	2	-	-
PC28. rough the surface of the balls using a sanding drum	1	2	-	-
PC29. apply uniform amount of rubber adhesive to the rough balls through tumbling operation	1	2	-	-
PC30. cut the nylon/woolen felts into 'dogbones' shape and stack them	1	2	-	-
PC31. dip the stacked felt to the vat of adhesive to adhere it to the core	1	2	-	-
PC32. use hand or ball-covering machine to apply two felts to the rubber core (2in wide, 6in long)	1	2	-	-
PC33. use roll-down conveyor to remove any lumps or wrinkles along the sim	1	2	-	-
<i>Perform final assembly of sports ball</i>	29	78	-	-
PC34. identify the points of inspection of the assembling goods	1	2	-	-
PC35. ensure the quantity of cut items meet specifications	1	2	-	-
PC36. organise and prepare components for sewing	1	2	-	-
PC37. execute the process for Inner and outer joint sewing	1	2	-	-
PC38. carry out test sews	1	2	-	-

Qualification Pack

PC39. sew cut items to specifications and in the correct sequence	1	2	-	-
PC40. assemble the balls by stitching the panels together	1	2	-	-
PC41. identify if sewn product conforms to shape and size requirements	1	2	-	-
PC42. inspect sewn products against specification	1	2	-	-
PC43. identify, mark and place rejects in the designated location	1	3	-	-
PC44. use tools and equipment correctly, efficiently and safely	1	3	-	-
PC45. prepare sewn work for transfer on to the next stage of the process	1	3	-	-
PC46. complete and store accurate records and documentation	1	3	-	-
PC47. identify the type of balls and their final assembly process – ball with bladder, hollow rubber ball, cricket	1	3	-	-
PC48. inspect bladders after removing from the molds	1	3	-	-
PC49. perform visual inspection to identify the faulty printed panels if any	1	3	-	-
PC50. identify missed stitches if any	1	3	-	-
PC51. ensure bladder of the ball is glued to the air valve panel before final stitching	1	3	-	-
PC52. inflate the ball to ensure that the bladder has not been punctured by a needle during stitching	1	3	-	-
PC53. use vulcanizing machine to heat the bladder to make it more flexible, durable and stronger	1	3	-	-
PC54. use twining or winding machines to wrap polyester or nylon threads around the inner bladder,	1	3	-	-
PC55. ensure the shape, size and weight of the ball is as per the manufacturing standards	1	3	-	-
PC56. identify the use of core in leather-based cricket ball	1	3	-	-
PC57. identify the characteristics of core used in leather-based cricket ball	1	3	-	-
PC58. differentiate cork and the wool	1	3	-	-

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PC59. check quality of the cork and wool	1	3	-	-
PC60. identify ratio of the cork to the wool	1	3	-	-
PC61. measure weight to be maintained for preparation of cork	1	3	-	-
PC62. perform final stitching of the outer layer of the ball	1	3	-	-
<i>Carry out final quality and standards check of sports ball</i>	9	27	-	-
PC63. trim excess threads from the article	1	3	-	-
PC64. check for any incorrect/ damaged stitch/design embroidery	1	3	-	-
PC65. handover to alteration section to mend minor defects	1	3	-	-
PC66. minimise waste and dispose of all waste materials in the approved manner	1	3	-	-
PC67. sort and place work to assist the next stage of production and to minimise the risk of damage	1	3	-	-
PC68. check if the final product meets the standards and international specification	1	3	-	-
PC69. attach brand labels, barcodes/price tags on the article	1	3	-	-
PC70. clean the final article to remove all residue, dirt, adhesive or any other contamination by hand/ machine	1	3	-	-
PC71. wrap the article in paper and prepare for packing in boxes	1	3	-	-
<i>Work effectively with others</i>	2	6	-	-
PC72. interact (verbal, non-verbal and written) in a gender, disability, and culturally sensitive manner	1	3	-	-
PC73. promote a safe and interactive environment	1	3	-	-
NOS Total	73	177	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SPF/N8119
NOS Name	Manufacture variety of sports balls
Sector	Sports
Sub-Sector	Sports Manufacturing
Occupation	Sports goods craftsman
NSQF Level	4
Credits	5
Version	1.0
Last Reviewed Date	29/09/2023
Next Review Date	29/09/2026
NSQC Clearance Date	29/09/2023

Qualification Pack

SPF/N8120: Manufacture variety of sports bats and racquets

Description

This unit is about adopting sustainable practices and optimizing use of resources, especially material, energy and waste, in day-to-day operations at work.

Scope

This unit covers the following

- Manufacture cricket bats, baseball bats, hockey sticks, lawn tennis and table tennis racquets
- Perform final assembly to produce sports bats
- Carry out final quality and standards check of sports bats

Elements and Performance Criteria

Manufacture cricket bats, baseball bats, hockey sticks, lawn tennis and table tennis racquets

To be competent, the user/individual on the job must be able to:

- PC1. select appropriate willow to craft bats
- PC2. identify the properties of Kashmir willow, English willow, and White willow
- PC3. ensure the willows are free from moisture before using them
- PC4. cut or match the willow to create clefts
- PC5. use waxing technique to smoothen the edges
- PC6. grade clefts as per four levels based on straightness, width, blemishes
- PC7. ensure the standard size of the bats are 38 inches and width as 4.25 inches
- PC8. use pressing machine to compress the willow to a solid compact state
- PC9. cut/slice the willow or the blade to create space for the handle
- PC10. assemble handle with the blades using wood adhesive
- PC11. use drawknife to shape the shoulders of the blades to the cricket bat
- PC12. ensure rounding off the tow and filling away unnecessary pieces on the bat
- PC13. use sanding process to smoothen the surface of the bat
- PC14. operate foot treadle to bind the handle of the bats with twine
- PC15. transfer bats for the quality check and next stage of production
- PC16. identify the types of laminated woods to be used to craft table tennis racquet
- PC17. dry the wood using sun drying techniques or an incubator
- PC18. measure the dryness of the wood using appropriate tool
- PC19. identify the properties of plywood cypress, wood balsa, soft ash, walnut, etc.
- PC20. select appropriate laminated wood to craft table tennis racquet
- PC21. slice the wood into core blades
- PC22. ensure uniformity of all sliced blades – shape and size
- PC23. ensure the rubber and sponge used as the surface of the racquet is ITTF approved (International Table Tennis Federation)
- PC24. identify the implications of using inward and outward pointing pimped rubber on the surface of the racquet
- PC25. apply sponge and rubber to the wood using adhesive
- PC26. utilise rubber pieces efficiently to get maximum cut pieces with minimum wastage
- PC27. ensure no defects on the material

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- PC28. check the stretchability and tightness of the rubber as per the ITTF standards
- PC29. transfer racquets for the quality check and next stage of production
- PC30. avoid any imperfections in the material when assembling
- PC31. dispose of waste materials safely and return re-useable materials
- PC32. transfer bats for the quality check and next stage of production
- PC33. assemble composite materials as 'flat sandwich' (graphite, fiberglass, boron, Kevlar, etc.)
- PC34. cut layered materials into strips
- PC35. roll the strips to hollow, flexible tube to create frame
- PC36. bind layers of sandwiched materials using air-pumped mold or fill the hollow with polyurethane foam
- PC37. create yoke using drilling machine for string holes
- PC38. use multiple spindles to hold drill bits to create multiple string holes
- PC39. use sander to smoothen the rough surface created during drilling
- PC40. temper the frame using heat and rapid cooling process
- PC41. anodize the frame by immersing in a mild sulfuric acid solution, and passing through an electric current
- PC42. ensure the treatment changes the surface of the aluminum, and gives the rackets a shiny finish
- PC43. fix pre-drilled flexible grommet strip in the groove around the edge of the head
- PC44. ensure grommet strip fit over the string holes in the frame head

Perform final assembly to produce sports bats

To be competent, the user/individual on the job must be able to:

- PC45. rasp the handles using appropriate tools
- PC46. ensure the handles are rasped to provide comfort and efficiency to the user
- PC47. bind the handle with traditional linen thread which is applied on a custom-made binding lather
- PC48. operate foot treadle to bind the handle
- PC49. apply appropriate glue to the binding and leave it for drying
- PC50. polish the cricket bat once the bindings dry
- PC51. use compression machine to ensure rubber, foam and plywood stuck together on a table tennis racquet
- PC52. use stringing machine to force the strings through the holes using threader
- PC53. stress test the racquets to determine proper stiffness and hardness
- PC54. inspect weight of racquets, usually before and after stringing, to make sure they meet specifications
- PC55. check the balance of the racquets to ensure it is not too heavy at the head or at the handle
- PC56. wound the grip smoothly ensuring no nicks or scratches
- PC57. ensure the length-wise strings are threaded through forcefully first
- PC58. use stringing machine to adjust the tension of the strings
- PC59. ensure cross strings are threaded through afterward and the tension is adjusted
- PC60. the end cut off a plastic cap is placed
- PC61. wrap handle in double sided tape and apply vinyl grip tap

Carry out final quality and standards check of sports bats

To be competent, the user/individual on the job must be able to:

- PC62. perform visual inspection to identify the faults, if any
- PC63. transfer finished racquets to lab tests to ensure the rackets are within the given constraints
- PC64. ensure the quality of semi-finished goods meet specifications
- PC65. identify if the product conforms to shape and size requirements
- PC66. ensure the shape, size and weight of the finished goods is as per the manufacturing standards

Qualification Pack

- PC67. identify, mark and place rejects in the designated location
- PC68. use tools and equipment correctly, efficiently and safely
- PC69. complete and store accurate records and documentation
- PC70. handover to alteration section to address minor defects
- PC71. attach brand labels, barcodes/price tags on the article
- PC72. clean the final article to remove all residue, dirt, adhesive or any other contamination by hand/ machine
- PC73. wrap the article in paper and prepare for packing in boxes

Qualification Pack

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. types of willow suitable for crafting bats
- KU2. types of materials aluminum, composite used for crafting racquets
- KU3. characteristics of wood, moisture, density, etc.
- KU4. operating procedures to carry out colouring, cleaning, lamping, thread trimming, and packaging
- KU5. styles/ design of the products currently being produced
- KU6. method of interpreting product specifications
- KU7. method of safely setting up and closing down cutting and other equipment in the workstation
- KU8. equipment needed for the moulding, shaping, sanding, cutting activity
- KU9. methods of calculating the number of components required for production
- KU10. common quality imperfections associated with the materials
- KU11. implications of using defective tools and machines on the materials
- KU12. manufacturers' instructions
- KU13. types of tools and equipment should be used for finishing
- KU14. types of raw material should be used require for finishing
- KU15. international standards of equipment
- KU16. the Standard applicable for manufacturing a Cricket Ball of International Label
- KU17. follow and maintain the BIS and International standards during process of cricket ball manufacturing
- KU18. explain different inspection/ testing procedures necessary to produces a Cricket Ball of International Label
- KU18. the process for packaging
- KU19. types of tools and equipment and other materials used for packaging
- KU20. the process of packaging in standard manner to prepare to send National and International Market
- KU21. potential faults in the various processes and methods to avoid them
- KU22. process for obtaining replacements for worn, faulty or defective tools
- KU23. appearance of the final product

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1. Read and interpret production plans
- GS2. identify technical specification issues
- GS3. identify solutions to production issues, customer complaints
- GS4. communicate with team members, staff, production managers and other supervisors to solve production issues
- GS5. organize personnel and tasks according to production needs
- GS6. handle complaints
- GS7. be organized

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manufacture cricket bats, baseball bats, hockey sticks, lawn tennis and table tennis racquets</i>				
PC1. select appropriate willow to craft bats	1	2	-	-
PC2. identify the properties of Kashmir willow, English willow, and White willow	1	2	-	-
PC3. ensure the willows are free from moisture before using them	1	2	-	-
PC4. cut or match the willow to create clefts	1	2	-	-
PC5. use waxing technique to smoothen the edges	1	2	-	-
PC6. grade clefts as per four levels based on straightness, width, blemishes	1	2	-	-
PC7. ensure the standard size of the bats are 38inches and width as 4.25 inches	1	2	-	-
PC8. use pressing machine to compress the willow to a solid compact state	1	2	-	-
PC9. cut/slice the willow or the blade to create space for the handle	1	2	-	-
PC10. assemble handle with the blades using wood adhesive	1	2	-	-
PC11. use drawknife to shape the shoulders of the blades to the cricket bat	1	2	-	-
PC12. ensure rounding off the tow and filling away unnecessary pieces on the bat	1	2	-	-
PC13. use sanding process to smoothen the surface of the bat	1	2	-	-
PC14. operate foot treadle to bind the handle of the bats with twine	1	2	-	-
PC15. transfer bats for the quality check and next stage of production	1	2	-	-
PC16. identify the types of laminated woods to be used to craft table tennis racquet	1	2	-	-

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PC17. dry the wood using sun drying techniques or an incubator	1	2	-	-
PC18. measure the dryness of the wood using appropriate tool	1	2	-	-
PC19. identify the properties of plywood cypress, wood balsa, soft ash, walnut, etc.	1	2	-	-
PC20. select appropriate laminated wood to craft table tennis racquet	1	2	-	-
PC21. slice the wood into core blades	1	2	-	-
PC22. ensure uniformity of all sliced blades – shape and size	1	2	-	-
PC23. ensure the rubber and sponge used as the surface of the racquet is ITTF approved (International Table Tennis Federation)	1	2	-	-
PC24. identify the implications of using inward and outward pointing pimped rubber on the surface of the racquet	1	2	-	-
PC25. apply sponge and rubber to the wood using adhesive	1	2	-	-
PC26. utilise rubber pieces efficiently to get maximum cut pieces with minimum wastage	1	2	-	-
PC27. ensure no defects on the material	1	2	-	-
PC28. check the stretchability and tightness of the rubber as per the ITTF standards	1	2	-	-
PC29. transfer racquets for the quality check and next stage of production	1	2	-	-
PC30. avoid any imperfections in the material when assembling	1	2	-	-
PC31. dispose of waste materials safely and return re-useable materials	1	2	-	-
PC32. transfer bats for the quality check and next stage of production	1	2	-	-
PC33. assemble composite materials as 'flat sandwich' (graphite, fiberglass, boron, Kevlar, etc.)	1	2	-	-

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PC34. cut layered materials into strips	1	2	-	-
PC35. roll the strips to hollow, flexible tube to create frame	1	2	-	-
PC36. bind layers of sandwiched materials using air-pumped mold or fill the hollow with polyurethane foam	1	2	-	-
PC37. create yoke using drilling machine for string holes	1	2	-	-
PC38. use multiple spindles to hold drill bits to create multiple string holes	1	2	-	-
PC39. use sander to smoothen the rough surface created during drilling	1	2	-	-
PC40. temper the frame using heat and rapid cooling process	1	2	-	-
PC41. anodize the frame by immersing in a mild sulfuric acid solution, and passing through an electric current	1	2	-	-
PC42. ensure the treatment changes the surface of the aluminum, and gives the rackets a shiny finish	1	2	-	-
PC43. fix pre-drilled flexible grommet strip in the groove around the edge of the head	1	3	-	-
PC44. ensure grommet strip fit over the string holes in the frame head	1	3	-	-
<i>Perform final assembly to produce sports bats</i>				
PC45. rasp the handles using appropriate tools	1	3	-	-
PC46. ensure the handles are rasped to provide comfort and efficiency to the user	1	3	-	-
PC47. bind the handle with traditional linen thread which is applied on a custom-made binding lather	1	3	-	-
PC48. operate foot treadle to bind the handle	1	3	-	-
PC49. apply appropriate glue to the binding and leave it for drying	1	3	-	-
PC50. polish the cricket bat once the bindings dry	1	3	-	-
PC51. use compression machine to ensure rubber, foam and plywood stuck together on a table tennis racquet	1	3	-	-
PC52. use stringing machine to force the strings through the holes using threader	1	3	-	-

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PC53. stress test the racquets to determine proper stiffness and hardness	1	3	-	-
PC54. inspect weight of racquets, usually before and after stringing, to make sure they meet specifications	1	3	-	-
PC55. check the balance of the racquets to ensure it is not too heavy at the head or at the handle	1	3	-	-
PC56. wound the grip smoothly ensuring no nicks or scratches	1	3	-	-
PC57. ensure the length-wise strings are threaded through forcefully first	1	3	-	-
PC58. use stringing machine to adjust the tension of the strings	1	3	-	-
PC59. ensure cross strings are threaded through afterward and the tension is adjusted	1	3	-	-
PC60. the end cut off a plastic cap is placed	1	3	-	-
PC61. wrap handle in double sided tape and apply vinyl grip tap	1	3	-	-
Carry out final quality and standards check of sports bats				
PC62. perform visual inspection to identify the faults, if any	1	3	-	-
PC63. transfer finished racquets to lab tests to ensure the rackets are within the given constraints	1	3	-	-
PC64. ensure the quality of semi-finished goods meet specifications	1	3	-	-
PC65. identify if the product conforms to shape and size requirements	1	3	-	-
PC66. ensure the shape, size and weight of the finished goods is as per the manufacturing standards	1	3	-	-
PC67. identify, mark and place rejects in the designated location	1	3	-	-
PC68. use tools and equipment correctly, efficiently and safely	1	3	-	-
PC69. complete and store accurate records and documentation	1	3	-	-

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PC70. handover to alteration section to address minor defects	1	3	-	-
PC71. attach brand labels, barcodes/price tags on the article	1	3	-	-
PC72. clean the final article to remove all residue, dirt, adhesive or any other contamination by hand/ machine	1	3	-	-
PC73. wrap the article in paper and prepare for packing in boxes	1	3	-	-
NOS Total				

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SPF/N8120
NOS Name	Manufacture variety of sports bats and racquets
Sector	Sports
Sub-Sector	Sports Manufacturing
Occupation	Sports goods craftsman
NSQF Level	4
Credits	5
Version	1.0
Last Reviewed Date	29/09/2023
Next Review Date	29/09/2026
NSQC Clearance Date	29/09/2023

Qualification Pack

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score a minimum of 70% of % aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % aggregate for QP: 70

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SPF/N8118.Plan Manufacturing of Sports Goods	28	72	-	-	100	18
SPF/N8114.Maintain Health and Safety at manufacturing workplace	40	60	-	-	100	18
SPF/N1169.Improve workplace resource usage	20	30	-	-	50	9
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	108	192	-	-	300	55

Elective: 1 Sports ball

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SPF/N8119: Manufacture a variety of sports ball	73	177	-	-	250	45

Elective: 1 Sports bats and racquets

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SPF/N8120: Manufacture a variety of sports bats and racquets	73	177	-	-	250	45

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Qualification Pack

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements that together specify the technical, generic, professional and organisational specific knowledge that an individual need in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication-related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.