

National School Curriculum

INSTRUCTIONAL GUIDE FOR TVET (FURNITURE MAKING)

CLASSES XI & XII



Department of Curriculum and Professional Development
Ministry of Education, Royal Government of Bhutan



“Your parents, relatives, and friends would be very proud of what you have achieved. At your age, to have completed your studies is your personal accomplishment. Your knowledge and capabilities are a great asset for the nation. I congratulate you for your achievements. Finally, your capabilities and predisposition towards hard work will invariably shape the future of Bhutan. You must work with integrity, you must keep learning, keep working hard, and you must have the audacity to dream big.”

- His Majesty Jigme Khesar Namgyel Wangchuck

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Foreword

COVID-19 has suddenly caused unforgiving disruptions in public education all over the world and brought about threats of fragmentation due to disparities in accessibility and connectivity in many systems. In Bhutan too, continuity of education and learning has been severely affected as a result of nationwide school closures and due to restrictions and health protocols. The disruptions have led to challenges in many existing patterns and trends in education resulting in a massive shift away from teaching and learning in traditional settings.

In the new normal education, human interaction and well-being are a priority. Digital technology that enables communication, collaboration and learning across distance, is a source of innovation and expanded potentials. As we embrace this exceptional opportunity to transform the world, and as we reimagine the organization of our educational institutions and learning environments, we need to think about where we want to go.

In the post COVID 19 era, we must prioritize the development of the whole person not just academic knowledge. Inspiration for the change can be drawn from the 1996 Delors report, *Learning the treasure within*, in its specification of four pillars of learning as “learning to know”, “to do”, “to be”, and “to live together”. Therefore, curricula must be increasingly perceived as an integrated and based on themes and problems that allows learners to learn to live in peace with our common humanity and our common planet. This has the potential in the development of a strong base of knowledge about one’s self and about the world and find purpose and be better able to participate in social and political milieu.

The National School Curriculum is, not just a mere response to the pandemic, but also a culmination of the curriculum reform work for the last four years by the then Royal Education Council. It is an attempt to transform education from the teaching of “what” to learning of “how” and “why” towards empowering learners with the transversal competencies and the 21st century skills, and preparing them to be lifelong learners. We are optimistic that this move orients our education process towards nurturing nationally rooted and globally competent citizens.

Wish all our learners and teachers a life enriching experiential teaching and learning.
Tashi Delek.



Tashi Namgyel

Director

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Introduction

Technical and Vocational Education and Training (TVET) is aimed at providing knowledge and skills for employment. It comprises education, training and skills development related to a wide range of occupational fields, production, services and livelihood. The Department of Curriculum and Professional Development, Ministry of Education envisages that the TVET curriculum has a place in the mainstream education system, as it is the case in most of the education systems of the developed world. The formal Technical and Vocational Education and Training (TVET) began in 1965 at Don Bosco Technical School (DBTS), in Kharbandi (presently known as Rinchening) in Phuntsholing. Even after that, major curriculum reform was planned by the then Department of Curriculum Research and Development (DCRD) in an attempt to make education relevant to the Bhutanese society through diversification of Secondary Education Curriculum in the schools, which included the introduction of TVET.

As per 'National Education Framework' developed collaboratively by the Royal Education Council (REC) and the Ministry of Education (MoE), it provides a pathway on integrating technical/vocational education in the mainstream school education curriculum and as elective subjects in higher classes (NEF, 2009; page 64).

With the collaborative efforts of the Ministry of Labour and Human Resources and the erstwhile Department of Curriculum Research and Development, Vocational Curriculum has been introduced in the schools with assistance from TTIs since 2011. After the first MoU that was signed between MoE and MoLHR in 2011, the second MoU was signed again in 2014, to improve technical/vocational courses. The technical/vocational courses offered by the TTIs/IZCs are adapted and redesigned and are offered in schools aligning to the 'Bhutan Education Blue Print' 2014-2024, which recommends upscaling and diversification of TVET in schools through the provision of alternative pathways in schools and the tertiary education systems, owing to the limited access to such courses, despite the growing demand for technical skills in the country.

The resolutions of the National School Curriculum Conference 2016, also strongly emphasised the need to upscale and deepen TVET. Accordingly, the TVET framework is developed from classes PP to XII, schools equipped with necessary resources and instructors trained. Tripartite MoU among the then REC, MoE and MoLHR was also signed in 2018 to implement the programmes collaboratively.

Although the TVET curriculum is competency based with more emphasis on hands-on experience, further improvements have been made taking care of cognitive and affective domains besides psychomotor. Teaching and learning approaches have also been enriched with the recommendation to use ICT and online resources. Since the pandemic (COVID-19) has resulted in the closure of schools, it has taught us lessons to be prepared for such an untoward situation in the future. Thus, the National School Curriculum Instructional Guide is prepared not only to encourage blended learning but also to facilitate remote learning. The guide would help the schools to implement the curriculum effectively without limiting to contact teaching/learning besides using a variety of pedagogies.

Purpose of the Instructional Guide

Among the many definitions of 'curriculum' this Instructional Guide underscores the meaning of curriculum as a standard and competency-based sequence of planned learning experiences where learners practise and achieve the proficiency in applying the learning experiences in real life scenarios. These proficiencies, in the curriculum framework, have been stated as "competencies" and 'objectives' for each class. In keeping with the principle, 'less is more' as stated the National School Curriculum, the contents of the curriculum have been reworked, so that learners can be engaged more in activities that can lead to the acquisition of required skills rather than having them 'cover the syllabus'.

This Instructional Guide believes that the classroom teachers, as professional individuals, can make the most authentic and reliable judgment about each learner's learning needs and the learning experiences to be provided to propel the learners in the learning continuum. With these beliefs and principles as the background, the following are the purposes of this document.

- Facilitate learners acquire required skills and competencies.
- Strengthen blended learning, including flipped classroom with multimedia, digital pedagogies and ICT devices and websites as tools to share the responsibility of learning amongst the learners, teachers, the parents and other stakeholders.
- Facilitate the use of Continuous Formative Assessment for learning using diverse appropriate assessment techniques and tools commensurate with individual differences in learning, and gather evidence to guide planning of educational programmes and activities for learners.
- Promote inclusive learning through the blended learning which facilitates learning anywhere, any time with the learner being responsible for the learning.
- Provide suggestive means of acquiring required skills by building interrelationship among, and through, the integration of the four strands of the curriculum.
- Help teachers assume the roles of facilitator, guide, motivator and evaluator.
- Guide teachers, parents and other stakeholders in helping learners achieve their potential.
- Empower teachers to design their own 'course of study' or 'class curriculum' for their students in line with the National School Curriculum Framework.
- Enhance sharing the burden of responsibility and accountability for learning amongst the stakeholders, including the learners themselves.

In this age of advanced communication and information technology, contents are widely available from a number of sources. Therefore, the teachers can select, structure and sequence the contents as required to best suit the learners' need while maintaining coherence and consistency. In other words, while the contents of the curriculum are negotiable, the competencies and objectives are not. While, teachers may have access to number of materials, it should be kept in mind that the teaching and learning should be focused on achieving the competencies rather than 'covering of the syllabus'. The teaching learning materials should be used as means to create a learning environment that is competency-based where the learners need to master the skills presented to them. While designing lesson plans and teaching learning

activities, teachers need to ensure that the materials are relevant and appropriate for the given task.

The assessment should be competency-based wherein the teachers should assess the learners' mastery of the skills stated as competencies and objectives for each class. Teachers should use appropriate assessment tools and techniques depending on the nature of the learning activities. The learners should be clearly informed about the success criteria, the areas of assessment and the tools to be used so that they know exactly what tasks are to be performed or expected of them. In the process of the performance, the teacher should continuously provide feedback and, if necessary, modify instructions. Efforts have to be made to ensure that every learner has mastered the skills.

Class XI

Module 2: Making table and chair

Chapter 1: Making table

✓ **Competency/Competencies:**

- ✓ Make a table with a different design using a circular saw machine, surface planer machine, and thicknesser machine.

✓ **Learning objectives/Topic:**

Learning objectives	Topic
1.1.1 Define table. 1.1.2 State the components of the table. 1.1.3 State the function of the circular saw machine. 1.1.4 Label the parts of the circular saw machine. 1.1.5 State the purpose of the surface planer machine. 1.1.6 Label the parts of the surface planer machine. 1.1.7 State the function of the thicknesser machine. 1.1.8 Label the parts of the thicknesser machine. 1.1.9 Prepare the table components	1.1 Preparing table components Overview: After learning the functions and parts of circular saw machines, learners can operate the machine to prepare table components.

✓ **Learning Experiences:**

- ✓ Make the students read INFORMATION SHEET 1.1
- ✓ Make the students perform OPERATION SHEET 1.1
- ✓ Teacher to brief and demonstrate to operate circular saw machine.
- ✓ Teacher to brief and demonstrate to operate surface planer machine.
- ✓ Teacher to brief and demonstrate to operate thicknesser machine.
- ✓ Make learners go through the given link to know more about operating circular saw machines and their safety measures. <https://www.einhell.de/en-de/blog/workshop/circular-table-saw-tips-tricks-for-beginners.html>
- ✓ Make learners take note of safety measures when dealing with circular saw machines.
- ✓ Make learners explore parts of the surface planer machine from available resources.
- ✓ Make learners go through the link that shows the details of the thicknesser machine including necessary adjustments and its safety. https://www.youtube.com/watch?v=p_mtD3kqFzQ
- ✓ Teacher to provide notes on purpose and parts of surface planer machine through Google Classroom.
- ✓ After watching videos, learners to be in groups of three (three machines) and discuss /explore everything related to a particular machine.
- ✓ The teacher provides questions on all three machines.

✓ **Assessment:**

- ✓ Teacher to assess their task (chair components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

- ✓ Assess the learners based on work submitted in the Google Classroom (thicknesser and circular saw machine in groups and questions).

E. Resources:

- ✓ CBLM.
- ✓ <https://www.einhell.de/en-de/blog/workshop/circular-table-saw-tips-tricks-for-beginners.html> (Notes on circular saw machine)
- ✓ https://www.youtube.com/watch?v=p_mtD3kqFzQ (Details of thickness planer machine)

A. Competency/Competencies:

- ✓ Make table using different joints.

B. Learning objectives/Topic:

Learning objectives	Topic
1.2.1 State the types of joint. 1.2.2 State the purpose of the pedestal drill machine. 1.2.3 Label the parts of the pedestal drilling machine. 1.2.4 State the function of the mortise machine. 1.2.5 Label the parts of the mortise machine. 1.2.6 Use a pedestal drilling machine. 1.2.7 Use a mortise machine. 1.2.8 Make table joints.	1.2 Making table joints Overview: After learning the purposes and function of pedestal and mortise machines, learner can operate the machines while making table joints.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 1.2
- ✓ Make the students perform OPERATION SHEET 1.2
- ✓ Make learners go through the textbook on parts and purpose of pedestal drilling machine and write notes on it.
- ✓ Make learners go through the given link <https://www.youtube.com/watch?v=KO4GM7J3zmc> showing the operation of the mortise machine.
- ✓ Make learners explore joints that are best for making chairs.
- ✓ Learners to list the safety precaution while making chair joints.

D. Assessment:

- ✓ The teacher may assess their task (chair components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assess the learners based on work submitted in the Google Classroom (joints best for chair and safety precaution)

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=KO4GM7J3zmc> (Operation of mortise machine)

A. Competency/Competencies:

- ✓ Assemble table components to produce or repair.

B. Learning objectives/Topic:

Learning objectives	Topic
1.3.1 State the purpose of nails and screws. 1.3.2 State the types of nails. 1.3.3 State the types of screws. 1.3.4 State the types of clamps. 1.3.5 State the purpose of clamps. 1.3.6 State the purpose of glues 1.3.7 State the types of adhesive. 1.3.8 State the importance of pre-assembling. 1.3.9 Interpret design drawing 1.3.10 Assemble table components	1.3 Assembling table components Overview: After learning the purposes and hardware fixing, learners can assemble the table components.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 1.3
- ✓ Make the students perform OPERATION SHEET 1.3
- ✓ Make learners explore on types of nails and screw with the help of the textbook
- ✓ Make learners go through the given link showing the types of clamp <http://www.joineryequipment.com/tag/types-of-clamps/> and let them make notes on it.
- ✓ Make learners explore adhesive used in wood construction.
- ✓ Before assembling two components, it's important to do pre-assembling. Make learners explore the given question.
- ✓ Make learners watch videos on assembling tables themselves.
- ✓ Make learners make one model of table.

D. Assessment:

- ✓ The teacher may assess their task (assemble chair components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assess the learners based on work submitted in the Google Classroom (types of clamps, nails, screw, and model of the table)

E. Resources:

- ✓ CBLM.
- ✓ <http://www.joineryequipment.com/tag/types-of-clamps/> (Types of the clamp)

A. Competency/Competencies:

- ✓ Make a drawer of a different design.

B. Learning objectives/Topic:

Learning objectives	Topic
1.4.1 Define drawer. 1.4.2 State the purpose of the drawer. 1.4.3 State the types of joints. 1.4.4 Make Drawer	1.4 Making drawer Overview: The learners can make a drawer after learning the purposes and types of joints used in drawer.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 1.4
- ✓ Make the students perform OPERATION SHEET 1.4
- ✓ Make learners go through the notes from a textbook about the following content to be submitted,
 - Definition of Drawer
 - Joints used in Drawer
 - Purpose of Drawer

D. Assessment:

- ✓ The teacher assesses their task (drawer) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given content)

E. Resources:

- ✓ CBLM.

A. Competency/Competencies:

- ✓ Assemble drawer components of different design.

B. Learning objectives/Topic:

Learning objectives	Topic
1.6.1 State the function of the sanding machine. 1.6.2 State the types of sanding machines. 1.6.3 State the purpose of wood filler. 1.6.4 State the purpose of polish. 1.6.5 State the types of polish 1.6.6 Use sanding machine. 1.6.7 Perform finishing work	1.5 Performing finishing work Overview: The topic enable learners to operate sanding machine after acquiring knowledge on the purposes of polish and wood filler, types of polishes and sanding machine. The learners will be able to perform the finishing work after every task.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 1.5
- ✓ Make the students perform OPERATION SHEET 1.5

D. Assessment:

- ✓ The teacher assesses their task (drawer) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given content)

E. Resources:

- ✓ CBLM.

A. Competency/Competencies:

- ✓ Perform finishing work for any product.

B. Learning objectives/Topic:

Learning objectives	Topic
1.5.1 Interpret design drawing. 1.5.2 Assemble the drawer components.	1.6 Assembling drawer components Overview: The learners can assemble drawer components after interpreting the given drawing.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 1.6
- ✓ Make the students perform OPERATION SHEET 1.6
- ✓ Make learners explore on types of sanding and guideline to operate sanding machine through the given link <https://dengarden.com/appliances/best-sanders>
- ✓ Make learners explore eight types of wood polish.
- ✓ Make learners write short notes on the purpose of using polish.

D. Assessment:

- ✓ The teacher assesses their task (sanding and polishing) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assess the learners based on work submitted in the Google Classroom (Notes on types of polish).

E. Resources:

- ✓ CBLM.
- ✓ <https://dengarden.com/appliances/best-sanders> (Types of sanding machine)

Chapter 2: Making the chair

A. Competency/Competencies:

- ✓ Use the components to make chairs of a different design.

B. Learning objectives/Topic:

Learning objectives	Topic
2.1.1 Define chair. 2.1.2 State the types of chairs. 2.1.3 Label the components of the chair. 2.1.4 Prepare chair components.	2.1 Preparing chair components Overview: After learning the components of chair and joints, learner will be able to prepare the chair components.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 2.1
- ✓ Make the students perform OPERATION SHEET 2.1
- ✓ Teacher to feed learners with information on content (types of chairs and their components)
- ✓ Make learners watch videos on making chairs.
- ✓ Make learners go through the given link showing parts of the chair.
<https://englishstudyonline.org/parts-of-a-chair/>
- ✓ Make learners solve SAMPLE OF SELF CHECK 2.1
- ✓ Make learners make a model of chair.

D. Assessment:

- ✓ The teacher assesses their task (components of chair) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (types of chairs and their components, model of chair)

E. Resources:

- ✓ CBLM.
- ✓ <https://englishstudyonline.org/parts-of-a-chair/> (Parts of chair)

A. Competency/Competencies:

- ✓ Use different joints to make different chairs.

B. Learning objectives/Topic:

Learning objectives	Topic
2.2.1 State the types of joints. 2.2.2 Make chair joint	2.2 Making chair joints Overview: After learning the types of joints used in chair, learners can make the chair joints.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 2.2
- ✓ Make the students perform OPERATION SHEET 2.2
- ✓ Make learners review on types of joints.
- ✓ Make learners watch videos on making a chair in the given link and write the process to make chair <https://www.youtube.com/watch?v=Y6ygA15K5bY>
- ✓ Make learners solve SAMPLE OF SELF CHECK 2.2

D. Assessment:

- ✓ The teacher assesses their task (components of chair) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (types of chairs and their components)

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=Y6ygA15K5bY> (Process of making chair)

A. Competency/Competencies:

- ✓ Use different joints to make a new chair/repair an old chair.

B. Learning objectives/Topic:

Learning objectives	Topic
2.3.1 Interpret design drawing 2.3.2 Make chair joint. 2.3.3 Assembling chair joints	2.3 Assembling chair joints Overview: After interpreting the chair drawing, learners can assemble the chair.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 2.3
- ✓ Make the students perform OPERATION SHEET 2.3
- ✓ Make learners watch videos on making a chair in the given link and write the process to make chair <https://www.youtube.com/watch?v=Y6ygA15K5bY>
- ✓ Make learners solve SAMPLE OF SELF CHECK 2.3 to be submitted in Google Classroom.

D. Assessment:

- ✓ The teacher assesses their task (components of chair) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Sample questions)

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=Y6ygA15K5bY> (the process of making chair)

Chapter 3: Making chokdrom

A. Competency/Competencies:

- ✓ Use the components to make chokdrom of a different design.

B. Learning objectives/Topic:

Learning objectives	Topic
3.1.1 Define chokdrom.	3.1 Preparing chokdrom component Overview: After learning components of chokdrom, learners can prepare chokdrom components.
3.1.2 Label the components of the chokdrom.	
3.1.3 Prepare chokdrom component	

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 3.1
- ✓ Make the students perform OPERATION SHEET 3.1
- ✓ Make learners go through the definition and components of chokdrom and write notes to be submitted in Google Classroom.
- ✓ Make learners list down the joints used in chokdrom.

D. Assessment:

- ✓ The teacher assesses their task (components of chokdrom) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on definition and components of chokdrom)

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=rCyi75FN3gY> (Preparing panel)

A. Competency/Competencies:

- ✓ Use the joints to make a chokdrom of different designs.

B. Learning objectives/Topic:

Learning objectives	Topic
3.2.1 State the types of joints. 3.2.2 Define spindle moulder machine. 3.2.3 State the function of the spindle moulder machine. 3.2.4 Label the parts of the machine. 3.2.5 Use spindle moulder machine. 3.2.6 Make chokdrom joint	3.2 Making chokdrom Joints Overview: The topic covers on types of joints used in chokdrom, functions and parts of spindle moulder machine and can make chokdrom joints.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 3.2
- ✓ Make the students perform OPERATION SHEET 3.2
- ✓ Make learners go through the given link showing the functions of splinder machine
<https://www.youtube.com/watch?v=Mskvb82xStY>
- ✓ Make learners explore on Splinder machine and its parts to be submitted in Google Classroom.

D. Assessment:

- ✓ The teacher assesses their task (components of chokdrom) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on Splinder machine and its parts).

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=Mskvb82xStY> (Functions of splinder machine).

A. Competency/Competencies:

- ✓ Assemble the components to make a new chokdrom.

B. Learning objectives/Topic:

Learning objectives	Topic
3.3.1 Interpret design drawing. 3.3.2 Assemble chokdrom components	3.3 Assembling chokdrom components Overview: After learning the interpreting design drawing, learner can assemble the chokdrom components.

C. Learning Experiences:

- ✓ Make the students read INFORMATION SHEET 3.3
- ✓ Make the students perform OPERATION SHEET 3.3
- ✓ Make learners make one model of divan using information given by the teacher.

D. Assessment:

- ✓ The teacher assesses their task (Making of drawer) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given content and model of Chokdrom)

E. Resources:

- ✓ CBLM.

Chapter 4: Interpreting basic engineering drawing.

A. Competency/Competencies:

- ✓ Draw stools of a different design.

B. Learning Objectives/Topic :

Learning objectives	Topic
4.1.1 Define elevation 4.1.2 Define section 4.1.3 Draw elevation 4.1.4 Draw section 4.1.5 Draw stool	4.1 Drawing stool Overview: The topic enable learners to draw section and elevation of the tools after the coverage on definition of section and elevation.

C. Learning Experiences:

- ✓ Make learners read INFORMATION SHEET 3.1
- ✓ Make learners perform OPERATION SHEET 3.1 individually.
- ✓ Teacher to explain the following content:
 - Section
 - Elevation
- ✓ Teacher to demonstrate/explain with drawing
 - Draw elevation
 - Draw section
 - Draw stool
- ✓ Make learners explore the definition of elevation and section from the textbook and other resources.
- ✓ Make learners go through the given link that shows the differences between plan view, elevation view, and section view <https://www.nda.ac.uk/blog/identify-plans-elevations-sections/>
- ✓ Make learners go through the given link on the plan view and elevation of some block <https://www.youtube.com/watch?v=BnwoipoGWJ8>
- ✓ The teacher provides drawing to draw elevation and section.

D. Assessment:

- ✓ Assess the learner's conceptual understanding of different types of drawing instruments and their function by conducting the class test.
- ✓ Make learners answer the SAMPLE SELF CHECK 1.3 and given additional questions.
- ✓ Based on the information gathered from the video, the learners develop elevation and section of drawing provided by the teacher.

E. Resources:

- ✓ Competency-Based Learning Materials.
- ✓ <https://www.youtube.com/watch?v=BnwoipoGWJ8> (Differences between Plan, Elevation, and section view)

A. Competency/Competencies:

- ✓ Draw a chair of a different design.

B. Learning Objectives/Topic :

Learning objectives	Topic
4.2.1 Draw elevation 4.2.2 Draw section 4.2.3 Draw chair	4.2 Drawing chair Overview: Learners can draw section and elevation of the chair.

C. Learning Experiences:

- ✓ Make learners read INFORMATION SHEET 3.2
- ✓ Make learners perform OPERATION SHEET 3.2 individually.
- ✓ Teacher to demonstrate/explain withdrawing
 - Draw elevation
 - Draw section
 - Draw chair
- ✓ The teacher provides drawing to draw elevation and section of the chair.

D. Assessment:

- ✓ Assess learner's elevation and section drawing of a chair.
- ✓ Make learners answer the SAMPLE SELF CHECK 3.2 and given additional questions.
- ✓ Assess learners through the drawing submitted on the chair.

E. Resources:

- ✓ CBLM.

A. Competency/Competencies:

- ✓ Draw a table of different designs.

B. Learning Objectives/Topic :

Learning objectives	Topic
4.3.1 Draw elevation 4.3.2 Draw section 4.3.3 Draw table	4.3 Drawing table Overview: Learners can draw section and elevation of the table.

C. Learning Experiences:

- ✓ Make learners read INFORMATION SHEET 3.3
- ✓ Make learners perform OPERATION SHEET 3.3 individually.
- ✓ Teacher to demonstrate/explain with drawing:
 - Draw elevation
 - Draw section
 - Draw table
- ✓ The teacher provides drawing to draw elevation and section of the table.

D. Assessment:

- ✓ Assess learner's elevation and section drawing of the table.
- ✓ Make learners answer the SAMPLE OF SELF CHECK 3.3 and given additional questions.
- ✓ Assess learners through the drawing submitted on the chair.

E. Resources:

- ✓ CBLM.

Class XII

Module 3: Making bed and sofa frames

Chapter 1: Making bed

A. Competency/Competencies:

- ✓ Prepare the components to make a new bed/repair a bed.

B. Learning objectives/Topic:

Learning objectives	Topic
1.1.1 Define bed. 1.1.2 State the types of beds. 1.1.3 Label the components of the bed. 1.1.4 State the size of the bed. 1.1.5 Prepare bed components	1.1 Preparing bed components Overview: The topic emphasis on preparing bed components and it enable learners to prepare bed components using different types of joints.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 1.1
- ✓ Make the learners perform OPERATION SHEET 1.1
- ✓ Teacher explains the marking of the bed.
- ✓ Carry out guided practice.
- ✓ Practise individual practice.
- ✓ Learners to go through the given link showing the process of making bed
<https://www.youtube.com/watch?v=egxmtlvYT6w>
- ✓ Explore the different design of bed from the given link
<https://www.youtube.com/watch?v=FDJnRPrtwCw>
- ✓ Learners to go through the components of bed from any other resources (CBLM., Google, etc)
- ✓ Explore eight types of beds (teacher may consider giving in groups) and sizes of bed from the CBLM. and maintain notes.

D. Assessment:

- ✓ Teachers assess their task (Preparing bed components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given types and size of the bed)

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=egxmtlvYT6w> (Process of making bed)
- ✓ <https://www.youtube.com/watch?v=FDJnRPrtwCw> (Different design of bed)

- A. Competency/Competencies:**
 ✓ Use bed joints to make beds of different designs.

B. Learning objectives/Topic:

Learning objectives	Topic
1.2.1 State the types of joints. 1.2.2 Make bed joints.	1.2 Making bed joints Overview: The topic is about making bed joints using different types of joints and techniques. It enables learners to make bed joints.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 1.2
- ✓ Make the learners perform OPERATION SHEET 1.2
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Make learners explore joints used in bed making and identify which joints are strongest for making the bed.
- ✓ Learners to make bed model.

D. Assessment:

- ✓ The teacher assesses their task (Preparing bed components) using a rubric.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (bed joints and bed model)

E. Resources:

- ✓ CBLM.

A. Competency/Competencies:

- ✓ Assemble the components to make a new bed/repair a bed.

B. Learning objectives/Topic:

Learning objectives	Topic
1.3.1 Define ironmongery. 1.3.2 State the types of hardware fittings for the bed. 1.3.3 State the importance of diagonal checking. 1.3.4 Assemble component of a bed.	1.2 Assembling component of the bed Overview: The learners can assemble bed components using different techniques and can maintain the squareness of the bed.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 1.3
- ✓ Make the learners perform OPERATION SHEET 1.3
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Explore joints used in bed making and identify which joints are strongest for making the bed.

D. Assessment:

- ✓ The teacher assesses their task (assemble bed components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given types and size of the bed)

E. Resources:

- ✓ CBLM.

Chapter 2: Make sofa

A. Competency/Competencies:

- ✓ Prepare sofa frames of different designs using a lathe machine.

B. Learning objectives/Topic:

Learning objectives	Topic
2.1.1 Define sofa. 2.1.2 State the types of sofa. 2.1.3 State the function of the woodturning lathe machine. 2.1.4 Label the parts of the woodturning lathe machine. 2.1.5 Prepare sofa components.	2.1 Making sofa frame Overview: Besides having the knowledge on types of sofas, learners can make sofa frames using woodturning machine.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 2.1
- ✓ Make the learners perform OPERATION SHEET 2.1
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Teacher to give notes on the definition and six types of sofa frame and learners to take notes.
- ✓ Make learners go through the link on parts and function of the lathe machine <https://www.youtube.com/watch?v=1e6L6Gk0RbI>
- ✓ Make learners go through given links <http://www.madehow.com/Volume-3/Sofa.html> (Components of a sofa and related information)
- ✓ Learners to make sofa model (prepare sofa components)
- ✓ Make learners go through the given link on operating lathe machine https://www.youtube.com/watch?v=2_P19jZiGOk

D. Assessment:

- ✓ The teacher assesses their task (sofa components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on sofa components)
- ✓ Assess sofa components (model).

E. Resources:

- ✓ CBLM..
- ✓ <http://www.madehow.com/Volume-3/Sofa.html> (components of a sofa and related information)
- ✓ <https://www.youtube.com/watch?v=1e6L6Gk0RbI> (parts of the lathe machine)
- ✓ https://www.youtube.com/watch?v=2_P19jZiGOk (operating lathe machine)

A. Competency/Competencies:

- ✓ Use different joints to make a sofa using a band saw machine.

B. Learning objectives/Topic:

Learning objectives	Topic
2.2.1 State the types of joints. 2.2.2 State the function of the band saw machine. 2.2.3 Label the parts of the band saw machine. 2.2.4 States the function of jigs and fixtures. 2.2.5 Use band sawing machine.	2.1 Preparing sofa joints Overview: The topic will enable learners to prepare different sofa joints using band saw machine.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 2.2
- ✓ Make the learners perform OPERATION SHEET 2.2
- ✓ Brief learners on the band saw about parts and how it functions.
- ✓ Practice guided practice (operating band machine/markings workpiece).
- ✓ Practice individual practice.
- ✓ Make learners go through the given link on operating band saw and different uses of the band saw <https://www.youtube.com/watch?v=6XPK9xJyEPs>
- ✓ Make learners point out the differences/similarities between jig saw and band saw.
- ✓ Link showing parts and function of the band saw machine <https://www.youtube.com/watch?v=jhc6TWgqxcQ>

D. Assessment:

- ✓ The teacher assesses their task (sofa joints) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Jigsaw and band saw)
- ✓ Assess sofa components (model).

E. Resources (Online and offline):

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=6XPK9xJyEPs> (Using band saw)
- ✓ <https://www.youtube.com/watch?v=jhc6TWgqxcQ> (Parts of band saw)

A. Competency/Competencies:

- ✓ Assemble the components to make a new sofa/repair a sofa.

B. Learning objectives/Topic:

Learning objectives	Topic
2.3.1 Interpret drawing. 2.3.2 State the importance of alignment 2.3.3 State the function of furniture stability 2.3.4 Assemble sofa components.	2.1 Assembling sofa components. Overview: The topic enables learners to assemble the sofa components, interpret the the drawing and check the stability of sofa.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 2.3
- ✓ Make the learners perform OPERATION SHEET 2.3
- ✓ Teacher to interpret drawing to learners while assembling.
- ✓ Ask learnersto interpret drawing.
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Make learners go through the CBLM. on drawing and try to interpret through audio records.
- ✓ Make learners assemble their sofa model and necessary finishing work.
- ✓ Make learners take notes on the importance of alignment and the purpose of furniture stability.

D. Assessment:

- ✓ The teacher assesses their task (sofa joints) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given content)
- ✓ Assess sofa components (model).

E. Resources

- ✓ CBLM.

Module 4: Making storage Cabinet

Chapter 1: Preparing cabinet

A. Competency/Competencies:

- ✓ Prepare cabinets of different designs.

B. Learning objectives/Topic:

Learning objectives	Topic
1.1.1 Define cabinet 1.1.2 State types of cabinet 1.1.3 Label the component of the cabinet.	1.1 Preparing cabinet component Overview: The topic enables learners to prepare cabinet components after knowing types of cabinets.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 1.1
- ✓ Make the learners perform OPERATION SHEET 1.1
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Make learners go through the given link on making the cabinet, for preparing the cabinet components, watch for 2 minutes.
<https://www.youtube.com/watch?v=vbZLfsjuS1k>
- ✓ Make learners go through notes on nine types of cabinets and components of cabinets.
- ✓ Make learners prepare a cabinet model (design to be given by the teacher).

D. Assessment:

- ✓ The teacher assesses their task (Cabinet components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on types and components)
- ✓ Assess sofa components (model)

E. Resources

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=vbZLfsjuS1k> (Making cabinet)

- A. Competency/Competencies:**
 ✓ Use different joints to make the cabinet.

B. Learning objectives/Topic:

Learning objectives	Topic
1.2.1 State types of cabinet joint 1.2.2 Make cabinet joint	1.2 Make cabinet joint Overview: The learners can know the types of joints used in cabinet and incorporate their knowledge to make cabinet joints.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 1.2
- ✓ Make the learners perform OPERATION SHEET 1.2
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Make learners revise on types of joints.

D. Assessment:

- ✓ The teacher assesses their task (Cabinet joints) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (joints)
- ✓ Make learners solve a SAMPLE OF SELF CHECK 1.2 from a CBLM..
- ✓ Assess sofa components (model)

E. Resources

- ✓ CBLM.

A. Competency/Competencies:

- ✓ Assemble the components to make a new cabinet/repair a cabinet.

B. Learning objectives/Topic

Learning objectives	Topic
1.3.1 Interpret design drawing 1.3.2 Assemble cabinet components.	1.1 Assembling cabinet components Overview: The topic can enable learners to assemble the cabinet joints after interpreting the given drawing.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 1.3
- ✓ Make the learners perform OPERATION SHEET 1.3
- ✓ Practice guided practice.
- ✓ Practice individual practice.
- ✓ Make learners revise on types of joints.
- ✓ Solve a SAMPLE OF SELF CHECK 2.3

D. Assessment:

- ✓ Teachers assess their task (Cabinet joints) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (joints)
- ✓ Assess cabinet (model)

E. Resources

- ✓ CBLM.

Chapter 2: Making shutter joint and assemble parts

A. Competency/Competencies:

- ✓ Prepare shutter components of different designs.

B. Learning objectives/Topic:

Learning objectives	Topic
2.1.1 Define shutter. 2.1.2 State the types of the shutter. 2.1.3 Label the components of the shutter. 2.1.4 Prepare shutter components.	2.1 Preparing shutter components Overview: Learners can prepare the shutter components after knowing the types of shutters.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 2.1
- ✓ Make the learners perform OPERATION SHEET 2.1
- ✓ Teacher to brief on marking and drawing of the shutter.
- ✓ Make learners go through the definition and types of the shutter from a CBLM..
- ✓ Make learners make shutter model (Teacher to give every detail of shutter including design).
- ✓ Make learners go through the given link on components and their function
<https://perfectfitshutters.com/shutter-terminology/>

D. Assessment:

- ✓ The teacher assesses their task (Shutter) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on definition and types of the shutter).
- ✓ Assess shutter (model).

E. Resources:

- ✓ CBLM.
- ✓ <https://perfectfitshutters.com/shutter-terminology/> (Components and its function of the shutter).

A. Competency/Competencies:

- ✓ Use different joints to make a shutter.

B. Learning objectives/Topic:

Learning objectives	Topic
2.2.1 State the types of shutter joints. 2.2.2 Make shutter joint.	2.2 Making shutter joints Overview: With the knowledge on types of joints used in shutter, learners can make shutter joints.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 2.2
- ✓ Make the learners perform OPERATION SHEET 2.2
- ✓ Teacher to brief on joints.
- ✓ Make learners explore joints used in shutters.
- ✓ Make learners make shutter model (Teacher to give details on which joints to be used in shutter).

D. Assessment:

- ✓ The teacher assesses their task (Shutter) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on joints used in shutter).
- ✓ Assess shutter (model).

E. Resources:

- ✓ CBLM.

A. Competency/Competencies:

- ✓ Assemble the components to make a new shutter/repair shutter.
- ✓ Select latches, knobs, tower bolt, magnetic door catcher, and handle according to the job requirement.

B. Learning objectives/Topic:

Learning objectives	Topic
2.3.1 Interpret design drawing 2.3.2 State the application of hardware fittings. 2.3.3 State the types of shutter hardware fittings. 2.3.4 Fix hardware fittings on the shutter. 2.3.5 Assemble shutter.	2.3 Assembling shutter Overview: Learners can fix hardware fittings on the shutter components and assemble it.

C. Learning Experiences:

- ✓ Make the learners read INFORMATION SHEET 2.3
- ✓ Make the learners perform OPERATION SHEET 2.3
- ✓ Conduct class tests.
- ✓ Make learners do a presentation on the given content.
- ✓ Make learners bring different designs of shutters and let them explain.
- ✓ Make learners explore types of latches and locks (from the CBLM., google, etc.
- ✓ The teacher gives notes on the following content:
 - Types of magnetic door catcher
 - Types of handle
 - Types of knobs
 - Types of Tower bolts
- ✓ Make learners make shutter model (assemble shutter and necessary finishing).
- ✓ Given link take learners to select the hinges according to job requirement
<https://www.youtube.com/watch?v=SM0KwTvZfOU>

D. Assessment:

- ✓ The teacher assesses their task using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.
- ✓ Assess the learners based on work submitted in the Google Classroom.
- ✓ Assess shutter (model).

E. Resources:

- ✓ CBLM.
- ✓ <https://www.youtube.com/watch?v=SM0KwTvZfOU> (how to select hinges according to job requirement).

RESOURCES

- 1) Technical and Vocational Education and Training (TVET) New Normal Curriculum Framework (Classes: PP-XII)
- 2) Competency Based Learning Materials (Furniture Making)