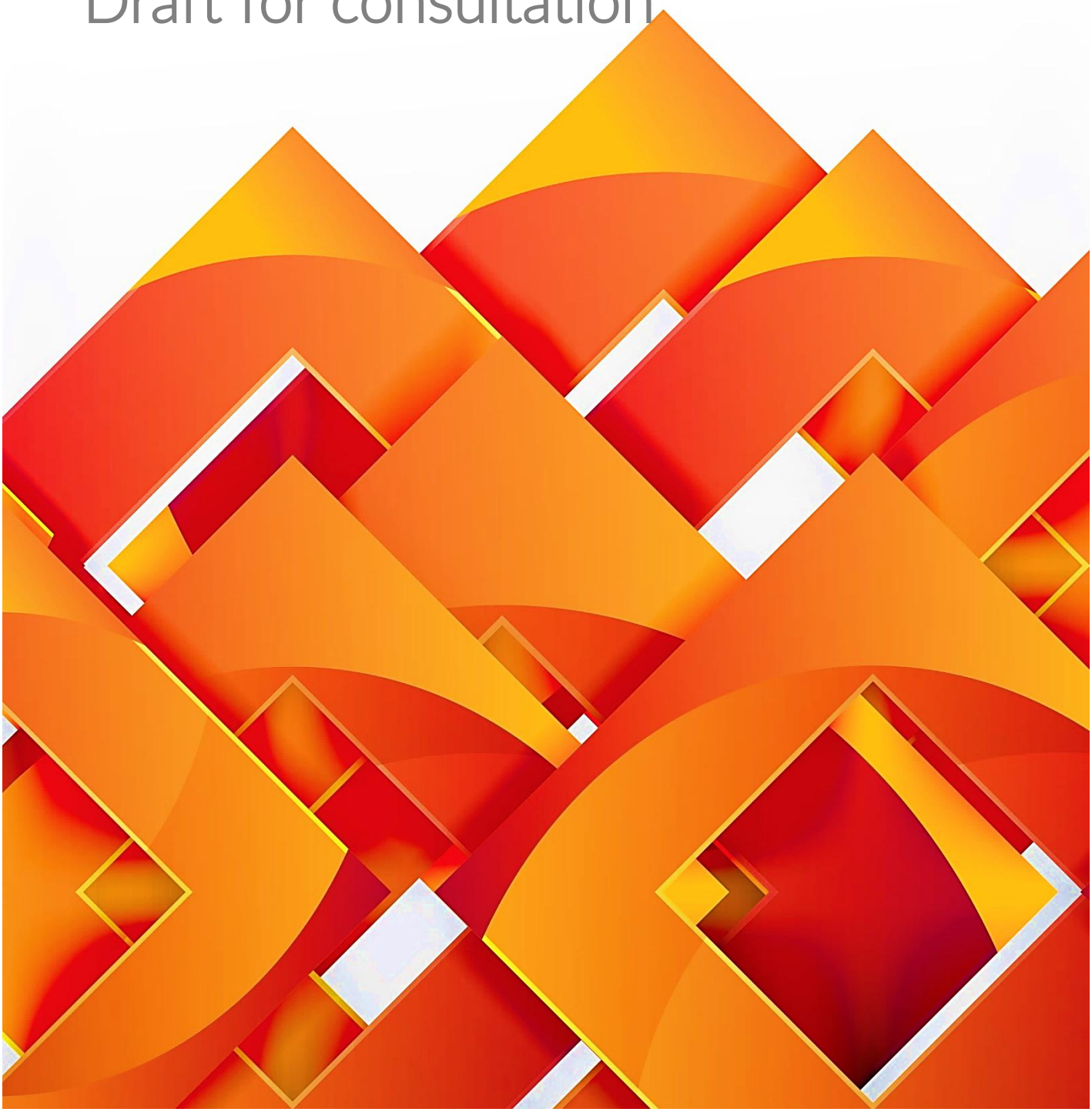
NCCA
An Chomhairle Náisiúnta Curaclaim agus Measúnachta
National Council for Curriculum and Assessment

Senior Cycle Level 2 Learning Programme: Design and Do

Elective Module

Draft for consultation



Introduction

The Senior Cycle Level 2 Learning Programme (SCL2LP) consists of a range of curriculum areas, each designed on a modular basis. There are four curriculum areas at the heart of the SCL2LP: Numeracy; Communication and Literacy; Personal Care; and Electives. Design and Do is an Elective Module.

Design and Do is designed for a minimum of 60 hours of teaching time/class contact time over two years.

Module title	Recommended time in hours
Design and Do	60

Rationale

The Design and Do elective module aims to develop students' understanding of design and the design process. It provides learning experiences for students that involve them using a range of materials and tools. Students engage with the iterative design process to enable them to become creators and collaborators, preparing them for real-world challenges. By guiding students through all aspects of the design process, the module enhances critical thinking, enables creativity and supports decision making. The Design and Do module equips students with hands-on experience in handling cutting and assembly tools while emphasising the safe use of tools. This helps build their confidence and supports their independence.

Continuity and progression

This module builds upon students' learning and experiences with the Primary School Curriculum and the Framework for Junior Cycle. In particular, learning through the Design and Do module builds upon students' development of the junior cycle key skills of managing self, staying well, communicating, being creative, working with others, and managing information and thinking. The module also promotes development and learning in areas such as literacy, numeracy, language, motor coordination, mobility and leisure skills.

The elective aims to develop students' senior cycle key competencies in being creative, communicating, managing learning and self, thinking and solving problems, and promotes greater independence, as well as providing students with a sense of achievement and confidence in their learning. Students are given opportunities to demonstrate how learning acquired here can be linked to prior learning, to other modules and curriculum areas, wider school activities and life outside of school, applying their learning in areas such as Communication and Literacy, Numeracy, Personal Care, Cookery, Looking after my environment, Being part of the community or their Area of Special Interest. Learning acquired here has universal transference across multiple areas of learning. This helps to reinforce learning and progress students' ability to communicate, interact, be creative, to express themselves, to explore ideas in a variety of ways. This supports students beyond school and provides them with a sense of achievement and confidence as they transition to the world of work, study or further services beyond school.

Teaching and learning

The Design and Do elective module emphasises active participation, social engagement, experiential and sensory learning focusing on guided discovery. Students actively participate in a learning environment that emphasises practical activities and project-based learning. There are five stages to the design process; Ask, Imagine, Plan, Create and Test. Students will design and create by applying the design process to create a solution to a problem or a need.

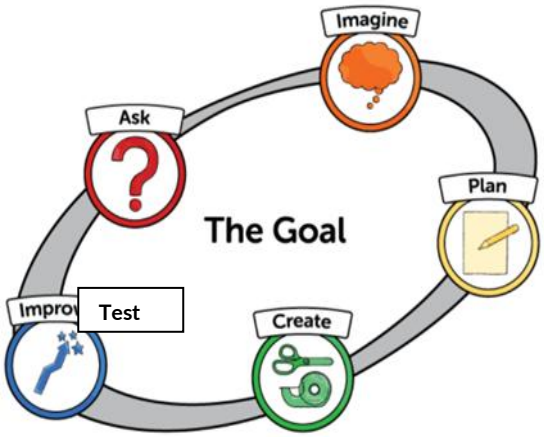


Figure1: The design process

Students should be encouraged to engage with a variety of materials, tools and techniques, identify their preferences and begin to understand the concept of design and making in a meaningful way.

Through the exploration of various materials such as paper, cardboard, wood, plastic, textiles, fabrics or metals, students will gain practical knowledge about material properties and how they can be used, which will inform their decision making. Schools have the flexibility to provide and/or choose their own materials depending on available resources and their students' interests.

This module places a strong emphasis on the safe and effective use of cutting and assembly tools, providing students with the opportunity to build confidence and proficiency in handling tools. Cutting tools may include: scissors, craft knives, rotary cutters, saws, guillotines and wire cutters, as appropriate to the student. Assembly tools may include: screwdrivers, spanners, hammers, Allen keys, staple guns, glue guns and clamps. Temporary joining techniques may include clamping, screwing, magnetic fasteners and sewing. Permanent joining techniques may include gluing, welding and nailing.

Students will learn essential techniques for manipulating materials such as cutting, folding, and bending, to create specific designs and structures. They will also experiment with different methods to discover new ways to work with materials, shaping and forming them into specific designs or structures. By experimenting with different manipulation techniques, they will discover innovative ways to work with materials.

A project-based approach encourages students to plan, create, and refine prototypes and models, fostering an iterative learning process. Therefore, students may participate in individual activities as well as involvement in activities with a partner or as part of a group, and should be given many opportunities to experience the fun, enjoyment, creative and the social aspects of Design and Do, as students engage with their peer group and the broader community.

Design and Do activities are structured in a way that support students' physical and coordination development while being flexible to accommodate individual strengths and abilities. Many activities may support the development of fine and gross motor skills. These activities may support the development of strength, control and promote coordination as students engage with the design process. Students may be guided and supported in their engagement with each stage of the process.

When planning tasks for students, teachers should carefully consider equipment, technology, and exploratory activities that suit the individual needs of their students. For some students, the starting point may simply be becoming familiar and comfortable with the different textures, sounds, or smells of the materials used. Where appropriate, incorporating digital and assistive technologies can support students' learning and participation. Visual aids, raised line drawing tools, adaptive tools for making and creating, communication devices, and visual or object cues can all help students engage more fully with the Design and Do elective module.

Module: Design and do

Module descriptor

Students engage with each stage of the design process, choosing appropriate materials. This enables students to identify creative activities they enjoy and motivate them to engage with the design process within and outside of school. Students may be guided and supported in their engagement with each stage of the process.

Students learn about	Students should be able to
The Design Process **Ask**	a. identify a need or a problem b. ask questions to understand the need or problem c. identify and name various materials
Imagine	d. identify a solution to the need or problem e. recognise what materials could be used for the solution to identified need or problem f. compare the properties of different materials
Plan	g. develop and present creative ideas for the identified solution h. identify own skills and preferences in creating their identified solution i. identify the steps needed to create their identified solution **j.** identify the materials needed for their identified solution
Create	k. follow example, familiar techniques or processes in creating their identified solution l. follow a step-by-step plan to create a simple model or prototype of their solution m. use different materials to create solutions and prototypes of solution
Test	n. refine their solution based on testing or feedback o. recognise the impact material choice has on the environment
Manufacturing and material manipulation Techniques for manipulating materials to create innovative designs and structures.	p. identify and name different cutting tools q. demonstrate safe handling of cutting tools, including proper grip and usage r. cut materials following marked lines or patterns s. use cutting tools to create simple prototypes or projects t. distinguish between temporary and permanent joining techniques u. demonstrate basic techniques for manipulating materials

	v. shape and form materials into specific designs or structures w. combine different materials to create a composite project x. follow safety practices when manipulating materials, such as using tools correctly y. experiment with different manipulation techniques to discover new ways to work with materials. z. describe their work using appropriate language or terminology.