Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2026

Marking Scheme

Technology

Ordinary Level

Note to teachers and students on the use of published marking schemes

Marking schemes published by the State Examinations Commission are not intended to be standalone documents. They are an essential resource for examiners who receive training in the correct interpretation and application of the scheme. This training involves, among other things, marking samples of student work and discussing the marks awarded, so as to clarify the correct application of the scheme. The work of examiners is subsequently monitored by Advising Examiners to ensure consistent and accurate application of the marking scheme. This process is overseen by the Chief Examiner, usually assisted by a Chief Advising Examiner. The Chief Examiner is the final authority regarding whether or not the marking scheme has been correctly applied to any piece of candidate work.

Marking schemes are working documents. While a draft marking scheme is prepared in advance of the examination, the scheme is not finalised until examiners have applied it to candidates' work and the feedback from all examiners has been collated and considered in light of the full range of responses of candidates, the overall level of difficulty of the examination and the need to maintain consistency in standards from year to year. This published document contains the finalised scheme, as it was applied to all candidates' work.

In the case of marking schemes that include model solutions or answers, it should be noted that these are not intended to be exhaustive. Variations and alternatives may also be acceptable. Examiners must consider all answers on their merits, and will have consulted with their Advising Examiners when in doubt.

Future Marking Schemes

Assumptions about future marking schemes on the basis of past schemes should be avoided. While the underlying assessment principles remain the same, the details of the marking of a particular type of question may change in the context of the contribution of that question to the overall examination in a given year. The Chief Examiner in any given year has the responsibility to determine how best to ensure the fair and accurate assessment of candidates' work and to ensure consistency in the standard of the assessment from year to year. Accordingly, aspects of the structure, detail and application of the marking scheme for a particular examination are subject to change from one year to the next without notice.

The table below contains information about annotations used for marking throughout the examination paper.

Annotation	Use	Marks (if applicable)
	Valid information	1
	Valid information	2
	Valid information	3
	Valid information	4
	Valid information	6
	Valid information	8
	Surplus information seen by examiner	N/A
	Incorrect answer	0
	Page seen by examiner/ information not valid	N/A

Section A. Answer **any nine** questions. All questions carry 8 marks.

Write your answers in the spaces provided.

1. The machine shown is commonly used in Technology workshops.

(i) Name the machine.

Pillar drill.

(ii) Outline **two** safety features which are incorporated into the design of the machine.

Safety guard, Easy access stop button, vice on table, adjustable table, etc.

(4+4 marks)

2. The first 3D-printed concrete houses in Ireland were completed in Dundalk, County Louth. These homes were built using 3D construction printing technology, which automates the process of laying concrete.

(i) Outline **two** benefits of using 3D printing technology to build concrete houses.

Faster, less labour, accuracy, efficiency, more modern technology, etc.

(ii) State **two** reasons why concrete is used in the construction of houses.

Strong in compression, cheap material, easy to mould etc.

(4+4 marks)

3. The safety sign shown is commonly used in everyday life.

(i) State the meaning of the safety sign shown.

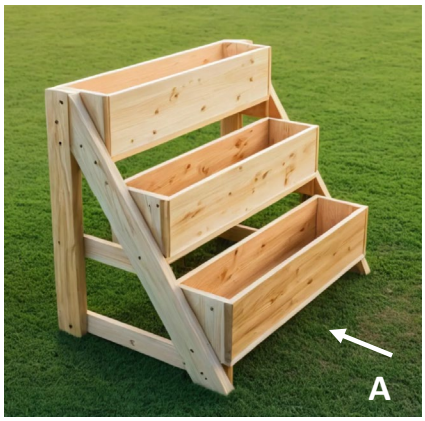
Trip hazard- mind the step.

(ii) Explain what is meant by safety signs that are **yellow** colour.

Caution, warning, etc.

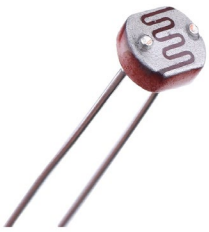
(4+4 marks)

4. In the box provided, sketch a well-proportioned elevation of the three-tiered planter box when viewed in the direction of arrow **A**.



(8,6,4,2 Marks)

5. The image shows a component commonly used in electronics.



(i) Name the component.

Light dependant resistor (LDR).

(ii) Outline **one** application of this component in everyday life.

Dark sensing circuit, street lighting, automation, etc.

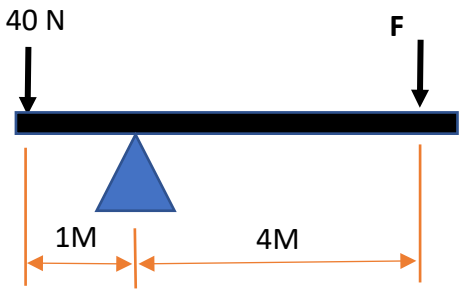
(4+4 marks)

6. The image shows a see-saw. A see-saw acts as a lever when in use.

(i) What class of lever is a see-saw?

Class 1.

(ii) A lever diagram is shown below. If a force of 40N is applied as shown in the diagram, calculate the force **F** required to balance the lever.



Calculation:

40 x 1 = F x 4
F = 40/4
F = 10N

(4+4 marks)

7. The image shows a stainless-steel saucepan.

(i) Suggest **two** reasons why stainless steel is a suitable material for the manufacture of the saucepan.

Good Conductor, easy to clean, durability, high heat tolerance, etc.

(ii) Suggest an alternative material that could be used for the manufacture of the saucepan handles.

Bakelite, wood, etc.

(4+4 marks)

8. The image shows a *high-quality* weights bench commonly found in home gyms.

Describe **two** costs associated with the manufacture of high-quality products.

More expensive materials, advanced machining, better testing and quality management, etc.

(4+4 marks)

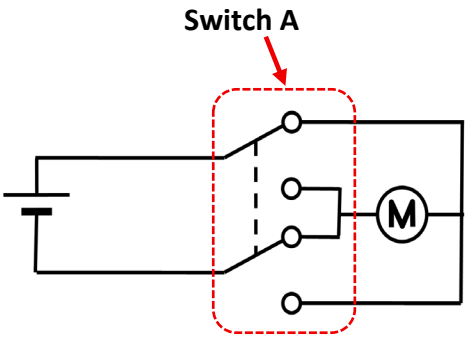
9. The circuit diagram shown contains a power supply, a switch, and a motor.

(i) Name the type of switch used at **A**.

Double Pole Double Throw (DPDT).

(ii) State the purpose of the switch in the circuit.

To allow the motor to turn in both forward and reverse directions.



(4+4 marks)

10. Cloud storage is a method of storing data on remote servers.
It has become very popular in recent years.

(i) State **two** advantages of using cloud storage for storing data.

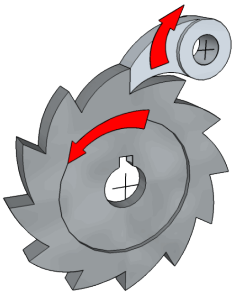
Can access data from anywhere, better security, less likely to lose data, etc.

(ii) Suggest **one** alternative of cloud storage for storing data.

Hard drive, external hard drive, USB flash drive, etc.

(4+4 marks)

11. The mechanism shown is widely used in industry and in many other areas.



(i) Name the mechanism.

Ratchet and Pawl.

(ii) Outline **two** advantages of using this mechanism.
Will only allow movement in one direction, high torque capacity, safety when lifting weights, etc.

(4+4 marks)

12. Use **two** graphic techniques to enhance the representation of the soap dispenser shown.

Any two techniques- rendering, colour, shadow, hatching, etc.

(4+4 marks)

Section B - Core - *Answer Question 2* ***AND*** *Question 3*

Question 2 - *Answer 2(a)* ***and*** *2(b)*

2 (a) The iPhone Air was released in 2025. With a thickness of 5.6mm and weighing just 165 grams, it is the thinnest iPhone ever.

(i) Briefly describe **one** technological advancement that has allowed such a thin phone be produced.

Advancements in electronics, materials, production methods, microtechnologies, etc.

(ii) Suggest **one** advantage for a consumer of using such a lightweight phone.

Comfort, ease of use, better portability, etc. *(10 Marks, 6+4)*

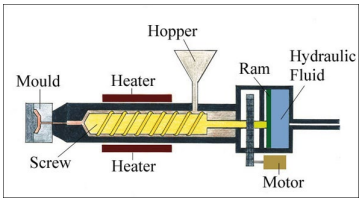
2 (b) Many individuals purchase a phone cover when they get a new phone.

(i) Outline **two** benefits of using a phone cover.

Protects the phone, improves resale value,
can be purchased in different colours/textures, etc.

(ii) Suggest a suitable material for the manufacture of a phone cover shown. State **two** important properties of this material.

Silicone, Polycarbonate, etc.
Lightweight, durable, impact resistance, etc.



(iii) Briefly describe, using notes and sketches, how the phone cover could be manufactured from your suggested material.

Injection moulded.

(8 Marks, 2+4+2)

Answer 2(c) ***or*** *2(d)*

2 (c) (i) Explain what is meant by the abbreviation USB.

Universal Serial Bus.

(ii) Suggest **two** advantages of using a USB-C to USB-C cable and plug to charge a phone.

Can plug in either side, faster charging, etc.

(6 Marks, 2+4)

OR

2 (d) (i) Explain what is meant by the abbreviation MP when referring to a camera.

Megapixel.

(ii) Name a type of image format used to save photographs.

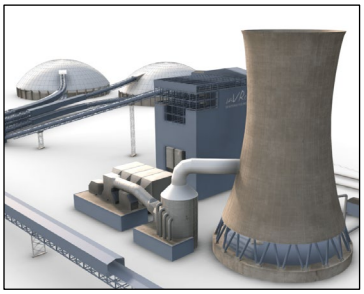
Jpeg, GIF, PNG, HEIF, etc. *(6 Marks, 2+4)*

Question 3 - *Answer 3(a)* ***and*** *3(b)*

3 (a) (i) Outline **two** benefits of using renewable sources of energy.
Better for the environment, lower costs over time, etc.

(ii) Name **two** renewable sources of energy.
Solar, Wind, Tidal, etc.

(10 Marks, 6+4)



3 (b) (i) Explain what is meant by the abbreviation MW when referring to electricity generation.

Megawatt.

(ii) Describe, **two** energy conversions that take place in a coal-burning electricity generator.

Chemical to heat, heat to electrical, etc.

(iii) The average Irish household uses approximately 12kWh of electricity per day. Typically, the cost per kWh is €0.40.

Calculate the cost of electricity usage for one year.

12 x 365 = 4380 x 0.4 = €1752

(8 Marks, 2+4+2)

Answer 3(c) ***or*** *3(d)*

3 (c) A Gantt chart is a visual tool used in project management.

(i) Outline **two** advantages of using a Gantt chart for project management.

See how long a project will take, know if the project is on track, anticipate potential delays before they happen, etc.

(ii) Describe **one** consequence of not considering project management when building a renewable energy hub such as an offshore wind farm.

Delayed completion of tasks, people lack direction on what to do, etc.

(6 Marks, 4+2)

OR

3 (d) The image shows a miniature DC motor commonly used by students in Technology projects.

(i) Draw a labelled diagram showing the operation of a circuit consisting of a DC motor, a battery, and a SPST switch.

Any appropriate circuit diagram accepted.

(ii) Briefly describe a situation in everyday life where controlling the speed of a motor would be useful.

Desk fan, washing machine, hair dryer, etc.

(6 Marks, 4+2)

Section C - Options - *Answer **any one** of the five optional questions.*

Option 1 - Applied Control Systems - *Answer 1(a) **and** 1(b)*

1 (a) Modern cars use *microcontrollers* to ensure they run safely and efficiently.

(i) Explain what is meant by the term microcontroller.

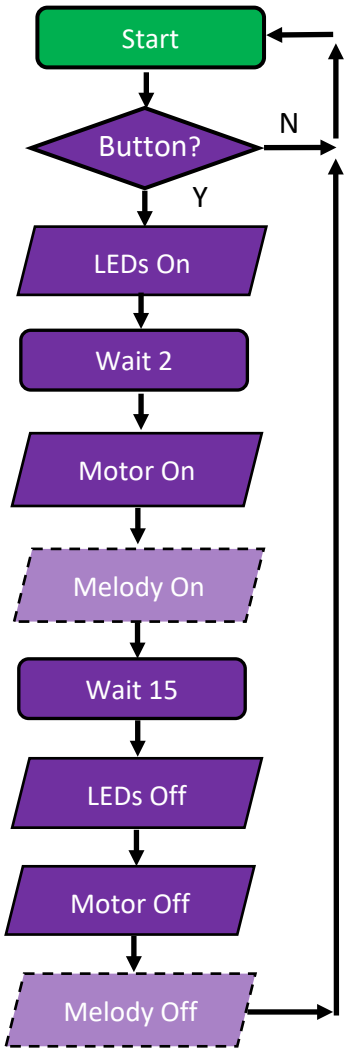
A small computer on an IC chip designed to control a specific function or device.

(ii) Name **two** sensors that are used with microcontrollers in cars.

Temperature sensors for engine management, crash/accelerometer sensors used to deploy airbags, ultrasonic sensors used to detect obstacles (to assist with parking), etc.

(10 marks, 4+6)

1 (b) The image shows a motorised turntable display that uses a microcontroller.



(i) Complete a flowchart to operate the motorised turntable display in the following sequence:

- When a button is pressed, the four LED lights turn on
- After two seconds, the turntable rotates
- After fifteen seconds, the LED lights turn off and the turntable stops rotating.

(ii) Name a suitable motor that could be used to rotate the turntable.

Stepper, geared DC motor, etc.

(iii) Suggest a modification to the flowchart that allows a melody (tune) to be played as the turntable rotates.

Melody command could be included as suggested in the flowchart.

Any valid alternative solution accepted.

(20 Marks, 8+6+6)

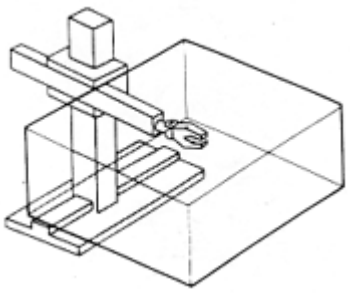
*Answer 1(c) **or** 1(d)*

1 (c) The image shows a robotic welding arm commonly used in industry.

(i) State **one** advantage of using a robotic welding arm.

Increased productivity, uniform weld, safety, etc.

(ii) Using notes and annotated sketches, describe what is meant by 'work envelope' when referring to robotics.



Area in which the end effector can reach to perform tasks.

(10 marks, 4+6)

OR

1 (d) Shown in the image is a *pneumatically-powered* nail gun.

(i) Explain what is meant by the term pneumatically powered.

A machine, system, or tool that's driven by compressed air.

(ii) State **one** advantage of using pneumatic power for a nail gun. Suggest **one** other example of where pneumatics is used in everyday life.

Advantage: **Faster, easier to use, etc.**

Application: **Dentist's drill, a lorry's braking system, bus doors, etc.**

(10 marks, 4+6)

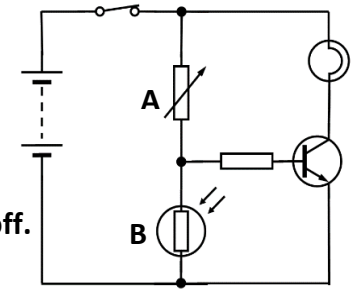
Option 2 - Electronics and Control - *Answer 2(a) **and** 2(b)*

2 (a) (i) Outline **two** advantages of using solar trees in an urban area.
Environmental benefits, aesthetics, low maintenance, etc.

(ii) Suggest **two** reasons why electrical energy generated using photovoltaic panels is often stored in batteries.
Energy needed most at night, doesn't have to exported to grid, backup during outages, etc.

(10 marks, 4+6)

2 (b) The circuit diagram shows a dark sensing circuit which is often used in project work.



(i) Using the *Formulae and Tables* booklet, or otherwise, name components **A** and **B** in the circuit.

A= Variable resistor, B= LDR.

(ii) Briefly describe the operation of the circuit.

In daylight: The LDR resistance is low, the trigger voltage of the transistor is not reached, and the bulb remains off.

In darkness: The LDR resistance rises, allowing the trigger voltage of the transistor to be reached, and turn on the bulb.

(iii) Explain the effect on the operation of the circuit, if components **A** and **B** are swapped.

The circuit acts as a light sensor that turns the bulb on during the day.

(20 Marks, 6+8+6)

*Answer 2(c) **or** 2(d)*

2 (c) *Digital multimeters* are commonly used in electronics.

(i) State **two** uses for a digital multimeter in electronics.

Measure voltage, current, resistance, continuity testing, etc.

(ii) An LED light bulb in a circuit has a power rating of 3 Watts.

Calculate the current that the light bulb will draw from a 9V power supply.
(**Note:** P = V×I) **3 = 9 × I**

I = 3/9 = 0.3333A

(10 marks, 4+6)

OR

2 (d) The image shows an *IN4001 Diode* commonly used in electronic circuits.

(i) Describe the function of a diode in a circuit.
It only allows current flow in one direction.

(ii) Outline how the cathode of the diode shown could be identified.
The grey colour band identifies the cathode terminal of the diode

(10 marks, 4+6)

Option 3 - Information and Communications Technology

*- Answer 3(a) **and** 3(b)*

3 (a) (i) Suggest **two** reasons why a desktop computer is more commonly used in the workplace.

Superior performance, more cost effective, durability, etc.

(ii) Explain the purpose of primary memory (RAM) in a computer.

Temporarily stores data for active applications so the CPU can access instantly.

(10 marks, 6+4)

3 (b) (i) Explain what is meant by a computer network.

A way of interconnecting devices so you can share resources and exchange data.

(ii) Outline **two** advantages to using a network in a workplace or in a school.

Share resources such as a printer, share data, access information from different locations, more cost effective, etc.

(iii) Briefly explain the difference between a LAN (Local Area Network) and a WAN (Wide Area Network).

A LAN covers a small geographical area like a home or school, whereas a WAN connects multiple LANs across large geographical distances like towns, cities and across countries.

(20 Marks, 6+8+6)

*Answer 3(c) **or** 3(d)*

3 (c) (i) Briefly explain the difference between uploading and downloading when referring to data transfer over the internet.

Uploading: Sending data from your device to the internet,
Downloading: Receiving data from the internet to your device.

(ii) Outline **two** cybersecurity measures that can be taken by individuals when transferring data over the internet.

Use data encryption, strict access control, strong authentication methods, scan files for malware, etc.

(10 marks, 4+6)

OR

3 (d) (i) Explain what is meant by an operating system.
Give **one** example of a commonly used operating system.

A software that allows users to access resources and enables applications to run. Example: IOS, Windows, etc.

(ii) Briefly describe how a computer or electronic device can be regularly maintained.

Keep software updated, run security scans, manage storage, etc.

(10 marks, 4+6)

Option 4 - Manufacturing Systems - *Answer 4(a) **and** 4(b)*

4 (a) **(i)** Explain what is meant by computer aided manufacturing.

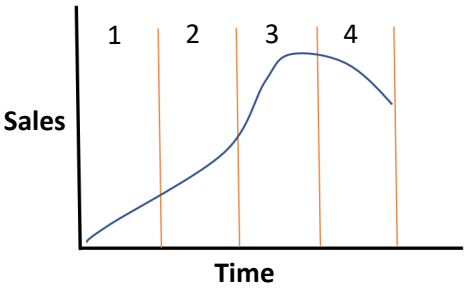
Using software and technology to control and automate a manufacturing process.

(ii) Outline **two** benefits of using CAM systems in the manufacture of products.

Faster, accuracy, repeatability, more cost-effective long term, etc.

(10 marks, 4+6)

4 (b) A product goes through several stages during its life cycle. Many products follow a cycle similar to the one shown in the graph below.



(i) Name the four main stages of a products life cycle.

Introduction, growth, maturity, and decline.

(ii) Outline **two** reasons why it is important for a manufacturer to understand the life cycle of a product.

Anticipate demand, better manage production and sales, plan for changing products, etc.

(iii) Briefly outline **one** method of increasing sales at stage 4 of a products life cycle.

Decrease price, add an additional/new feature, etc.

(20 Marks, 8+8+4)

*Answer 4(c) **or** 4(d)*

4 (c) **(i)** Describe **two** aspects that should be considered in relation to a product reaching its end-of-life.

Ease of disassembly, recycle, reuse, or decomposition considerations, etc.

(ii) Outline **two** ways a designer can reduce the environmental impact at this stage.

Make it easy to disassemble, manufacture from recyclable materials, etc.

(10 marks, 6+4)

OR

4 (d) **(i)** Briefly describe how a business could establish the level of demand for a new product.
Market research, focus groups, tracking customer trends, etc.

(ii) Outline **two** ways a business could expand its capacity to meet a higher demand for a product.

Optimising existing processes, investing in technology, outsourcing production, etc.

(10 marks, 4+6)

Option 5 – Materials Technology - *Answer 5(a) **and** 5(b)*

5 (a) *Hardwoods* and *softwoods* are commonly used in the manufacture of coffee tables.

(i) Briefly outline the main differences between hardwoods and softwoods.

Hardwoods: comes from deciduous trees, grow slowly, dense, durable, etc.
Softwoods: comes from conifers, grow quickly, lighter, easier to work with, etc.

(ii) Name **one** alternative material that could be used to manufacture the top of the table. Justify your selection.

Glass, manufactured boards such as plywood, marble, etc.
Appearance, easy to source, easy to clean, etc. *(10 marks, 4+6)*

5 (b) (i) Describe **two** reasons why steel is a suitable material for the manufacture of the leg assembly.

Hard wearing, easy to source, strength, etc.

(ii) Explain what is meant by the term *ferrous* when referring to metals.

A metal that contains iron- prone to rusting, etc.

(iii) Using notes and annotated sketches, describe a method of attaching the leg assembly to the table.

Screws or any other suitable method. *(20 Marks, 8+4+8)*

Leg assembly

*Answer 5(c) **or** 5(d)*

5 (c) The leg assembly of the coffee table has been spray-painted.

(i) Suggest **two** reasons why this process was carried out on the leg assembly of the coffee table.
To enhance its appearance, prevent rusting, etc.

(ii) Outline **two** safety precautions that should be observed when applying paint to materials.
Ensure a well-ventilated area, wear PPE such as gloves, mask, etc.

(10 marks, 4+6)

OR

5 (d) (i) Describe, using **one** example, what is meant by the term composite when referring to materials.

Combining two or more distinct materials to create a new material with superior properties.
Example: Carbon fibre, fibreglass, concrete, etc.

(ii) Suggest **two** reasons why engineered bamboo is a suitable material for manufacturing hurleys.

Very tough, lightweight, low availability of high-quality Ash, etc.

(10 marks, 4+6)

Coimisiún na Scrúduithe Stáit
State Examinations Commission

2026. M103P
2026. M104P

Leaving Certificate Examination, 2026

Technology

Coursework Briefs

Ordinary Level and Higher Level

200 marks

The Thematic Briefs for the Leaving Certificate Examination 2026 are given overleaf.

The Coursework must be available for assessment by Friday 27 March 2026.

Leaving Certificate Technology

Ordinary Level and Higher Level 2026

Instructions to candidates:

1. The coursework submitted for assessment must consist of two components:
    - a design folio *and*
    - an artefact.
2. If **either** assessment component (written examination or coursework) is submitted at Ordinary Level, the subject is graded at Ordinary Level.
3. All coursework submitted for assessment must be clearly identified with your examination number.
4. The coursework submitted for assessment must be **your own individual work** and must be completed in school under the supervision of the class teacher.
5. Your coursework must not be removed from the school setting under **any** circumstances as doing so may result in such coursework being considered invalid.
6. The design folio should record all stages of your work and should document how the artefact meets the stated thematic brief.
7. Digital drawings or other manufacturing details, if presented for assessment, must be included in **hardcopy** format in your design folio.
8. Where computer aided manufacture (CAM) is used, supporting CAD drawings must be included in your design folio to authenticate your own individual work.
9. The coursework should display knowledge and skills developed through your study of the core and chosen options.
10. All important operating features of the artefact must be clearly visible and be easily accessible without dismantling.
11. Where an electrical supply is used to operate the artefact, it should be of low voltage output. Where specialised equipment is required, it must be set up by you, have clear operating instructions and be ready to use.
12. The coursework presented for assessment must be displayed in an attractive manner. Multimedia presentations, where submitted, must be of **maximum** 3 minutes duration, must be set up by the candidate and must be ready for viewing.
13. You must reference and acknowledge all research sources used such as: publications including books, professional journals and government reports; online sources and other types of media; any material generated using artificial intelligence (AI) software or applications; and material from specialist organisations and relevant individuals. To include such material without properly referencing the source will be considered plagiarism. In addition, the copying from, or reproduction of, material from such sources may also be considered plagiarism.
14. Material copied directly from the Internet or from other sources and presented as your own work will not receive any marks.
15. Any case of suspected copying, plagiarism (which includes the use of AI software), improper assistance, or procurement of work prepared by another party will be thoroughly investigated.

The coursework must be available for assessment by Friday 27 March 2026.

Leaving Certificate 2026 - Ordinary Level

Thematic Brief

With rising energy costs and increasing concern for the environment, it is important for households to use energy more efficiently. Reducing waste and managing how energy is used can lead to financial savings and a lower environmental impact. This includes turning off unused appliances, using efficient lighting and heating, and monitoring energy consumption. Technology can help individuals and families make smarter choices about their daily energy use.

In this context, design and make a working model of a device, system, aid, or display to help an individual or household manage energy use more effectively. Using modern materials and technologies, your model should incorporate an electronic and/or mechanical system and should be well presented.

Note: The maximum dimension of the artefact you present for assessment should not exceed 500 mm.
If multimedia presentations are used to enhance your display, a digital file ready to view on a school laptop or PC must be provided.

Coursework at Ordinary Level is weighted as follows:

- Design Folio - 40% of marks
- Artefact - 60% of marks

Total - 200 marks

Design Folio - Ordinary Level - 80 marks			
No.	***Heading***	***Description***	***Marks***
1	Analysis, research and investigation	Analysis of thematic brief. Research into chosen area. Analysis of existing solutions.	10
2	Overall management of the project	Analysis of available resources, time and budget constraints; proposed timeframe etc.	5
3	Environmental impact	Impact of materials and production processes; product use; suitability for reuse/recycling.	5
4	Design ideas and selection of optimum solution	Annotated **freehand** sketches outlining three possible solutions. Optimum solution identified and justified.	10
5	Sketches and drawings for manufacture	Detailed annotated sketches and drawings including all elements/aspects of solution; circuit diagrams/ flowcharts/ models/prototypes/dimensions/scale/assembly details.	15
6	Production planning	Materials and component lists; scheduling, work breakdown structure, costing.	10
7	Product realisation	Sequence of manufacture including photographic record.	15
8	Evaluation and testing	Testing against chosen brief. Evaluation of final artefact. Comparison of planned schedules and actual schedules. Suggested modifications with justification.	5
9	Presentation and ICT	Correct sequence of presentation. Quality of material presented. Acknowledgement of sources. ICT skills in production of folio.	5

Artefact - Ordinary Level - 120 marks			
No.	***Heading***	***Description***	***Marks***
1	Artefact meets theme & specification	Solution presented fulfils the thematic brief and specifications.	15
2	Creativity	Creativity in design, aesthetics & ergonomics. Creative and appropriate use of materials.	15
3	Production skills	Processing of materials. Assembly of materials and components. Range and depth of skills.	30
4	Functionality	Artefact works well. Appropriate/limited use of commercial components/solutions.	30
5	Quality and finish	High quality manufacture. Artefact well finished. Due regard for health and safety.	20
6	Presentation	Coursework well presented. Parts well integrated and labelled where appropriate.	10

Note: ***While the general headings and marks above will largely remain the same, breakdowns may vary depending on the actual brief for any given year.***