



Junior Cycle Engineering

Guidelines for the Classroom-Based Assessments

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Introduction

This document, *Junior Cycle Engineering: Guidelines for the Classroom-Based Assessments* provides:

- general information on Classroom-Based Assessments
- detail of the nature and scope of the Classroom-Based Assessments described in the specification for Junior Cycle Engineering
- the Features of Quality used to describe the level of achievement for each Classroom-Based Assessment
- guidelines for schools, teachers and students on completing the Classroom-Based Assessments.

These guidelines should be used in conjunction with the curriculum specification for Junior Cycle Engineering and the NCCA's online assessment support material for junior cycle, which includes further details of the subject learning and assessment review process and other aspects of junior cycle assessment set out in these guidelines.

All documentation can be accessed at <https://curriculumonline.ie/Junior-cycle/Junior-Cycle-Subjects/Engineering>. An outline of assessment in junior cycle can be found in the Framework for Junior Cycle 2015, which can be accessed at <https://www.education.ie/en/Publications/Policy-Reports/Framework-for-Junior-Cycle-2015.pdf>.

Classroom-Based Assessments: General Information

Classroom-Based Assessments are best described as the occasions when the teacher assesses the students using the specific task(s) set out in the subject specification. They are included within the time allocated for Engineering, which is a minimum of 200 hours. The Classroom-Based Assessments and the Features of Quality, which support teacher judgement, are set out in these guidelines.

Although the assessment is similar to the ongoing assessment that occurs every day in class, in the case of Classroom-Based Assessments, the teacher's judgement is recorded for Subject Learning and Assessment Review meetings (SLAR) and is used in the school's reporting to parents and students. Students prepare for the Classroom-Based Assessments over specified periods of time in second and third year. The results of other projects, homework or tests undertaken by the students in the course

of their normal classwork do not add up to the award of a descriptor for the Classroom-Based Assessment.

The autonomy of the school in preparing students for the Classroom-Based Assessments

These guidelines set out a range of options for the Classroom-Based Assessments so that they can suit the particular needs and circumstances of students and the school. Students and teachers have a choice of topics and formats for the Classroom-Based Assessments in Engineering. A variety of possibilities are presented as to how the Classroom-Based Assessments can be conducted and presented for assessment to allow students to pursue their own interests and motivations. For both Classroom-Based Assessments, students are encouraged to use a variety of support materials and to present their work in a variety of formats. Within the parameters set by these guidelines, the range of themes and topics for the assessments can be determined independently by the school, teachers and students.

How the school supports the completion of the Classroom-Based Assessments

The school supports the completion of the assessments by:

- ensuring that the *NCCA Junior Cycle Engineering Specification* and *Junior Cycle Engineering Guidelines for the Classroom-Based Assessments* are provided to teachers
- supporting teachers in recording the level descriptors awarded to each student
- retaining records and pieces of work, as appropriate, for the purposes of Subject Learning and Assessment Review meetings
- applying the guidelines for Subject Learning and Assessment Review meetings
- applying inclusive assessment practices and ensuring accessibility of assessment for all students

- reporting the outcomes of Classroom-Based Assessments to students and their parents/guardians as part of the school's on-going reporting procedures and through the Junior Cycle Profile of Achievement (JCPA).

Further information can be found at <http://www.ncca.ie/en/junior-cycle/assessment-and-reporting>

To facilitate providing feedback to students during their engagement with assessment, the process of completing the Classroom-Based Assessments should be viewed as part of teaching and learning, and not solely for assessment purposes. It is envisaged that teachers will guide, support and supervise throughout the process.

Support may include

- clarifying the requirements of the task
- using annotated examples of student work to clarify the meaning and interpretation of the Features of Quality to students
- providing instructions at strategic intervals to facilitate the timely completion of the assessments
- providing supports for students with special educational needs (SEN)

Note that only work which is the student's own can be accepted for assessment in the JCPA.

Inclusive assessment practices

Schools facilitate inclusive assessment practices whether as part of ongoing assessment or Classroom-Based Assessments. Where a school judges that a student has a specific physical or learning difficulty, reasonable supports may be put in place to remove, as far as possible, the impact of the disability on the student's performance in Classroom-Based Assessments. These supports e.g. the support provided by a special needs assistant or the support of assistive technologies, should be in line with the arrangements the school has put in place to support the student's learning throughout the year.

Classroom-Based Assessments in Engineering

There are two Classroom-Based Assessments in Engineering. They are assessed at a common level. They relate to learning outcomes and are scheduled to be undertaken by students in a defined time period within class contact time to a national timetable (as advised by the NCCA) in the school calendar. This timetable for Classroom-Based Assessments for all subjects will be provided on an annual basis at www.ncca.ie/junior-cycle and at www.curriculumonline.ie/Junior-cycle. The Classroom-Based Assessments for Engineering and indicative timings are outlined in Table 1 below.

Classroom-Based Assessments	Format	Student preparation
Engineering in action	<p>Investigation and presentation on an application of engineering.</p> <p>Response may be presented in a wide range of formats</p> <p>Students can collaborate, but each student must present an individual piece of work</p>	<p>During a maximum of 3 weeks with support/guidance from teacher</p>
Research and development	<p>Researching an aspect of the theme featured in the SEC project</p> <p>Students must individually present a piece of work</p> <p>Response may be presented in a wide range of formats</p>	<p>During a maximum of 3 weeks, with support/guidance from teacher</p>

Table 1: Classroom-Based Assessments for Engineering

Classroom-Based Assessment 1: Engineering in action

Engineering in action provides opportunities for students to engage in practical, authentic learning experiences that gives them the experience of exploring the applications of engineering in the world around them. The Classroom-Based Assessment will ask students to research, analyse and draw conclusions on the application of engineering from their chosen engineering discipline.

Regardless of the discipline of engineering, the students decide to research, their response should be conducted through the lens of:

- research and analysis
- engineering principles
- evaluating their Classroom-Based Assessment
- communicating their Classroom-Based Assessment

Students will capture the various stages of the Classroom-Based Assessment through a learning log that will be presented as part of their final submission. The learning log can be produced in a suitable format, to be decided upon in agreement with the teacher, that captures the students work throughout the Classroom-Based Assessment. Students may present models, artefacts and any other form of evidence to accompany the learning log to further communicate their findings if they deem it necessary. Further details on the learning log can be found on p. 14.

The learning outcomes assessed will, to an extent, depend on the topic chosen and the media in which the work is presented.

Guidelines for completion of the Classroom-Based Assessment

Figure 1 sets out the process for conducting a Classroom-Based Assessment. The aim of this process is to provide guidance for teachers as they support their students completing their Classroom-Based Assessments.



Figure 1 Process for conducting a Classroom-Based Assessment: Exploring the application of controlled systems in a local context

Getting ready



Student preparation

For this Classroom-Based Assessment, students can focus their investigation through the lens of a specific strand, a combination of two strands or can adopt an integrated approach across all three strands. For this, students should have developed some knowledge, understanding and skills across the three strands of study of Engineering before engaging with the first Classroom-Based Assessment. As part of the ongoing teaching, learning and assessment of the learning outcomes for Engineering, students should have opportunities to develop research and evaluation skills which will help them to engage meaningfully with **Engineering in action**. Where opportunities arise, their curiosity should be

fostered to explore topics and ideas that are of interest to them and they should be encouraged to identify relevant links between classroom learning and everyday life. Such experiences will be of benefit to them as they engage with **Engineering in action** at a level appropriate to their age and stage of learning.

This Classroom-Based Assessment promotes student curiosity and engagement when students:

- are encouraged to explore their surroundings for applications of engineering technology
- identify and choose an application that will form the focus of their response
- choose the format(s) in which to present their response
- consider a wide variety of media sources to ensure a broader range of perspectives are researched and considered
- collaborate through the discussion and exploration of the researched information.

Whilst the Classroom-Based Assessment is summative, it has a formative value and should be used as a tool to provide feedback to students, parents and teachers on student progress and learning. At an appropriate moment in their learning, students should be familiarised with the Features of Quality that will be used to judge the quality of their work.

Teacher preparation

Planning for teaching, learning and assessment should develop students' knowledge, understanding, skills and values across the learning outcomes of the specification incrementally in advance of, and during the completion of the Classroom-Based Assessment. The role of the teacher should be to guide, support, enable and provide direction to students as they complete their **Engineering in action** Classroom-Based Assessment.

Where possible, it is recommended that teachers discuss the Classroom-Based Assessment with colleagues and plan any teaching and learning that may be required. Teachers are encouraged to facilitate students to see the relevance in what they are learning to everyday living. A non-linear approach across learning outcomes and strands is suggested in the Engineering specification. This will provide opportunities for students to experience interactions, interconnections and implications across different areas of study. In order to prepare for the Classroom-Based Assessment, teachers should familiarise themselves with the following documentation available on www.curriculumonline.ie:

- *Junior Cycle Engineering Specification*
- *Junior Cycle Engineering Guidelines for the Classroom-Based Assessments*
- annotated examples of student work
- assessment and reporting in junior cycle (<https://www.ncca.ie/junior-cycle/assessment-and-reporting>).

Completing CBA 1



Engineering in action will be completed within a three-week period. In this Classroom-Based Assessment, students will engage in, and document the four areas of activity in their learning logs which contribute to the generation of their evidence of learning and achievement:

1. research and analysis
2. engineering principles
3. evaluating their Classroom-Based Assessment
4. communicating their Classroom-Based Assessment.

1. Research and analysis

An area of focus for completion of the Classroom-Based Assessment is developing a student's research skills. Once the students and teacher have decided on an application of engineering to explore, students should define their idea(s) by brainstorming key words, phrases and other pieces of information that will assist their research. Each student will be required to gather data and information from different sources to research their project. Each individual student must conduct

their own research using some field (primary) research and/or some desk (secondary) research. Appendix A offers some possible headings students may include in their learning log. It is important that each student records the source(s) of all the information gathered in order to assess its reliability and quality, and to ensure that the sources used can be referenced in the task. They should be encouraged to search effectively, evaluate and synthesise material. The chosen topic for research can be framed in questions or statements that is of interest to the student. A sample of possible topics can be found below.

- Engineering innovations/innovators in either a local, national, or international context and their impact on me.
- How it works: an investigation into the engineering principles behind how *item X* functions.
- An investigation into materials: their background, uses, benefits, properties, impact...
- The influence engineering processes and principles, design and mechatronics has on Robotics.
- What is a mechanism and where are they used?
- Precision, how, where and why does it play such an important role across Engineering disciplines?

2. Engineering principles

Once the research and analysis has been conducted, the students should relate their findings to the relevant key principles of engineering to their topic. Students can draw on existing knowledge of their chosen engineering application but should support their ideas with their research to gain enhanced knowledge in order to identify relevant real-life applications. By exploring their application of engineering, students should demonstrate understanding of their topic and should be considering what key information will be needed to accurately communicate their findings.

3. Evaluating their Classroom-Based Assessment

Having undertaken the **Engineering in action** Classroom-Based Assessment, using their chosen topic, the students should:

- Evaluate what they have learned and link it to real-life applications.
- Reflect on the process that led them from start to finish of their submitted work.

Areas that could be included at this stage:

- Exploring the importance of the topic from a personal, local, social or environmental relevance
- Were they able to apply their knowledge, understanding and ideas to the chosen topic
- Explaining different opinions related to the chosen topic where appropriate
- Reflecting on what they thought about the topic before the research and what they think now having evaluated the research

In other words, the student should aim to develop a personal opinion in relation to the Classroom-based Assessment.

4. Communicating their Classroom-Based Assessment

Each student will present on what they have learned having explored an application of engineering from a discipline of engineering of their choice. The information should be presented to demonstrate personal understanding of the knowledge and ideas relevant to the chosen topic. Students should be encouraged to identify which information best communicates their work and choose the most suitable medium in which to present it.

Evidence of learning

The students are required to capture their Classroom-Based Assessment using an individual learning log. The learning log can be produced in any format that is appropriate for capturing the ideas of the students. For example:

- In written form, such as a report
- In digital form, such as a blog, a video or slide presentation
- In visual form, such as a graphic presentation or a display
- In audio form, such as a podcast or a voice-over

This list is not intended to be exhaustive but serves to offer suggestions as to the possible choices in developing the learning log. Students may present models or prototypes as part of their submission to support their learning logs.

Deciding on the level of achievement: Engineering in action



Features of Quality

There are four level descriptors of achievement in each Classroom-Based Assessment: *Exceptional*, *Above expectations*, *In line with expectations*, and *Yet to meet expectations*. All work submitted is judged to fit one of these four descriptors. Teachers use the Features of Quality, set out in these guidelines, to decide the level of achievement in each Classroom-Based Assessment.

When using the Features of Quality to assess the level of student achievement in a Classroom-Based Assessment, teachers use 'on-balance' judgement. The teacher should read the Features of Quality (starting with *Yet to meet expectations*) until they reach a descriptor that best describes the work being assessed. While it should be noted that none of the descriptors imply faultless achievement, evidence of work for the award of *Exceptional* should closely match the criteria for that level within the Features of Quality. Where it is not clearly evident which quality descriptor should apply, teachers must come to a judgment, based on the evidence from the student's work, to select the descriptor that best matches the student's work overall. This 'best fit' approach allows teachers to select the descriptor that 'on balance' describes the work being assessed.

Teachers should not assume that the results of a group of students being assessed will follow any particular distribution pattern, as the students' work is being judged only against the Features of Quality rather than other students' performances. Teacher judgements about the quality of student work, with the aim of arriving at a shared understanding of standards and expectations, are supported by annotated examples of student work published on <https://curriculumonline.ie/Junior-cycle/Junior-Cycle-Subjects/Engineering> by the features of quality in these guidelines; and by collaboration and discussion with colleagues during Subject Learning and Assessment Review (SLAR) meetings.

Features of Quality: Engineering in action	
<p>Exceptional</p> <p>A piece of work that reflects these Features to a very high standard. While not necessarily perfect, the strengths of the work far outstrip its flaws, which are minor. Suggestions for improvement are easily addressable by the student.</p>	<ul style="list-style-type: none"> ▪ The research method chosen demonstrated a comparison of a range of sources which led to the production of a comprehensive and detailed analysis of the data/findings. ▪ The response demonstrates a comprehensive awareness of relevant engineering principles for their chosen area of learning. ▪ Critical evaluation of the response was evident throughout the task that lead to refinements at various stages resulting in meaningful, accurate conclusions and examples of real-life applications. ▪ The presentation of the response is of an excellent standard, using highly effective media which allowed for a critical consideration of what information accurately communicates the task.
<p>Above expectations</p> <p>A piece of work that reflects these Features very well. The student shows a clear understanding of how to complete each area of the task. Feedback might point to the necessity to address some aspect of the work in need of further attention or polishing, but on the whole the work is of a high standard.</p>	<ul style="list-style-type: none"> ▪ The research method chosen was effective for their area of learning and generated an in-depth level of analysis. ▪ The response demonstrates very good awareness of relevant engineering principles for their chosen area of learning. ▪ The evaluation of the response is at a high level, with relevant and accurate conclusions that indicates an understanding of real-life applications. ▪ The response is presented to a very high standard, using effective media, with careful consideration of what information best communicates the task.
<p>In line with expectations</p> <p>A piece of work that reflects most of these Features well. It shows a good understanding of the task in hand and is free from significant error. Feedback might point to areas needing further attention or correction, but the work is generally competent and accurate.</p>	<ul style="list-style-type: none"> ▪ The research method chosen was appropriate for their area of learning and generated a suitable analysis. ▪ The response demonstrated some awareness of relevant engineering principles for their chosen area of learning. ▪ The evaluation was appropriate; conclusions are brief and include some suggestions on real life applications. ▪ The response is well presented, using appropriate media, with careful consideration of what information to communicate to best showcase the task.
<p>Yet to meet expectations</p> <p>A piece of work that falls somewhat short of the demands of the Classroom-Based Assessment and its associated Features. Perhaps the student has made a good attempt, but the task has not been grasped clearly or is marred by significant lapses. Feedback will draw attention to fundamental errors that need to be addressed.</p>	<ul style="list-style-type: none"> ▪ The research method chosen for their area of learning was ineffective and the analysis lacks depth. ▪ The response demonstrated little or no awareness of relevant engineering principles for their chosen area of learning. ▪ The evaluation of the response offers little or no conclusions and makes no suggestions on real life applications. ▪ The response is presented in an unsuitable format resulting in an ineffective communication of the Classroom-Based Assessment.

These Features of Quality will be applied to authentic examples of student work. Arising from this process:

- adjustments may be made to the Features of Quality
- amended Features of Quality, where necessary, will be published in the assessment guidelines
- annotated examples of student work will be published on www.curriculumonline.ie.

Next steps



Subject Learning and Assessment Review meeting

Shared understanding of standards within junior cycle will arise through professional discussion in Subject Learning and Assessment Review meetings, where staff bring their own examples of student work and compare their judgements with other colleagues and with annotated examples of student work provided by the NCCA. Over time, this process will help develop a greater understanding of standards and ensure consistency of judgement about student performance.

Samples of **Engineering in action** by students will be gathered/recorded for discussion at the Subject Learning and Assessment Review meetings. In preparation for the Subject Learning and Assessment Review meeting, each teacher will identify one sample of students' work for each descriptor, where feasible, and will have these available for discussion at the meeting. Any audio or audio-visual recording device, such as a tablet, mobile phone, laptop or video camera, available in the school can

be used for this purpose. School device rather than personal devices should be used. The recording should take place with cognisance of child protection guidelines and in line with the school's acceptable use and data protection policies. [This only applies to subjects where students will be recorded]

Further details on managing and participating in the Subject Learning and Assessment Review meeting are included in the Appendix and are available online at <https://www.ncca.ie/en/junior-cycle/assessment-and-reporting/slar-meetings>.

Recording and reporting results from Classroom-Based Assessments

Following the Subject Learning and Assessment Review, each individual teacher re-considers the judgement they had made of their student's work, based on the outcomes of the meeting, and where necessary makes the appropriate adjustments to the level of achievement awarded to the work. The descriptors awarded are used in reporting progress and achievement to parents and students as part of the school's ongoing reporting procedures and through the Junior Cycle Profile of Achievement (JCPA).

Where it arises that a student does not submit any work for their Classroom-Based Assessment, a descriptor cannot be awarded, as there is no work to discuss against the Features of Quality. In such cases, 'Not reported' should be selected when inputting results for the JCPA. Further information in relation to reporting Classroom-Based Assessment descriptors for the JCPA is available from the DES at the following link: <https://www.education.ie/en/Schools-Colleges/Services>Returns/Post-Primary-Online-Database-P-POD-Project/>

Using feedback

Providing effective feedback is a crucial step in **Engineering in action** to support learning. Students will be informed of the Descriptor they have been awarded once the SLAR meeting has taken place and its outcomes have been processed. However, effective feedback goes beyond the naming of the Descriptor awarded. Feedback on the strengths of the student's work, and on areas for improvement can be used to support their future learning. Further information on the use of feedback can be found at <https://www.ncca.ie/en/junior-cycle/assessment-and-reporting/focus-on-learning>.

Querying a result

Queries in relation to the Descriptors awarded for the Classroom-Based Assessments, where they arise, will be dealt with by the school.

Classroom-Based Assessment 2: Research and development

Research and development provides opportunities for students to investigate and develop their understanding of a theme related to their upcoming project, which will be issued by the State Examinations Commission. The theme will change each year and will be derived from the project the students will undertake in that same academic year. The theme for this Classroom-Based Assessment will be developed by the State Examinations Commission and issued by the NCCA online through www.curriculumonline.ie.

The student can communicate the Classroom-Based Assessment through any appropriate media that captures their response. To help structure their approach to the Classroom-Based Assessment, the students should focus their work through the lens of:

- research and analysis
- exploring concepts
- communicating their Classroom-Based Assessment.

The learning outcomes assessed will, to an extent, depend on the topic chosen and the media in which the work is presented.

Guidelines for completion of the Classroom-Based Assessment: Research and development

Figure 2 sets out the process for conducting a Classroom-Based Assessment. The aim of this process is to provide guidance for teachers as they support their students completing their Classroom-Based Assessments.



Figure 2 Process for conducting a Classroom-Based Assessment: Research and development

Getting ready



Student preparation

While **Research and development** is focusing on researching a theme, students should have developed sufficient knowledge, skills, values and understanding to undertake the second Classroom-Based Assessment. As part of the ongoing teaching, learning and assessment of the learning outcomes for Engineering, students should have developed their researching skills that allows them to effectively investigate a theme to help inform them of their upcoming State Examination Commission project.

Whilst the Classroom-Based Assessment is summative, it has a formative value and should be used as a tool to provide feedback to students, parents and teachers on student progress and learning. At an appropriate moment in their learning, students should be familiarised with the Features of Quality that will be used to judge the quality of their work.

Teacher preparation

Planning for teaching, learning and assessment should develop students' knowledge, understanding, skills and values across the learning outcomes of the specification incrementally in advance of, and during the completion of the Classroom-Based Assessment. The role of the teacher should be to guide, support, enable and provide feedback to students as they complete their **Research and development** Classroom-Based Assessment.

Where possible, it is recommended that teachers discuss the Classroom-Based Assessment with colleagues and plan any teaching and learning that may be required. Teachers are encouraged to facilitate students to see the relevance in what they are learning to everyday living. A non-linear approach across learning outcomes and strands is suggested in the Engineering specification. This will provide opportunities for students to experience interactions, interconnections and implications across different areas of study. In order to prepare for the Classroom-Based Assessment, teachers should familiarise themselves with the following documentation available on www.curriculumonline.ie:

- Junior Cycle Engineering Specification
- Junior Cycle Engineering: Guidelines for the Classroom-Based Assessment
- Annotated examples of student work
- Assessment and Reporting in junior cycle (<https://www.ncca.ie/junior-cycle/assessment-and-reporting>)

Completing CBA 2



Research and development will be completed within a three-week period. In this Classroom-Based Assessment, students will engage in, and document the three areas of activity which will contribute to the generation of their evidence of learning and achievement:

1. research and analysis
2. exploring concepts
3. communicating their Classroom-Based Assessment.

1. Research and analysis

An area of focus for completion of the Classroom-Based Assessment is developing a student's research skills on a prescribed area. Students should try to define their idea(s) such as brainstorming key words, phrases and other pieces of information that will assist their research. Each student will be required to gather data and information from different sources to research the prescribed theme. Each individual student must conduct their own research using some field (primary) research and/or some desk (secondary) research. Appendix A offers some possible headings students may include in their response. It is important that each student records the source(s) of all the information gathered in order to assess its reliability and quality, and to ensure that the sources used can be referenced in the task. They should be encouraged to search effectively, evaluate and analyse material.

2. Exploring concepts

After completing their initial research, students should be encouraged to identify and explore relevant concepts associated with the theme. These concepts can relate to the theme as a whole, or, to distinct aspects of the theme. Students can draw on existing knowledge but should support their work with research to enhance their knowledge of their identified concepts. By exploring concepts relevant to the theme, students should be able to show a genuine understanding of the theme and should consider what key information will be needed to accurately communicate their findings.

3. Communicating their work

Each student will present on what they have learned having completed the Classroom-Based Assessment. The information should be presented in their own words to demonstrate personal understanding of the knowledge and ideas relevant to the theme. Students should be encouraged to identify which information best communicates their work and choose the most suitable medium in which to present it.

Evidence of learning

The student's response to their Classroom-Based Assessment can be produced in any format that is appropriate for capturing their reflection. For example:

- In written form, such as a report
- In digital form, such as a blog, a video or slide presentation
- In visual form, such as a graphic presentation or a display
- In audio form, such as a podcast or a voice-over

This list is not intended to be exhaustive but serves to offer suggestions as to the possible choices in presenting the Classroom-Based Assessment.

Deciding on the level of achievement



Features of Quality

There are four level descriptors of achievement in each Classroom-Based Assessment: *Exceptional*, *Above expectations*, *In line with expectations*, and *Yet to meet expectations*. All work submitted is judged to fit one of these four descriptors. Teachers use the Features of Quality, set out in these guidelines, to decide the level of achievement in each Classroom-Based Assessment.

When using the Features of Quality to assess the level of student achievement in a Classroom-Based Assessment, teachers use 'on-balance' judgement. The teacher should read the Features of Quality (starting with Yet to meet expectations) until they reach a descriptor that best describes the work being assessed. While it should be noted that none of the descriptors imply faultless achievement, evidence of work for the award of Exceptional should closely match the criteria for that level within the Features of Quality. Where it is not clearly evident which quality descriptor should apply, teachers must come to a judgment, based on the evidence from the student's work, to select the descriptor that best matches the student's work overall. This 'best fit' approach allows teachers to select the descriptor that 'on balance' describes the work being assessed.

Teachers should not assume that the results of a group of students being assessed will follow any particular distribution pattern, as the students' work is being judged only against the Features of Quality rather than other students' performances. Teacher judgements about the quality of student work, with the aim of arriving at a shared understanding of standards and expectations, are supported by annotated examples of student work published on <https://curriculumonline.ie/Junior-cycle/Junior-Cycle-Subjects/Engineering> by the features of quality in these guidelines; and by collaboration and discussion with colleagues during Subject Learning and Assessment Review (SLAR) meetings.

Features of Quality: Research and development	
<p>Exceptional</p> <p>A piece of work that reflects these Features to a very high standard. While not necessarily perfect, the strengths of the work far outstrip its flaws, which are minor. Suggestions for improvement are easily addressable by the student.</p>	<ul style="list-style-type: none"> ▪ The research method chosen demonstrated a comparison of a range of sources which led to the production of a comprehensive and detailed analysis of the data/findings. ▪ The response demonstrated a comprehensive understanding of a range of concepts in relation to the theme. ▪ The presentation of the findings is of an excellent standard; using highly effective media which allowed for a critical consideration of what information best communicates their response.
<p>Above expectations</p> <p>A piece of work that reflects these Features very well. The student shows a clear understanding of how to complete each area of the task. Feedback might point to the necessity to address some aspect of the work in need of further attention or polishing, but, on the whole the work is of a high standard.</p>	<ul style="list-style-type: none"> ▪ The research method chosen was effective for the theme and generated an in-depth level of analysis of the data/findings. ▪ The response demonstrated a high level of understanding of concepts relevant to the theme. ▪ The findings are presented to a very high standard, using effective media, with careful consideration of what information accurately communicates their response.
<p>In line with expectations</p> <p>A piece of work that reflects most of these Features well. It shows a good understanding of the task in hand and is free from significant error. Feedback might point to areas needing further attention or correction, but the work is generally competent and accurate.</p>	<ul style="list-style-type: none"> ▪ The research method chosen was appropriate for their area of learning and generated a suitable analysis. ▪ The response demonstrated some level of understanding of concepts relevant to the theme. ▪ The findings are well presented, using appropriate media, with careful consideration of what information to communicate their response.
<p>Yet to meet expectations</p> <p>A piece of work that falls somewhat short of the demands of the Classroom-Based Assessment and its associated Features. Perhaps the student has made a good attempt, but the task has not been grasped clearly or is marred by significant lapses. Feedback will draw attention to fundamental errors that need to be addressed.</p>	<ul style="list-style-type: none"> ▪ The research method chosen for the theme was ineffective and the analysis of the data/findings lacks depth. ▪ The response demonstrated little or no understanding of concepts relevant to the theme. ▪ The findings are presented in an unsuitable format resulting in an ineffective communication of their response.

These Features of Quality will be applied to authentic examples of student work. Arising from this process:

- adjustments may be made to the Features of Quality
- amended Features of Quality, where necessary, will be published in the assessment guidelines
- annotated examples of student work will be published on www.curriculumonline.ie.

Next steps



Subject Learning and Assessment Review meeting

Shared understanding of standards within junior cycle will arise through professional discussion in Subject Learning and Assessment Review meetings, where staff bring their own examples of student work and compare their judgements with other colleagues and with annotated examples of student work provided by the NCCA. Over time, this process will help develop a greater understanding of standards and ensure consistency of judgement about student performance.

Samples of **Research and development** by students will be gathered/recorded for discussion at the Subject Learning and Assessment Review meetings. In preparation for the Subject Learning and Assessment Review meeting, each teacher will identify one sample of students' work for each descriptor, where feasible, and will have these available for discussion at the meeting. Any audio or audio-visual recording device, such as a tablet, mobile phone, laptop or video camera, available in the school can be used for this purpose. School rather than personal devices should be used. The recording should take place with cognisance of child protection guidelines and in line with the school's acceptable use and data protection policies. [This only applies to subjects where students will be recorded]

Further details on managing and participating in the Subject Learning and Assessment Review meeting are included in the Appendix and are available online at <https://www.ncca.ie/en/junior-cycle/assessment-and-reporting/slar-meetings>.

Recording and reporting results from Classroom-Based Assessments

Following the Subject Learning and Assessment Review, each individual teacher re-considers the judgement they had made of their student's work, based on the outcomes of the meeting, and where necessary makes the appropriate adjustments to the level of achievement awarded to the work. The descriptors awarded are used in reporting progress and achievement to parents and students as part of the school's ongoing reporting procedures and through the Junior Cycle Profile of Achievement (JCPA).

Where it arises that a student does not submit any work for their Classroom-Based Assessment, a descriptor cannot be awarded, as there is no work to discuss against the Features of Quality. In such cases, 'Not reported' should be selected when inputting results for the JCPA. Further information in relation to reporting Classroom-Based Assessment descriptors for the JCPA is available from the DES at the following link: <https://www.education.ie/en/Schools-Colleges/Services>Returns/Post-Primary-Online-Database-P-POD-Project/>

Using feedback

Providing effective feedback is a crucial step as part of **Research and development** to support student learning. Students will be informed of the Descriptor they have been awarded once the SLAR meeting has taken place and its outcomes have been processed. However, effective feedback goes beyond the naming of the Descriptor awarded. Feedback on the strengths of the student's work, and on areas for improvement can be used to support their future learning. Further information on the use of feedback can be found at <https://www.ncca.ie/en/junior-cycle/assessment-and-reporting/focus-on-learning>.

Querying a result

Queries in relation to the Descriptors awarded for the Classroom-Based Assessments, where they arise, will be dealt with by the school.

The State Examination Commission project

All instructions for the State Examination Commission project will be issued by the State Examination Commission and will be available for students during their third year of Junior Cycle.

Appendix A: Student research template

CBA title:	
Title of your project:	
Student name:	
Method of research:	Primary research <input type="checkbox"/>
	Secondary research <input type="checkbox"/>
Outline briefly the purpose of the research	
Method of research: Explain briefly why you have chosen your method of research	
Sources: List your source(s) of information	
Summary: Give a brief summary of what you found out as a result of your research	
Evaluation of findings: Think critically about the following questions and write a short response	
(a) Were your findings as to be expected or otherwise? Give a reason for your answer.	
(b) Is the source of your research reliable? Give a reason for your answer.	

(c) Is the information one-sided or biased? Give a reason for your answer.

Conclusion: Based on your findings what is are your key observations

Appendix B: Support for teacher judgement:

Subject Learning and Assessment Review

Subject Learning and Assessment Review meetings enable teachers to collaboratively reach consistency in their judgments of student work against common, externally set Features of Quality. Greater understanding of standards and expectations will develop over time as teachers come together in professional discussion to reflect on the quality of their own students' work, informed by the subject specification, assessment guidelines and other support material including annotated examples of students' work provided by the NCCA.

Overview

The review process is centred on teachers discussing student work at structured meetings. It will play an important role in helping teachers to develop an understanding of standards and expectations by enabling them to reflect on the evidence of students' work and to share the learning and teaching strategies supporting that work.

The objectives of the review process are to achieve

- greater consistency of teachers' judgement
- better feedback to students
- greater alignment of judgements with expected standards

and to assure parents and others that students are receiving appropriate recognition of their achievements in line with standards and expectations.

The time for review meetings will be provided for in the school calendar from the allocated 22 hours of professional time for each full-time teacher each year. One teacher of each subject will be allocated two additional hours by school management to prepare for and coordinate each review meeting. This role will normally be rotated among the relevant teachers.

Each meeting will

- be subject-specific

- be approximately two hours long
- take place at a time as near as possible to the completion of the Classroom-Based Assessment
- involve the review of student work related to a specific Classroom-Based Assessment.

Where there is a single teacher of a subject in a school, the teacher can be facilitated to participate in a Subject Learning and Assessment Review meeting in another school. In the case of an Irish-medium school, the single teacher of a subject can participate in a Subject Learning and Assessment Review meeting in another Irish-medium school.

Facilitator's guide

Teachers will fulfil the role of facilitator during Subject Learning and Assessment Review meetings on a rotational basis. The facilitator will model effective questioning during the discussion of the samples of student work focusing on how well students' work matches the Features of Quality. During review meetings, where it is not clearly evident which descriptor should apply, the group should look for the evidence in the student's work that matches all or nearly all of the Features of Quality associated with a particular descriptor. This 'best fit' approach allows teachers at the review meeting to select the descriptor that 'on-balance' best matches the work being assessed. The facilitator will submit a short report (see Appendix B) of the review meeting to the school principal.

Teachers should not assume that the results of a group of students being assessed will follow any particular distribution plan as the student's work is being judged only against the Features of Quality rather than other students' performance.

Before the meeting

As a first step, teachers may find it helpful to review some of the relevant NCCA-annotated examples prior to coming to decisions about their own students' work.

Once students have completed their Classroom-Based Assessment, the teacher will carry out a provisional assessment of the students' work based on the Features of Quality. These provisional assessments may be modified in light of the discussions that take place at the Subject Learning and Assessment Review meeting.

The teacher will make a note of the descriptor allocated to each student and any other point they may wish or find useful to refer to during and after the Subject Learning and Assessment Review meeting. This note will be for the teacher's own use.

In preparation for the Subject Learning and Assessment Review meeting, each teacher will identify one sample of student's work for each descriptor, where feasible, and will have these available for discussion at the meeting.

During the meeting

The facilitator leads the meeting and keeps the record of the decisions made in a template, which is used to generate the report of the meeting (see Appendix B). It is recommended that the meeting should generally follow this sequence:

- The facilitator explains that the purpose of the meeting is to support consistency of judgement about students' work and to develop a common understanding about the quality of student learning. The value of the meeting in providing feedback to students on how they might improve their work should also be highlighted.
- The facilitator asks one member of staff to introduce a sample of work they have assessed as Yet to reach expectations.
- Following a short introduction by the teacher, the facilitator leads a general discussion on the extent to which the student's work matches the relevant Features of Quality. If the meeting affirms the judgement, this is noted in the meeting record by the facilitator.
- Where there is a lack of agreement, the facilitator should refer to relevant annotated examples of student work provided by the NCCA and, if appropriate, a couple of examples of student work that other teachers in the group have assessed and awarded that descriptor to.
- The facilitator should look to establish consensus during the discussion of examples but the emphasis should be on developing teachers' professional knowledge and skills rather than on seeking unanimous agreement over every Feature of Quality in every example.
- The emphasis in affirming judgements during the review meetings should always be on a 'best fit' approach which allows teachers to agree the descriptor that 'on-balance' is most appropriate for the work being assessed.

- While reasonable time should be allowed for discussion, the facilitator should use his/her professional judgement to decide when it would be appropriate to proceed to the next sample.
- If possible, there should be discussion of at least two samples for each descriptor and the facilitator should ensure that each teacher has at least one of their samples discussed during the meeting.
- The process is repeated, in turn, with samples assessed as In line with expectations, Above expectations and Exceptional being discussed and shared in the group. At the end of the meeting, the facilitator briefly summarises the key points from the discussion.
- It is important that each teacher notes the implications of the decisions made during the meeting for the rest of the student work they have already assessed, particularly in the case of descriptors where their judgement did not align with the view of the majority of teachers at the meeting.

After the meeting

After the meeting, each teacher considers the assessment of their students' work based on the outcomes of the meeting and, where it is considered necessary, makes the appropriate adjustments to their provisional assessments. Following the Subject Learning and Assessment Review meeting, the facilitator submits their report from the meeting focusing on the outcomes of the discussion of student work at the meeting and submits it to the school principal.

The facilitator may also ask teachers, should they wish, to contribute some student work to a bank of examples

- to support the induction of new teachers
- to support future Subject Learning and Assessment Review meetings
- to use with students and parents in demonstrating the standard of work achieved.

Appendix C: Subject Learning and Assessment

Review Meeting: Facilitator's Report

Subject:	Date/time:
Attendance	
Key decisions taken	
Points of note for future review meetings	
Any further comment?	
Facilitator Date	

