

Engineering

JCt4 Newsletter

Junior Cycle for Teachers

Junior Cycle for Teachers exists to **inspire, support** and **empower** teachers in the transformation of Junior Cycle education in Ireland.

Commencement of Engineering CBA 1

As Second-Year Engineering students continue their learning journey, they will commence Classroom-Based Assessment 1 “Engineering in Action” between the 6th of January and 14th of May 2021.

Student exemplars are now available to access on www.curriculumonline.ie, which will support teachers in reaching a professional judgement on standards of student work in advance of and during the SLAR process. The Engineering team have designed and delivered a webinar dedicated to support teachers to adequately prepare students to enhance their skills prior to, during and after CBA 1. A link to the webinar can be found [here](#).

Infographics on Classroom-Based Assessments

Frequently Asked Questions



Planning for Classroom-Based Assessments



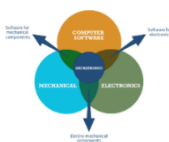
Welcome

On behalf of the Engineering team, we hope that you have had a fruitful and enjoyable year to date, whether you have taught students in the classroom or engaged with students with learning from home. During this time, our resources will continue to be developed which will support teachers to engage with an integrated approach to practical and theory. Should Engineering teachers have any queries, our dedicated Engineering advisors can be contacted from the [Meet the Team](#) tab on jct.ie.

Online Engineering CPD Cluster Day

Our online Engineering CPD cluster day will be held through Zoom this year between January and March 2021. In response to teacher feedback from previous cluster workshops, teachers will engage with the Mechatronics strand specifically with ‘micro:bit’ and the ‘All-in-one Robotics Board’ to facilitate activities using computer software. Teachers will also look at various approaches to teaching and learning in the classroom, how students may engage in Classroom-Based Assessments and how teachers will prepare themselves prior to, during and after a SLAR meeting.

Mechatronics diagram



3D Printing in the Classroom Elective

The JCt4 team were delighted to kick off a new elective on Tuesday 19th January called ‘3D Printing in the classroom’ with the support of 3D WIT, I-Form and funded by Science Foundation Ireland. This elective offers teachers from all four Technologies’ subjects an opportunity to engage in the basics of 3D Printing, Health and Safety, TinkerCad, Cura Software, 3D Printing preparation and the maintenance of various 3D Printers. It promises to be informative for all attendees. All workshops are now fully booked out but more 3D printing electives are planned to take place in the near future.

3D Printing in the Classroom - Creativity and Design

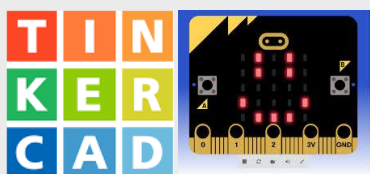


Engineers’ Week and STE(A)M

During Engineers’ Week 2020, we were delighted to see many teachers and students engaging with activities and promoting the subject of Engineering within second level education and we are looking forward to seeing more of the same this year. Engineers’ Week will commence on Monday 1st March and conclude on Friday 5th March. Mention us [@JCt4ed](#) on Twitter or send images/videos to highlight the various activities occurring within your school. STE(A)M in Junior Cycle is an elective partnership between Junior Cycle for Teachers (JCT) and education outreach partners from fields of STEM and The Arts. Its vision is to “Provide Junior Cycle teachers with rich



Engineering Elective



If you are already using or planning to use video streaming tools for online learning from home, you can combine them with a free micro:bit classroom approach to teaching mechatronics and coding from home. Students do not need a micro:bit device to use micro:bit classroom as they can program the simulator in MakeCode. An introduction webinar to TinkerCad and Mechatronics was delivered by the Engineering Team and can be accessed by clicking the link [here](#).

Learning from Home Engineering Challenges

The Jct4 team developed a series of weekly challenges for students, across the suite of Technologies' subjects, to engage with practical/project work from home. These challenges may be suitable to pursue ideas and approaches with first and second-year students to engage students with learning from home once again. A link to these challenges can be found under [resources](#) in the Technologies' section of the [jct.ie](#) website.

Communication



@Jct4ed

An tSraith Shóisearach do Mhúinteoirí
JuniorCYCLE
for teachers

www.jct.ie



[Mailing List](#)

Spring 2021

STE(A)M professional learning experiences in keeping with national and international best standards. This provision will allow for interdisciplinary responses to societal challenges in subject specific and cross curricular contexts". The Jct4 Engineering Team and the Junior Cycle STE(A)M Team will be promoting the important work completed in these areas. Keep an eye on the Jct4 News and Events [here](#) and STE(A)M

News and Events [here](#).

Engaging with Mechatronics

All Engineering teachers [registered](#) for their online CPD cluster workshop will receive a Mechatronics' Teaching and Learning resource. Some of the components will not be required during this year's CPD workshop but will be used in future CPD workshops. Teachers have been communicated with



through the mailing list where the instruction letter for assembly and the learning log for the workshop can be accessed. It is important to note while teachers will be engaging with [learning outcomes](#) in the Mechatronics strand such as '3.6 **configure** and **program** basic mechatronic systems using appropriate

software', '3.8 **build** and **test** a basic mechatronic system with specific inputs or outputs' and '3.9 **incorporate** basic mechatronics into their engineered products', an integrated approach to planning for Mechatronics will best support student engagement in Engineering.

Engineering in the world around us

To develop the 'Engineering Mindset' and engage students in the world of Engineering around them, we are constantly looking out for various articles, videos and support materials to ignite the minds of students. The links below may provide a lead into some interesting activities around the following learning outcomes:

1.5 **research** applications of existing and emerging technological developments.

<https://www.intel.com/content/www/us/en/tech-tips-and-tricks/virtual-reality-vs-augmented-reality.html>

1.6 **engage** with the various engineering disciplines by relating them to everyday application.

<https://irishtechnews.ie/engineering-graduates-in-demand/>

2.4 **explore** how design impacts on the function and quality of a product including ergonomic considerations.

<https://www.youtube.com/watch?v=qiHvxarRE3w>

News and Events

Continue to encourage your colleagues to sign up to our mailing list on the link opposite. Watch our [news and events](#) tab within the Technologies' section of [jct.ie](#) and follow us on our Twitter page [@Jct4ed](#). Please feel free to contact any member of the team with your queries via email. The email addresses can be found in the [Meet the Team](#) tab on the [jct.ie](#) homepage. We would like to wish teachers, students and parents the best for the year ahead.



Kind regards,

The Jct4 Engineering Team