

The suite of Technology Subjects

Student Challenges - 27th April



Applied Technology



Engineering



Graphics

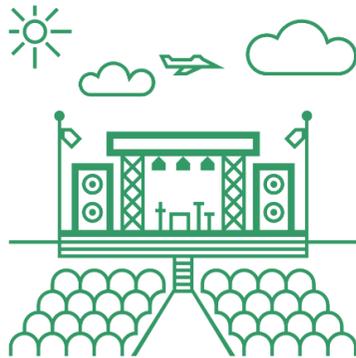


Wood Technology



Applied Technology Challenges

CHALLENGE 5



Entertainment events are becoming more interactive using Virtual Reality (VR) and Augmented Reality (AR) to enhance people's experience.

Did you ever consider how these events can happen and the technology involved? Research the difference between VR and AR technology.

Choose an entertainment event and suggest how you could enhance this experience using technology. Include any digital hardware and software you could also use.

Links which might help in completing this challenge:

Here are some videos of entertainment events happening virtually:

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

<https://www.youtube.com/watch?v=NBsCzN-jfvA>

CHALLENGE 6



Tired of staying inside? How would you design and make a tree house or similar outdoor shelter? What structure would it have? What materials would you use? Justify your thinking.

Perhaps consider making a prototype model first. How can making a prototype help you learn?

Links which might help in completing this challenge:

<https://www.youtube.com/watch?v=WRfJyXks09o>

Did you ever consider how manmade structures can be inspired by the natural world? Watch the video below to find out more:

<https://youtu.be/WHgeMDT0tAg>



Engineering Challenges

CHALLENGE 5



Stay Home and watch a movie

Build a projector for your smart phone.

If you don't have a magnifying glass, is there something else that could be used?

Reflect on the process and the completed project.

Links which might help in completing this challenge:

This [4 minute video](#) has all the instructions on how to build a projector from a shoe box.

[Here](#) you will find more examples and materials required to build a projector.

CHALLENGE 6



Electronics

Locate a simple device in your home which works electronically.

Investigate and **research** how this device operates and sketch the electronic circuit labelling all the components correctly using the relevant symbols.

Links which might help in completing this challenge:

This [link](#) will bring you to a PDF of electrical symbols.

[Here](#) you can watch a 10min. video on how electricity works.



Graphics Challenges

CHALLENGE 5

"Throughout the course, students will explore the geometric world to gain an appreciation of the importance of graphics in the world around them."
Graphics specification page 4

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YOUR
Surroundings

<http://www.makeshapechange.com>

Look at your favourite space or object:

- What is it?
- Where is there geometry present?
- Show how you could make it better?
- One A3 sheet per entry.

Teachers are asked to submit entries on their students' behalf to: jct4competitions@jct.ie or by post to: First-year Graphics Exhibition, RIAI, 8 Merrion Square, Dublin 2, D02Y E68

Closing Date: May 1st 2020

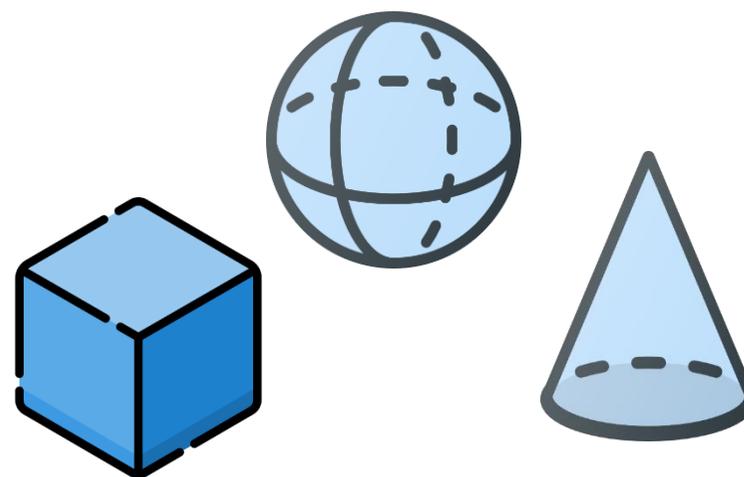
RIAI Junior Cycle for Teachers are delighted to run this initiative in conjunction with The Royal Institute of the Architects of Ireland (RIAI). The RIAI have kindly offered to showcase samples of student entries in their offices in Merrion Square. Schools will be informed in advance if their students work is being displayed.

The **Royal Institute of the Architects of Ireland (RIAI)** have partnered with the **Jct4 Graphics team** to offer an opportunity for First-year Graphics students to have their work exhibited at the RIAI headquarters. More information [here ...](#) Leagan Gaeilge [anseo...](#)

Links which might help in completing this challenge:

A short video animation of various shapes we interact with on a daily basis can be found at <http://www.makeshapechange.com/>

CHALLENGE 6



How many ways can you stack/combine these 3D solids?

Sketch your solutions in 2D and/or 3D. Add colour/shade to your solutions. Perhaps add in a 4th solid of your choice.

Links which might help in completing this challenge:

Watch this [video](#) to help you sketch the 3D solids.



Wood Technology Challenges

CHALLENGE 5



Wood is often used to make cooking utensils and other food preparation equipment

Select one such item of wooden equipment from your kitchen and create a sketch of it.

Suggest one design improvement you would like to make to this item.

Suggest a suitable type of wood to make this item from and give **two** reasons for your selection.

Links which might help in completing this challenge:

To find out more about wooden cooking utensils click [here](#)

CHALLENGE 6

**SHOW
YOUR
TALENT**

Design Challenge

Design an award to be presented to the winner of your school talent show.

Watch the video below which outlines a strategy called “Crazy 8’s”. Use this strategy to brainstorm ideas.

Sketch your final design ideas and create a cardboard model of your design(s).

Links which might help in completing this challenge:

Watch this [video](#) to help you with your design ideas.

This [link](#) will help you to create a model of your design

Technologies teachers ...

These activities are designed and collated for teachers who may have to engage with remote teaching. These activities only offer, as a suggestion, some possible tasks which could be completed by students.

Teachers knowledge of their own students' context should inform their decision around which activities would best engage their students.

We would like to showcase student challenge responses each Friday on our Jct4 twitter page.

If you would like any of your student's responses featured, please send images of this work to the following Jct4 email: michael.lynch@jct.ie



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Engineering



Graphics



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