

An tSraith Shóisearach do Mhúinteoirí



Junior Cycle Applied Technology activities

Classroom activities for the physically distanced classroom for the school year 2020/2021



Introduction



Junior Cycle for Teachers (JCT) is a dedicated continuing professional development (CPD) support service of the Department of Education and Skills. Junior Cycle for Teachers aims to inspire, support and empower teachers in the transformation of Junior Cycle education in Ireland. Responsibility for the four Junior Cycle Technologies subjects (Applied Technology, Engineering, Graphics and Wood Technology) within JCT lies with the dedicated Technologies team, commonly known as JCT4.

In the development of this resource, the JCT4 team aim to create rich learning experiences to complement the Junior Cycle specifications, particularly in the wider context of students and teachers returning to school with COVID-19 procedures in place. The resources created are not designed to be used in a linear fashion, but rather to support the creation of learning experiences that work for individual schools in their individual contexts. Potential links with other subjects and potential to explore these topics in other areas of learning within Junior Cycle are encouraged throughout and again, teachers would be encouraged to adapt and explore these links to suit their own students' and school context.



As you explore this resource, you may identify potential links with other subjects and potential to explore these topics in other areas of learning within Junior Cycle. Please let us know your experience of using these resources on social media via [@JCt4ed](https://twitter.com/JCt4ed) and/or [@JCforTeachers](https://twitter.com/JCforTeachers)

Contents

Page 1 Identifying the starting points of learning

Page 2 Preparation for teaching and learning

Page 3 Learning approaches

Page 4 Key Skills

Page 5 Managing myself

Page 6 Managing information and thinking

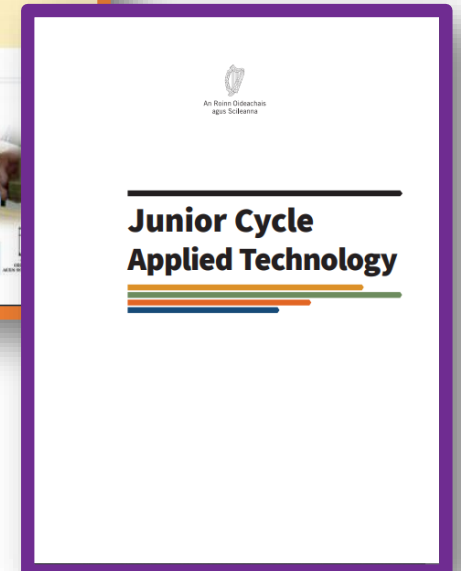
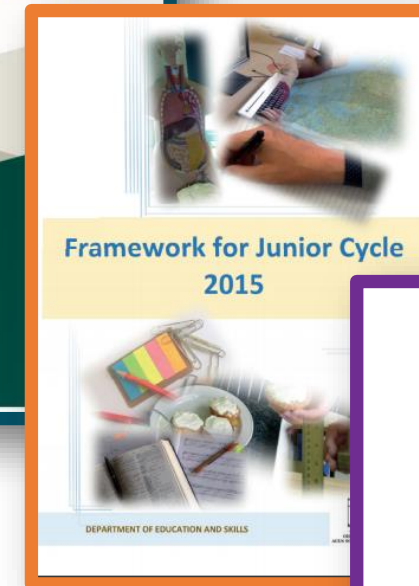
Page 7 Staying well

Page 8 Applied Technology classroom activities

Page 9 Life hack (*suggested First year*)

Page 13 Promoting a tourism attraction (*suggested Second year*)

Page 20 Communication (*suggested Second year*)



Key documents underpinning this resource

Identifying the starting points of learning

Students will have a variety of needs as they return to school and teachers will need to provide learning experiences to meet those needs. Accordingly, teachers will need to be alert to where their students are at; they will need to take time to evaluate students' needs, and may need to and wish to consolidate previous learning before introducing new learning. Key to this is an approach which builds on students' strengths. In that regard, some important questions for schools are:



Adapted from pages 13 and 14

Have I reflected on the learning progress students have made?

Have I identified a range of formative assessment measures to assess the progress that students have made?

Have we as a subject department reviewed subject specifications and identified learning outcomes that are priorities for the return to school?

Have cross curricular learning opportunities been identified and planned collaboratively to maximise learner outcomes?



Preparation for teaching and learning

Building on their assessment of students' learning as outlined above, teachers will make key decisions about what students learn, the sequence in which they learn, the pace at which they learn, and the activities and experiences through which they learn. Teachers and schools are best placed to make these decisions and to exercise the professional judgement and the autonomy they have in this context. The following questions may support teachers to reflect on their preparation for teaching and learning:

Has my lesson planning taken account of collaborative decisions about teaching and learning including decisions about essential learning, the sequencing of learning, the pace at which students learn and the activities and experiences through which they learn?

Do the planned learning experiences provide for social interaction and collaboration between students?

Do the planned tasks assess the learning outcomes or objectives that have been prioritised over a series of lessons?

Are planned learning tasks and activities accessible to all students, including those with special and additional educational needs?



Adapted from pages 13 and 14

Learning approaches

It is essential that, right from the start of the school year, a broad range of active learning experiences is provided for all students. These should include:



Adapted from page 14



Prioritising practical lessons to enable students to demonstrate skills and knowledge developed during engaging with learning from home



Providing learning experiences based on pair work and group work that support student interaction and engagement in meaning-making; this will help in achieving learning outcomes/objectives across the curriculum, particularly in the areas of language, mathematics, business, science and technology and the arts



Integrating digital technologies in a responsive and innovative way into teaching, learning and assessment



Questioning, tasks and student-teacher conferencing; these are practical and effective assessment approaches that will be helpful in identifying the priority areas in which students' learning needs to be progressed

Key skills

In light of the school closure and related health requirements, many schools have already adopted creative and innovative ways to introduce incoming first years to the school. Where students have not had the usual supports when moving from primary to post-primary school, the Key Skills of Junior Cycle such as Managing Myself, Managing Information and Thinking, and Staying Well should be prioritised through the school's induction and wellbeing programmes.

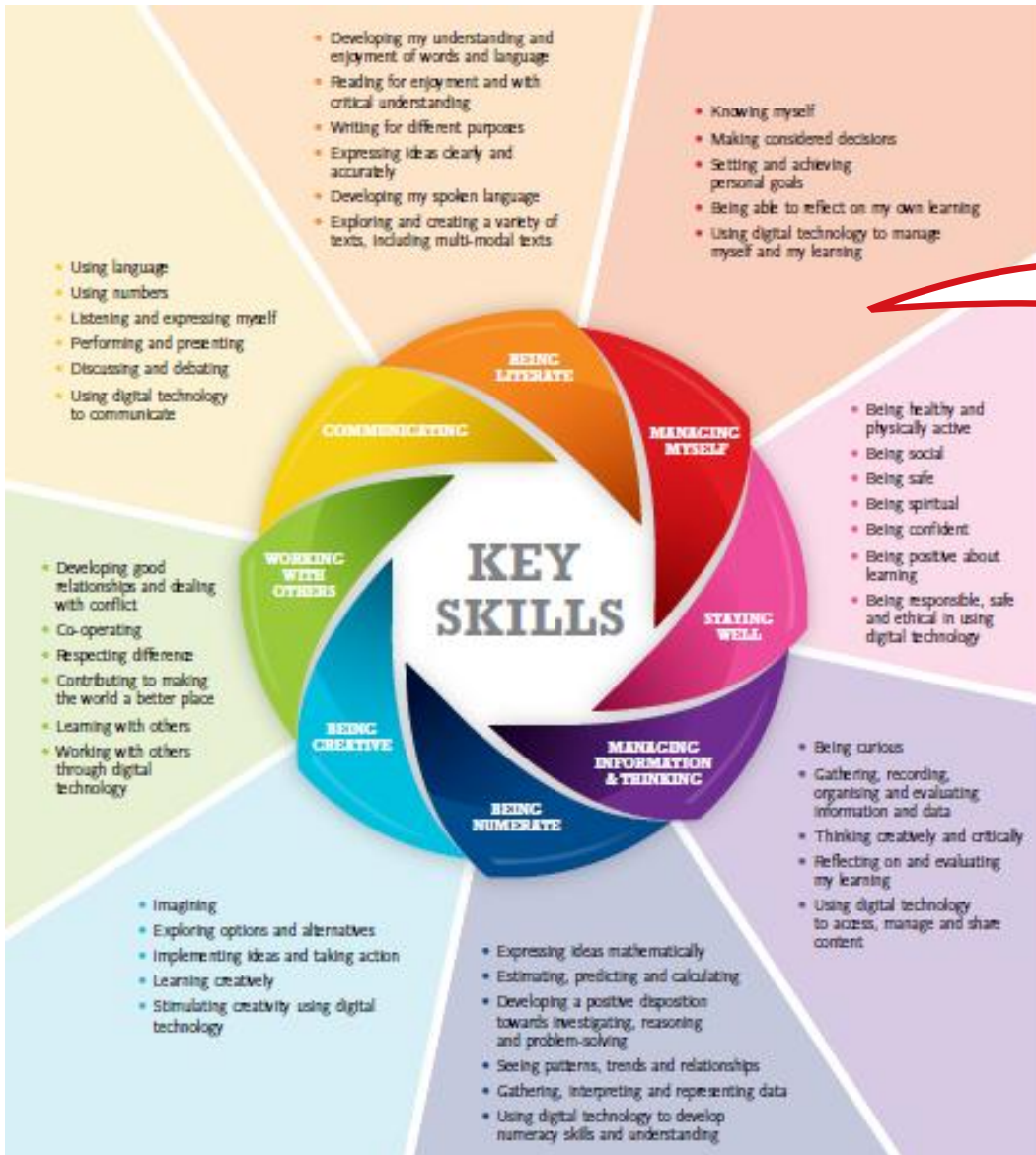


Adapted from Page 10

Managing Myself

Managing Information and
Thinking

Staying Well

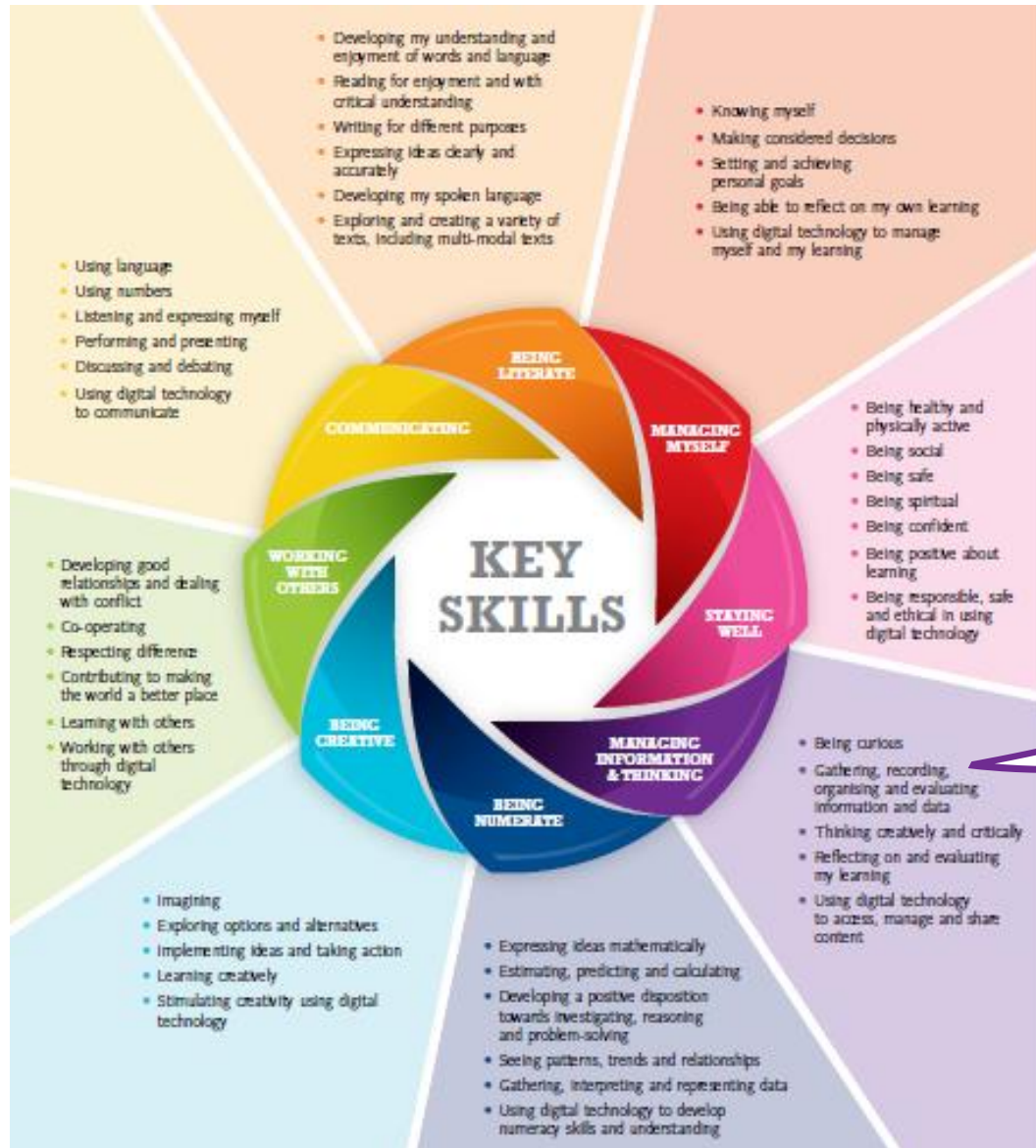


Managing Myself

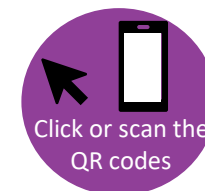
- Knowing myself
- Making considered decisions
- Setting and achieving personal goals
- Being able to reflect on my own learning
- Using digital technology to manage myself and my learning

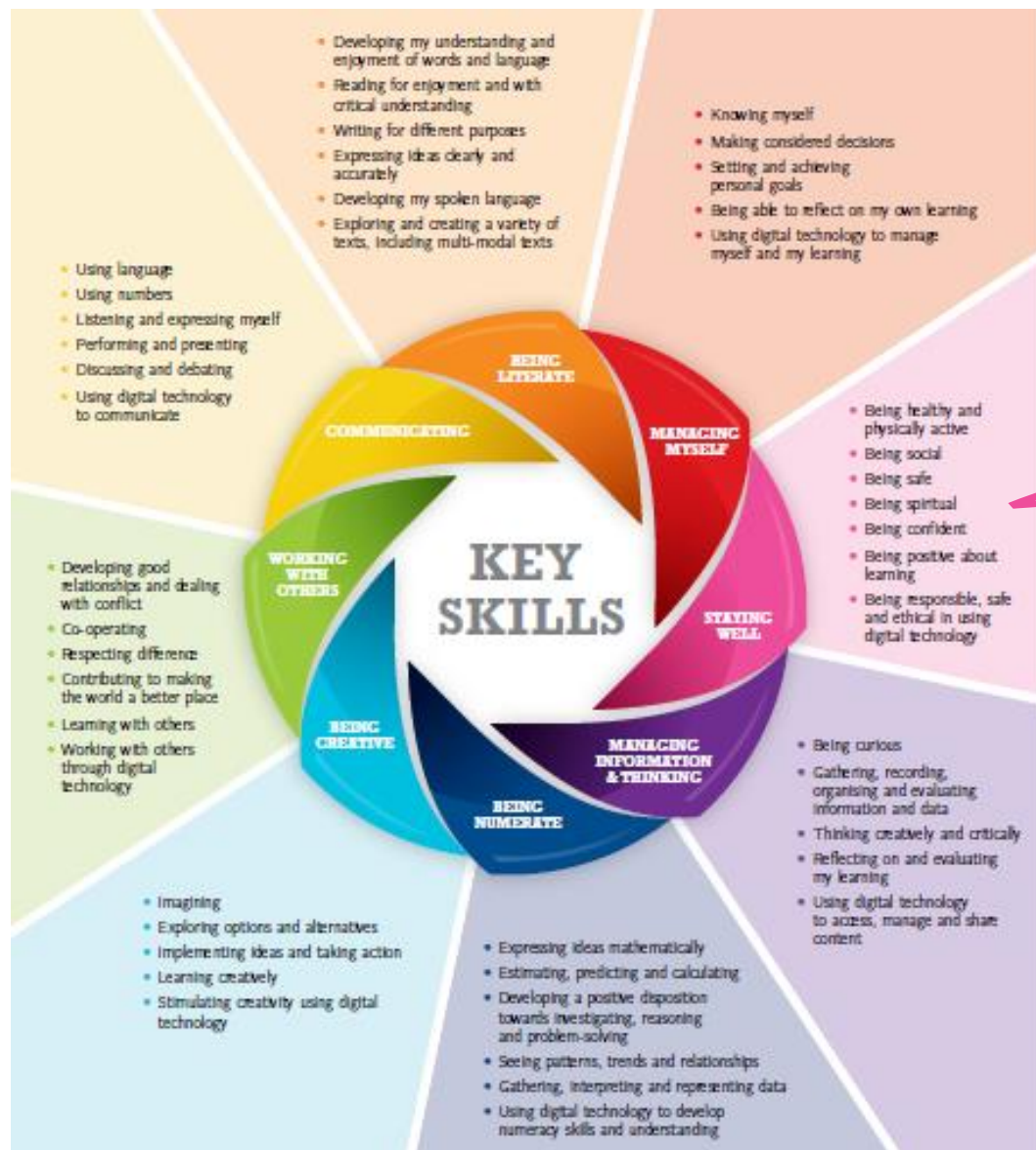


Managing Information and Thinking



- Being curious
- Gathering, recording, organising and evaluating information and data
- Thinking creatively and critically
- Reflecting on and evaluating my learning
- Using digital technology to access, manage and share content





Staying Well

- Being healthy and physically active
- Being social
- Being safe
- Being spiritual
- Being confident
- Being positive about learning
- Being responsible, safe and ethical in using digital technology



Junior Cycle Applied Technology



Scan this QR code for the Junior Cycle Applied Technology specification



The following classroom activities for Junior Cycle Applied Technology aim to develop the Key Skills of **Managing Myself, Managing Information and Thinking** and **Staying Well**. Teachers are best placed to adapt these activities to suit their students' prior learning, local context and needs.

The specification for Junior Cycle Applied Technology focuses on developing students' understanding of, and skills in, the application and impact of technologies in the world around them. This will be achieved through three inter-connected contextual strands: **Principles and practices, Energy and control** and **Technology and society**.

Applied Technology uses an interdisciplinary approach which encourages the integration of the three strands in the teaching and learning of the subject.

The achievement of learning outcomes should be planned in a way that is active and stimulating.

- adapted from the Junior Cycle Applied Technology specification, page 9



Applied Technology

Resource 1: Life hack

Focus: Introduction to Design & Key Skill of Managing Myself

Suggested Year Group: First year



Engaging with this resource:

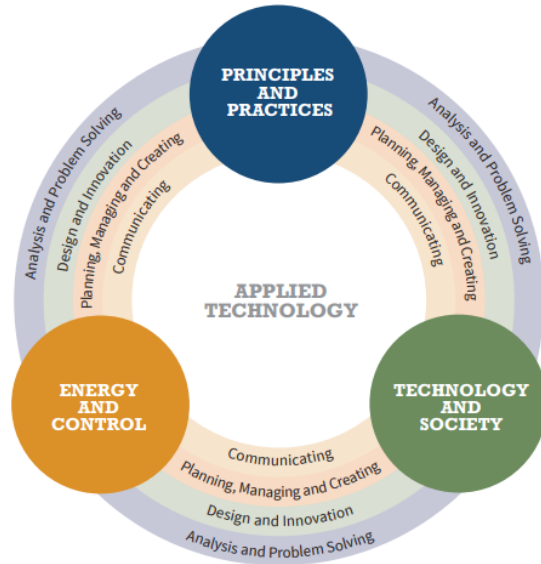
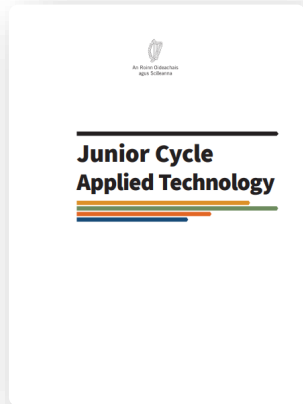
Hyperlinks to supporting resources and websites are included across the range of learning experiences. The QR codes to the right will also direct students to My Design Guide and associated design resources from www.jct.ie which may assist in responding to the learning activities within this resource.



Resource 1: Life hack

Focus: An Introduction to design & developing the Key Skill of Managing Myself

Suggested Year Group: First year



Note to Teachers:

The following resource is designed to align with the Applied Technology specification and learning outcomes. Contained within the resource are suggestions for a range of possible learning experiences, developed across the three strands. The suggested activities can be used in isolation following a period of instruction or as a combination of activities. The depth and time allocated is dependant on a teacher's plan for learning and their students' prior knowledge and understanding. When planning for teaching and learning, teachers should consider the needs and context of their students, in choosing Learning Outcomes (LOs) and the learning activities that will best support the learning. In planning teachers should also consider situations where students may need to engage with learning from home. If students are engaging with learning from home, assessment and reporting procedures may need to be reconfigured to reflect this circumstance.

Explore Strands and Elements:

Possible Strands and Elements which could be explored for these suggested activities are:

Strands:

- Principles and practices
- Technology and society

Elements:

- Analysis and problem solving
- Design and innovation

When deciding on learning outcomes you should consider class context, focus of learning and the action verbs you would like to develop with your students. The above list is merely a suggestion of the strands and elements which are relevant to the outlined activities that follow.

Introduction

A life hack (or life hacking) is any trick, shortcut, skill, or novelty method for accomplishing a task more easily and efficiently. During the COVID-19 lockdown there have been very creative solutions developed for everyday problems. Even life at school has new challenges with new things to remember. In turn, opportunities can arise to organise your day in a better way.

Task

Students are to identify real life problems around them at school/home. Then they will have to generate and evolve their ideas by life hacking to resolve the real life problems.



Examples of life hacks



- 1 Discuss** any **two** of the life hack solutions pictured above. Consider each individual problem and discuss how and why this life hack solution solves the problem. **Explore** any other examples of life hacks which students may have encountered.



- 2 Collaboration** in a physically distanced classroom could be facilitated through the use of a class Padlet to record all the life hack discussion problems/ideas in an online space. [Video: How to Teach Remotely with Padlet](#)

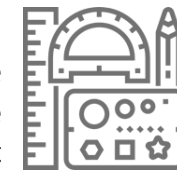
Possible student activities



- 3 Investigate** further individually, one problem that could be solved by creating a life hack. A student could gather and present his/her findings in a mood board style using a presentation application.



- 4 Design sketching** is the best way to communicate ideas to others and further develop solutions to problems. Each student could sketch possible solutions to identified problems. A great starter support is the following YouTube video: [Sketching: Thinking Visually](#)



- 5 Prototype** using various materials (card, paper, recycled materials) to visualise your solution and communicate it to others. Free 3D software could also be used like [Tinkercad](#) to create a virtual model.



- 6 Record and Reflect** – Students are encouraged to record their learning journey from concept to realisation, reflecting on each stage of the process.

Classroom Strategies

The following are suggested alternative approaches to the tasks on page 11 with a focus on digital technologies to enhance teaching, learning and assessment. These tools have been selected as they can also support remote and blended learning.



2 Collaboration suggested tool - **Padlet**

Padlet is a free online tool where you can create an online post-it board that you can share with any student or teacher.

The following two video links will help you get started with Padlet:

[The basics for Educators](#) and [How to Teach Remotely with Padlet](#)

Q: Are there other digital tools students could use to communicate their thinking and understanding in this activity?



3 Investigate suggested tool – **Wakelet**

Wakelet is a free content curation platform. Wakelet allows students/teachers to gather, organise and share multimedia resources (text, images, videos, podcasts) with each other. To find out more about using Wakelet, click on the link to the beginners' video: [How to create a Collection in wakelet](#)

Q: How could students organise and manage their projects in an online space? Is there an alternative platform available to students in school that they could use as an online learning log?



6 Record and Reflect suggested tool – **Adobe Spark**

Adobe Spark is a creative tool that lets students tell their story of the process they went through to solve the problem. There are many options for students to choose from, this introduction video will explain:

[Adobe Spark in the Classroom: Create Videos, Graphics, and Web Stories in Minutes](#)

Q: Students are encouraged to record their learning journey from concept to realisation, reflecting on each stage of the process. Are there other digital tools that students could use to record their learning?

CLICK on the logos below



padlet

wakelet



Adobe Spark

Applied Technology

Resource 2: Promoting a tourism attraction

Focus: Research, communication and realisation skills

& Key Skills of Managing Information and Thinking and Staying Well

Suggested Year Group: Second year



Engaging with this resource:

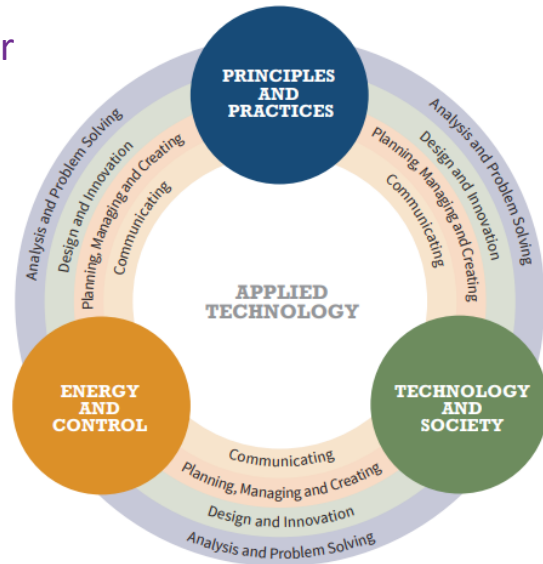
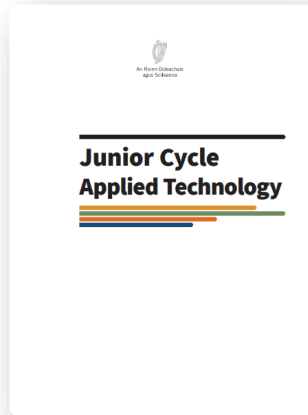
Hyperlinks to supporting resources and website are included across the range of learning experiences. The QR codes to the right will also direct students to My Design Guide and associated design resources from www.jct.ie which may assist in responding to the learning activities within this resource.



Resource 2: Promoting a tourism attraction

Focus: Research, communication and realisation skills & developing the Key Skills of Managing Information and Thinking and Staying Well

Suggested Year Group: Second Year



Note to Teachers:

The following resource is designed to align with the Applied Technology specification and learning outcomes. Contained within the resource are suggestions for a range of possible learning experiences, developed across the three strands. The suggested activities can be used in isolation following a period of instruction or as a combination of activities. The depth and time allocated is dependant on a teacher's plan for learning and their students' prior knowledge and understanding. When planning for teaching and learning, teachers should consider the needs and context of their students, in choosing Learning Outcomes (LOs) and the learning activities that will best support the learning. In planning teachers should also consider situations where students may need to engage with learning from home. If students are engaging with learning from home, assessment and reporting procedures may need to be reconfigured to reflect this circumstance.

Explore Strands and Elements:

Possible Strands and Elements which could be explored for these suggested activities are:

Strands:

- Principles and practices
- Technology and society

Elements:

- Analysis and problem solving
- Planning, managing and creating

When deciding on learning outcomes you should consider class context, focus of learning and the action verbs you would like to develop with your students. The above list is merely a suggestion of the strands and elements which are relevant to the outlined activities that follow.

Introduction

The past summer, many of us became familiar with the travel buzzword 'staycation'. The word itself promotes the idea of having a holiday locally rather than going abroad. A staycation can be for a short period of time or involve day trips to local attractions.

Task

Consider how you could market a tourist attraction of your choice to potential tourists.



Currently on
STAYCATION



- 1 Discuss and Explore** with your class group what makes for an effective advertisement. What advertisements could you use to stimulate a discussion?



Consider our research strategies to help your students learn. Scan or click the QR code below to find out more.



Framing
Questions



Capturing
Thoughts



Observing
User Needs

Research strategies on www.jct.ie

Possible student activities

- 2 Collaboration online** could be facilitated with [Mentimeter](#) to record the class groups ideas and thoughts in relation to activity 1.
[Video: Tools for online teaching](#)



- 3 Investigate** a local tourist attraction, create a mood board full of images that will help you to identify what this attraction has to offer. Interview a tourist guide to find out more. Are there any other ways for your students to find out more?



- 4 Sketch:** Students sketch their design thinking to promote their chosen tourist attraction. Can they consider an even better design?

Is there a better design that you need to consider?

Pair work: Could your students view this work in digital format and assess it using agreed success criteria?

Introduction

Over this summer, many of us became familiar with the travel buzzword 'staycation'. The word itself promotes the idea of having a holiday locally rather than going abroad. A staycation can be for a short period of time or involve day trips to local attractions.

Task

Consider how you could market a tourist attraction of your choice to potential tourists.



- 5 **Create a prototype** (physical or digital) of your advertisement display to learn more about how effective it is. Use card material or free 3D software such as [Fusion 360](#)

Online group work: Evaluate prototype solutions. You may find our sample [evaluation sheet](#) useful in generating your own evaluation sheet for this task.

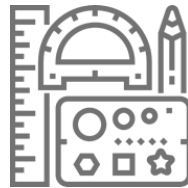


- 6 **Create** a multi-media presentation or a poster to market your tourist attraction.

Your students could create their own poster by visiting www.canva.com or by scanning/clicking the QR code attached.



Possible student activities



- 7 **Design and make** an advertisement display to promote your tourist attraction.

Q. Is there a way to incorporate electronic or mechanical features?

Q. Is there an opportunity to demonstrate new skills using digital technology?

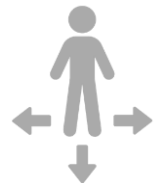


- 8 **Record and Reflect** on your thinking as you learn. Students could use an online reflection journal to capture their thoughts and to help them with their next steps.

'[My Design Guide](#)' offers useful reflection questions for students to consider at different stages of their learning journey.



Stay safe in class



Avoid unnecessary movement



Ensure that there is good ventilation

Applied Technology

Resource 3: Communication

Focus: Communication in Applied Technology & Key Skill of Managing Information and Thinking

Suggested Year Group: Second year



Engaging with this resource:

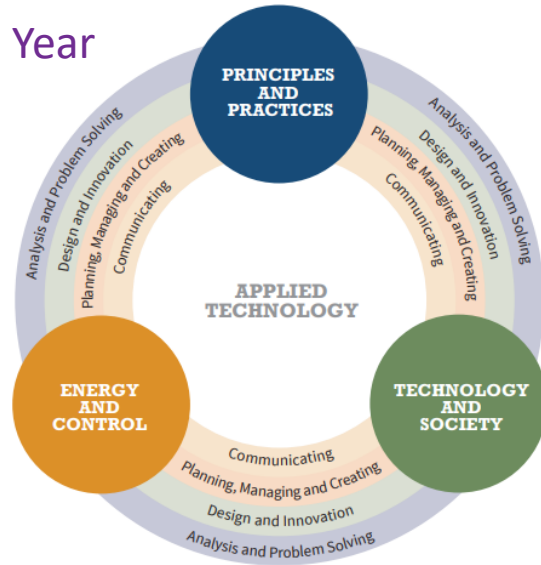
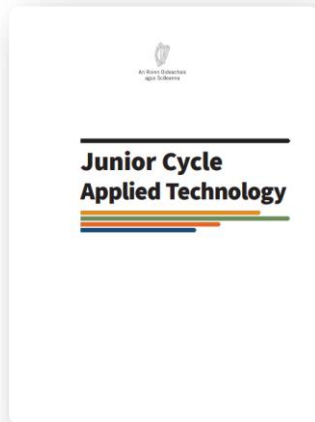
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Resource 3: Communication

Focus: Communication in Applied Technology & developing the Key Skill of Managing Information and Thinking

Suggested Year Group: Second Year



Note to Teachers:

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Explore Strands and Elements:

Possible Strands and Elements which could be explored for these suggested activities are:

Strands:

- Energy and control
- Technology and society

Elements:

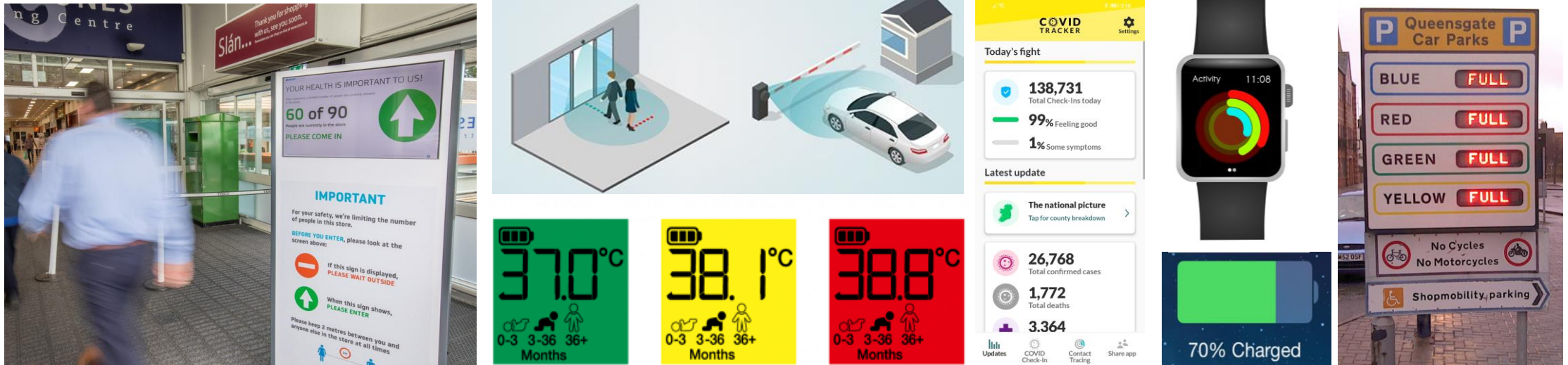
- Design and innovation
- Communication

When deciding on learning outcomes you should consider class context, focus of learning and the action verbs you would like to develop with your students. The above list is merely a suggestion of the strands and elements which are relevant to the outlined activities that follow.

Resource 3: Communicating Information

In today's world we have access to large amounts of information. Products, services and spaces are all designed to communicate technical information clearly. Simple techniques can be used effectively to communicate this information such as using colour, lights, sounds, symbols and graphics.

How we communicate information and break it down so that it is easily understood, is both interesting and challenging.



Possible Introduction Activities



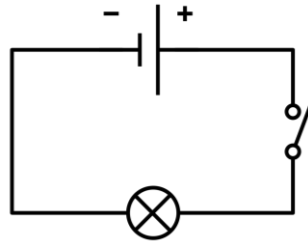
- Consider each reference image above and discuss how the information is communicated.
- Create/Research **three** products and services which you use and discuss how they communicate information to a user. Generate a short digital report to compile your thinking.
- Choose **one** example from your list. How might we improve this design so that more people can understand the information?

Resource 3: Communication in Applied Technology

In Applied Technology a range of techniques are used to communicate our thinking, information about our design ideas and our understanding of the world around us. All this technical information is designed to be clear and easily understood by all users. Just some examples of how we communicate information in Applied Technology are shown below.

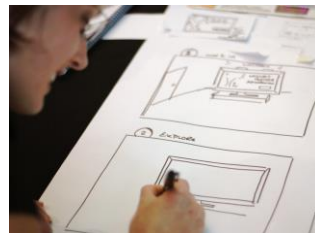
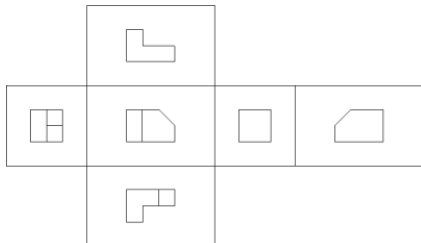
Communication using symbols

Symbols are used to communicate how electricity flows through different components in a circuit.



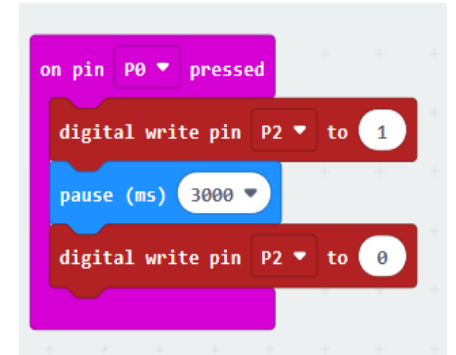
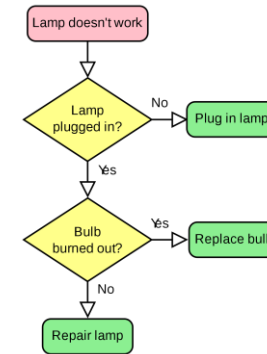
Communication using drawing

In Applied Technology drawing is also an important communication skill. Technical drawing is used to show detailed views of our design ideas or an existing product or space. We can also use freehand sketching to communicate our thinking as a design idea develops.



Communication using flow charts

Techniques like flow charts are used to break down an activity or a project into steps. A flow chart uses shapes and arrows to show the stages and sequence of an activity. We can also use a flow chart to show how to program a device.



Possible Class Discussion:



Q: Can you think of more examples of how and where information is communicated in Applied Technology?

Q: How can you present your findings?

Resource 3: Communication in Applied Technology – Suggested theme and student activities

An event is being organised in your local club or community. Organisers need help in designing an event which is safe for people to move through and where all necessary information is clearly communicated.

Possible student activities



- Discuss a list of questions to consider in organising your chosen event. What information needs to be communicated?
- The use charts and graphics to communicate their responses may be useful.

Q: Are there other strategies that students have used to conduct primary research?



- Record and Reflect – Document the progression of your work at various stages using different formats such as digital or written.
- Reflect on the following: What have I learned about communicating? What have I learned about communicating technical information?

Q: What other questions could students consider and reflect upon in this task?

Q. Are there other activities or learning experiences which you could use do develop your students understanding of communication?

Tip: The Discover Phase questions in My Design Guide might prove useful in generating research and investigation questions.



- Create an idea for an app to support people in booking tickets for the event.
- Sketch sample app screens and consider how to show the booking stages, sequence of information and the decision stages within the app.

Q: Are there other digital tools students could use to communicate their thinking in this activity?

Resource 3: Communication in Applied Technology – Suggested theme and student activities

An event is being organised in your local club or community. Organisers need help in designing an event which is safe for people to move through and where all necessary information is clearly communicated.

Possible student activities



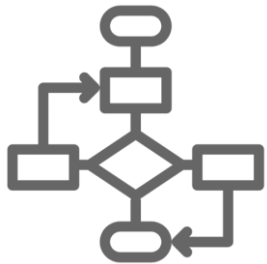
- Draw a map or plan view of the existing space. You can also choose to design and draw your own space/event.
- Make sure to consider scale and measurements. Think about how people enter, exit and move around the space.

Q: Are there other techniques students could use to communicate the plan view of their chosen space or their design idea for an event?



- Design an entry system which can track the number of people entering and leaving the event. Include details of any mechanical or control components which are used in your design and why you have chosen to use them.
- Create a prototype model of your entry system.

Q: What other questions could students consider in designing an entry system?



- Create a guide or flow chart to help people move through the event.
- Can you use technical information and graphics so the information is easier to understand?

Q: Are there other digital tools students could use to communicate their thinking and understanding in this activity?

Q. Are there other activities or learning experiences which you could use to develop your students' understanding of communication?

Tip: The Discover Phase questions in [My Design Guide](#) might prove useful in generating research and investigation questions.



Junior Cycle Applied Technologies activities

Classroom activities for the physically distanced classroom in the school year 2020/2021

These resources were designed and collated in response to the [‘Returning to school - Guidance on learning and school programmes for post-primary school leaders and teachers’](#) and have a focus on the Junior Cycle Key Skills of Managing Myself, Managing Information and Thinking and Staying Well from the [‘The Framework for Junior Cycle 2015’](#).

These activities only offer, as a suggestion, some possible tasks which could be completed by students to engage with these Key Skills in the Applied Technology classroom.

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