



Webinar 2019 Activities

This resource was developed as part of our webinar, “**Engaging with the Applied Technology Specification**”, which took place on the 03/04/2019. All materials used during this workshop can be viewed in the Technologies section of www.jct.ie within the CPD Workshops tile.

Website Link:

https://www.jct.ie/technologies/cpd_supports_applied_technology_elective_workshops

During this webinar, attendees considered planning a unit of learning through the lens of energy and control. Attendees also observed a range of learning experiences that were developed as part of a unit of learning.

What is included in this PDF?

1. Sample unit of learning

Included is a sample unit of learning developed by the Applied Technology team. Contained in the plan are the learning outcomes and key learning activated by engaging with the learning experiences below.

2. Learning experiences

Included are the learning experiences developed by the JCT4 Applied Technology team. It is important to make note of the learning outcomes, key learning and the action verbs in the unit of learning plan which contextualise these learning experiences.



Link to
Resource

Note: It is recommended that you watch the webinar in conjunction with using this resource to contextualise the resource and to develop a better understanding of how this resource can enhance student research skills.

EXPLORING LIGHTING TECHNOLOGY

LEARNER EXPERIENCES

AGE/STAGE 
1st Yr - OCTOBER

PRIOR KNOWLEDGE

- INTRODUCTION TO MATERIALS
- INTRODUCTION TO PROTOTYPING
- AWARENESS OF CONTROL SYSTEMS AT HOME, SCHOOL, COMMUNITY
- SUSTAINABILITY
- BASIC RESEARCH AND ANALYSIS
- SOME STUDENTS HAVE DONE PROGRAMMING / CODING IN PRIMARY

BROAD AREA OF LEARNING

- INTRODUCE NEW DISCIPLINARY SKILLS
- FURTHER DEVELOP RESEARCH AND COMMUNICATION SKILLS
- INTRODUCTION TO BASIC ELECTRONIC COMPONENTS
- INTRODUCTION TO PRINCIPLES OF BASIC CONTROL SYSTEMS

POSSIBLE LEARNING OUTCOMES

1.8 1.9 2.1 2.3 3.4 3.8
1.10 1.11 2.2 2.8 3.9

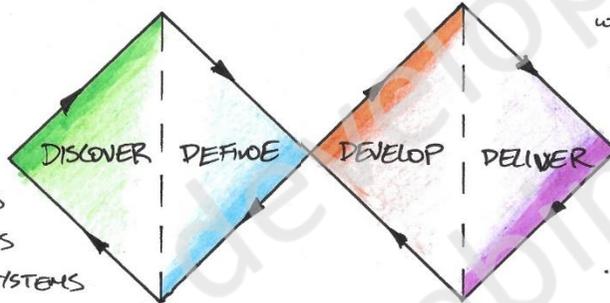
CHOSEN LEARNING OUTCOMES

- 2.1** INVESTIGATE RELATIONSHIPS BETWEEN THE INPUTS, TRANSFORMATIONS AND OUTPUTS OCCURRING WITHIN SIMPLE CONTROL SYSTEMS.
- 3.4** EXPLORE APPLICATIONS OF TECHNOLOGY IN LOCAL CONTEXTS.
- 2.9** COMMUNICATE TECHNICAL INFORMATION IN APPROPRIATE FORMS.
- 1.10** EXECUTE A PLAN USING APPROPRIATE TOOLS, MATERIALS AND PROCESSES.
- 1.11** DEMONSTRATE ADHERANCE TO RECOGNISED HEALTH AND SAFETY STANDARDS.

* A CONTROL SYSTEM IS WHERE COMPONENTS ARE USED TO MODIFY THE BEHAVIOUR OF A SYSTEM, SO IT BEHAVES IN A SPECIFIC WAY

KEY LEARNING

- UNDERSTAND RELATIONSHIPS BETWEEN INPUTS, TRANSFORMATIONS AND OUTPUTS OCCURRING IN SIMPLE ELECTRONIC CIRCUITS. **2.1**
- RECOGNISE CONTROL IN A LOCAL CONTEXT. **2.1, 3.4**
- DEVELOP COMMUNICATION SKILLS THROUGH AND INTRODUCTION TO CIRCUIT DIAGRAMS. **2.9**
- DESIGN, CREATE AND EVALUATE A SIMPLE LIGHTING SOLUTION USING THE BASIC PRINCIPLES OF CONTROL. **1.10, 1.11, 2.9, 3.4**



ASSESSMENT & REPORTING

CLASS DISCUSSION PEER FEEDBACK
TEACHER OBSERVATION PRODUCT WRITTEN ASSESSMENT
DIGITAL/MECHANICAL SIMULATION

RESEARCH TASKS

- EXPLORE SIMPLE LIGHTING SYSTEM
- EVOLUTION OF LIGHTING COMPONENTS
- LOCAL THEATRE
↳ INTERVIEW
- INVESTIGATE SC/LE PROJECTS.
- PRESENT FINDINGS IN ANY APPROPRIATE MEDIA
- ELECTRONIC CONTROL IN SCHOOL - DOORS
WINDOWS
FIRE
CURTAINS
- LINK BETWEEN ENERGY SAVING AND CONTROL
- CONTROL AND USER NEEDS



MANUFACTURE

- SIMPLE LIGHTING SOLUTION
PRODUCT PROCESS
- CUT, STRIP, SOLDER WIRE
- CUT ACRYLIC, FINISH.
- ASSEMBLY
- TESTING AND EVALUATION

DELIVER

SIMULATION

- CIRCUIT SIMULATION SOFTWARE TO TEST SIMPLE LIGHTING CIRCUITS
- MAKE CIRCUIT USING CROCODILE CLIPS AND SIMPLE COMPONENTS
- EXPLORE FUNCTION OF COMPONENTS

COMMUNICATION

- DRAW CIRCUIT DIAGRAM
- DRAW AND EXPLAIN SYMBOLS
- SKETCHES, NOTES AND DRAWING OF LIGHTING SOLUTION
- PITCH LIGHTING IDEAS
↳ EDISON ROLE PLAY

EVIDENCE OF LEARNING

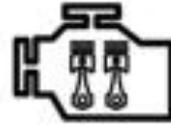
- ENGAGEMENT IN ACTIVITIES
- RESEARCH REPORT / PRESENTATION IN ANY APPROPRIATE MEDIA
- CIRCUIT DIAGRAM - SIMULATION AND HAND DRAWN
- SUMMATIVE TEST ON COMPONENTS
- LIGHTING SOLUTION
- EVALUATION OF PRODUCT AND PROCESS

Matching Exercise

Input

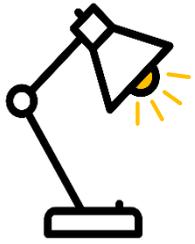


Process



Output



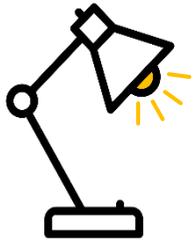


Lighting Solutions



Target audience:	
Purpose:	
Safety considerations:	
Materials:	
How is it controlled?	
One reason we like it:	
One reason we don't like it:	

Sample - developed for
use with webinar 2019

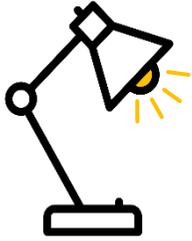


Lighting Solutions



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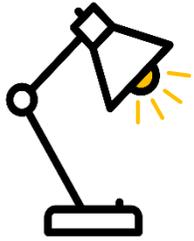


Lighting Solutions



Target audience:	
Purpose:	
Safety considerations:	
Materials:	
How is it controlled?	
One reason we like it:	
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Lighting Solutions



Target audience:	
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Research project

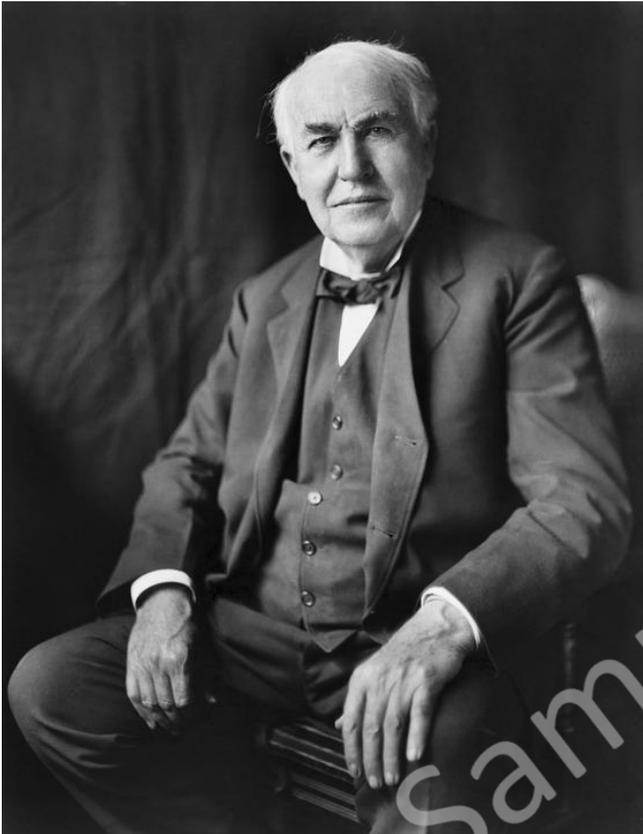


Investigate theatre/stage lighting under the following headings.

- Why is lighting important?
- Who controls the lights?
- How are the lights controlled?
- Identify 3 Input/Process/Outputs.

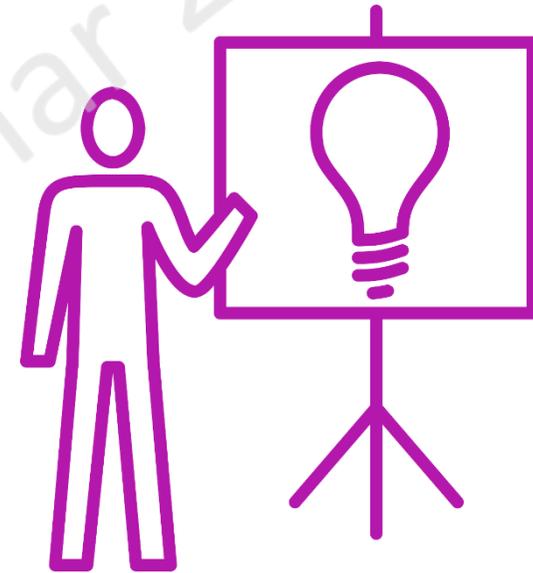
Sample - draft - intended for use with webinar 2019

Thomas Edison Sales Pitch



Thomas Edison is looking to invest in a young inventor.

Make a 1-minute pitch to sell your lighting solution idea.



Design Brief:

Design and create a bedside light that would encourage a young person to read at night time.

