



Sample unit plan

This resource was developed as part of a Engineering webinar which aired on the 30th March and can be viewed on jct.ie within the CPD supports tile under the elective workshops tab.

Webinar Link: https://www.jct.ie/technologies/cpd_supports_engineering_elective_workshops



This webinar entitled “*Goal-orientated problem solving in the Engineering specification*” focused on how a teacher developed with a specific area of learning in mind, while also using Action Verbs to design the learning experience. Throughout the webinar the teacher involved discusses the thought process which went into the teaching and learning of the unit.

What is included in this PDF?

1. *Sample unit of learning*

Included is the sample unit of learning developed by the teacher. Throughout the webinar this plan is developed to emulate the planning process that the teachers went through when developing the unit.

A big thank you to the teachers involved, for making these resources available to the JCT4 team.

Note: It is recommended that you watch the webinar in conjunction with using this resource to contextualise the resource and make a better connection between how the plan was developed.

ENGINEERING DIGITAL PLANNING TOOL

CLASS GROUP:

2nd Years

UNIT: Investigating a Crane/Model Making

CLASS TEACHER:

Trevor Galvin

TERM: **Two** START DATE: 24/02/2020 DURATION: **2 weeks (6 Lessons)**

REFLECTION/NOTES:

Click or tap here to enter text.

IDENTIFYING KEY LEARNING

2nd Year students who have prior experience of researching inventors, creating cardboard models and presenting to their peers in 1st Year.

Learning Outcomes and Key Learning

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

2.2 evaluate the factors that influence design

2.12 communicate their design decisions using suitable media

3.5 investigate the impact of mechatronics on the environment and society

3.8 build and test a basic mechatronic system with specific inputs or outputs

Key Learning:

Introduce Students to Model building using Technik. Enquire how an area of Engineering may be applied to their model part and highlight any prior knowledge they may have.

Researching Engineering principles behind the area they have investigated.

Researching the area investigated using the “why” for such things such as the materials, mechanisms, structures etc

Link the use of this Engineering area to everyday life Incorporate model making to allow students to show their understanding of its use in everyday life.

Introduce the students to two forms of presentation media to explain their findings to their peers.

IDENTIFYING ASSESSMENT METHODS

Engage - enter into or become occupied by an activity or interest; to attract or hold interest and attention

Evaluate - collect and examine evidence to make judgements and appraisals; describe how evidence supports or does not support a judgement; identify the limitations of evidence in conclusions; make judgements about the ideas, solutions or methods

Communicate - use visual, gestural, verbal or other signs to share meaning or exchange information; interaction between sender and recipient; both work together to understand

Investigate - observe, study, or make a detailed and systematic examination, to establish facts and reach new conclusions

Build - construct by putting parts or material together

Test - establish the quality, performance, or reliability of something

Evidence of Learning

- Creation of the crane part
- Use of a 'learner log' sheet to collate prior knowledge and research findings
- Group discussion with their peers
- Group discussion with the Teachers
- Teacher feedback
- Peer feedback
- Creation of a Model
- Use of PowerPoint or a mood board to show their findings.
- Presenting of their findings to the class

IDENTIFYING LEARNER EXPERIENCE

Strategies/Methodologies

Think/Pair/Share

Group work

Teacher feedback

Peer Feedback

Teacher Demonstration

Presentation

Model Making

Resources

Workshop

Learner Log

Computer Room

Technik Set

Learner Experience

Click or tap here to enter text.



CLASSROOM APPROACH

- Group work to solve a problem in putting together the given parts using a list of instructions.
- Group discussion (passive) on the working part of the crane designated to them.
- Spider diagrams to explore their previous knowledge of the Engineering area they are working on.
- Think/Pair/Share of the spider diagrams to broaden their understanding of the Engineering area.
- Use of Google to research the area with the use of leading questions.
 - Use of class discussions/forum to explore each area use in everyday life.
- Use of Google to research each area use in everyday life.
 - Creation of a model (cardboard, Lego, Kinex, Mechano) to show the Engineering area uses in an alternative environment to the crane.
- Filling in all of the spider diagrams and research in a “learner log”.
- Presentation of the student’s findings using PowerPoint or a Mood board