

Outcomes

A student will:

- explore the steps involved in the process to satisfy a design brief, need or opportunity
- test a range of materials, components, tools and equipment to determine the appropriate technologies needed to make products, services or environments, for example a moving vehicle
- experiment with materials, tools and equipment to refine design ideas, for example considering the selection of materials and joining techniques to suit the purpose of a product
- develop alternative design ideas and considering implications for the future to broaden the appeal and acceptance of design ideas
- evaluate the suitability of materials, tools and equipment for specific purposes
- work safely, responsibly and cooperatively to ensure safe work areas, for example the safe use of equipment when making a water-resistant, floating craft or a model of an environmentally sensitive outdoor shelter
- match material and joining techniques to the design intention, for example accurately cutting and sewing the fabric pieces to make a community banner or joining components to produce an electric circuit
- outline the planning and production steps needed to produce a product, service or environment using digital technologies
- reflect on planned steps to see if improvements can be made

Content

Materials and technologies specialisation

Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (ACTDEK023)

Producing and implementing

Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions (ACTDEP026)

Investigating and defining

Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)

Generating and designing


Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)

Evaluating

Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027)

Collaborating and managing

Develop project plans that include consideration of resources when making designed solutions individually and collaboratively (ACTDEP028)

Resources			
Various Handouts, loose parts materials (boxes, foil, straws, pop sticks, tooth picks etc), videos, books, K'Nex boxes			
Week	Content	Resources	Registration & Annotation
1	<p>Content</p> <p>Introduce the new topic for the term – Design and Engineering</p> <p>Explain the Engineering Design Process – Use the Poster and hang in the classroom for reference throughout the unit.</p> <p>Explain Design – is the planning and drawing of the idea and Engineering – is the creating/building .</p> <p>Activity: Students in partners - work together to build a bridge, levers or Pulleys or gear system using the instructions.</p> <p>Students build replicas of real-world machines to gain an understanding of the principles that make them work.</p>	<p>Resources</p> <p>Engineering Design Process Poster – www.twinkl.com</p> <p>K'NEX Boxes</p> 	<p>Registration & Annotation</p>
2	<p>Review Working in a team from last session</p> <p>Discuss challenges and successes with building</p> <p>Mix groups and have students work with someone different to expand their skills and not rely on their friends to help them.</p> <p>Students to have one more week to build using the instructions.</p>		<p>Photographic evidence of students working and of their finished designs.</p>

7 - 10

Make a percussion Instrument

Introduce task – To research, design and construct a percussion instrument, documenting your technology processes in a design portfolio.

Session 1

Investigate (using the internet) how percussion instruments work, are made, materials to use, sketch and label a diagram of your design.

Record all findings and hand in work to be marked.

Session 2 and 3

In partners choose one of the instruments to be engineered

Using the design, construct your percussion instrument

Session 4

Share percussion instruments with the class

Enjoy a biscuit while your designs are showcased to the class

Evaluate your progress of the design process

Design portfolio

Project management checklist		✓
1. Investigation		
Find out how percussion instruments work.		
Find out how percussion instruments are made.		
Explore and test materials, tools and techniques that will help you make your instrument.		
Record notes and sketches of your investigations about instruments, materials, shapes and construction methods.		
2. Design (ideation)		
Create a design for a percussion instrument, including labelled drawings showing how you will make it.		
3. Production		
Construct your percussion instrument.		
4. Evaluation		
Evaluate your progress and the design process.		

Checklist and observation.

Assessment

Testing & Evaluating


- Children present projects to class
- Evaluate design ideas, processes and solutions, based on criteria for success
- Best ones voted to present at Assembly


Reflective writing


- What technology did you learn about in this unit?
- Critique your design or model.
- How might you help others know more about technologies in Australia?
- How well did I participate in this unit?
- What pieces of work are you most satisfied with?
- What questions do you have about the topic so far?

Photographs, Project design booklets, self-evaluation and peer evaluations

Design Technology Evaluation


During this unit we learnt how to 

We worked as a team by 

We were really pleased with 

We had some problems like

We sorted them out by

Next time we would 

By

