

# D&T

## DESIGN & TECHNOLOGY / HANGARAU NEWSLETTER



Ki te kahore he whakakitenga ka ngaro te iwi.

# STEM

Science, Technology, Engineering & Maths. **What is it about ?**

### Welcome / Haere Mai

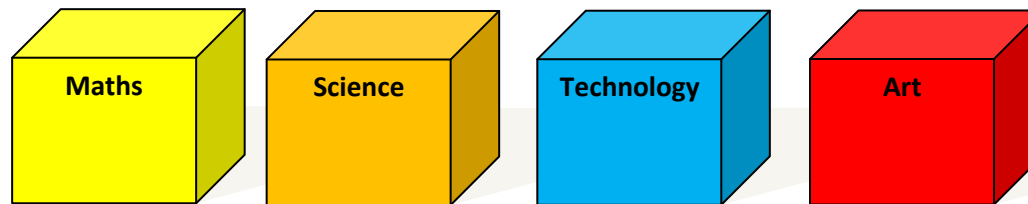
In Technology we are building opportunities that encourage our students to transfer their knowledge and skills from all curriculum areas, particularly through STEM subjects [Science, Technology, Engineering and Maths]. This edition we bring you some examples of how that is developing.

We also bring you this terms 'Tech All Stars'.

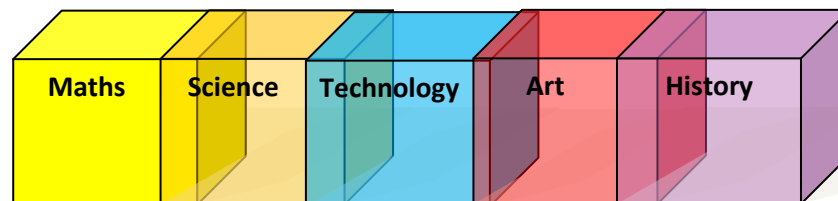
If you have any feedback on this newsletter please e-mail us at:  
[tonitippett@stpetersgore.school.nz](mailto:tonitippett@stpetersgore.school.nz)

**'We believe in D&T'**

Students tend to keep what they learn in a 'box'.

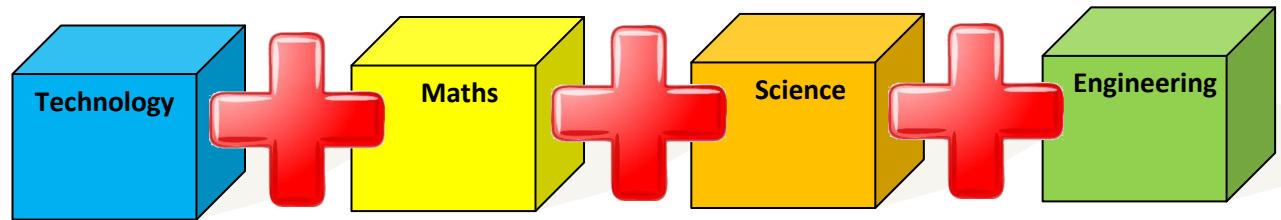


In Technology we want them to **'fuse'** their knowledge and skills from all subjects together. This makes learning more real and **connected**. Science, Engineering and Math are three subjects that we use and apply in Technology all the time, we apply knowledge and skills from these subjects in our project work.



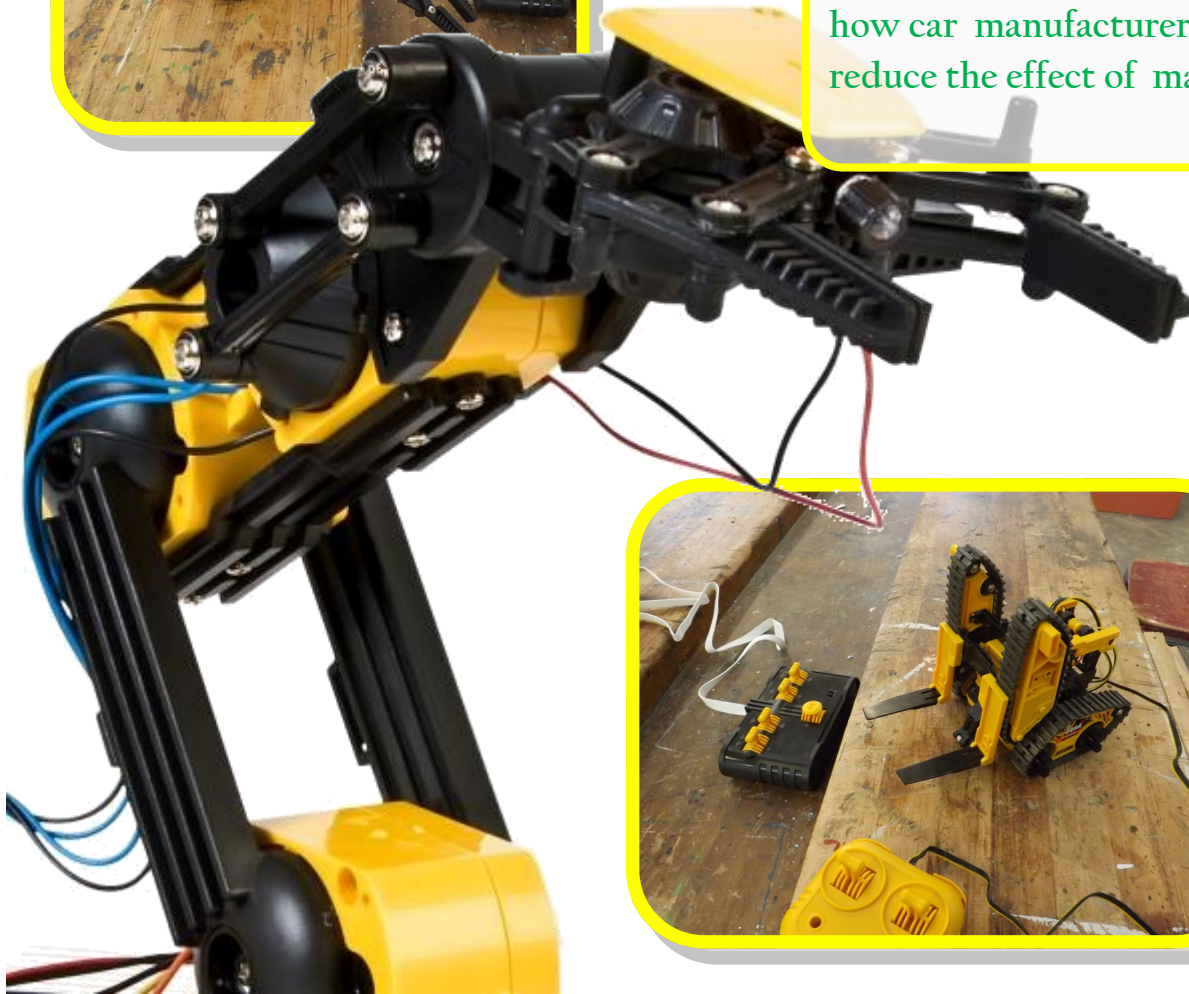
**We want our students to actively use their knowledge and skills from all areas of the curriculum when they are working in Technology.**

# Fusing.....

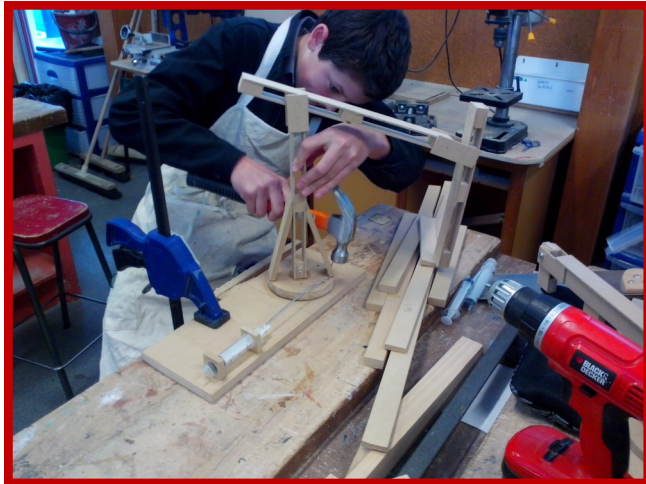


In Year 8 Product Design & Making our students are learning about the use of robotics and machines in manufacturing, within our context of sustainability. They have been watching a video showing how cars are made using robots and how car manufacturers are aiming to use 'cleaner' technologies that reduce the effect of manufacturing on our environment.

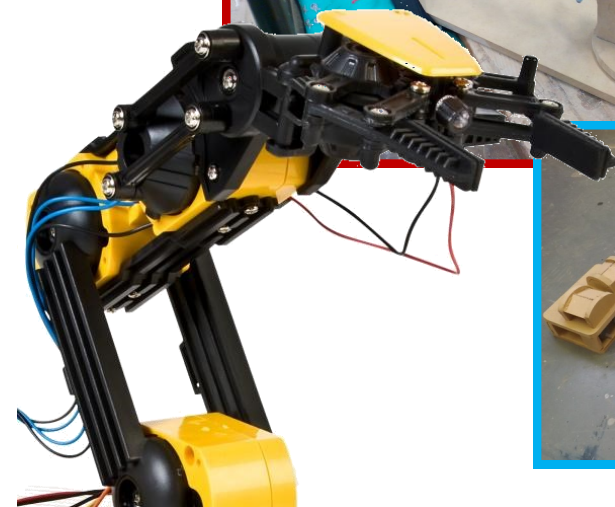
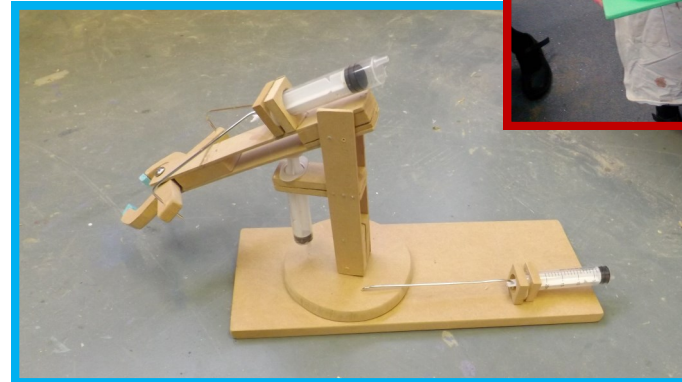
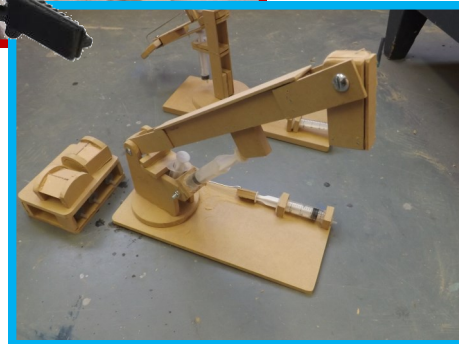
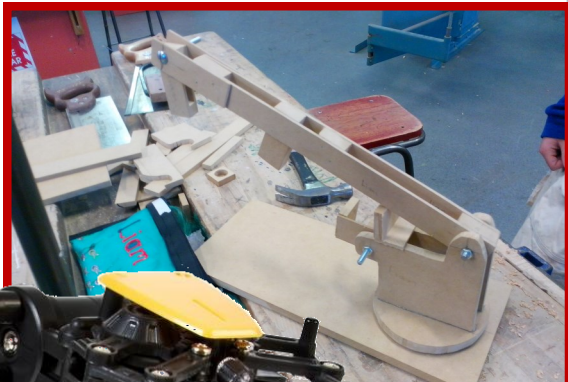
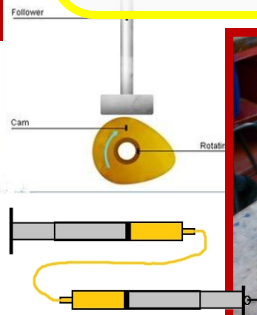
Our new robotic arm and fork lift machine give students an insight into 21st century manufacturing methods.



# Fusing.....

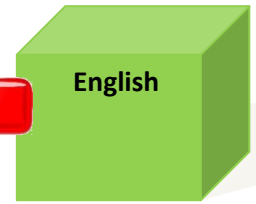
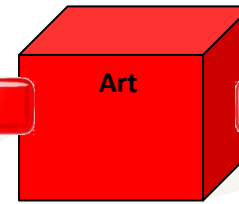
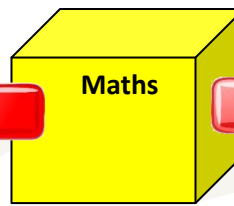
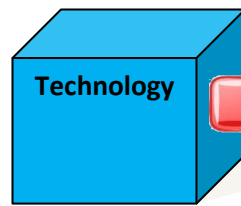


Within their Technology project students have been set the challenge to make a machine, using pneumatics or hydraulics to perform a task. They are learning about different types of mechanisms and types of motion to help them in this challenge. All levels of challenge were picked up. The 'Easy' Challenge involved making the given design; the 'Medium' level challenge was to adapt the design and the 'high' level challenge was to create their own design. Their mechanical arms had to be able to pick up marbles and move them from one place to another. Here are some in the making.....





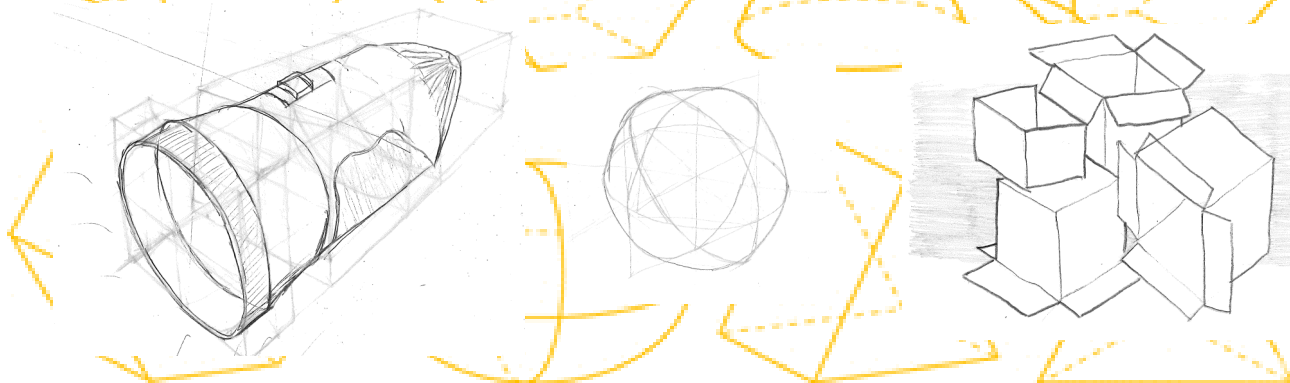
# Fusing.....



Visual Design & Communication links well with elements of Mathematics. In Year 8 and 9 our students have the opportunity to develop and use their geometry knowledge and skills, and apply them to the design of products. Every product we use each day has 2D shapes and 3D forms within them. Once our students understand how to construct them through sketching and technical drawing they can connect and rotate them to form their own product designs. They are then able to communicate their design ideas more effectively to show us what they are thinking. We also use other mathematical skills such as; measurement, angles, area and nets.

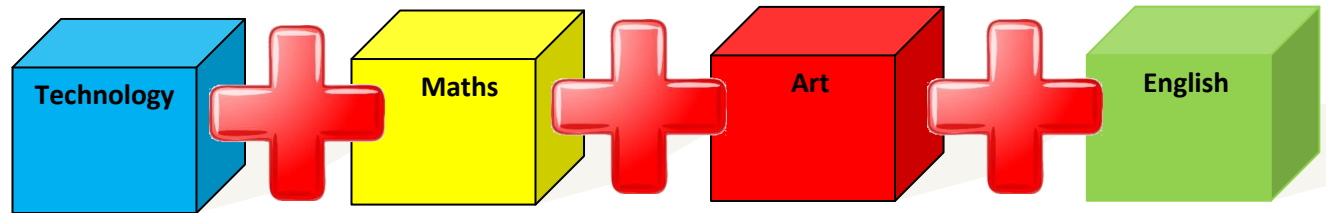
We also use and develop our students English knowledge and skills..... To design a product students need to be able to evaluate their ideas against some criteria to help them work out which ideas are suitable and which are not. To do this students are taught how to analyse existing products to identify criteria for good design and how to write evaluations of existing products and their own design ideas.

## Here are some Year 9 sketches from 9MM.....



We also fuse Visual Design & Communication with their Art knowledge and skills. Students use colour theory, and the application of colour to realistically represent the materials their ideas would be made from, as well as teaching drawing methods such as isometric and perspective.

# Fusing.....



## Fusing it all together.....

Last term students in 9GW were challenged with designing an egg cup holder that would 'fit' with the 'Alessi' design range [seen below].

Before students can undertake a task like this they need to be confident in sketching geometric forms. To help them visualise these forms in their minds we use modelling with 'Play-Doh'. This gives our students an image of what their designs looked like from all angles. Here are some examples of their ideas.....



**Turtleastic**

designed by Jordan



**Run -Away**

designed by Fraser



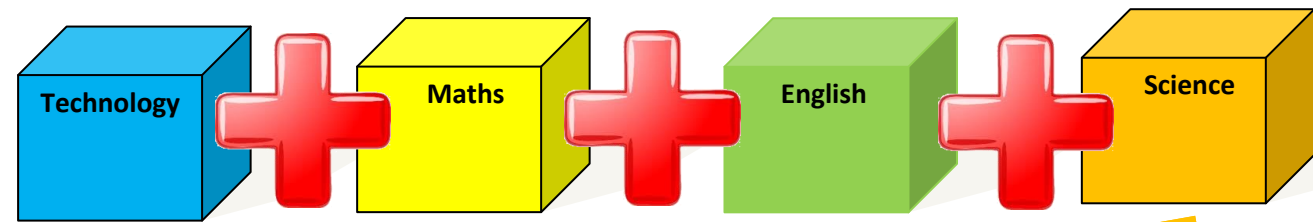
**Mr Purr**

designed by Helena



**ALESSI**

Well done to 9SC!  
Fusing.....



**LEARNING HOW THINGS WORK  
AND ARE MADE.....**

- Creating new food products
- Function of ingredients

**WORKING OUT THE SIZES.....**

- Measuring solids and liquids
- Proportions
- Learning about measuring units

**DEVELOPING LANGUAGE  
SKILLS.....**

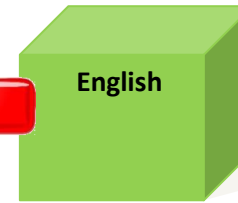
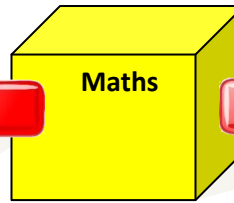
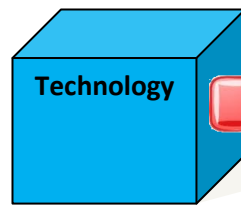
- Reading a recipe and writing recipes
- Developing vocabulary

**THE SCIENTIFIC FACTS...**

- What happens when ingredients are combined
- How heat change the properties of the ingredients

Well done to 8PS!

Fusing.....



**LEARNING HOW THINGS WORK AND ARE MADE.....**

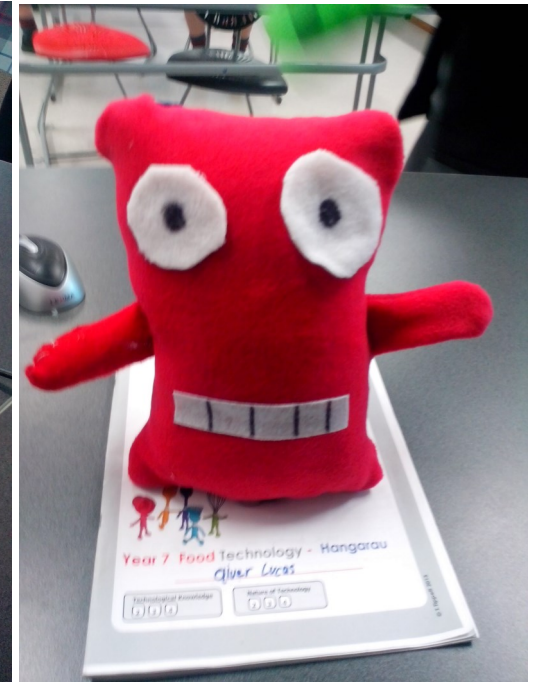
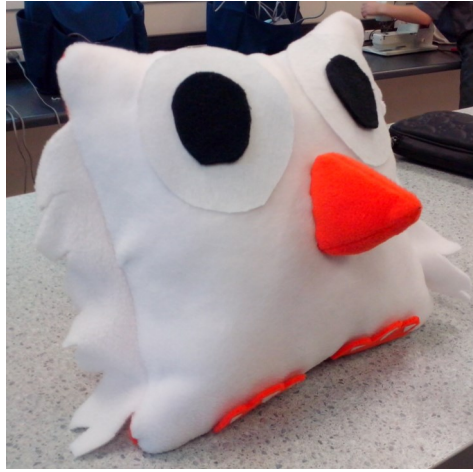
- Designing
- Sewing
- Understanding of materials
- Understanding of techniques and textile codes

**WORKING OUT THE SIZES.....**

- Tessellating patterns pieces
- Measuring material requirements
- Measuring out fabric pieces

**DEVELOPING LANGUAGE SKILLS.....**

- Describing and explaining features of existing products
- Writing product reports and evaluations
- Developing vocabulary



## 7KR

What a fantastic job you have done with your Pillow Pets! They are great design ideas and you have made them really well.



**7KR** have also been busy in the kitchen doing some Food Technology as well. They have been **very busy!**



In Year 10 Product Design & Making **Nicole Henderson** deserves a special mention because she has shown: determination, self motivation, perseverance and hard work - all great qualities to achieve well. Nicole choose to complete the 'high' level challenge and created a jewellery box. **Great Job Nicole!**



In Year 10 Product Design & Making **Bailey Hazlitt** deserves a special mention because he has shown: determination, self motivation, perseverance and hard work - all great qualities to achieve well. Bailey chose the 'high' level challenge . This challenge gave him a set amount of materials and he had to devise his own product. He used that and has built himself a chair. **Great job Bailey!**

# 'TECH ALL STARS'

This term we have introduced a new award across all areas of Technology called, 'Tech All Stars'. This award is for students that have put a lot of effort into class. It is not for high achievement levels, we will continue to recognise those in the end of year prize giving. We are aiming to encourage **effort and perseverance**, two qualities we feel are very valuable, and often shown by students who just try their best day in and day out. This is one way we aim to recognise them.

## 7EM Digital Technologies

Svetlana McGregor  
Angelo Rosario

## 8GR Product Design & Making

Ella McGuigan  
Liam Davis

## 7KR Food & Textiles Technology

Sam Keeler  
Jessie Robertson

## 8PS Textiles Design & Making

Thomas Irwin  
Kirsten McInnes  
Lily Chamberlain  
Tom Terry

## 8 PS Visual Design & Communication

Bailey Hazlitt  
Nikole Henderson

## 9SC Food Technology

Charlotte Cuttance  
Dakoda Conroy  
Marion Frei  
Ashlea Friend  
Jessi Mason

**Congratulations to these**

**'Tech All Stars'.**

**They have shown great effort  
and perseverance, and a  
willingness to learn day in and  
day out.**

## 9MM Visual Design & Communication

Levi Middleton    Jenna Fisken  
Kate Johnson    Hannah Weller  
Ryan Horrell  
Harriet Grogan  
Georgia Roberston

## 9GW Digital Technologies

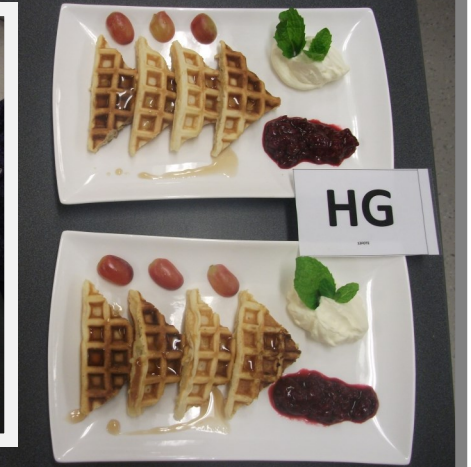
Alida Chay  
Fraser Ditchfield  
Rhys Gutschlag  
Matthew Kirk  
Luke Roughan

Ruby Young  
Regan Toogood  
Jordan Stott

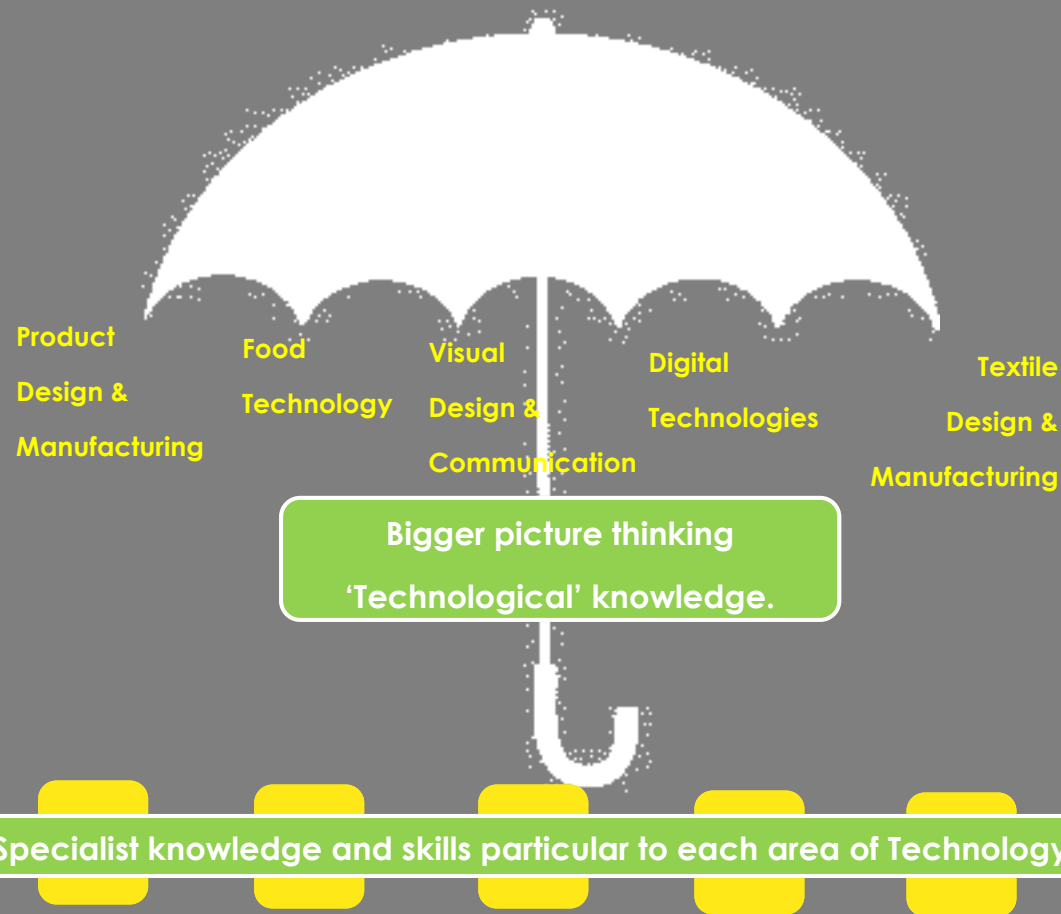
The students on this course have developed a two course meals for two invited guests. As part of the unit students have to develop a suitable menu, which then needs trialled and developed, so they can work through recipes and get a feel for the timing of each task.

### Level 3 Food Technology

As part of having guests students must also consider the table settings and food presentation, to enable them to deliver an enjoyable meal that looks appetising.



## Technology reports explained.....



### When we report to you, we report on:

- The **generic 'bigger picture' thinking** [issues that relate to all areas of industry]
- The level of knowledge and skill your child has developed in each area of Technology
- The next steps your child can work on to continue making progress

The five areas of learning within Technology reflect the different fields within industry and have been outlined in the New Zealand National Curriculum in consultation with Universities and Industry Training Organisations [ITO's].

Each of our specialist areas within Technology leads to a recognised 'Pathway' from junior into senior years, and those pathways are balanced to equally enable our students to move into industry through apprenticeships or to continue their studies at Tertiary Institutions or Universities.

### To achieve this we aim to develop students that can:

- think for themselves
- use a defined process to solve problems
- have a range of practical skills
- have a strong work ethic