Technology Online Webinar, Years 0–6
Developing Technology Understandings alongside Practice



MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

Technology Online

Kaua e rangiruatia te hāpai o te hoe;
e kore to tātou waka e ū ki uta

Karakia Timatanga

Kia hora te marino
Kia whakapapa pounamu te moana
Hei huarahi mā tātou
i te rāngi nei
Aroha atu aroha mai
Tātou i a tātou katoa
Hui ē! Tāiki ē!

Opening Karakia
May peace be widespread
May the sea be like greenstone
A pathway for us all this day
Let us show respect for each other
For one another

Bind us all together

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Developing Technology Understandings alongside Practice

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Columba College, Dunedin

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Webinars for primary

- **Wednesday, 11 November: What is Technology?**
  Exploring technology with juniors
- **Wednesday, 18 November: Teaching technological knowledge**
  Exploring food packaging
  Introducing technological systems
- **Wednesday, 25 November: Developing technology understandings alongside practice**
  Technological practice and producing a newspaper
  Technological modelling in tie-dying
  Is food a technological outcome?
  Recycling coffee sacks: Integrating technology and art

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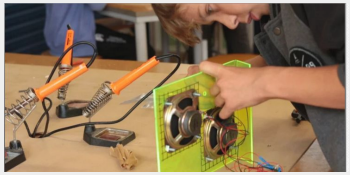
Technological practice

Three components

- brief development
- planning for practice
- outcome development and evaluation



Technological practice is:

- producing a technological outcome

or

- planning to make a technological outcome that cannot be completed in the classroom for a variety of reasons.

Technological practice

Technological practice

Need or opportunity

- Is there a need or opportunity within my class?

or

- Do I need to create a need or opportunity?

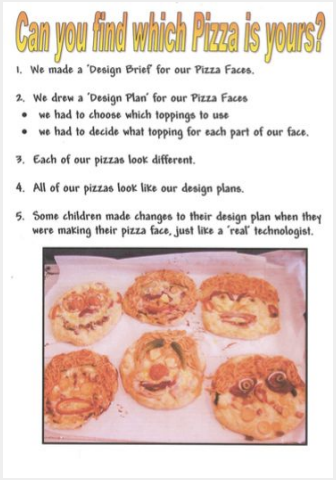
Consider

- How can I integrate this learning within technology with learning in other areas?
- Thinking Skills – an opportunity to be creative

"Now I feel confident about my design because I know what my design, colour, and t-shirt might look like. I also need to add more colour for more effect."

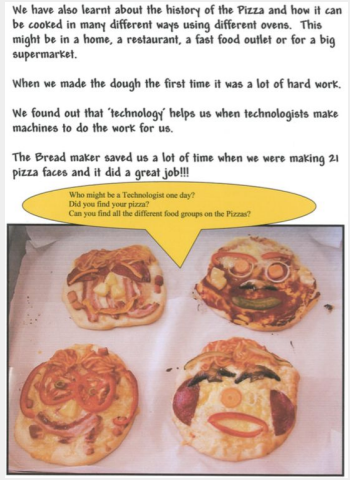
Technological modelling in tie-dyeing

Pizzas – a need for a better lunch menu



Can you find which Pizza is yours?

1. We made a 'Design Brief' for our Pizza Faces.
2. We drew a 'Design Plan' for our Pizza Faces
   - we had to choose which toppings to use
   - we had to decide what topping for each part of our face.
3. Each of our pizzas look different.
4. All of our pizzas look like our design plans.
5. Some children made changes to their design plan when they were making their pizza face, just like a 'real' technologist.



We have also learnt about the history of the Pizza and how it can be cooked in many different ways using different ovens. This might be in a home, a restaurant, a fast food outlet or for a big supermarket.

When we made the dough the first time it was a lot of hard work.

We found out that 'technology' helps us when technologists make machines to do the work for us.

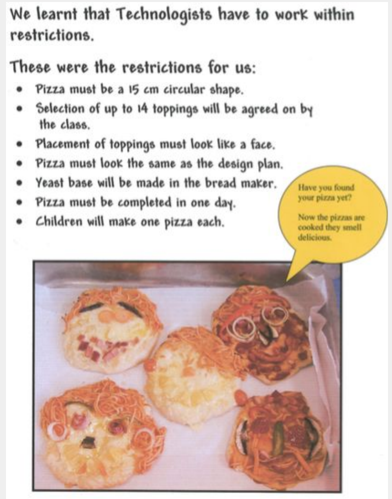
The Bread maker saved us a lot of time when we were making 21 pizza faces and it did a great job!!!

Who might be a Technologist one day?
Did you find your pizza?
Can you find all the different food groups on the Pizzas?

Pizzas

Pizzas were a great food to make because:

- For Science we have learnt about solids, liquids and gases and how heating and cooling can change them from one state to another.
- For Technology we have learnt how to create a Design Brief, Design Plan and a 'Designer Pizza.'
- For Biotechnology we have learnt about the yeast fermentation process.
- For Health we have learnt what food groups the pizza ingredients and toppings come from and how they will give us the things our bodies need to grow, have energy and stay healthy and strong.



We learnt that Technologists have to work within restrictions.

These were the restrictions for us:

- Pizza must be a 15 cm circular shape.
- Selection of up to 14 toppings will be agreed on by the class.
- Placement of toppings must look like a face.
- Pizza must look the same as the design plan.
- Yeast base will be made in the bread maker.
- Pizza must be completed in one day.
- Children will make one pizza each.

Conceptual design – musical instruments

Brief development

Level 1

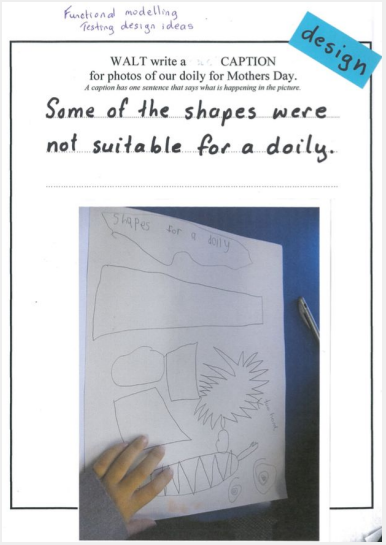
- Communicate the outcome to be produced
- Identify attributes for an outcome

Who are the stakeholders?

- Teacher led discussion and brief written from the children's ideas, for example, bookmarks, fridge magnets for Mother's Day
- See the brief for a new biscuit: Is food a technological outcome?

Fridge magnets – mothers as stakeholders

Doilies



Doilies

Brief development

Technology in the news: Brief development search

- No. 5065 scooter is an effective piece to a bigger urban transportation service
- Autonomous freightliner inspiration truck introduced to the US roads
- Wet-free unnurella umbrella uses remarkably high-dense fabric
- Glow-in-the-dark ice cream is really a thing

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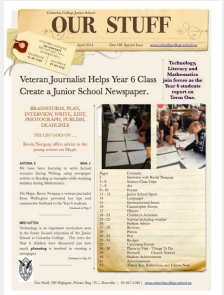
Planning for practice

Level 1

- Identify what they will do next
- Identify the particular materials, components, and/or software they might use


OUR STUFF
Veteran Journalist Helps Year 6 Class Create a Junior School Newspaper.

Examples

- Technological practice and producing a newspaper
- Musical instruments became our fundraising calendars for art – they were what we planned to make.
- Inventions in year 6, for example, dog collar, fashion design at stores

Planning for practice

Technology in the news

- Watch: This Brilliant Lego Calendar Syncs With Google

Golfing outfit leads to outstanding scholarship

- What planning tools (project management) did Kate use?

Food processing and testing in a local environment

- What planning would Ann do to make her pies?

Outcome development and evaluation

Level 1

- Identify potential outcomes that are in keeping with the attributes, and select one to produce
- Produce an outcome in keeping with identified attributes

Examples

- Recycling coffee sacks: Integrating technology and art
- Technological modelling in tie-dyeing

Outcome development and evaluation

Crowd sourcing sites

- pledge me
- Kickstarter

Awards

- NZ Innovators Award
- Fieldays: Young inventors steal limelight
- Dyson Awards: Sustainable agriculture

Technology in the news

- Matthew Mazzotta: open house a transforming public theatre

Key competencies

Technology and the key competencies

Technological modelling in tie-dyeing

- How will the key competencies be visible in my class when we are making the Tie Dye T Shirts ?

I asked them, "If this is what thinking means, how will you be thinking when you are tie-dyeing? If this is what managing self means, how will you manage yourself when you are tie dyeing?" The students were very honest about where they were at in terms of the competencies, and they set their goals for the tie-dyeing exercise around this. I have the key competencies on the classroom wall and we often talk about them, but the tie-dyeing gave them something real to set goals around.
Dorothy Hutton

A broad technological literacy

Reading an unknown product

How technologically literate are my students?

Develop questions using the indicators, for example:

- What was the purpose of the drink?
- What are its physical attributes?
- What are its functional attributes?
- What type of modelling would be used when developing this product ?
- What impact would it have on the natural environment?

Tracking coverage and learning across a school

A broad technological literacy

- Tracking coverage and learning across a school
- A principal supports technology curriculum implementation at primary
- Planning for technology at primary
- My role as a lead teacher technology at Green Bay Primary

Indicators of progression

- Accountability, reporting
- Planning for practice: Achievement objectives, teacher guidance, indicators
- Progression diagrams

Online forums and cluster groups

1. Would you like to participate in an online forum for technology?
   What kind of online forum would be useful and appealing?
2. Would you like to form and participate in virtual cluster groups?

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Karakia Whakamutunga

Ka whakairia te tapu
Kia watea ai te ara
Kia tūruki whakataha ai
Kia tūruki whakataha ai
Hui e Tāiki e

Restrictions are moved aside
So the pathway is clear
To return to everyday activities
Enriched and unified