# Digital Technologies Catalogue Term 4 2020

## Year 9 & 10 : Level 4 & 5

# NZCETA SALES POLICY

Please note that all CETA resources are produced using Microsoft Windows XP

## Ordering Resources from NZCETA
All prices are GST inclusive.
The order form lists all the new resources which are described in the newsletter.

Only use the correct order form. Orders will be accepted via email, fax or post – no telephone orders are acceptable. If payment is not attached, a school order number must be given.

When ordering resources from the CETA catalogue, write the name and number of the resource in the blank space provided at the end of the order form. Resources are available on disk or USB keydrive, with the exception of booklets & posters which can be ordered as hardcopy. Preference should be indicated on the Order Form.

When an order is received CETA prepares a Tax Invoice, including the CETA GST number. If payment accompanies the order, the invoice is stamped 'Paid', if not it is stamped "Payment Due within Seven Days". The invoice is sent with the order.

Members' differential: to take advantage of the differential we offer to CETA members, it is essential that you complete the appropriate section on the order form with your membership number. To receive this differential the order must be made by a member and not on behalf of another person, or by quoting another member's number. We know that members appreciate this differential, and we are keen to continue our policy, but we must ensure that it is not abused, or it will be necessary to reconsider.

## Delivery of Resources
All resources are sent using courier services.
Postage fee: A flat fee is payable on all orders to cover courier and packaging costs. Please remember to include this in the order total.
Courier service: The courier service CETA uses requires all mail to be addressed to a street address. For this reason, it is essential to supply a school street address on all resource material orders. A post office box or private bag is NOT acceptable.

## Payment for Resources
**Any items purchased on credit must be paid no later than the 20th of the month following purchase.**

Please make cheques payable to NZCETA and crossed Not Transferable.

CETA would like to encourage members and schools to use direct crediting when paying for subscriptions, professional development, and resource purchases.

Schools will need to send a Direct Credit Authorisation Form to CETA for bank account details. Please note that if this type of payment is used it is essential to indicate what the payment is for, example "resources", "PD", "subs – name of member".

All prices include GST.

## Moderation/Evaluation
All CETA Achievement Standard and Unit Standard resources have been checked by experienced subject experts.  Please note that this is not an official NZQA moderation.

## NZCETA Copyright
A copyright statement has been included in the CETA Newsletter for a number of years. We wish to emphasise this statement as we know some people have breached Copyright and NZCETA wishes to make it clear that it will not hesitate to take action if this continues. Reference can be made to The Copyright Act 1994, Section 44 (revised in January 1998) regarding educational establishments. The purchasing of a resource is not gaining prior permission. Please note the following statement which appears on all NZCETA resource materials.

Use of NZQA copyright materials: CETA has obtained permission from NZQA to use, where appropriate, Achievement Standards Criteria and Unit Standards Criteria, as well as NZQA produced NCEA resources to support CETA produced resources. Links with The New Zealand Curriculum where appropriate are indicated by *NZC Links*

Should you have any queries, please do not hesitate to contact us.

**Digital Technologies Catalogue – Year 9 and 10**

**NB Resource Codes: DT = Digital Technologies; CC = Connected Curriculum**

# GUIDES All Levels

| Title and Keywords | Code | Price | Description/Contents |
|---|---|---|---|
| **NZCETA DIGITAL TECHNOLOGIES HANDBOOK**<br>**A teacher's guide for programme design and implementation**<br><br>**Aligned to The New Zealand Technology Curriculum Levels 4 & 5**<br><br>*Version 2 – updated from previous version in order to meet the new Digital Technologies Curriculum (December 2017)* | DTB 11v2 | $90.00 | *Published September 2018*<br>This NZCETA Digital Technologies Teachers' Guide has been developed to accompany *The New Zealand Curriculum* (2007) and the new digital technologies curriculum content (December 2017). *The New Zealand Curriculum* vision includes the aspiration that our young people "will seize the opportunities offered by the new knowledge and technologies to secure a sustainable social, cultural, economic, and environmental future for our country" (MoE.2007, page 8). The curriculum's future focus principle (page 9) recognises that young New Zealanders need the tools to understand and address a range of issues and concerns of global significance [1] .<br>This guide is intended to assist NZCETA members to unpack the new digital technologies curriculum so that they are better placed to access the content and to develop digital technologies programmes of learning for Years 9 & 10. Whilst this resource will assist teachers to learn more about the new digital technologies content it will also allow teachers the freedom to develop learning activities or experiences to achieve their intended local curricula. For example, activities and experiences which address the diverse learning needs of the students within their school environment and the culture of the school.<br>This resource will support teachers to integrate digital technologies ideas, outcomes, principles and technological thinking into the design and delivery of meaningful, authentic and relevant learning experiences for the students within their school.<br>This booklet provides suggestions for programme planning at junior level to ensure students are being provided with a robust and comprehensive skill and knowledge base to enable them to follow appropriate pathways into digital technologies at senior level.<br>It gives special emphasis to continuity and progression in delivery, identifies key competencies and values, and addresses a range of teaching strategies, possible assessment activities and evaluation suggestions.<br>Contents: Introduction; What is Technology About; The New Technology Curriculum; What is Digital Technology; Digital Technologies Outcomes; Digital Technology Areas; What is a Digital Technology Program; Progress Outcomes; Recommendations for Consideration by Teachers; Pedagogical Strategies; Key Competencies; Resources; Assessment; Assessment Strategies; Teaching Strategies; Lesson Planning; Schemes of Work; Digital Technologies Scheme Development; Evaluation of the Programme; End of Unit Reflection Log : Teacher/Faculty; Key Competencies Checklist; Computer Science Glossary; Assessment Terminology; Technology Curriculum Strands |
| **Year 11 Curriculum Level 6 NZCETA Digital Technologies Handbook**<br><br>for programme design and implementation appropriate for The New Zealand Technology Curriculum Levels 6 & NCEA Level One | DTB12 | $90.00 | *Revised 2012*<br>The booklet has been developed to accompany the New Zealand Curriculum and is intended to support the development of a Digital Technologies programme of learning while allowing for freedom to address the diverse learning requirements of students and the culture of the school. It provides suggestions for programme planning to ensure students are being provided with a robust and comprehensive skill and knowledge base to enable them to follow an appropriate Digital Technology pathway at senior level. Also included are suggested strategies for embedding the key competencies and values within a programme of teaching and learning; a range of teaching strategies; possible teaching activities; software and suggested resources. Contents include: What is Technology; What is Digital Technologies; What is a Digital Technology Programme – it's structure |

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[1] Digtial Technologies and the New Zealand Curriculum, Your Guide to finding support and gettig ready, pg. 3.

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|---|---|---|---|
| | | | & Aims; Learning Objectives; An Approach to Planning; Schemes of Work – scheme development, programme planner, Planning a Technology Unit, Developing a Successful Programme; Planning Checklist; Key Competencies; Content Development; Resources; Assessment Mutually Exclusive Standards |
| **Year 12 Curriculum Level 7 NZCETA Digital Technologies Handbook Version 2**<br><br>for programme design and implementation appropriate for The New Zealand Technology Curriculum Levels 7 & NCEA Level Two | DTB13 | $90.00 | *Revised Term 4 2012*<br>The booklet has been developed to accompany the New Zealand Curriculum and is intended to support the development of a Digital Technologies programme of learning while allowing for freedom to address the diverse learning requirements of students and the culture of the school. It provides suggestions for programme planning to ensure students are being provided with a robust and comprehensive skill and knowledge base to enable them to follow an appropriate Digital Technology pathway at senior level. Also included are suggested strategies for embedding the key competencies and values within a programme of teaching and learning; a range of teaching strategies; possible teaching activities; software and suggested resources.  Contents include: What is Technology; What is Digital Technologies; What is a Digital Technology Programme – it's structure & Aims; Learning Objectives; An Approach to Planning; Schemes of Work – scheme development, programme planner, Planning a Technology Unit, Developing a Successful Programme; Planning Checklist; Key Competencies; Content Development; Resources; Assessment Mutually Exclusive Standards. The Version 2 edition of this resource includes a comprehensive and detailed section indicating the step-ups from NZC Level 6/NCEA Level 1 to NZC Level 7/NCEA Level 2 |
| **Year 13 Curriculum Level 8 NZCETA Digital Technologies Handbook**<br><br>for programme design and implementation appropriate for The New Zealand Technology Curriculum Levels 8 & NCEA Level Three | DTB14 | $90.00 | *Published Term 4 2012*<br>The booklet has been developed to accompany the New Zealand Curriculum and is intended to support the development of a Digital Technologies programme of learning while allowing for freedom to address the diverse learning requirements of students and the culture of the school. It provides suggestions for programme planning to ensure students are being provided with a robust and comprehensive skill and knowledge base to enable them to follow an appropriate Digital Technology pathway at senior level. Also included are suggested strategies for embedding the key competencies and values within a programme of teaching and learning; a range of teaching strategies; possible teaching activities; software and suggested resources.  Contents include: What is Technology; What is Digital Technologies; What is a Digital Technology Programme – it's structure & Aims; Learning Objectives; An Approach to Planning; Schemes of Work – scheme development, programme planner, Planning a Technology Unit, Developing a Successful Programme; Planning Checklist; Key Competencies; Content Development; Resources; Assessment Mutually Exclusive Standards, as well as including a comprehensive and detailed section indicating the step-ups from NZC Level 7/NCEA Level 2 to NZC Level 8/NCEA Level 3 |
| **NZC L6/NCEA L1 Using Relevant Implications to Underpin Digital Technologies Teaching and Learning Programmes** | DT 18/4/1 | $60.00 | This resource is designed to provide teacher guidance on the relevant implications that are part of all the updated NCEA Digital Technologies Internal Achievement Standards.  Suggested activities that be can be integrated into a programme of teaching and learning are included. These should activities should provide scaffolding to support students on how to both **describe** and **address** the relevant implications in their outcomes.  Relevant implications link to iterative improvement, testing and development of a high-quality outcome. The resource links with the New Zealand Curriculum and in particular embodies the Principals of High Expectations and Future Focus.  High expectations are addressed as a student learns how to appropriately test and improve the quality of digital outcomes with regard to the relevant implications.  The focus is |

on producing an outcome that is of a high standard that meets end-user requirements.  Future focus is addressed through the relevant implications as students are learning to develop outcomes that are socially and ethically acceptable as well as sustainable and future-proofed.  It provides support for students to meet *Designing and Developing Digital Outcomes Progress Outcome 4*: In authentic contexts, students investigate and consider possible solutions for a given context or issue. With support, they use an iterative process to design, develop, store and test digital outcomes, identifying and evaluating relevant social, ethical and end-user considerations. They use information from testing and apply appropriate tools, techniques, procedures and protocols to improve the quality of the outcomes and to ensure they are fit-for-purpose and meet end-user requirements

**Specific Content**

At the conclusion of this topic, teachers should be able to provide guidance for students regarding:

- How to describe relevant implications that are important to their context for the development of a digital outcome.
- How to test their outcomes to determine if they have addressed the relevant implications.
- How to use the results of research, testing and feedback to inform and refine their digital outcomes.

# All Levels

## Mixed Resources and Software Related Activities

| Title and Keywords | Code | Price | Description/Contents |
|---|---|---|---|
| **A beginners guide to Visual Basic in PowerPoint**<br><br>Basic VB Coding<br>A good starting point | DT 11/3/1 | $60.00 | This easy to follow, 25-page user friendly teaching resource will guide you through a step by step tutorial teaching you how to create simple, fun and funky interactive quiz slides within Microsoft PowerPoint. You will quickly learn how to link PowerPoint with Visual Basic Editor tools to design pop-up message boxes, feedback statements and easy navigation structures within your slideshows. The resource includes a quick revision test and examples of cross curricular, student designed learning activities. Students can work through these tasks individually and also choose to extend themselves and try different challenges along the way. |
| **Weighing Up Assessment**<br><br>What teachers should think about when writing assessment | DT 05/3/28 | $25.00 | This resource discusses assessment terminology and what teachers need to think about when designing and assessment activity for the classroom. It examines the notion of 'holistic assessment' and what this means in relation to a standards based system. The resource also discusses how to use the New Zealand Curriculum Exemplars.<br><br>*Contents: Teacher Notes; Terminology; Exemplars; Guide to Assessment Schedules; Summary* |
| **What's the Score!**<br><br>Produces quiz's in excel<br>Programming<br>Graphic Design | DT 09/2/2 | $40.00 | In this unit students are asked to produce a simple quiz using excel. The focus is on using planning tools around an authentic opportunity linked to key competencies and values. It is also an introduction to the application of the skills of programming and graphic design. *NZC Links* This unit is suitable for Years 9 Level 4 although it could be used and/or adapted for other year levels (eg Year 10). There is opportunity within the unit for students to work at their own pace. Embedded in the learning activities design are the key competencies of Thinking and Participating and Contributing. *The time frame approximately 20 one hour lessons.*<br><br>*Contents: The resource contains Teacher Guidelines including strategies to promote the key competencies: Thinking and Participating and Contributing; step by step instructions; and how to write the quiz in excel. To assist with brain storming a "y" chart template is included, as well as a student planning log and a flow chart for planning quiz questions.* |
| **SCRATCHING the surface Creatively**<br><br>Introduction to Programming | DT 09/3/1 | $40.00 | SCRATCH is a new programming language that makes it easy for students to create their own interactive stories, animations, games, music, and art, and share their creations on the web. Incorporating SCRATCH into your teaching and learning program will help your students to develop 21st century learning skills. Your students will learn how to become critical thinkers, problem solvers and decision makers and will work in a creative, innovative and collaborative environment. As they create SCRATCH projects, students learn important mathematical and computational ideas, while also gaining a deeper understanding of the process of design. This unit of work includes a series of tutorials plus a Scratch project and assessment template. Please note: The tutorials have been downloaded from a range of websites and are free. The links are supplied. |
| **Spreadsheet Pack**<br><br>Teacher and student notes covering a range of skills and tasks.<br>Skills Development<br>Decision Making | DT 10/2/1 | $60.00 | *Revised 2012*<br>This pack contains Spreadsheet tasks to use as part of your teaching. It develops skills and gives students the chance to think for themselves and make decisions about the work they complete.<br>Formatting and Graph Posters with reminders for students<br>Thinking and making decisions about tools to use<br>Formulaes – IF, PMT, and a variety of functions |

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| Posters<br>Teaching Cards | | | Conditional Formatting, Macros, Templates |

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| **Bag it**<br><br>Be the latest logotype designer - Translate verbal ideas into visual images<br>Creativity and Imagination<br>Fireworks or MS Word<br>Meeting the needs of a client | DT 09/4/1 | $50.00 | This package allows students to draw using a variety of brush tools and gain This is project is an introduction to graphic design with a focus on the fundamentals of logo design. Students will become familiar with the objectives and needs of a client and given the task to develop a logo design based on these goals. |

They will be set the task of designing and creating an innovative, aesthetically pleasing, and exciting logo which is appropriate for the purpose and target audience. Students will be given the challenge of personalising their logo so that it makes a personal statement about who they are.

This activity pack contains:

- ✓ An "how to guide" for using Adobe Fireworks CS4 (the skills covered in this guide can also be applied to earlier versions of Fireworks
- ✓ For those who do not have the Adobe software there are links to tutorials for using the draw tools within MSWord to create images
- ✓ Student notes on Logo Design Tips
- ✓ An activity on critical analysis of existing solutions
- ✓ Student templates
- ✓ Plus an assessment schedule

This is an authentic yet challenging project which will enable your students to express who they are in an imaginative and creative way.

*This 10-12 hour activity pack is overflowing with support material, tips, and tricks. No prior knowledge of design is necessary and can be implemented using a range of software. This resource could easily be modified to suit a context more appropriate to your students, for example, design a logo for a T Shirt.*

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| **Respecting Others Innovations and Creations**<br><br>Intellectual Property<br>Copyright | DT 10/1/4 | $45.00 | Intellectual Property covering copyright, plagiarism, piracy and the dangers of Peer to Peer networking. Class discussion is used to raise the awareness of the issues involved. Students research the Internet using supplied websites to gather information. Students then create a presentation in a format of choice for use as an explanation of the issues involved for the teaching staff of your school. The teaching notes cover terminology and definitions, suggested starter questions, some suggested responses to the issues and attitudes. The Prior Knowledge and Reflections student worksheet allows the teacher to assess any changes in attitudes over the unit. This unit will take approximately 3-4 hours. |

New Zealand Curriculum Values *Innovations, inquiring & curiosity* - Explore and discuss values of others

*Thinking critically creatively & reflectively* - Thinking about their own practices and attitudes in relation to the Copyright Law and effects on the creators of works; Reflecting on what has been learnt and how this has changed their attitudes

*Equity-* Fairness and social justice; Reflection on the effects on creators and the possible effects on Research and Development

*Integrity-* Being accountable for own actions and acting ethically

*Respecting others-* Allowing all students to voice opinions and values without challenge

Key Competencies *Thinking* - Developing understanding of concept of copyright and challenging their own values; Reflecting where they started, and where they have finished in terms of attitudes

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| | | | *Using of language, symbols, and texts -* Use of symbols: copyright, trade mark and patent |
| | | | *Relating to others -* Listen, recognize different points of view, negotiate values and share ideas |
| | | | Learning Area *Technology:* Level 5 *Strand:* Nature of Technology; Characteristics of Technology – understand how people's perceptions and acceptance of technology impact on technological development; |
| | | | Understand how the illegal copying of others work impacts on those people |
| | | | *Digital Technologies Context, Knowledge and Skills Strand* Digital Information |
| **MovieMaker**  Designing a Movie Storyboards Using Digital Cameras | DT 10/1/8 | $45.00 | *Revised 2012* |
| | | | Within this resource students will use a digital camera and MovieMaker (or Photostory). Designing a movie incorporating storyboards, digital camera use, movie creation, movie formats and respecting the rights of others when taking photos. The students have the opportunity to discover how to use these resources independently. This can be completed with a limited amount of cameras and computers if necessary. Approximately 8 hours in length. |
| | | | New Zealand Curriculum Values *Innovation, inquiry and curiosity -* Encourage students to think independently; Encourage students to gather resources to assist their learning; Encourage students to be creative *Equity -* Encourage students to work with others and resources fairly |
| | | | *Integrity -* Act responsibly when taking and using images of others and their property |
| | | | Respect- Encourage students to accept others and their opinions; Encourage students to take responsibility for equipment |
| | | | Key Competences Managing self; Relating to others; Thinking; Participating and contributing; Using language, symbols, and texts |
| | | | Learning Area Technology: Level 4 - Technological Products |
| **A Beginners Guide to Visual Basic in PowerPoint**  Create an interactive Quiz Visual Basic | DT 11/3/1 | $60.00 | *Revised 2012* |
| | | | This easy to follow, comprehensive user friendly teaching resource will guide you through a step by step tutorial teaching you how to create simple, fun and funky interactive quiz slides within Microsoft PowerPoint. |
| | | | You will quickly learn how to link PowerPoint with Visual Basic Editor tools to design pop-up message boxes, feedback statements and easy navigation structures within your slideshows. |
| | | | The resource includes a quick revision test and examples of cross curricular, student designed learning activities. |
| | | | Students can work through these tasks individually and also choose to extend themselves and try different challenges along the way. |
| | | | *Contents: Using VBA; Creative Techniques; Glossary of Terms; Creating a Quiz; Task 1 – 5 steps on How To with screen shot assistance; Task 2 extra project with new tricks – 8 steps on How To with screen shot assistance; Review Activity; PowerPoint Review Quiz with Answers.* |
| **Getting Animated with Adobe Flash CS5** | DT 12/3/2 | $60.00 | *Achievement Objectives to teach students (and teachers) the essentials of using Adobe Flash CS5 which could be used in conjunction with* |
| | | | Level 3 Computing Unit Standard 25661 v6 3 credits *design and assemble an interactive media product without scripting* |
| | | | Level 3 Computing Unit Standard 5947 v6 3 credits *use computer technology to solve a specified problem* |
| | | | Level 1 Computing Unit Standard 5946 v6 3 credits *use computer technology to create and deliver a presentation from given content* |

Or any NCEA Level 1-3 Digital Technology Achievement Standards Internal assessments)

The purpose of this resource is to provide a 38 page student resource with a step by step guide on how to use the basic elements of Adobe Flash CS5 including a student checklist. Also included is a 38 slide powerpoint on How to Use Adobe Flash CS5. Any resources needed for the tutorial are provided. Students will learn how to produce an animated, interactive Flash application that can be either inserted into a web page or published as a standalone application on a CD or DVD

This resource could be also be used across the curriculum to assist in creating interactive, exciting teaching resources. *This resource replaces DT 08/2/1 which is now out-of-date*

*Contents: Teacher Notes; Beginners Task Folder; Bouncing Balls v1 Folder; Movie Clip Folder Text Folder; Sound Folder containing 3 x sound file resources to go with the tutorial; how to beginning guide; a powerpoint presentation on the skills used in Adobe Flash CS5*

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| **Meet the Director**<br><br>*Getting to grips with the Movie Logo* | DT 14/2/1 | $60.00 | Knowing the terminology used on a movie or video production set helps everyone involved understand the production and Director's needs. This resource introduces students to the skills and knowledge required to write a movie proposal, create a storyboard and plan a video production. This teaching and learning guide will help students and teachers gain a better understanding of what is required to produce a fit for purpose, captivating, high quality video outcome. Topics covered are: |
| | | | Understanding Film Genre and the conventions within Genre |
| | | | Different cinematography techniques such as camera angles and movement, their use and purpose |
| | | | Pre-production procedures and techniques such understanding narrative and storyboarding |
| | | | Production procedures such as production schedules, permission and the practicalities of shooting |
| | | | Post-production procedures |
| | | | The resource includes: Introductory terminology, activity sheets, word finds and planning templates are included with this resource. |
| | | | This resource is suitable for students at Levels 6, 7 & 8 of the curriculum and can be used to support the teaching and learning within Digital Technologies/Media, Generic Technology and Media Studies.<br>Please note: The procedures, skills and techniques to edit and create a video using video editing software IS NOT covered |
| **What is Your Aura**<br><br>*Creating augmented reality using Aurasma* | DT 14/2/2 | $60.00 | *Achievement Objective: Implement procedures to produce a digital media outcome* |
| | | | *In the form of an augmented reality image integrating video and static image.* |
| | | | A resource designed to be used to teach Digital Media and could be used in year 11 to 13 – NZC Level 6, 7, 8/ NCEA Level 1, 2, 3 depending on the complexity of skills used to develop the outcome. It does link with internal Achievement Standard 91073 (1.43*) Implement basic procedures to produce a specified digital media outcome* |
| | | | This resource package covers the skills needed to create an augmented reality or 'aura' using the free app, Aurasma. |
| | | | With Aurasma, every image, object and even place can have its own Aura. Auras can be as simple as a video and a link to a web page or as complex as a lifelike 3D animation. Use the Aurasma app to unlock Auras and share the experience with friends. This resource uses Aurasma to integrate two different types of media products, static image and video, to create an augmented reality "aura". |

The resource covers the skills required to create Auras using online tools provided by Aurasma. It does not however cover the skills required to create a static or moving image.

Curriculum Links - This resource links to the Technology Curriculum, Achievement Objective: Level 5 – Students will:

*Analyse their own and others' outcomes to inform the development of ideas for feasible outcomes.*

*Undertake ongoing functional modelling and evaluation that takes account of key stakeholder feedback and trialling in the physical and social environments.*

*Use the information gained to select and develop the outcome that best addresses the specifications.*

*Evaluate the final outcome's fitness for purpose against the brief.*

| **What's your Rapper Name?** | DT 15/1/3 | $60.00 | Designed to be suitable for Year 9 & 10 students but could be used as an introductory exercise at NCEA Level 1 or Level 2 for students who have never written code before. |
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| *An introduction to javascript* | | | Students will be introduced to javascript variables, collecting basic input from an html form, performing simple string methods (such as extracting the first letter of a name), conditional statements (if and if/else). The resource contains an activity to introduce javascript to students with no prior coding experience. |
| | | | Students will be introduced to javascript variables, collecting basic input from an html form, performing simple string methods (such as extracting the first letter of a name), conditional statements (if and if/else). Assessment ideas are included. |
| | | | It links with the New Zealand Curriculum and in particular embodies the values *of innovation, inquiry, and curiosity, by thinking critically, creatively, and reflectively*, and the principles of High Expectations and Learning to Learn. It supports working towards TCKS objectives for Programming and Computer Science given in the DTG (Digital Technologies Guidelines). |
| | | | Students may study this topic further at Level 6 or Level 7. For NCEA Level 1 assessments, students would need to progress to an activity which includes iterative loops and different types of variables. For NCEA Level 2, students would need to progress further to activities which include parameters and scope. |
| | | | Notepad++ is available for download FREE from http://notepad-plus-plus.org/download/v6.6.9.html. Make sure this software is downloaded onto your computers before you start. If you are using Chromebooks or Android devices you will need to choose a suitable coding app that runs javascript and HTML. |
| | | | The tutorial teaches the following aspects of HTML |
| | | | HTML tags, head and body tags, basic text paragraphs |
| | | | Text box, Radio Button and Button inputs |
| | | | The tutorial teaches the following aspects of javascript |
| | | | Functions (without parameters) |
| | | | Variables and introduction to arrays |
| | | | getElementById to extract information from HTML |
| | | | Conditionals: if and else if statements |
| | | | This tutorial does not include the following aspects that are needed at Level 1 and 2 |
| | | | Scopes of variables (local and global) |
| | | | Parameters of functions |
| | | | Iterative loops |
| | | | *Specific content in the resource* |
| | | | At conclusion of this topic students should be able to: |

- Follow instructions to create a simple javascript program.
- Be familiar with javascript functions, variables and conditionals
- Be familiar with introductory html

| Who we are | DT 15/1/2 | $60.00 | "Who we are" is a culturally diverse project to support Maori or Pasifika Junior Students (year 7 to 10). |
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*A culturally diverse project to support Maori or Pasifika Junior Students (years 7 to 10)*

*Technology using Digital Technology*

**NZC Levels 4-5**

This resource contains five activities and summative assessment notes to assist in teaching the topic of Digital Technology within the context of cultural awareness and diversity as part of the New Zealand Curriculum for Technology levels 2 – 5 and is adaptable to meet the requirements of year 7 – 10 Maori or Pasifika students.The resource pack supports cultural values and the importance of the ways of thinking and relating to each other both as a teacher of Maori or Pasifika students as well as a student. Some of these values are:

Manaakitanga – the care for students as culturally located human beings.

Mana motuhake – the care by teacher for the academic success and performance of the students

Whakawhanaungatanga, the nurturing of mutually respectful and collaborative relationships between all parties around the student learning.

Ako, the promotion of effective and effective and reciprocal teaching and learning relationships, where everyone is a learner and a teacher.

One of the aims of this resource pack is to build trust and create mutual respect by having positives relationships within the classroom, between student to student and teacher. It is strongly recommended that teachers involve students so that they feel a part of the learning process, for example:-

Communicating the objective of each lesson

Determining prior knowledge

Negotiating content and time

Setting expectations

Giving feed forward

Ka Hikitia, the Ministry's Māori education strategy, emphasises the importance of Māori students' presence, engagement and achievement. Examples of this could include some or all of the following and each activity has been designed around the following:

co-operative learning strategies

co-constructing the learning contexts and inquiry questions

problem-solving together

integrating local knowledge and context

Each activity has been designed without being too prescriptive so that the locus of power is given to the students by allowing them to choose the context for learning with an inquiry process. These activities create opportunities for Maori or Pasifika students to build on their knowledge and previous experiences showing them their culture counts.

*Specific Content*

At conclusion of this topic students should be able to:

Confidently use range of ICT tools

Understand how their culture and others interact in society

Be confident  and realise their importance and values and those of others in society

21 Century learner embracing independence, research, self-motivation and organisation within a context

Be  proud of their work and accomplishment

Have succeed at a high level

Self-directed

| **Getting to Grips with the Technology Terminology – Lesson Starters/Do now's**  **NZC Levels 4-6 Years 9-11** | DT 16/3/1 | $30.00 | This resource contains a range of Do Now activities to assist in teaching the technology terminology for NZC Levels 4-6, Years 9 and 11 Students will be introduced to the technology terms via a range of letter patterns The activity will be followed by a discussion about the meaning of the technology term with some Big Questions which encourage critical and deep thinking. Students will be exposed to common assessment terms such as: <ul><li>Identify</li><li>Discuss</li><li>Explain</li><li>Justify</li></ul> Technology education in New Zealand explores how, beginning with a need or opportunity, new products and systems are developed, and how technological developments impact on our world. Students should be provided with opportunities to develop the technological literacy within a range of technology contexts. This resource is designed to support students to develop their understanding and application of the technological terms used within the three technology strands. The activities are designed to be very quick starter activities and should take approximately 10 minutes to complete. Contents: Do Now Student Activities; Deep thinking Questions; Suggested answers; Cryptograms with suggested guidelines as to how to make your own. |
| **Cracking the Code – a quick glimpse at C#**  Computer Science and Programing C# coding using Visual Studio Express 2015 for Windows Desktop  **Assessment Links:** Year 9 or 10 Project based learning – working in teams to create a simple computer program to solve a problem Level 1 Digital Technologies 91076 [1.46] - Construct a basic computer program for a specified task (3 Credits) 91075 [1.45] - Construct a plan for a basic computer program for a specified task | DT 16/3/3 | $60.00 | *Achievement Objective: Computational thinking* *Work in groups to plan and construct a basic computer program using C# and Windows Form Applicator* This comprehensive 50 page resource is a 'Pick-Up and Go' how to guide is designed to guide the teacher and students through the process of constructing a basic computer program for a specified task. The approach used will be through the use of Visual Studio Express 2015 and the Windows Form Application option. It contains full student instructions with extension activities. It is expected that students could complete this step by step guide in approximately 8 lessons. The key focus of the assessment at the end of the *How to* guide is to encourage students to work in groups to apply computational thinking to solve a specified problem. Students will work in small teams or pairs to develop a plan and implement the plan to construct a simple computer program. Students will be posed with a problem to solve. They will work in groups to plan and construct a basic computer program to solve the problem. This resource also links with the *New Zealand Curriculum* and in particular embodies two Technology Strands – Technological Practice and Technological Knowledge. For example, students will: <ul><li>outline a general plan to support the development of an outcome, identifying appropriate steps and resources.</li><li>describe the outcome they are developing and identify the attributes it should have, taking account of the need or opportunity and the resources available.</li><li>understand that functional models are used to represent reality and test design concepts and that prototypes are used to test technological outcomes.</li></ul> Contents: Teacher' introductory notes; Student *How to guide*; **Student group project;Suggested Assessment Schedule** |

# Years 9 and 10 - Curriculum Level 4 and 5

## Activity Resources

| Title and Keywords | Code | Price | Description/Contents |
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| **Business Identity**<br><br>NZC Levels 2 & 3<br><br>Years 7-8<br><br>Suitable for prior learning check for NZC Level 4/5<br><br>Could be modified for NZC Level 4/5 | DT 12/1/4 | $40.00 | *Published 2012*<br><br>Technological practice: *Outcome development and Evaluation*<br>*Achievement Objective*<br><br>Investigate a context to develop potential outcomes. Evaluate these against identified attributes; select and develop an outcome.<br><br>Evaluate the outcome in terms of the need/opportunity<br><br>Technological practice: *Planning for practice*<br><br>*Achievement Objective*<br><br>Develop a plan that identifies the key stages and the resources available<br><br>Nature of Technology: *Characteristics of Technological outcomes*<br>*Achievement Objective*<br><br>Understand that Technological Outcomes are developed through<br><br>Technological Practice and have related physical and functional natures<br><br>*Key competencies:* thinking (creatively)*;* managing self*;* relating to others<br><br>This is a comprehensive project students studying Technology at Year 7. It could be used as prior learning check for Year 9/10 as is or easily modified It contains a comprehensive unit planner as a teacher guideline covering all aspects of teacher planning; an 18 page student brief, including templates, checklist and reflection sheet; as well as an assessment sheet |
| **Digital Media with Digital Mash-ups**<br><br>NZC Levels 4 & 5 | DT 12/1/3 | $40.00 | *Technological practice:*<br>Brief Development<br>Outcome development and Evaluation<br><br>This resource is to be used as an introduction to Digital Mash-ups, Creative Commons and the Technology Process. It contains a unit plan (week by week, approximately 8 weeks of student work), an 'end of unit' assessment task and assessment schedule based on the technology curriculum. Reference is made to copyright issues and the use of creative commons. The unit and assessment schedule is based on the Technology Curriculum at levels 4 and 5.<br><br>Contents: Resource Descriptor; Teacher Guidelines; Curriculum Links; Key Competencies; Task including an 18 page student resource, PMI table, checklist, storyboard, planning table |
| **Dabbling with Databases**<br>Learn a range of tools in Access<br><br>Flatfile Database - queries and reports using wizards<br><br>Preparation for AS 91071 | DT 11/4/6 | $45.00 | This resource package covers the basic skills required to introduce Year 10 students to a basic flat file database using Microsoft Access 2010. If you have an older version this resource can be adapted easily as the process is the same. Dabbling with Databases could be used as a Year 11 resource if you wish to use databases for AS 91071 Implement basic procedures to produce a specified digital information outcome. Included in this resource are three short PowerPoints to assist teachers in introducing Databases, student activities and suggested outcomes. |
| **The Tool Has Changed but the Skills Haven't**<br>Cross Curricular Activity | DTB 6 | $40.00 | *Revised 2010*<br>Feeling frazzled? Can't think of anything creative? Check these out – a wide variety of innovative teaching ideas and activities with some cross-curricular links. They are designed to avoid constantly assessing the printed copy and encourage DTG teachers to try new |

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| Useful Starting Pack<br>Technology<br>Terminology | | | strategies in the classroom. This booklet has 25 activities. An example of an activity is 'Read me a Story' where students produce a story suitable to read to 5 – 6 year olds, a cross curricular activity that requires students to compose a story and create a booklet. Skills for this activity are communication, problem solving and social and co operative, learning outcomes are text entry, proofreading, composition, publishing and, if able to, reading the story a suitable age group. Each activity gives you the aim of the activity, what strand and level the activity is targeting, what skills will be used, what learning outcomes there may be, a description of the task and an brief assessment guide. Also included is an extensive glossary of DTG terminology. |
| **Troubleshooting and Quick Keys** | DT 05/3/10 | $18.00 | A useful resource for junior students to revise reasons for logon difficulties and the use of quick keys.<br>*Contents: Teacher Notes; Troubleshooting; Quick Keys* |
| **Spreadsheets and Graphs Development** | DT 06/1/9 | $30.00 | Intended to develop the students' spreadsheet and graphing skills. It contains a pack of 10 activities based around a variety of themes. Topics include Bungy Jumping; Rugby; Party Shopping; ACC Claims; Lotto Numbers; Car Sales; Visitors to New Zealand; Cricket; Shopping with a Friend; and Flying to Brisbane.<br>*Contents: Teacher Notes; How to Use; Student Activities; Assessment Schedules; Suggested Solutions* |
| **Design Skills Development** | DT 06/1/10 | $30.00 | This resource will develop students' design skills. It contains a pack of 10 activities based around two themes – Magazines and Music.<br>*Contents: Teacher Notes; How to Use; Student Activities; Assessment Schedules; Suggested Solutions* |
| **Critical Analysis and Design Unit** | DT 08/1/2 | $40.00 | This pack contains two design tasks with suggested assessment schedules.  The first task is a practice task to introduce students to the technology process and critical analysis.  The assessment schedules are based on the technology process with a focus on guiding students to become technologically literate.  To assist student to develop the skills to be able to critique technological outcomes (their own and others); to apply the knowledge gained through the evaluation process to the development of their own outcomes; and to develop understandings of technological achievements and issues from a wider perspective other than their own. This resource is an ideal way of introducing the technology terminology and aspects of the technology process and practice.  Furthermore, teachers could use this resource as a way to prepare year 10 students for NCEA Level 1 Technology ICT.<br>The activity introduces students to a range of technology procedures such as:  the concept of critically analysing their own and other technologists' outcomes, the conceptual design and refining process through to creating a final outcome, and the essential process of evaluating the final outcome against the design brief.<br>Contents: Practice Assessment Task (Pukeariki Poster Design), Final Assessment and Assessment Schedules |
| **Tech Guardians**<br><br>Working in others<br>Discussions<br>Students making decisions working as a team | DT 09/2/3 | $40.00 | Levels 4 -5 of the New Zealand Curriculum (Years 9 -10) This unit of work has been prepared to allow students to develop an understanding of working in groups.<br>They will be focussed on working as a member of a community group and as a member of the school community. Students will work to identify a concept that a teacher within their school wants to teach and then as a group with the teacher to find some appropriate software to enhance the teaching. This unit involves students communicating ideas and presenting these back to the class. |

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| | | | *Contents: Teacher Notes; Teacher Guidelines; Summary of Key Competencies embedded in this unit; Summary of Values embedded in this unit; Unit focusing questions; Summary of unit learning outcomes; Activities including student ready worksheets; Useful web resources; An example of how software can be used in the classroom. Opportunities for students to improve key competencies focussing on: Relating to others; Managing self; Participating and contributing. The values being focussed on are: Community, participation; Integrity; respect* |
| **Flip Out – Digital Flash Cards**<br><br>*Teaching & Learning Pack* | DT 15/4/1 | $50.00 | *Achievement Objective(s):Develop Digital Technology skills by learning how to design an interactive flash card template using PowerPoint and populate it to make a relevant and up-to-date digital resource for any subject.*<br><br>This resource is aimed at NZC Level 5 as a possible lead up to an assessable Technology Project. It focusses on teaching the skills and steps to build an interactive outcome. The outcome can be built as a resource for another department within the School Community or can be used as a learning or teaching tool within Digital Technology. It has scope to be used across the curriculum and in other languages. The resource contains a step-by-step guide that demonstrates how to build an interactive resource using PowerPoint. The final outcome is an interactive flash card resource with a question/clue on one side. With a click on the clue card there is a resulting flip, and the answer is revealed on the reverse side of the card. With another click and a flip, the question/clue is revealed again. The resource can be used as a cross-curricular tool as the initial outcome can be treated as a template that can be populated with relevant and up-to-date questions and answers to suit any subject.<br>The instructions take the reader through the process of file management, card design, image manipulation, text and shape formatting, working with animations, working with triggers and using a variety of tools and shortcuts within PowerPoint.<br>This resource can be used by students, and/or teachers to learn how to build an interactive outcome suitable for any subject. It has been created using PowerPoint 2013. (PowerPoint 2010 can also be used – see <u>notes</u> on this pg 7)<br><br>Specific Content At conclusion of this topic students should be able to:<br><br>• Create a usable and well-designed interactive resource<br>• Use Exit and Entrance Animations effectively<br>• Use Triggers efficiently<br>• Include images effectively<br>• Know the difference between linking and embedding images<br>• Use file management correctly and name files appropriately<br><br>*Contents: Teaching and Learning Guide; A completed Flash Card PowerPoint; 11 Images including one that students can experiment with removing the background from (ThumbsUp2.png); A pdf containing a list of Word Short Cut Keys* |
| **Make a Choice – Digital Multi-Choice Questionnaire**<br><br>*Teaching & Learning Pack* | DT 15/4/2 | $50.00 | *Achievement Objective(s): Develop Digital Technology skills by learning how to design an interactive multi-choice template using PowerPoint and populate it to make a relevant and up-to-date resource for any subject*<br><br>This resource is aimed at NZC Level 5 as a possible lead up to an assessable Technology Project. It focusses on teaching the skills and steps to build an interactive outcome. The outcome can be built as a resource for another department within the School Community to be used as a learning or teaching tool within Digital Technology. It has scope to be used across the curriculum and in other languages.<br><br>This resource contains a step-by-step guide that demonstrates how to build an interactive resource using PowerPoint. The final outcome is an interactive multiple choice questionnaire. For every question there |

is one correct answer and 3 incorrect answers. Each correct answer, when clicked, takes the user to a well-done image and then on to the next questions. Each incorrect answer, when clicked, takes the user to an incorrect image with the option of trying again or quitting. The resource can be used as a cross-curricular tool as the initial outcome can be treated as a template that can be populated with relevant and up-to-date questions and answers to suit any subject. The instructions take the reader through the process of file management, slide design, image manipulation and linking, text and shape formatting, working with hyperlinks, and using a variety of tools and shortcuts within PowerPoint. The resource can be used by students, and/or teachers to learn how to build an interactive outcome suitable for any subject. It has been created using PowerPoint 2013. (PowerPoint 2010 can also be used)

Specific Content: At conclusion of this topic students should be able to:

- Create a usable and well-designed interactive resource
- Format and design user friendly slides
- Use hyperlinks efficiently
- Include images effectively
- Know the difference between linking and embedding images
- Use file management correctly and name files appropriately

*Contents: A teaching and learning guide; A completed Multi-Choice PowerPoint with hyperlinks; 11 images (including ThumbsUp2.png with a white background that can be removed to demonstrate the benefits of linking an image Contents: Teaching and Learning Guide; A completed Flash Card PowerPoint; 11 Images including one that students can experiment with removing the background from (ThumbsUp2.png); A pdf containing a list of Word Short Cut Keys*

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| **Technology Project Interactivity** <br><br> *Assessment Pack* | DT 15/4/3 | $60.00 | *Achievement Objective: Complete the Technology Process to complete the design and build of an interactive outcome to support the learning of others* <br><br> This resource is designed for students to be guided through the Technology Process to plan, design and build one or two interactive outcomes. The resourcing for the outcomes students are to build is not part of this pack. In order to obtain resources to use with this pack, the suggestion is to ask staff members from other departments in your school for their resources eg flash card hard copies, multi-choice questions and answers. By using resources from within your school community, students have the opportunity to work within an authentic environment <br><br> *Achievement Objective: Complete the Technology Process to complete the design and build of an interactive outcome to support the learning of others* <br><br> This resource is designed for students to be guided through the Technology Process to plan, design and build one or two interactive outcomes. The resourcing for the outcomes students are to build is not part of this pack. In order to obtain resources to use with this pack, the suggestion is to ask staff members from other departments in your school for their resources eg flash card hard copies, multi-choice questions and answers. By using resources from within your school community, students have the opportunity to work within an authentic environment |
| **Scratching the Surface Coding using the programme language Scratch –** <br><br> *Teaching & Learning Pack* | DT 17/3/2 | $80.00 | *Learning Objectives* <br> *Students can implement an algorithm by creating a program which uses inputs, outputs, sequencing, loops and selection using comparative operators and logical operators.* <br> *Students can work in a collaborative environment to solve computing problems* <br> *Students can explain/document their programs and use an organised approach for testing and debugging* <br> This resource contains basic to more detailed programming activities |

| | | | in the programming language Scratch to assist with the teaching and learning of Programming in Digital Technologies for NZC Level 5, Year 10 to support digital fluency and develop an aspect of Computational thinking. This Pack encourages students to be creators, not consumers. Students will be introduced to the Scratch 2.0 programming interface and stepped through a range of different programs. By programming, testing, debugging and commenting programs, students learn how to code using Scratch to meet objectives. They will learn how to implement an algorithm to carry out a particular intention. Challenges and opportunities to experiment are offered and are essential to the development of computational thinking. Students should be encouraged to further develop the programs they are required to build to enhance their learning. *Contents: Resource Descriptor; Definitions and descriptions of programming terms; Detailed student activities including objective and script descriptors; Code screen shots; Programming challenges; Video to introduce Scratch 2.0 interface; Video to introduce variables and how they are used;12 completed programming solutions* |
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| **Scratch the Surface**<br><br>**Assessment Gaminator** | DT 17/3/1 | $50.00 | *Achievement Objectives: Construct a basic computer program for a specified task*<br>This resource is an assessment activity to assess students' ability to program a simple game. The exemplar for this practice assessment is in the programming language Scratch. This resource includes a Practice Assessment activity detailing the specifications for a simple computer game. A basic program design is outlined, plus a list of tasks to be completed. To support the teacher, a completed program with comments, testing and debugging plan, objective and description document are provided. An assessment schedule is also provided. The resource 'Scratch the Surface' would be a good fit with this Practice Assessment as a Learning Tool to prepare students for this assessment.<br>*Contents: Resource Descriptor; Practice Assessment; Suggestion solution including a completed program with comments, testing plan; objectives and descriptions; Testing Plan Template; Game Objective and Description Template; Research Bibliography Template; Assessment Schedule with Authenticity Statement; Student Check Sheet* |
| Designing and Developing Digital Outcomes (DDDO)<br><br>*Develop an outcome to manage data*<br><br>**FileMaker Pro Advanced**<br><br><br>**An Interactive Resource** | DT 18/1/1 | $70.00 | This resource would be suitable for Year 10 (could also be used at Year 11 depending on students prior learning) students who are undertaking a Level 1 Digital Technologies programme of study.<br><br>Students will work through a step by step guide to support them to *Develop a design for a digital outcome* and to *Develop an outcome to manage data*. Developing a design for a digital outcome requires students to follow an interactive design process to develop a design for an outcome.  Students will:<br>• define the purpose of the database and end-user requirements;<br>• in consultation with the end-user, mock-up the database table structure and design ideas for the form (including the placement of the buttons)<br>• seek end-user feedback to refine and improve the functionality of the database system;<br>• consider the relevant implications (including usability, functionality, aesthetics and end user considerations; and<br>• justify, with evidence, why the chosen design is suitable for the purpose and end users<br><br>Developing an outcome to manage data requires students to use appropriate tools and techniques to structure, organise, query and present data for a purpose and end user.  The purpose and end user should be determined prior to the outcome being made.<br>When developing the outcome to manage data students will:<br>• apply appropriate data integrity and testing procedures; |

- use appropriate file management procedures; and
- apply appropriate design elements and formatting techniques to ensure the outcome if fit for purpose and that it meets end-user requirements

This resource is designed to guide students and teachers to through the process of developing a design for a digital outcome to manage data.
- Work with the user to identify end user requirements
- Design and develop a database table
- Set field names, data types and drop down menus
- Perform data integrity testing to ensure accuracy of data
- Design and create an input form for entering data
- Add buttons to the form
- Add scripts to the buttons
- Test the design of the database to determine its usability and functionality
- Find/query a database
- Use different layout modes for viewing and editing data
- Save and Export queries (Finds)
- Populate data in a predetermined format (e.g. a Report)
- Evaluate the database in terms of its ability to meet the purpose and end user requirements

Contents: Student Step by Step 'How to Guide" for designing and creating a flatfile database (44 pages); Suggested Templates; Completed Database; Logo Master; Voice-over Videos stepping through the process (11)

| InDesign It | DT 18/1/2 | $70.00 | This resource would be suitable for Year 10 or Year 11 students who are undertaking a Level 1 Digital Technologies programme of study. The digital media outcome that is created in this resource is designed to teach skills that students could implement in an assessment. The assessment could be an outcome from another subject area eg Geography, English, Media Studies – any subject where a report is to be created with text and images. While the outcome is built as an interactive one, it can be resaved and printed too. Elements of design are noted throughout the building of the outcome. |
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| *Develop a digital media outcome* | | | |

Students are able to independently work through this step-by-step guide to support them to *develop a design for a digital outcome* and to *Develop a digital media outcome*

Developing a design for a digital outcome requires students to follow an iterative design process to develop a design for an interactive pdf using Adobe InDesign. Students will:
- Define the purpose of the document and end-user requirements;
- Research design ideas
- In consultation with the end user, sketch some layout and design options for the document keeping in line with the specifications and end-user requirements
- Seek end-user feedback to refine and improve the design considering relevant implications, for example, social, cultural, legal, ethical etc.

Developing a digital media outcome requires students to use appropriate tools and techniques relevant to the outcome to suit the purpose and end-user requirements. Students will:
- Apply data integrity and testing procedures to improve the quality of the outcome and usability
- Use an iterative process to do so
- Apply design ideas effectively considering relevant implications.

It is beneficial if students have some experience with Adobe InDesign before working with this resource, but it is not essential. This resource

has 7 pages showcasing a variety of layouts and design ideas.

The scenario that is provided is to give students a starting point so that they can look into some layout ideas, complete some research and make sure the outcome that is being created meets the specifications. A number of different layouts are showcased in this resource. A section on Design Challenges is included at the end of the document. The aim of this is for students to practise some of the skills they have learned, and to experiment with different design principles. They should research some designs and have a go at replicating them.

This resource is a 'fictional' document – the images used do not correspond to real National Parks. The resource has a tools/techniques focus rather than a content focus.
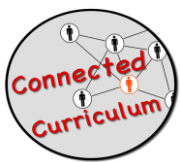
**Contents**: Resource Descriptor; A student step by step 'How-To Guide' for creating an interactive document using Adobe InDesign. (54 pages) Adobe InDesign CC 2015 is used in this resource. Other versions are not too different to this one, and so any other version of Adobe from CS6 would be suitable to use in conjunction with this resource. A Troubleshooting and Tips Document – for those annoying things that go wrong. A few tips are included in the troubleshooting document to help with some of the more frustrating moments; A Design Document – a short description with examples of the principles Balance, Repetition, Contrast and Hierarchy. It is expected that students research Principles of Design and be able to apply them to their outcome; Principles that have been applied are noted in the main resource; Copyright Free Images. These have been sourced and are fully copyright free. www.unsplash.com is also a great resource of copyright free images; A completed interactive pdf with buttons, links and transitions; A printable pdf

| Discerning Design -- Design Principles | CC 18/2/3 | $70.00 | **Achievement Objectives(s):** Learn about the four main principles of design, contrast, repetition, alignment and proximity and be able to recognise them and apply them to any outcome |

*Suitable for Digital Technologies as well as Integrated/Cross Curricular presentation/reports*

**NZC Levels 4 – 8**

Creating a well-designed visual outcome using digital skills have become a part of all school curriculum areas. With the implementation of Hangarau Matihiko, this 57page resource supports the learning of how to create an aesthetically pleasing piece of work – whether a website, booklet, poster, brochure, presentation, newsletter or report. Once the concepts of good design are recognised, students will be able to apply them to their own outcomes.

This comprehensive resource guides the learner to recognise good design principles and learn how to apply them to their own work. There are well-designed and badly designed outcomes to compare, examples to analyse and tasks to complete to reinforce the principles of design as they are discussed and demonstrated.
While content isn't a consideration in this resource, outcomes that students will be designing as part of their school program will require that they create their own content.

Students can be given this resource to follow at their own pace. It teaches the principles of design – Contrast, Repetition, Alignment and Proximity. It addresses the use of copyright free images and how to find them. Students are encouraged to choose the best software for building each of the outcomes. The choices could be Publisher, PowerPoint, Prezi (these first three for junior students) Scribus, and InDesign (these two for senior students). There are 5 tasks for students to try and collaborating with classmates for feedback is encouraged.

This resource could be used as an assignment with each of the tasks,

or a selection of them, to be handed in for critiquing. This could be a class activity where each student chooses two of their best pieces of work to showcase for critiquing by the class as a whole.
**Please note: This resource is not designed to teach students how to use the software**

**Prior Learning:** Software knowledge essential for students who use this resource. For juniors this could be Prezi, PowerPoint or Publisher. For seniors this could be InDesign, or Scribus**.**

**Specific Content** At conclusion of this topic students should be able to: Apply the principles of design, namely contrast, repetition, alignment and proximity to any outcome they create, whether this is a website, booklet, poster, brochure, presentation, newsletter, or report

**Further Learning:** The design skills taught in this resource can be used across a range of curriculum areas where a report or presentation is required.

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| **Café Project**<br><br>*How to Guide for Students*<br><br>**DDDO Progress Outcome:**<br>Progress Outcome 2 or 3 (Curriculum Level 4 or 5)<br><br>**Computational Thinking Progress Outcome:**<br>Progress Outcome 3 or 4 (Curriculum Level 4 or 5)<br><br>**Theme**:<br>Developing a range of outcomes to support the marketing and management of a new Restaurant / Café | CC 18/2/4 | $70.00 | **Content:** step-by-step 37 page 'How to Guides' for creating a range of solutions to identified needs / opportunities, including<br>• Menu Design using online tools<br>• Website design using online tools<br>• Basic ordering system using Python programming<br><br>This resource would be suitable for Year 9 students who are studying Digital Technologies. It provides a range of linked activities that can form a complete module of work or can be adjusted to fit the time available. Each task can stand alone.<br>Students will work through a step-by-step guide to support them to *Develop designs for digital outcomes.*<br><br>These will include<br>1. Designing a relational database and an app using Filemaker Pro<br>2. Creating a menu using CANVA<br>3. Creating a simple website using WIX<br>4. Creating a basic ordering system using Python and Repl.it<br>Developing a design for a digital outcome requires students to follow an iterative design process to develop a design for an outcome. Students will:<br>• define the purpose of the outcome and end-user requirements;<br>• seek end-user feedback to refine and improve their outcomes; and<br>• consider the relevant implications (including usability, functionality, aesthetics and end user considerations;<br><br>Developing outcomes requires students to use appropriate tools and techniques to produce solutions that are fit for purpose and meet end-user requirements.<br><br>When developing their outcomes students will:<br>• consider design with specific reference to aesthetics, legibility and useability; and<br>• use appropriate software to meet the needs of the outcome development.<br><br>This resource is designed to guide students and teachers through the process of developing a range of designs for a range of digital outcomes.<br><br>Digital Technologies | Hangarau Matihiko<br>New Zealand is a digital nation. Digital technologies are transforming how we live; shaping our homes and our workplaces, changing the way that we interact with each other and live our everyday lives. The Technology Learning Area of the New Zealand Curriculum stresses |
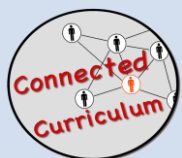
the importance of intervention by design: the use of practical and intellectual resources to develop products and systems. These developments expand human possibilities by addressing needs and realising opportunities to meet new and emerging societal needs[2].

**Designing and Developing Digital Outcomes**
Students understand that digital applications and systems are created for humans by humans. They develop increasingly sophisticated understandings and skills related to designing and producing quality, fit-for- purpose, digital outcomes. They develop their understanding of the digital information technologies that people need in order to locate, analyse, evaluate, and present digital information efficiently, effectively, and ethically. They become more expert in manipulating and combining data, using information management tools to create an outcome. They become aware of the unique intellectual property issues that arise in digital systems, particularly approaches to copyright and patents.[3]

Digital Technologies focus on understanding, developing and using digital software, hardware and electronic systems across a range of contexts including school, the home and wider community settings. Students develop understandings and skills related to producing quality digital outcomes or environments.

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| **Study Buddy**<br><br>**App Design**<br><br>**Designing and developing digital outcomes**<br>Progress Outcome 2 or 3 (Curriculum Level 4 or 5)<br><br><br><br><br>**Theme**:<br>**Application Design** | DT 18/4/2 | $60.00 | This resource contains three activities for students to complete as well as teaching notes. It is designed for students in Year 9 at Curriculum Levels 4 and 5. And provides opportunities for students to demonstrate the Design and Develop Digital Outcomes Progress Outcome. It includes 24 pages of detailed and clear how to use notes. It focuses specifically on app development, design and deployment. This resource is designed to allow students to explore and create content to demonstrate their ability in Designing and Developing Digital Outcomes.<br>It is intended to be used with Year 9 students. However, it could also be used with Year 8 students or as a short introductory task for Year 10 students before embarking on a more challenging design task. The tasks are as follows<br>**Task 1** – create a Document to allow students to develop the brief/specifications for the project as well as analyse the data required and provide an evaluation at the end.<br>**Task 2** – create a spreadsheet with suitable fields for storing data (including a simple drop-down list)<br>**Task 3** – create an app based on the spreadsheet using appsheet (a free online tool for app development and deployment)<br>**Task 4** – improve the app following an iterative development process<br>**Task 5** – deploy the app<br>**Task 6** – explore ways to further improve the app using feedback and discussion from other users<br>**Task 7** – evaluate the app against specifications, relevant implications, fitness for purpose and with input from other users.<br>In this format it is anticipated that the task would take in the region of 5 – 6 hours to complete fully. However, this time scale will be affected by student ability and experience. In addition, there are many opportunities to expand the project to include greater coverage of the Progress Outcomes. Suggested activities to expand the resource are detailed in the notes below.<br>The work in this resource links to the Designing and Developing Digital Outcomes Progress Outcome in the New Zealand Technology Curriculum. While it does not in itself address all aspects of the Progress Outcomes, it gives an opportunity to explore a number of key aspects and could be expanded by the teacher to cover a wider range |

**Specific Content**

- Identify the information and type of information that might be required in an app
- Create a simple spreadsheet with a drop down list
- Create a simple mobile application
- Understand the connection between two different applications and how changing one dynamically updates the other
- Understand the importance of layout to ensure ease of use in an app
- Use simple formulas to apply formatting to data in an application
- Deploy and test an application

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| **Holiday Currency Converter**<br><br>**Designing and developing digital outcomes**<br>Progress Outcome 2 or 3 (Curriculum Level 4 or 5)<br><br><br><br>**Includes:**<br>**Python**<br>**Spreadsheet**<br>**Thunkable** | DT 20/1/1 | $60.00 | This resource could be used with students from years 8 - 10 depending on both the previous experience of the student and the familiarity of the teacher with the software used.<br><br>The **Python** tasks should take no longer than 2 hours to complete. However, it is expected that teaching will take place around the tasks which would help students understand what they are doing and why. In addition, it is important for the students to evaluate the solutions created within the context of limitations. It is possible to further develop the solutions attempted to make them more effective and therefore the resources could form the starting point for a short unit of work that explores a number of Python techniques.<br>The **Spreadsheet** task should be completed in a single lesson but builds upon the knowledge gained from the Python task. As with the Python task the teacher can expand the task further and also use it to teach a range of spreadsheet specific skills.<br>The **Thunkable** task requires a similar amount of time to complete but again can be expanded and developed further and provides a useful contrast with the Python task that should spark discussion about fitness-for-purpose and the effectiveness of types of software (ie desktop v mobile apps).<br><br>**Objectives of the Resources**<br>The resources allow students to develop a number of the skills and abilities described in the curriculum above.<br>Key areas are:<br>• formulating solutions that use computers to solve problems<br>• understanding how data / information is stored<br>• understanding types of information<br>• algorithmic thinking and decomposition of a task<br>• user interaction and ease of use<br>• flexibility and efficiency in programming<br>• user interface and heuristic design.<br><br>It is important to understand that while work in all of these areas is possible it will be necessary for the teacher to identify and expand of specific focus, the resources can be seen as a striating point for further teaching in a longer course or a stand-alone exercises in a shorter course.<br>In addition to the specific Digital Technologies skills the tasks offer an opportunity to compare and contrast solutions to evaluate their effectiveness for users and as a solution in themselves. Students should be evaluating the restrictions and limitations of the different solutions and exploring through classroom discussion how some of these limitations could be overcome. The solutions also give scope for discussion about fitness-for-purpose and the environment they will be used in and how that affects their usefulness.<br><br>**Resources / Equipment / Alternatives**<br>If your school has BYOD all of the tasks can be completed on laptops or Chromebooks. |

**Python** - this task can be completed in any development environment. The example in the resource uses Python 3.8 (IDLE) but other options are available depending on the system in use at your school.
Online versions are also available such as https://repl.it
**Spreadsheet** - the example shown uses the Mac version of Xcel but any version can be used including Google Sheets.
**Thunkable** - is an online app development tool that will allow users to test their designs live on a mobile phone. It is cross platform meaning that it will work with Android or iPhones. Students will need to download and install the Thunkable app from the Google Play Store or the App Store. It is important that teachers test the ability of students to install the app and the ability of the school system to run the software before starting the task. An alternative to using Thunkable would be to design on Filemaker but this would require a good level of teacher ability with the software and is limited to testing on a suitable desktop or laptop.