TECHNOLOGY/ART INTEGRATED UNIT PLANNER: Technology into Art, English, Science...

Year Group: 6/7 (NC Level 3) **Unit Title:** Papermaking – Jasper Johns **Duration:**

DESCRIPTION OF CONTEXT

Columba College has received 'Enviroschool' status. This means that the school is showing concern for the environment in the way that it runs. For example, located around the school are blue bins for the disposal of paper. These are collected each week by the Environment Committee, and all the paper is put in a big bin for collection by Envirowaste. Instead of going into a landfill, it is bundled up by and Otago Paper Recyclers and shipped overseas for recycling into various other paper products such as corrugate for cardboard, and 'new' paper made from 60% recycled materials.

But... can we do anything here at school with the paper we collect?

KEY FOCUS ON TRANSFORMATION OF: Information / Energy / Materials Circle)



CLASS DESCRIPTION/Students' Past Experiences

Unknown at this stage - this section will be completed when the actual class to be taught is known and the unit will be refined accordingly to build of students past experiences (prior understandings/competencies)

LEARNING LINKS

KEY COMPETENCIES:

Using language symbols and text - specific to curriculum areas, literacy, numeracy

Managing self – appropriate time management, use of materials and equipment to ensure the completion of a creative and quality outcomes

Relating to others – group/ shared tasks, particularly in practical activities

Thinking – specific to curriculum area i.e. technological process

Participating and contributing - constructive contribution to class and activities

VALUES:

Students will be encouraged to value

Excellence – through scaffolded sequential tasks, handson experience, and opportunities to practice skills and demonstrate understanding of technological and artmaking processes, plus experience with high-quality exemplars

Innovation, inquiry and curiosity – through experimentation, learning experiences based around an 'every-day' technological product, and through variety in creative outcomes

Diversity – through looking at papers as creative expressions of different cultures - Japanese, Maori, Pacific Island 'Tapa' cloth, paper industries in NZ, and individual interpretations of the project theme(s)

Equity – through equal access to equipment, materials and resources

Community and participation – through sharing responsibility for management of equipment, materials and resources in the classroom context

Ecological sustainability - through using recycled materials, and examining the wider context of consumption and recycling

Integrity – through classroom conduct and commitment to the production of high quality technological products. artworks and artefacts

KEY FOCUS: Component/s of Technology underpinning unit Planning for Practice	KEY FOCUS: Context-specific skills/knowledge
Brief Development Outcome Development and Evaluation Technological Modelling Technological Products Technological Systems	Technology: pulp preparation and paper-making, planning and brief development, awareness of technological process
KEY FOCUS: Component/s of Visual Art underpinning unit Understanding the Arts in Context Developing Practical Knowledge Developing Ideas Communicating and Interpreting	Visual Art: drawing (media and processes), printing, colour,
KEY FOCUS: Component/s of English underpinning unit Writing and Presenting, processes and strategies Writing and Presenting purpose and audience Writing and Presenting Ideas	English – writing clear instructions, layout, verbs, language features
KEY FOCUS: Component/s of Science underpinning unit Investigating in Science	Science: examining prior knowledge, investigating through inquiry and experimentation
TERMINOLOGY embedded within component focus deckle, frame, pulp, concentrate, drying rack,	TERMINOLOGY of specific skills/knowledge

LITERACY/ NUMERACY

LEARNING ENVIRONMENT CONSIDERATIONS

SAFETY ISSUES

(Refer to MOE Revised Health & Safety Guidelines)

RESOURCES REQUIRED

Recycled papers: office, card, coloured, newspaper, magazines

Other ingredients: vegetation, string, sparkles etc Moulds and deckles, blender, water, jaycloths, cclamps and drawing boards, hairdryer, pegs aprons, newspaper. colour wheel, frottage, collage,

verbs, layout, compose, sequence, order

strength, absorbency, texture, rigidity, softness, recycling, physical change, functional change, starch, fibres, investigating

newsprint, ohp (acetate), paint, dyes, printing inks, brushes and rollers, glue etc.

School journals

Variety of papers, including remade, magnifying glass, torch, eye-droppers, dye

PREDETERMINED SPECIFIC LEARNING OUTCOMES	ASSESSMENT CRITERIA	ASSESSMENT STRATEGIES
 Develop skills in working with paper and recycled materials (<i>Outcome development and evaluation</i>) Develop knowledge of paper qualities and performance (<i>Technological products</i>) Develop understanding of the key stages in the technology cycle (<i>Planning for Practice</i>) Undertake appropriate time and resource management to ensure the completion of a quality outcome (<i>Planning for Practice</i>) Undertake and understand that technological modelling is used to test and trial conceptual and realised ideas. (<i>Outcome development and evaluation</i>, <i>Technological modelling</i>) Apply knowledge and skills in the manufacture of a quality solution. (<i>Outcome development and evaluation</i>) Develop an awareness of representations of Technological systems (<i>Technological Systems</i>) 	Students will: Develop understanding of the key stages in the technology cycle Undertake planning to identify the key stages and resources required to develop an outcome Undertake appropriate time and resource management to ensure the completion of a quality outcome Complete an outline of intended outcome(s), specifying attributes, resources, methodology, and useage Demonstrate understanding that modellingis a form of testing and trialling. Show knowledge and understanding of how materials combine together to form products Apply knowledge and skills in the manufacture of a quality solution. Undertake modelling as a form of testing and trialling. Develop knowledge and skills in working with paper and recycled materials, including paper and materials qualities and performance Develop an understanding of manual and mechanical processes as examples of transformative systems	 Observation of material selection and use to produce an outcome. Discussion with students about knowledge of how to work materials to form products. Teacher checks through ongoing formative discussions with each student and marking of workbooks to ensure all students have: developed concepts, tested mock ups, completed an outcome in given time, evaluated outcome against performance attributes Observation of cooperation between students.
 To develop an understanding of the Numerals series by Jasper Johns (Understanding the Arts in Context) To explore and use a range of drawing and printmaking processes (Developing Practical Knowledge) Use the Numerals series by Jasper Johns as the 	Students will: Investigate and analyse examples of appropriate artworks to identify their characteristics and the contexts in which they were made Use dry media, exploring use of line,	 Written comment on context of the work of Jasper johns, and analysis of his artwork(s) Production and presentation of a number of artworks in sketchbooks Planning and development of ideas in sketchbooks

 basis for making a series of artworks (Developing ideas) Critique and evaluate their work and the work of their peers following exhibition (Communicating and Interpreting) 	 shading, texture and pattern Explore mono print-making techniques Generate ideas in response to artworks by the selected artist model, and materials and media, using typographic templates Express ideas contained in their own work and the work of others. 	Verbal responses to their own work and the work of their peers
 Develop an understanding of the connections between written and visual language when producing an instructional text. (L3 Speaking, Writing and Presenting, processes and strategies) Form and express ideas and information with increased clarity (L3 Speaking, Writing and Presenting, Ideas) Construct a text that shows an awareness of purpose and audience through careful choice of content, language and text form. (L3 Speaking, Writing and Presenting, purposes and audiences) 	Students will: Written and visual features are balanced Written language matches the visual aspects. Includes most domain element for procedure e.g. headings, materials, actions. Relates most content and detail to the task A task can be completed from the information provided. Writer shows some awareness of purpose and audiences through choice of content, language and writing style. May rely on context and relies on some audience inference to follow the instructions.	 Discussion with teacher around the layout Peer critique Peer assessment on whether the instructions are clear and specific Self assessment using checklist for instruction writing considerations. Stakeholder feedback around clarity of the instructions.
 Examine prior knowledge through inquiry and experimentation (<i>Investigating in Science</i>) Carry out investigations to develop simple explanations (<i>Investigating in Science</i>) 	Students will: Identifying and controlling variable to enable valid and reliable data to be collected Design experiments, and communicate results using appropriate means	Written work and illustrations in topic books
NEGOTIATED SPECIFIC LEARNING OUTCOMES		ASSESSMENT STRATEGIES
(Class, group or individual student specific learning outcomes should be noted here. At the planning stage of the unit this will be blank. However, as the unit progresses and opportunities for negotiated learning		

outcomes arise, this section can be completed to ensure additional learning experiences are developed and incorporated in to the delivery to support the class, group of students or individual students as appropriate.)	

TECHNOLOGY

LEARNING EXPERIENCES (Lesson One)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Introduction into Course Roll Introduction to the art room (H3) and teacher Equipment needed:		Workbooks issued Students require pens, coloured pencils, glue sticks, to be organised	
Codes of Practice Safety in the classroom environment Explain Duties / Routines.	Managing self Students are aware of their surroundings and appropriate behaviour Students understand that each student is responsible for own actions		
 Introduce Technology Cycle Introduce the Technology Cycle (relate this to Technological products e.g. Juice carton*) What is Technology? (give examples : Camera – analogue/ digital; microwave, etc.) 	Using Language, symbols and texts: Students can Develop understanding of technological process Participating and contributing: Take part in group discussion to complete brainstorming diagram on board	Technology Cycle sheet – Juice Carton	Develop understanding of the key stages in the technology cycle (Planning for practice)

LEARNING EXPERIENCES (Lesson Two)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Recap Technology Cycle	Thinking: Introduction to issue	Brief sheet,	Develop understanding of the key stages in the technology cycle
Introduce the issue of Paper, Columba as an Enviroschool, and opportunity for recycling waste paper into specialty papers (special papers for special purposes).	Students understand the aims of the course and how process is an integral part of technology.	Blank Technology Cycle Sheet	(Planning for practice)
 Introduce class brief and discuss differences between attributes and specifications: Give out Technological Issue sheet and explain Key 	Understand the stages of the technology cycle and those specific to that term.		
stages in the process. (Relate to the Technology cycle) as it relates to the class brief	Revise the technology cycle.		
	Relate the process of technology to the new context.		

LEARNING EXPERIENCES (Lesson Three)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
 Introduce students to variety of existing paper samples Where does it come from? How is it made? Establish prior knowledge Question students on uses of paper (group brainstorm on board) – what do we use paper for? Special papers for special purposes? Show them samples and explain their attributes – strength, weight, usage, cost; terminology: sheaf, ream, pad, Set Paper Analysis sheet for class work, and a second one for homework. 	Using Language, symbols and texts: Students will: • establish, share and build upon relevant prior knowledge • use appropriate terminology: attributes (characteristics) • Identify the material they are working with and possible implications in using paper Participating and contributing: Take part in group discussion to complete brainstorming diagram on board	Paper samples Paper Analysis sheet Definitions of terminology for homework	Develop knowledge of paper qualities and performance (Brief Development, Technological Products)

LEARNING EXPERIENCES (Lesson Four)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Reflect on Key Stakeholder and stakeholder interests / hobbies / likes / dislikes. Complete the first page in their brief (this can be completed for homework if not done in class) • Identify the key stakeholder (Intermediate staff, students) • Complete the following questions: • who will their specialty paper be for - intermediate staff? • whatmakes it special/what will it be used for – personal stationery, scrapbook pages • why – visually interesting, every page is unique, made from recycled materials, possibly themed gift idea Identify the key attributes/specifications for their specialty paper; It should	Thinking – making sense of information, experiences and ideas	Characterise stakeholders on whiteboard! Brief worksheet	Undertake modelling as a form of testing and trialling. (Outcome development and evaluation and Technological modelling)

 Review workbooks and homework Concepts: Develop ideas for possible paper recipes. Concept design – what sort of paper is suitable for your selected specialty? What is possible? What sort of materials should it contain? Design ideas might include using base mixes of different paper pulp, and then customising them with additional ingredients such as dyes, flowers, glitter, leaves. Other variations include: consideration of pulp size (small/large chunks), colour themes/ relationships etc. Refined identified key attributes/specifications based on stakeholder feedback and findings from undertaking technological modelling Use the worksheet provided 	Relating to Others: Develop an understanding of the stakeholders needs.	Worksheet Drawing equipment. Colouring pencils	Develop knowledge of paper qualities and performance (Brief Development, Technological Products
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LEARNING EXPERIENCES (Lesson Five)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
What resources are needed at the different stages during the project? Talk about Restrictions (i.e. methodology of papermaking process – pulping, different pulps based on different papers, additional ingredients, drying methods and times) and the importance of Planning to make sure their paper project is finished in time and to a high standard to address identified key attributes/specifications. With teacher guidance draw up a scheme on the worksheet headed " Planning ".	Managing self Thinking Importance of planning will be understood. Students will understand what resources are needed to work through the process.	Workbooks Planning worksheet	Develop understanding of the key stages in the technology cycle (<i>Planning for practice</i>) Undertake appropriate time and resource management to ensure the completion of a quality outcome (<i>Planning for practice</i>).

LEARNING EXPERIENCES (Lesson Six)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Finish planning template Gathering and sorting materials, tearing and sorting. Work in small groups to process papers.	Participating and Contributing	Recycled papers	Develop understanding of the key stages in the technology cycle (<i>Planning for practice</i>) Undertake appropriate time and resource management to ensure the completion of a quality outcome (<i>Planning for practice</i>). Develop skills in working with paper and recycled materials (<i>Outcome development and evaluation</i>)

LEARNING EXPERIENCES (Lesson Seven & Eight)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Trial paper making	Using Language, symbols and texts; Thinking: Trial and evaluate potential outcomes against key attributes and specifications to select and develop an outcome to address the need or opportunity Students will understand the importance of accuracy to create a quality outcome.	Pulps Frames and deckles Sponges Jay cloths Trays newspaper Boards & c clamps Rollers Additional ingredients: dyes, vegetation, glitter etc.	Develop skills in working with paper and recycled materials (Outcome development and evaluation)

LEARNING EXPERIENCES (Lesson Nine)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Planning and undertaking evaluations	Managing self: Importance of planning will be reinforced	Worksheet	

Development: Stick samples in workbook, and annotate successes and proposed changes Use the trials as a template to make modifications. Apply the feedback given to you by stakeholders. Make any adjustments requested and show this on the development worksheet. Support changes / modifications with annotations.	Using Language, symbols and texts: Understand the importance of using a mock up as a form of testing and trialling.		
Final brief: Create a final written statement that tells you: Make a visually interesting specialty handmade paper from recycled materials Final Attributes: With guidance, students should complete the following information on a 'SCUMPS' graphic organiser- • The qualities the paper should have (what it should look and feel like) • Size • Number of sheets • Final recipe, including materials used	Using Language, symbols and texts: • Understand the importance of a final brief • Key attributes identified in final brief specifications • Students will understand the importance of accuracy to create a quality outcome. Thinking: Use SCUMPS graphic organiser to plan effectively		

LEARNING EXPERIENCES (Lesson Ten, Eleven & Twelve)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Development of Final technological Outcome (Workshop Practice/ application of skill development) Use of frame and deckle Use of rollers, other ingredients Safe and appropriate conduct during practical activity On-going use of PMI thinking to evaluate work	Using Language, symbols and texts: Apply relevant knowledge and skills to manufacture an outcome Thinking: On-going use of PMI (Plus/Minus/Improve-Interesting) to help evaluate work.	Workshop equipment	Develop skills in working with paper and recycled materials (<i>Outcome development and evaluation</i>) Apply knowledge and skills in the manufacture of a quality solution. (<i>Outcome development and evaluation</i>)

LEARNING EXPERIENCES (End of project)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Talk to the students about how to evaluate their technological outcome and complete the evaluation sheet. Give out the assessment rubric – explain the terminology and ask students to complete these and hand them in. Give out blank portfolios (folded card) Explain using the examples how to assemble their portfolio, explain that presentation is important.	Managing Self: Evaluate final outcome against the key attributes and how it addresses the need or opportunity (metacognitive learning) Take pride in their presentation of their work	Evaluation sheet. Portfolio card, craft knifes and cutting mats. Assessment Rubric	Apply knowledge and skills in the manufacture of a quality solution. (ODE)

TECHNOLOGY INTO ART

LEARNING EXPERIENCES (Broken into Session Blocks)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
This Art activity is based upon some prior experience of paper-making. Students should consider approaches to papermaking design in the context of the artist model studied. This lesson sequence should therefore be inserted after trial paper-making, and prior to Lesson 9 – evaluation and final brief design. Through visual resources, students are introduced to the Numerals series by Jasper Johns. • Hand out examples, using the CAMPER template, discuss the following issues as a class/ in groups: Composition, Accuracy, Meaning, Period, Effectiveness, Relevance • Students record ideas on answer sheets provided	Use CAMPER format to organise and analyse	Reproductions of Jasper Johns' Numerals series	Developing an understanding of the Numerals series by Jasper Johns (<i>Understanding the Arts in Context</i>)

LEARNING EXPERIENCES (Broken into Session Blocks)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Based upon artworks studied, students can undertake a number of practical drawing activities, as well as consider designing and making coloured grounds using a variety of pulps for printing.	Using language, symbols and texts Exploring art-making conventions	a range of numbers (0-9) cut from OHP and/or card, and in a range of fonts for use as stencils, masks and templates	Exploring and using a range of drawing and printmaking processes (<i>Developing Practical Knowledge</i>)
(Tasks are not listed in any sequential order here, as multiple activities may allow individual teachers to work with available materials and resources as appropriate to student needs and abilities) DRAWING TECHNIQUES	Thinking Using creative and critical processes to make sense of visual information and artmaking experiences		
Frottage – rubbing on textures surfaces using soft drawing material(s) on newsprint/ or handmade paper). Masks can be used to define numeral shape, including a variety of fonts. Alternatively, numbers can be cut out afterwards from sheets of	Managing self Self-motivated/ directed practical tasks	handmade papers, newsprint, cartridge	

frottaged paper, and collaged onto other papers.		paper	
Pencil – shading and line techniques (scribbling/ hatching etc) using templates/masks (various fonts) as a guide. Shade outside the figure, use side of pencil only, point of pencil.			
Cutting & glueing – whole numbers made with handmade papers, pasted onto other (different) papers			
Collage – cut or torn paper stuck down within drawn out/ traced mask shape			
PRINTMAKING TECHNIQUES Students are encouraged to use these approaches on handmade papers of their own design		Rollers, printing ink	
Relief printing – cut out card figure and stick onto card, coat with watered-down PVA. Note: figure must be inverted to print positive	(various colours), palette for rolling out	(various colours),	
Embossing – using relief card process as above, lay paper over the top and roll with clean dry roller			
Mono-Printing on OHP – wax resist on/around figure. Ink can be applied to OHP surface with brush, rollers, and drawn into with stylus. Emphasise mark-making potential.		,	
Linocut/ woodblock print – conventional approach for tidy printing			
Tonal water colour/ ink washes – a means by which grounds can be covered in preparation for printing.			

LEARNING EXPERIENCES (Broken into Session Blocks)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Students plan, develop and revisit art-making ideas using annotated examples in their workbooks. Students are asked to collate artworks in their workbooks and add notes on how they were made, and what changes could be made to them in subsequent artworks.	Using language, symbols and texts Exploring art-making conventions, and using literacy in workbooks Thinking Using creative and critical		Using the Numerals series by Jasper Johns as the basis for making a series of artworks (Developing ideas)

processes to make sense o visual information and art- making experiences	of
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LEARNING EXPERIENCES (Broken into Session Blocks)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
This work has potential to be exhibited in a variety of contexts, including: Book format (*see Tech into English following) Within conventional art displays As a visual resource in the Mathematics department (e.g. as an algebraic equation, or pi – a visual celebration of number!) Students should be given the opportunity to comment on their work and the work of their peers. Discussion should be around the ideas contained within their work, use of materials and media, relevance to and inspiration provided by the artist model. This can be in the form of class/group discussion, written evaluation etc.	Using language, symbols and texts Exploring art-making conventions, and using literacy Thinking Using creative and critical processes to make sense of visual information and art-making experiences Participating and contributing Students verbalise answers to visual stimulus Relating to others In group work Managing self Metacognitive learning – self awareness and evaluation	Display space, evaluation forms	Critique and evaluate their work and the work of their peers following exhibition (Communicating and Interpreting)

TECHNOLOGY INTO ENGLISH

LEARNING EXPERIENCES (Broken into Session Blocks)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
Introduce writing of instructions through looking at journal articles such as <i>Bright Lights Window Decorations</i> (P3 No 2 2004) and <i>Fold It!</i> (SL, No 2 1995).	Thinking - critical thinking about what makes an effective set of instructions.	School Journals	Construct a text that shows an awareness of purpose and audience through careful choice of content, language and text form. (L3 Speaking, Writing and Presenting, purposes and
Look at the language features of the instructions and develop success criteria on what features effective instructions should include. (refer to self assessment tool for idea of expected success criteria)			audiences)
Teacher models the instruction writing process to the class, using a process that is common to all.	Using language, symbols and texts: Looking at language features essential to clear instruction writing		
Students work in a pair to experiment with writing instructions using a process they are familiar with, such as tying a shoe lace, making a sandwich or washing their hair, with a focus on	Ç		
Using a range of school journals with instructions, students look at the visual language features particularly the layout and how the written and visual features complement each other.	Using language, symbols and texts: how the visual and written language combine to enhance	School Journals – articles on instructions	Develop an understanding of the connections between written and visual language when producing an instructional text. (L3 Speaking, Writing and Presenting, processes and
Students work in groups to develop some success criteria around layout.	meaning	moti dottorio	strategies)
Using photographs of a common process such as making toast or brushing teeth, students put the photographs into the appropriate order and write instructions for what is happening in each photograph. Encourage the students to think about the time frame for each stage. Students also need to consider the layout of their instructions and photographs and how the text and visual's combine to enhance meaning.	Thinking: Sequencing ideas and writing clear and concise instructions		Form and express ideas and information with increased clarity (L3 Speaking, Writing and Presenting, Ideas)
Students use the photographs of their paper making process, and sequence them according to the process they followed. Students will write a concise set of instructions for each photograph.	Sequencing ideas and writing clear and concise instructions		
Students to consult with peers, the teacher and stakeholders about the clarity of the instructions and edit where appropriate.	Relating to others: Editing process – using appropriate language features and		Construct a text that shows an awareness of purpose and audience through careful choice of content, language and text form. (L3 Speaking,
Students will self assess their final product, as part of the editing	giving meaning.		Writing and Presenting, purposes and

process, using the instruction writing self assessment tool.			audiences)
Students publish their work onto the recycled paper and bind into a booklet.	Participating and Contributing: Presenting a well balanced, clear and concise set of instructions that are easy to follow.	Recycled paper from paper making, binding clips	

TECHNOLOGY INTO SCIENCE

LEARNING EXPERIENCES (Broken into Session Blocks)	LEARNING INTENTIONS	RESOURCES	LINK TO LEARNING OUTCOMES
DOES RECYCLING CHANGE THE PHYSICAL PROPERTIES OF PAPER? (Activities listed here come from "Making Better Sense of the Material World; levels 1-4", Learning Media Ltd, 1998) Students carry out a range of tests, comparing the properties of recycled paper with those of original samples. Students comment on the differences and similarities in the physical properties of the papers they test, and present evidence in the appropriate manner. Activity 1: Look, Fold, Pull, Rip, Shine and Soak Activity 2: Close Inspection	LEARNING INTENTIONS	RESOURCES	Investigating in Science Build on prior experiences, working together to share and examine their own and others' knowledge. Ask questions, find evidence, explore simple models and carry out appropriate investigations to develop simple explanations. Communicating in Science Begin to use a range of scientific symbols, conventions and vocabulary