Nowra High School: Unit of work Technology (Mandatory)

Unit title: Nowra High herbs (Unit 2a)	**Length of unit:** 20 weeks – 4 x 50 minute periods
Area of study: Products **Design specialisation:** Food design **Technologies:** Plant production technologies and food technologies. **Design project:** Design and plant a herb garden. Trial the herbs grown in recipes, then produce a 'herb garden' cookbook.	**Outcomes:** **Focus outcomes:** 4.1.1 applies design processes that respond to needs and opportunities in each design project. 4.1.3 identifies the roles of designers and their contribution to the improvement of the quality of life. 4.2.1 generates and communicates creative design ideas and solutions 4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects 4.3.2 demonstrates responsible and safe use of a range of tools, materials and techniques in each design project. 4.4.1 explains the impact of innovation and emerging technologies on society and the environment 4.5.1 applies management processes to successfully complete design projects 4.6.1 applies appropriate evaluation techniques throughout each design project **Contributing outcomes:** 4.1.2 describes factors influencing design in the areas of study of Built Environments, Products and Information and Communications 4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources 4.5.2 produces quality solutions that respond to identified needs and opportunities in each design project 4.6.2 identifies and explains ethical, social, environmental and sustainability considerations related to design projects.
Unit description: In 2003, students at Nowra High School designed and built large garden beds, for the growing of herbs for use in Design and Technology, Food Technology and Hospitality classes. Year 7, 2004 will be the first group of students to see the benefits of this garden by undertaking a design project that will allow them to grow herbs and then use them in test recipes. Once recipes have been selected, students will produce a 'herb garden' cookbook. The focus will be upon the specialisation of food design, as students will initially grow food products and then use these products in recipes, (food production systems). The students will then present each recipe for display, so that it may be photographed, then included in the cookbook. **Design task:** Design and plant a herb garden. Trial the herbs grown in recipes, then produce a 'herb garden' cookbook.	
Resources: **Excursions:** Plants Plus – Nowra Garden Centre, Princes Hwy, Bomaderry, Ph: 44231799 Shoalhaven Nursery, 135 Terara Road, Terara, Ph: 44234788. Wirin Wirra Native Plants, 72 Hill Street, Tomerong, Ph: 44434029. Wreck Bay Enterprises Ltd. C/- Visitor Information Services, Booderee National Park, Jervis Bay Ph: 44421029 Yard 'n' Garden, Princes Hwy, South Nowra, Ph: 44210601 **References:** Australian Women's Weekly (1992) *Brunches and Lunches Cookbook*, ACP Publishing, Sydney Australian Women's Weekly (1989) *Cooking with Herbs Cookbook,* ACP Publishing, Sydney Better Homes and Gardens (1996) *A Grower's Guide to Herbs*, Murdoch Books, Sydney Better Homes and Gardens Magazine, Murdoch Magazines, Sydney Burke's Backyard Magazine, Burke's Backyard Publishing, Chatswood Choice Magazine, Australian Consumers Association, Marrickville Family Circle (1989) *Step by Step Scones and Muffins Cookbook,* Murdoch Books, Sydney Hemphill, J and R, *Herbs. Their Cultivation and Usage*. Lansdowne Press	**Videos:** Video Education Australia (2001) *Great Food Presentation – More than Food on a Plate*, Bendigo Victoria Video Education Australia (1994) *Recycling Processes*, Bendigo Victoria Video Education Australia (1995) *Safety in the Kitchen*, Bendigo Victoria Video Education Australia (1996) *The Axis Kettle*, Bendigo Victoria **Web Sites**: Burke's Backyard www.burkesbackyard.com.au Choice www.choice.com.au SRD Home Page www.green.net.au/srd

Students learn about:	Students learn to:	Integrated learning experiences and resources	Evidence of learning	Teacher evaluation
		Weeks 1–2		
		Introduction to central unit *Nowra High Herbs*. Students to indicate if they would prefer to undertake 2a or 2b.		
		Overview of design process. Brainstorm components of investigating, designing, producing, evaluating. Review of key concepts learnt in Semester 1.		
Focus outcome 4.1.3 • relationship of design to the areas of study of Built Environments, Products and Information and Communications. • different design specialisations. • the nature of work of designers as individuals and collaborators.	• identify relationships of design to each area of study. • describe the nature of each of the areas of study of Built Environments, Products and Information and Communications. • identify a range of design specialisations relevant to each area of study. • apply group work and collaborative strategies to project development.	• Small group design activity, (Design Target Activity Sheet). Presentation to class. • Brainstorm: who uses a design process? Designers who work in a range of design specialisations. • In groups, compile a list of design specialisations linked to each area of study: Products, Information and Communications, The Built Environments. Use resources provided by the school library to help compile the lists.	Assessment task: *Designers and their work*. In groups, students to select one design specialisation they are interested in. Research and prepare a PowerPoint presentation on a designer who has had success in that area of design. (Refer to task outline).	
Focus outcome 4.2.1 • communication methods including – drawings, sketches and models – written reports – oral presentations – **digital presentations.** • communication methods suitable for specific audiences including – users and clients – technical experts – **peers**.	• communicate information appropriate to specified audiences.			

Focus outcome 4.1.3 • the contributions of females and males who engage in design and technology.	• identify the contribution the designer makes to the improvement of everyday life.	Video: *Axis Kettle*. Designers involved in product design that is greatly influenced by environmental sustainability. Internet search: Society for Responsible Design, www.green.net.au/srd. Report on the contributions being made by designers to improve the environment.		
• work and training opportunities for people who engage in design and technology in each area of study.	• explore work and training opportunities for people who engage in design and technology relevant to each area of study.	Guest speaker/s: Work and training opportunities within the Shoalhaven for designers: – careers adviser – TAFE adviser – local designer, e.g. Sydney Yachts. – ex-student/s, e.g. Amy Coulthart, Drew Rosskelly, Bonnie Rozorio, Jackson Wicks.		
Weeks 3–4				
Focus outcome 4.2.1 • using ICTs to plan, develop and document design projects.	• compose a design folio for a specific audience in electronic format including features such as tabs, indents, headers and footers, margins and line paragraph spacing and using appropriate layout and graphic design. • use word processing features including page numbering and page breaks, find and replace, word count, spell check and thesaurus, columns and sections, inserting text/object/images.	Introduction to design brief and folio. Students to compose a design folio on the computer.	Documentation in folio of each stage of the design process undertaken, to produce quality solution.	
Focus outcomes 4.1.1 and 4.2.1 • design processes including – analysing needs, problems and opportunities. • needs and opportunities in the areas of study.	• establish a design process that responds to an identified need and opportunity. • identify needs and opportunities that require solutions in the areas of study.	Brainstorm: requirements of the design brief. What is the brief asking you to do? Develop a mind map of needs and opportunities as determined by the brief.	Ongoing folio documentation – computer generated.	

• methods used to generate creative design ideas including – **brainstorming** – **mind mapping** – sketching and drawing – modelling – experimenting and testing.	• use a variety of methods to generate creative design ideas for each design project.			
Focus outcome 4.1.1 • design processes including: – establishing criteria for success – researching – communicating ideas. – managing resources	• apply a design process when developing quality solutions for each design project. • establish criteria for successful achievement of needs and opportunities. • record design processes and decision making in a design folio for each design project.	Research using texts, recipe books and web sites provided to determine the types of herbs used in cooking and the factors that lead to a successful cook book. Determine in groups, appropriate criteria needed to ensure the finished herb garden and recipe book will be a success. Negotiation of final criteria between groups. Word process the criteria, for display in the classroom and folio.	Documentation of ideas in folio. Presentation of criteria for success to class. Documentation of criteria in folio.	
Focus outcome 4.5.1 • Resource availability including: – time – money – materials, tools and techniques – human resources including skills and expertise. – other resources	• identify resource availability and apply realistic limitations to each design project.	Discuss time, budget considerations, available human and non-human resources. Students to document this overview in folio. Complete a time, action and finance plan for project, using a computer-based spreadsheet. Print a copy of the plans for inclusion in folio.	Documentation of project plans in folio.	
Contributing outcome 4.1.2 • factors affecting design – **function** – aesthetics – human form – **scale** – ergonomics – ethical – environmental – legislation including OHS – **cost** – socio-cultural – **resource availability** – physical and material properties	• describe the factors affecting design in the development of each design project. • evaluate the appropriateness of specific design solutions for different cultural groups including Aboriginal and Torres Strait Islanders and other Indigenous peoples.	Complete a *Consider all factors* (CAF) activity in folio. Optional excursion: 'Wreck Bay Walkabout' Investigation of bush foods available in the Shoalhaven. Use of native herbs in Aboriginal cooking.		

– safety				
Weeks 5–6				
Focus outcome 4.3.1 **Plant production** **Materials** • characteristics of different plant types and varieties. • plant requirements which may include the use of nutrients, chemicals, fertilisers and growing medium.	• identify a variety of plants appropriate to the design project. • research and evaluate plant requirements in the development of a design project.	Discuss amount of garden space allocated to each class. Consider requirements of the brief including that the herbs must be: – compatible within a garden – useful in food preparation. Library research: compile a list of herbs that have culinary uses. Form teams. Each team to outline the cultivation, growing, harvesting, processing and companion planting required for four herbs. Class negotiate with teacher upon final group of herbs to be grown.	Ongoing folio documentation – computer generated. Oral report to class, findings of four herbs.	
Focus outcome 4.2.1 • methods used to generate creative design ideas including – brainstorming – mind mapping – **sketching and drawing** – **modelling** – **experimenting and testing**. • use of a design folio to record and reflect on design ideas and decisions. • communication methods including drawings and sketches and oral presentations. • communication methods suitable for specific audiences including users and clients, technical experts and peers. • using ICTs to plan, develop and document design projects.	• use a variety of methods to generate creative design ideas for each design project. • use a design folio to record and reflect on design ideas and decisions. • sketch, draw and model to aid design development. • manipulate images with tools such as editing, resizing, grouping, aligning and positioning. • communicate information appropriate to specified audiences. • use ICTs to communicate information including saving a document in various file types and storage locations from within the application.	Demonstrate methods, (pictorial using isometric grid sheets and orthographic) for drawing and sketching design ideas. Model, (using paper) and then draw initial design idea. Design a herb garden to scale, using CAD. Consider aspect, compatibility of herbs, cost, season, resources available and scale. Discuss how the communication of their design will be influenced by the intended audience. Save their design to user storage space on School Intranet, and on class CD-ROM. Class evaluation to determine which design best meets the required criteria for the herb garden design. Final design selected based upon class assessment.	Peer assessment of garden designs.	

Weeks 7–9				
Focus outcome 4.3.1 **Plant Production** **Tools** • specific tools relating to plant production technologies. • the function, selection and correct use of a range of contemporary tools used for – planting, – managing – harvesting	• select, maintain and correctly use tools and equipment for specific purposes in design project development.	Visit to local nursery to research cultivation, through talk by resident horticulturalist. Purchase of seed and seedlings. Discussion of cuttings and small plants (root division) available from home. Handout: Cloze passage – garden tools use and the required maintenance for each tool.	Ongoing folio documentation – computer generated.	
Focus outcome 4.3.2 • risk management strategies. • responsible behaviour in working environments. • Occupational Health and safety practices • the safe and responsible use of materials, tools and techniques in each design project. • maintenance of tools and equipment.	• manage risk when developing design projects. • use tools, materials and techniques in a responsible and safe manner in each design project. • maintain tools and equipment including computer equipment.	Review 'sun safety' policy. Develop a class policy to follow when working in garden. Handout work sheet: How to safely use and maintain garden tools. Prepare garden bed, using safe work practices.	Uses tools, materials and techniques safely to produce herb garden.	
Focus outcome 4.3.1 **Plant production techniques** • techniques used for: – planting – managing – harvesting	• select and use techniques appropriate for the purposes of a design project.	Students to develop cards for the care and maintenance of the herbs being planted, (computer generated). Plant herbs. Formulate a teamwork roster for garden maintenance. Review prior learning of cultivation and planting, managing and harvesting herbs and information received from nursery.	Participation in garden maintenance and planting of herbs.	

Weeks 10–11				
Focus outcome 4.3.2 • risk management strategies. • responsible behaviour in working environments • Occupational Health and Safety practices • the safe and responsible use of materials, tools and techniques in each design project. • maintenance of tools and equipment.	• manage risk when developing design project. • use materials, tools and techniques in a responsible and safe manner. • maintain tools and equipment including computer equipment..	Introduction to the Food Technology room. Watch video: *Safety in the Kitchen*. Brainstorm/CAF activity – safety issues both in the use of food (food hygiene) and in the use of tools and equipment. In teams, design a poster with safety issues outlined for class display.	Ongoing design folio documentation- computer generated.	
Focus outcome 4.3.1 **Food technologies** **Materials** • characteristics and properties of foods appropriate to a design project.	• identify common properties of food within each of the food groups. • select and prepare food for a design project.	Worksheet: food groups and their properties. Placement of herbs within the healthy eating target.		
Focus outcome 4.4.1 • innovation and emerging technologies relating to tools, materials, techniques or products in each area of study. • the impact of innovation and emerging technology on society and the environment.	• identify and describe a selected innovation or **emerging technology** in each area of study of Built Environments, **Products** and Information and Communications. • explain the impact of innovations and emerging technologies on society and the environment including new ICTs	Library research/Internet research: Genetic engineering of food, in particular herb products. Discussion of the use of genetic engineering (genetically modified food); its purpose; food labelling; consumer concerns. Review of articles from Choice magazine – the genetically modified food debate, (May 1999, November 2002)	Research findings presented as a report in folio – computer generated. .	

Weeks 12–13				
Focus outcome 4.3.1 **Food Technologies** **Tools** • specific tools related to food technologies. • the functions and correct and safe use of a variety of contemporary food utensils and appliances used for: – cutting – measuring – preparation, processing and cooking • recipes including the format and abbreviations commonly used.	• select and correctly use a variety of appropriate food utensils and appliances to prepare quality food items for a design project. • select, interpret and/or modify/develop recipes for a design project.	Investigate the range of tools used in food production and their use – 'Treasure hunt'. Location of equipment and tools. Use of textbooks to determine their usage in food production. Categorise tools: cutting, weighing, measuring, preparation, processing, cooking. Discuss safe use of tools and complete safety worksheet. Recipe analysis worksheet.	Competently completes safety test.	
Techniques • specific techniques used in – food preparation, – food processing – cooking food. • presenting food for visual appeal.	• select and use techniques appropriate for the purposes of a design project	Teacher demonstration of trial recipe number 1: Chicken Salad with Tarragon and Coconut, (N.B. recipes selected will be dependent upon the herbs being grown by each class group; herbs may be purchased if not yet fully grown in school garden). Teacher demonstration of techniques prior to each practical experience. Video: *Great Food Presentation – More than Food on a Plate*. Discuss food presentation as an area of Food Design. Trial food photography. Students to use the digital camera to photograph each food item produced, (for use in herb cookbook).	Uses tools, materials and techniques safely to produce food products. Formulation of an appropriate recipe template to be used in cookbook.	
Weeks 14–16				
Focus outcome 4.1.1 • design processes including – experimenting and testing ideas – producing design solutions. Contributing outcome 4.2.2		Trial recipes 2 and 3: Cheese and Herb Scrolls; Pasta with Basil Sauce. Students to form teams of four. Brainstorm categories needed for herb cookbook contents.	Practical participation: completion of trial recipes 2 and 3. Students to formulate recipe method: literacy strategy 'procedures'. Ongoing folio documentation –	

• experimentation and testing of design ideas • relationship of experimentation to success criteria.	• apply the results of experimentation to designing and making when developing each design project. • use effective research methods to identify needs and opportunities and locate information relevant to the development of each design project.		computer generated	
Contributing outcome 4.5.2 • skill development and refinement • construction steps that contribute to a quality solution • relationship of quality solutions to needs and opportunities and the criteria for success for each design project.	• practice and refine skills needed for design projects. • apply a design process that responds to needs and opportunities for each design project. • produce solutions reflecting quality standards appropriate to each design project.	Class negotiation for cookbook categories. Each team to select, trial and evaluate two recipes, using the types of herbs available in the school herb garden.		
Weeks 17–19				
Focus outcome 4.6.1 • developing criteria for success as a tool for assessing design development and production. • ongoing evaluation of design ideas and decisions.	• apply criteria for success in decision making during the development of each design project. • use criteria for success to reflect on the design process used and the solutions. • evaluate prior to, during and at completion of each design solution.	Develop an evaluation checklist for each recipe tested using the criteria established earlier in the process. Trial recipes 4 and 5. Evaluate the success of each product in relation to design criteria and food design presentation. Class analysis and evaluation of recipes trialled. In practical work groups, compile and word process recipes. Download digital photographs into each recipe. All groups collate, edit and sort recipes into one file. Print for final editing by team leader of each group.	Ongoing folio documentation – computer generated Folio documentation and evaluation of quality design solution. Final selection of recipes presented as a herb cookbook.	
Focus outcome 4.1.1 • Design processes including – evaluating ideas and solutions.	• evaluate design processes		Design folio follows a design process. Evaluation of quality design solution in terms of criteria established in brief.	

Contributing outcome 4.6.2 • ethical and responsible design	• demonstrate appropriate ethics and etiquette in relation to computer use such as general computer care, passwords, file security, network use, printing and shared resources.			
Week 20				
Focus outcome 4.1.1 • Design processes including – risk management. Focus outcome 4.6.1 • final evaluation considering – design process used – design solutions – reflection on learning.	• consider long and short term consequences of design in the design process. • self assess and peer assess design solutions.	Students undertake a life cycle analysis of the finished product, (paper). Discuss short and long term impact upon the environment of the design being produced. Optional: Watch video: *Recycling Processes.* Printing and binding of recipe books, one per class member. Optional: Printing and binding of additional recipe books for sale to staff and students undertaking unit 2b. Class analysis and evaluation of finished product – Herb Cookbook. Harvesting of remaining herbs for use by students completing Unit 2b.	Finished design solution.	