

Lesson Structure

5 x 70min lessons

Year 10 – Citizen Science

LESSON NUMBER	FOCUS	AUSTRALIAN CURRICULUM GENERAL CAPABILITIES	AUSTRALIAN CURRICULUM CONTENT DESCRIPTORS
1	WHAT IS CITIZEN SCIENCE?	<ul style="list-style-type: none"> • CRITICAL AND CREATIVE THINKING – INQUIRING – IDENTIFYING, EXPLORING AND ORGANISING INFORMATION AND IDEAS • CRITICAL AND CREATIVE THINKING – GENERATING IDEAS, POSSIBILITIES AND ACTIONS • ICT CAPABILITY – INVESTIGATING WITH ICT 	<ul style="list-style-type: none"> • SCIENCE - PEOPLE USE SCIENTIFIC KNOWLEDGE TO EVALUATE WHETHER THEY ACCEPT CLAIMS, EXPLANATIONS OR PREDICTIONS, AND ADVANCES IN SCIENCE CAN AFFECT PEOPLE’S LIVES, INCLUDING GENERATING NEW CAREER OPPORTUNITIES (ACSH194)
2	STARTING OUR SCIENTIFIC APPROACH	<ul style="list-style-type: none"> • CRITICAL AND CREATIVE THINKING – INQUIRING – IDENTIFYING, EXPLORING AND ORGANISING INFORMATION AND IDEAS • CRITICAL AND CREATIVE THINKING – GENERATING IDEAS, POSSIBILITIES AND ACTIONS • ICT CAPABILITY – INVESTIGATING WITH ICT • ETHICAL UNDERSTANDING – UNDERSTANDING ETHICAL CONCEPTS AND ISSUES • ETHICAL UNDERSTANDING – REASONING IN DECISION MAKING AND ACTIONS 	<ul style="list-style-type: none"> • GEOGRAPHY - HUMAN-INDUCED ENVIRONMENTAL CHANGES THAT CHALLENGE SUSTAINABILITY (ACHGK070) • GEOGRAPHY - THE APPLICATION OF SYSTEMS THINKING TO UNDERSTANDING THE CAUSES AND LIKELY CONSEQUENCES OF THE ENVIRONMENTAL CHANGE BEING INVESTIGATED (ACHGK073) • GEOGRAPHY - THE APPLICATION OF ENVIRONMENTAL ECONOMIC AND SOCIAL CRITERIA IN EVALUATING MANAGEMENT RESPONSES TO THE CHANGE (ACHGK075) • SCIENCE - FORMULATE QUESTIONS OR HYPOTHESES THAT CAN BE INVESTIGATED SCIENTIFICALLY (ACSI198) <p><u>SUSTAINABILITY Cross-curriculum</u></p> <ul style="list-style-type: none"> • SYSTEMS FUTURES

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3	DESIGNING AN EXPERIMENT	<ul style="list-style-type: none"> • CRITICAL AND CREATIVE THINKING – INQUIRING – IDENTIFYING, EXPLORING AND ORGANISING INFORMATION AND IDEAS • CRITICAL AND CREATIVE THINKING – GENERATING IDEAS, POSSIBILITIES AND ACTIONS • CRITICAL AND CREATIVE THINKING – ANALYSING, SYNTHESISING AND EVALUATING REASONING AND PROCEDURES • CRITICAL AND CREATIVE THINKING – REFLECTING ON THINKING AND PROCESSES • ETHICAL UNDERSTANDING – REASONING IN DECISION MAKING AND ACTIONS 	<ul style="list-style-type: none"> • GEOGRAPHY - THE APPLICATION OF SYSTEMS THINKING TO UNDERSTANDING THE CAUSES AND LIKELY CONSEQUENCES OF THE ENVIRONMENTAL CHANGE BEING INVESTIGATED (ACHGK073) • GEOGRAPHY - DEVELOP GEOGRAPHICALLY SIGNIFICANT QUESTIONS AND PLAN AN INQUIRY THAT IDENTIFIES AND APPLIES APPROPRIATE GEOGRAPHICAL METHODOLOGIES AND CONCEPTS (ACHGS072) • SCIENCE - FORMULATE QUESTIONS OR HYPOTHESES THAT CAN BE INVESTIGATED SCIENTIFICALLY (ACSIS198) • SCIENCE - PLAN, SELECT AND USE APPROPRIATE INVESTIGATION TYPES, INCLUDING FIELD WORK AND LABORATORY EXPERIMENTATION, TO COLLECT RELIABLE DATA (ACSIS199) • DESIGN AND TECHNOLOGIES - INVESTIGATE AND MAKE JUDGEMENTS ON HOW THE CHARACTERISTICS AND PROPERTIES OF MATERIALS, SYSTEMS, COMPONENTS, TOOLS AND EQUIPMENT CAN BE COMBINED TO CREATE DESIGNED SOLUTIONS (ACTDEK046)

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4	DATA COLLECTION AND ANALYSIS	<ul style="list-style-type: none"> • CRITICAL AND CREATIVE THINKING – INQUIRING – IDENTIFYING, EXPLORING AND ORGANISING INFORMATION AND IDEAS • CRITICAL AND CREATIVE THINKING – GENERATING IDEAS, POSSIBILITIES AND ACTIONS • CRITICAL AND CREATIVE THINKING – ANALYSING, SYNTHESISING AND EVALUATING REASONING AND PROCEDURES • CRITICAL AND CREATIVE THINKING – REFLECTING ON THINKING AND PROCESSES • ICT CAPABILITY – INVESTIGATING WITH ICT • ICT CAPABILITY – APPLYING SOCIAL AND ETHICAL PROTOCOLS AND PRACTICES WHEN USING ICT • ICT CAPABILITY - CREATING WITH ICT • NUMERACY - RECOGNISING AND USING PATTERNS AND RELATIONSHIPS 	<ul style="list-style-type: none"> • SCIENCE - SELECT AND USE APPROPRIATE EQUIPMENT, INCLUDING DIGITAL TECHNOLOGIES, TO COLLECT AND RECORD DATA SYSTEMATICALLY AND ACCURATELY (ACSIS200) • SCIENCE - ANALYSE PATTERNS AND TRENDS IN DATA, INCLUDING DESCRIBING RELATIONSHIPS BETWEEN VARIABLES AND IDENTIFYING INCONSISTENCIES (ACSIS203) • SCIENCE - CRITICALLY ANALYSE THE VALIDITY OF INFORMATION IN PRIMARY AND SECONDARY SOURCES AND EVALUATE THE APPROACHES USED TO SOLVE PROBLEMS (ACSIS206) • DIGITAL TECHNOLOGIES - DEVELOP TECHNIQUES FOR ACQUIRING, STORING AND VALIDATING QUANTITATIVE AND QUALITATIVE DATA FROM A RANGE OF SOURCES, CONSIDERING PRIVACY AND SECURITY REQUIREMENTS (ACTDIP036)

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5	CONCLUSIONS AND NEW PROJECTS	<ul style="list-style-type: none"> • CRITICAL AND CREATIVE THINKING – INQUIRING – IDENTIFYING, EXPLORING AND ORGANISING INFORMATION AND IDEAS • CRITICAL AND CREATIVE THINKING – GENERATING IDEAS, POSSIBILITIES AND ACTIONS • CRITICAL AND CREATIVE THINKING – REFLECTING ON THINKING AND PROCESSES • CRITICAL AND CREATIVE THINKING – ANALYSING, SYNTHESISING AND EVALUATING REASONING AND PROCEDURES • ICT CAPABILITY - CREATING WITH ICT • ICT CAPABILITY – COMMUNICATING WITH ICT • NUMERACY - RECOGNISING AND USING PATTERNS AND RELATIONSHIPS • NUMERACY – INTERPRETING STATISTICAL INFORMATION 	<ul style="list-style-type: none"> • SCIENCE - ANALYSE PATTERNS AND TRENDS IN DATA, INCLUDING DESCRIBING RELATIONSHIPS BETWEEN VARIABLES AND IDENTIFYING INCONSISTENCIES (ACSIS203) • SCIENCE - USE KNOWLEDGE OF SCIENTIFIC CONCEPTS TO DRAW CONCLUSIONS THAT ARE CONSISTENT WITH EVIDENCE (ACSIS204) • SCIENCE - EVALUATE CONCLUSIONS, INCLUDING IDENTIFYING SOURCES OF UNCERTAINTY AND POSSIBLE ALTERNATIVE EXPLANATIONS, AND DESCRIBE SPECIFIC WAYS TO IMPROVE THE QUALITY OF THE DATA (ACSIS205) • SCIENCE - CRITICALLY ANALYSE THE VALIDITY OF INFORMATION IN PRIMARY AND SECONDARY SOURCES AND EVALUATE THE APPROACHES USED TO SOLVE PROBLEMS (ACSIS206) • SCIENCE - COMMUNICATE SCIENTIFIC IDEAS AND INFORMATION FOR A PARTICULAR PURPOSE, INCLUDING CONSTRUCTING EVIDENCE-BASED ARGUMENTS AND USING APPROPRIATE SCIENTIFIC LANGUAGE, CONVENTIONS AND REPRESENTATIONS (ACSIS208) • GEOGRAPHY - HUMAN-INDUCED ENVIRONMENTAL CHANGES THAT CHALLENGE SUSTAINABILITY (ACHGK070) • DIGITAL TECHNOLOGIES - ANALYSE AND VISUALISE DATA TO CREATE INFORMATION AND ADDRESS COMPLEX PROBLEMS, AND MODEL PROCESSES, ENTITIES AND THEIR RELATIONSHIPS USING STRUCTURED DATA (ACTDIP037)