

Integrated Underachievement Model

Collaborative Research Team: Professor Karen Rogers, Lindsay Donnan, Maria Bousnakis, Tracy Burns, Shelley Hopper

Presenters: Lindsay Donnan, Tracy Burns, Maria Bousnakis, Shelley Hopper

Introduction

“We do not believe in ourselves until someone reveals that deep inside us is something valuable, worth listening to, worthy of our trust, sacred to our touch ... once we believe in ourselves we can risk curiosity, wonder, spontaneous delight, or any human experience that reveals the human spirit,”

E. E. Cummins

Introduction

The Integration Underachievement Model (I.U.M.) was designed to

Increase the self-efficacy of underachieving gifted students using pedagogical and affective interventions.

Introduction

The Integrated Underachievement Model was developed to assist teachers in:

1. Identifying underachievers
2. Profiling students
3. Planning interventions
4. Selecting and designing curricula aimed at enhancing academic self-efficacy
5. Monitoring and assessing student progress, and
6. Evaluating the intervention program.

Archdiocesan Sydney Catholic Schools Strategic Plan

- + Enhance students' well-being and resilience
- + Address the identified needs of underachieving students
- + Empower academically gifted students to perform to the highest level
- + Sustain and improve achievement levels of students in the Years 3 and 5 Literacy and Numeracy Basic Skills Tests.

Need

Awareness within Archdiocesan schools of underachieving gifted minority groups and their underrepresentation in gifted education programs.

Minority Group Populations – Archdiocese of Sydney

	EASTERN REGION PRIMARY	EASTERN REGION SECONDARY	INNER WEST REGION PRIMARY	INNER WEST REGION SECONDARY	SOUTHERN REGION PRIMARY	SOUTHERN REGION SECONDARY
REFUGEES	5	2	147	101	29	36
ESL	3892	2813	6901	4083	7760	4694
INDIGENOUS	142	71	53	25	94	51

Total Primary	Total Secondary	Total Prim & Sec
181	139	320
18553	11590	30143
289	147	436

Basic Skills Test Programme 2007

YEAR 3

GROUP		Numbers	Literacy (mean)	Numeracy (mean)
All Students	Archdiocesan	5115	53.9	56.3
	State	58001	51.0	53.1
A & TSI	Archdiocesan	38	52.3	53.8
	State	3379	46.3	47.5
NESB	Archdiocesan	2801	53.2	55.2

Basic Skills Test Programme 2007

YEAR 5

GROUP		Numbers	Literacy (mean)	Numeracy (mean)
All Students	Archdiocesan	4598	59.7	64.9
	State	58477	57.5	61.9
A & TSI	Archdiocesan	48	55.6	58.1
	State	3574	52.3	54.6
NESB	Archdiocesan	2394	59.0	64.0

Three Primary schools with high Indigenous / ESL populations funded to participate in a professional development program related to underachieving gifted students within these cohorts.

The IUM Underachievement Intervention Model provides a variety of possible intervention strategies to suit different types of underachievement, with a particular focus on identified gifted students within minority groups.

Sample programs based on New South Wales Board of Studies syllabus outcomes, as well as samples of student work will be used to illustrate the use of the Integrated Underachievement Model.

The Integrated Underachievement Model is currently being trialled in several schools.

Integrated Underachievement Model Objectives

For the teacher

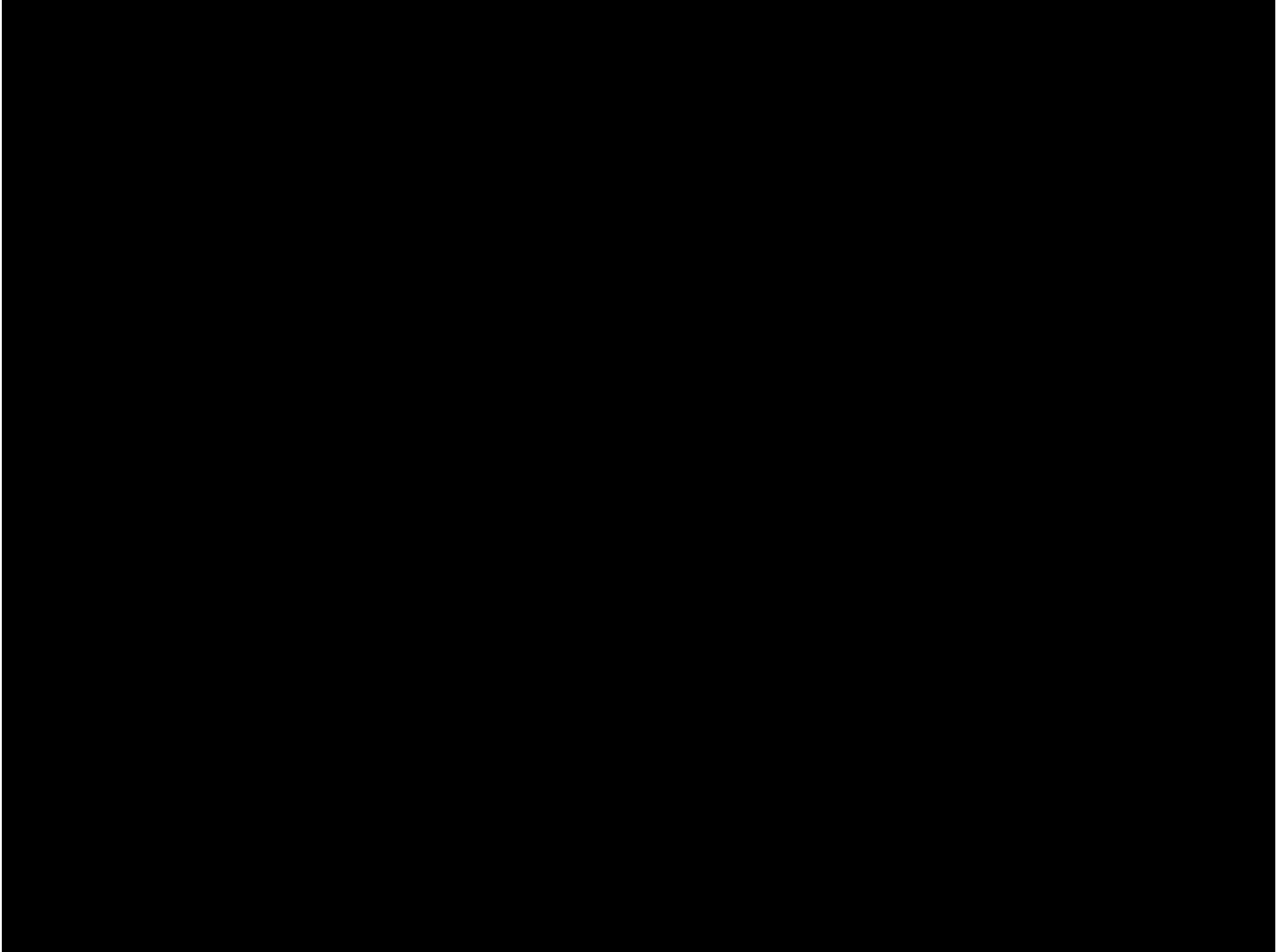
- To cater for the gifts, talents, strengths, interests and learning styles of all children.
- To identify gifted underachievers and 'invisible' underachievers and plan appropriate interventions.
- To design curriculum that engages the students at their own level of understanding.
- To provide students with flexible learning opportunities within a supportive learning environment.
- To utilise strategies that enhance academic self-efficacy.

Integrated Underachievement Model Objectives

For the student:

- To demonstrate responsibility and initiative in the planning, designing, and preparing of learning tasks.
- To increase academic self-efficacy- belief in their ability to complete academic tasks.
- To develop skills in goal setting, planning and self-monitoring.
- To explain knowledge and understanding of concepts to a variety of audiences.
- To produce quality products that demonstrates their understanding of a concept.
- To have a greater self-awareness of learning styles and learning needs (meta-cognition).

Celebrating Ability



Groups 'At Risk' of Underachievement

'At Risk' groups include students affected by:

- Geographic- ecological factors
 - Ethnic Factors
 - Economic Factors
 - Gender Factors
- Educational depravation
 - Sub-cultural factors
- Physical or psychological problems
 - Family Factors
- Being Highly Creative (Peters et al. 2000:612)

1. Identification

- Multiple measures
- Subjective
- Objective
- Coolabah Dynamic Assessment
 - Focuses on the **cognitive and socio-emotional** factors thought to contribute to underachievement.

Factors that may artificially lower test scores:

- High or low expectations of others
- Test anxiety/ tension
- Learning problems
- Fear of Failure
- Lack of motivation
- Peer pressure
- Negative attitudes towards school
- Lack of experience
- Forced Choice Dilemma
- Missed basic skills
- Low academic self-efficacy

What does self-efficacy do?

An individual's level of self-efficacy towards a given task will determine:

Whether coping behaviour will be initiated.

How much effort will be expended.

How long task engagement will be sustained in the face of obstacles and difficulties

2. Analyse Data Collected

- Classify students according to the following;
 - achieving,
 - underachieving or
 - invisible underachievers.
- Estimate the **level** of underachievement, ie. high, moderate, low.

3 Categories

- **Achievers**
- **Underachievers:** School performance judged to be significantly below the level expected, based on some reliable evidence of potential for higher achievement, (Whitmore 1987:1)
- **Invisible Underachievers:** Students who underperform both in the classroom and on commonly used evidence of potential for higher achievement.

3. Create Class Profile

Achievers Table (list student names under the appropriate column.)

Gifted Achievers	Mainstream Achievers	Special Ed. Achievers	ESL Achievers

Underachievers (Including 'invisible' underachievers.)

Gifted non-producer	Gifted Underachiever	ESL Gifted Underachiever	Double Labelled

Underachievers Mainstream/ Special Ed – including 'invisible' underachievers.

Mainstream Underachiever	Special Ed. Underachiever

4. Screen for Specific Learning Disabilities

Some of the major learning disabilities that are common in gifted children include;

1. Sensory Integration Dysfunction
2. Auditory Processing Disorder
3. Visual Processing Disorder
4. Attention Deficit Hyperactivity Disorder (ADHD)
5. Dyslexia
6. Nonverbal Learning Disorder (Spatial Disorientation)
7. Writing Disabilities.
8. Socio/emotional disorders

5. Create Student Profiles

6. Parent/ Teacher interview

Select a variety of checklists

- student's interests,
- learning style preferences,
- motivation level and
- possible causes of underachievement.

7. Action Plan

- Analyse class and individual student profiles
 - group students according to their needs.
- Plan whole class, group or individual interventions
 - based on needs/causes of underachievement

Underachievement Intervention Strategies Table

- Different types of underachievers.
- Withdrawal intervention units focusing on specific need areas
- Whole class or integrated into a differentiated curriculum. (Chaffey Provision Model 2002)

Academic Remedial Strategies	Academic Support Strategies	Academic Intrinsic Strategies	Emotional Support Strategies	Motivation Support Strategies	Social Support Strategies
Identify skill gaps -Target specific weaknesses through small group or individual intervention programs. Eg. Reading Comprehension Self evaluation/ reflection Interest based projects -independent study to develop own project of interest Cross age tutoring (subject strength) -Acknowledge strengths and weaknesses. Celebrate strengths through providing opportunities for the student to tutor others in their strength areas while targeting specific areas of weakness for interventions.	Goal Setting - Progress from daily learning goal setting sessions to weekly goal setting card. Scaffolding -Breaking down tasks into smaller parts. *Learning Styles -awareness of academic learning styles: Visual, linguistic, Kinesthetic, sequential, etc... Provide tasks that allow students to work within their own learning styles. Reflective Thinking -Free time to reflect and select a task (half hour-reward self-initiating behaviours) Metacognitive Skills based lessons -provide opportunities to develop metacognitive skills: Habits of Mind, DeBono	Impact of practice and effort (Ericsson Unit) (Students design investigations to test theory) *See Karen Feedback -Specific performance and attributional feedback on work completed or skills demonstrated. *Monitoring -Regular opportunities to check progress eg. Draft work checked at regular intervals when working on a larger project. -Allow student to resubmit work -Self-monitoring of performance and behaviour (Reflective log) Interest Based Learning -Negotiating area of interest with the student. Goal setting; task monitoring system for self and teacher followed by self pacing and selection of learning task.	Enhancing Academic Self-efficacy - Embedding the strategies that enhance academic self-efficacy into classroom programs. -Mastery -Specific performance and attributional feedback -Vicarious experience - Verbalisation Self Awareness -awareness of attitudes and values of self and others - Activities that assist students in developing a sense of what their interests are, learning style preferences, needs, motivation triggers, etc. Learning Styles -awareness of academic learning styles: Visual, linguistic, Kinesthetic, sequential, etc... Provide tasks that allow students to work within their own learning styles. Like Minds -Opportunities to discuss issues with other students in informal chat groups.	Perfectionism -small group counseling sessions on perfectionism Motivation -assessment of motivation levels for learning and school Research tasks -Negotiating area of interest with the student. Goal setting; task monitoring system for self and teacher followed by self pacing and selection of learning task. Leadership Roles - Providing opportunities for leadership, meaningful responsibilities and tasks (library monitor, lab assistant). The outcome being to develop skills and sense of self worth.	*Conflict Resolution Assisting students in developing strategies to deal with conflict -role playing - Co-operative learning -dealing with positive and negative situations - social stories: Addressing problem situations/ issues - Cause and effect situations in the classroom and on the playground "What was the cause of the problem? What effect does it have on my learning / interaction with peers?" *Significant Others – Parent/Teacher relationship - Develop a parent / student and teacher partnership to foster the student's capabilities and needs. *Career and Higher Education Goal Setting Expand knowledge of further education and career options. -Assist students in identifying some of the possible steps that may assist them in working towards their possible career paths or interest areas.

Curriculum Intervention

What is UBD?

A set of ideas and practices in the design of learning.

The Design Process addresses:

- Curriculum
- Assessment
- Achievement Target (Syllabus outcome)
- Transfer of understandings to other contexts

Why use UBD?

Caters for all learning needs of students.

Is an integrated approach to programming.

Outcomes and concept focussed rather than content driven.

Streamlines programming process.

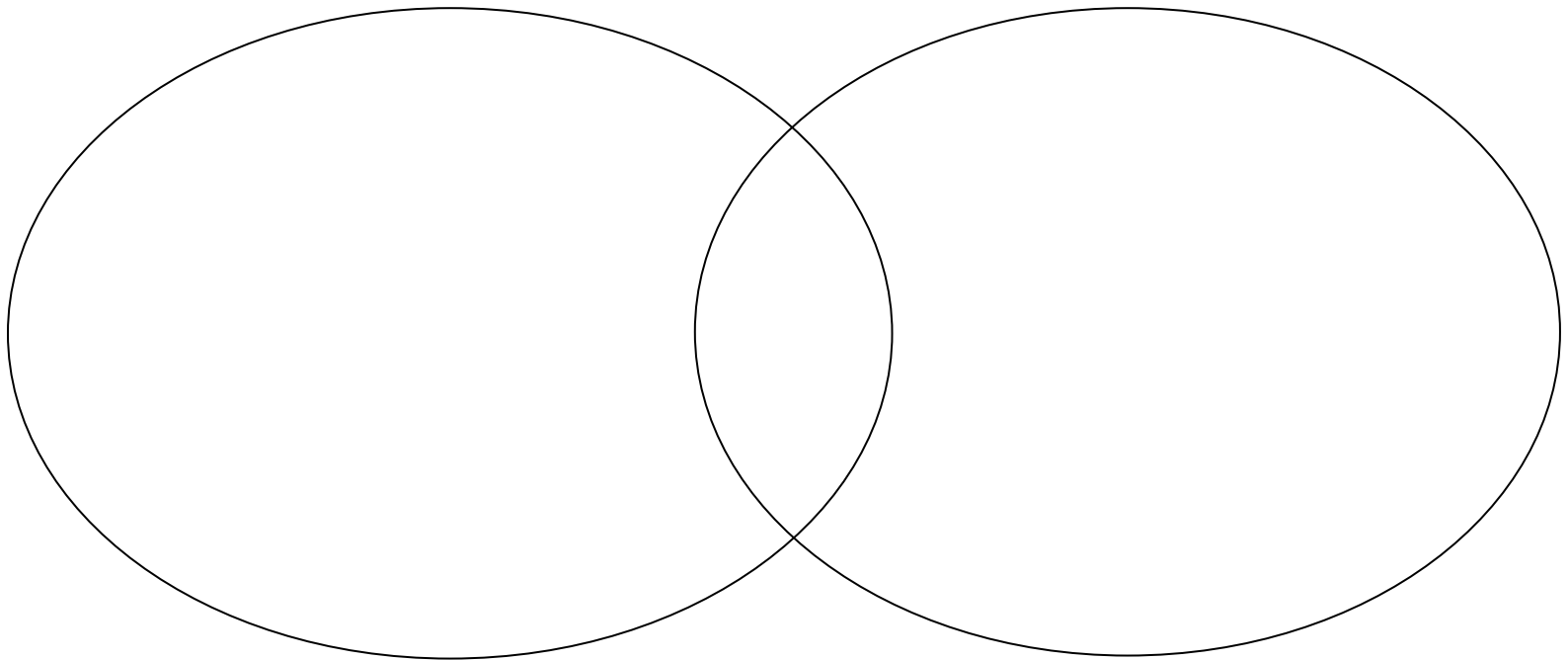
Other program models may be incorporated.

Knowledge vs Understanding

What is understanding and how does it differ from knowledge?

Understanding

Knowledge



Research on Learning and Cognition

‘Learning with understanding is more likely to promote transfer than simply memorising information from a text or a lecture.’

Bransford, et. al., *How People Learn*, p.224

Understanding By Design Model



STEP 1: Identify ENDURING UNDERSTANDING

The enduring understanding for the unit is identified based on syllabus outcomes and pre-test results.

Reflect on:

What is the 'big' or the universal idea of this unit?

What do we want the students to remember from studying this unit of work?

Enduring Understandings

ENDURING UNDERSTANDING: What 'big' idea or the universal idea of the unit?
Concepts that may be used to develop an enduring understanding for a unit of work include:

Power
Ownership
Freedom
Family
Invincibility
Hate
Morality
Communication
Life
Religion
Friendship

Death
Work
Commitment
Responsibility
Sound
Creation
Evaluation
Conservation
Conflict
Wisdom
Tradition

Leisure
Courage
Peace
Violence
System
Silence
Energy
Pollution
Change
Love
Cycles
Other:

Reference : Gross, McLeod, Drummond, Merrick.(2001).Gifted Students in Primary Schools: Differentiating the Curriculum.

STEP 2: Identify ESSENTIAL QUESTIONS

Identify the essential questions and important knowledge based on outcomes, pre-test results and the enduring understanding of the unit.

Reflect on:

What perspectives does this enduring understanding have?

What important issues problems or debates are relevant?

ESSENTIAL QUESTIONS: are open-ended with no single correct answer. They are meant to stimulate inquiry, debate and further questions.

Open ended:
requires
reasoning

Doorway: lead to
'big ideas'

Essential

?

Questions

Generative: spark
inquiry and raise
other questions

Recur: can (and
should) be
revisited



STEP 3: Identify IMPORTANT KNOWLEDGE relating to ESSENTIAL QUESTIONS

IMPORTANT KNOWLEDGE: Relates to syllabus outcomes and indicators- all the facts, concepts and principles related to the unit.

STEP 4: Assess Previous Student Knowledge

Administer Pre-test

This assessment will differ depending on the students you have in your class and the topic focus.

Stage One- Years 1 & 2

Enduring Understanding

The Changing Environment- Let's Protect It !

Differentiated Unit using Understanding By Design and
elements of Wheelwork

Stage 1: The Changing Environment- Let's Protect It!

Unit Stage 1	Enduring Understanding: The Changing Environment: Lets Protect It!		
ESSENTIAL QUESTIONS: What are the perspectives of the enduring understanding?		IMPORTANT KNOWLEDGE: What specific knowledge do I want the students to gain for each of these essential questions?	
Essential Question 1	How are environments the same and different?	Important Knowledge	1. Define natural and built environments. 2. Geographical terms, east, west, mountain, valley, hill, city, 3. Geographical tools; map, globe and atlas. 4. Types of environments; local; playground, park, school, Stanmore National; Homebush wetlands, inland Australia, costal, city. World; rainforests, polar regions, man made landmarks.
Essential Question 2	How and why has the environment changed?	Important Knowledge	1. local – changes to Stanmore (past and present) 2. national – Great Barrier Reef, Tasmania (logging) 3. national – Aboriginal peoples interaction with the land 4. global - effect of natural disasters on the environment and the effect of human interaction on the environment
Essential Question 3	How and why should we protect the environment?	Important Knowledge	1. define conservation 2. local – protection of school playground/park for enjoyment and recreation 3. national – protection of Great Barrier Reef for enjoyment and recreation (other) 4. global - climate change and global warming 5. feelings towards environments
Core Syllabus Outcomes related to the TOPIC	ENS1.5 Compares and contrasts natural and built features in their local area and the way sin which people interact with these features. ENS1.6 Demonstrates an understanding of the relationship between environments and people.		

Stage Two- Years 3 & 4

Enduring Understanding

State & National Parks-

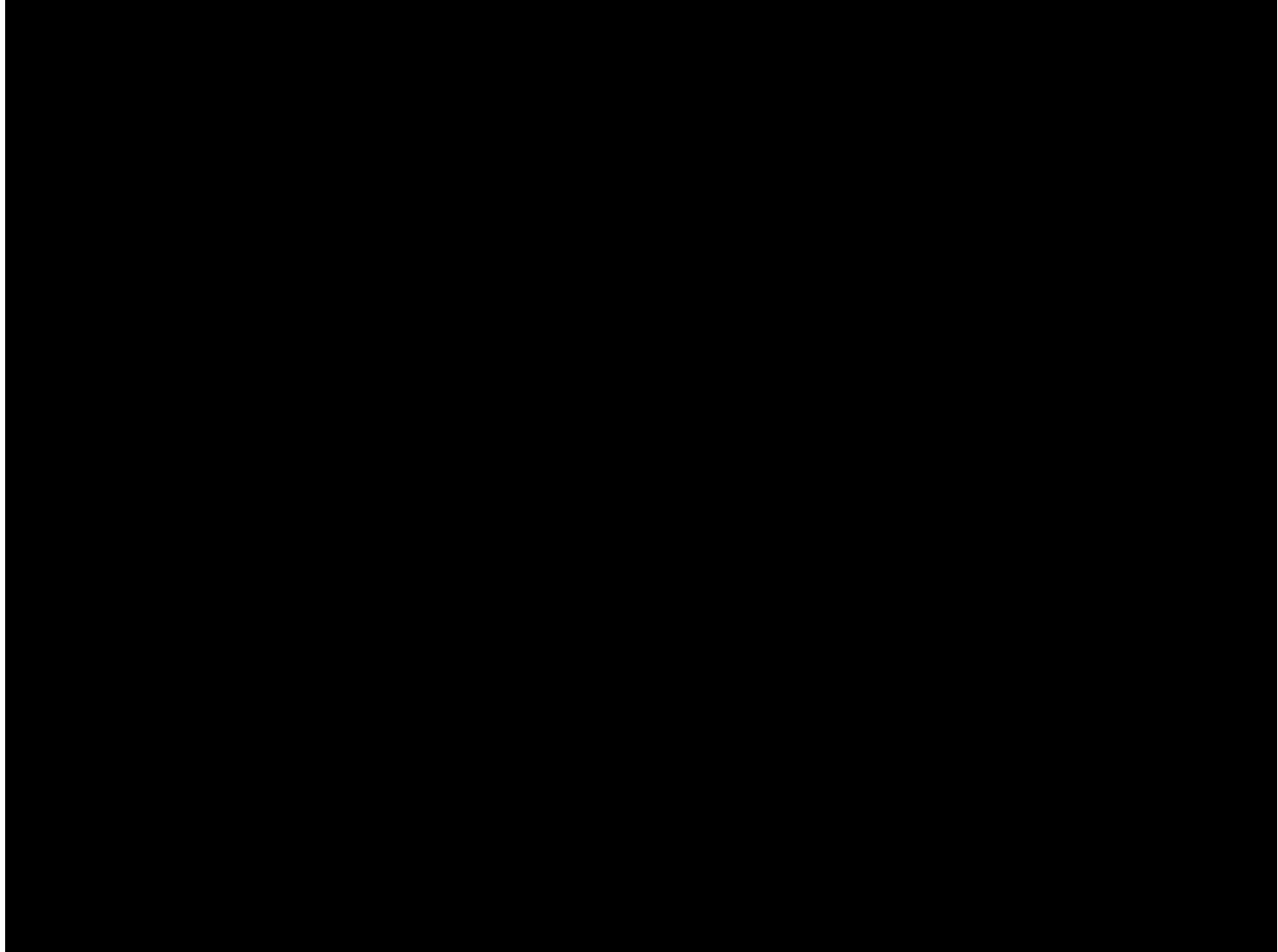
Our Actions Impact on the Environment

Differentiated Unit using Understanding By Design and
elements of Wheelwork

State & National Parks

Unit example	Stage 2: State and National Parks: Enduring Understanding: Our Actions Impact on the Environment (Change and Continuity)		
ESSENTIAL QUESTIONS: What are the perspectives of the enduring understanding? (2-3 questions will be enough to run the unit for the length of the term)		IMPORTANT KNOWLEDGE: What specific knowledge do I want the students to gain for each of these essential questions?	
Essential Question 1	How can we preserve natural environments for future generations? (Application & Empathy)	Important Knowledge	A. Identification and features of ecosystems. B. Purpose of protecting natural sites. Eg. World heritage sites, Australian State and National Parks. C. Use of State and National Parks.
Essential Question 2	How does the built environment impact on the natural environment? (Explanation)	Important Knowledge	A. Features of built environments (cities/towns/suburbs) B. Features of natural environments (food chains / webs) C. Threats to the natural environment (human intervention, introduced species)
Core Syllabus Outcomes related to the TOPIC	Human Society and Its Environment ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments. ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.	Extended Outcomes related to the TOPIC (Extended from the core outcome)	ENS2.6.1 Describes the impact of human intervention and other threats on the natural environment. ENS2.6.2 Explores and describes patterns in political action related to an ecosystem. ENS2.5.1 Evaluates the criteria used to identify and protect world heritage sites.

What the kids produce...



Stage Three- Years 5 & 6

Enduring Understanding

Life & Interdependence: A Study of Living Things

Differentiated Unit using Understanding By Design and
elements of Wheelwork

Unit	Enduring Understanding: Life and Interdependence: A Study of Organisms		
ESSENTIAL QUESTIONS: What are the perspectives of the enduring understanding?		IMPORTANT KNOWLEDGE: What specific knowledge do I want the students to gain for each of these essential questions?	
Essential Question 1	How are organisms interdependent?	Important Knowledge	<ul style="list-style-type: none"> -What is an organism? -How are organisms classified? Classification of Living things (the 5 kingdoms): Plant, Animal, Protist, Monera (Bacteria), Fungi - How do the five kingdoms rely on each other? (Interdependence): Eg. Animals and bacteria (digestion)
Essential Question 2	How do micro-organisms impact on our lives?	Important Knowledge	<ul style="list-style-type: none"> -What is a micro-organism? Definition: Micro-organisms are so small that as individual cells they are impossible to see with the naked eye. - Types of micro-organisms. - How micro-organisms reproduce: Most micro-organisms reproduce asexually. They do this by doubling everything in the cell and then splitting equally into two genetically identical daughter cells. Bacteria and yeast reproduce this way. Fungus produce spores which grow when they land in an environment with a food supply and the right levels of warmth and moisture. - Where are micro-organisms found? Micro-organisms are incredibly successful survivors. They live and thrive in virtually every environment on earth, including deep oceans, steaming hot geysers, the freezing poles and the driest deserts. - INVESTIGATION: What important functions do micro-organisms have? Food: Bread, yoghurt, cheese, pickles, sauerkraut, salami, beer, wine and spirits. Digestion Illness / Disease (pathogens) Negative and positive impact on other living things.

Essential Question 3	In what way has the study of micro-organisms changed society and the environment?	Important Knowledge	SCIENTIST STUDY: Anton Van Leeuwenhoek Edward Jenner Ignaz Semmelweis & Oliver Wendel Holmes Joseph Lister Louis Pasteur Robert Koch Dr Alexander Fleming Dr Howard Florey Dr Ernst Chain
Core Syllabus Outcomes related to the TOPIC	LTS3.3 Identifies, describes and evaluates the interactions between living things and their effects on the environment. INVS3.7 Conducts their own investigations and makes judgments based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing		

What the kids produce...



Stage One & Two

Enduring Understanding

History In The Making

Enrichment Workshops

Program Overview

Significant Events and People

CCS3.1 Explains the significance of particular people, groups, places, actions and events in the past in developing Australian identities and heritage.

Identities

CUS3.2 Describes different cultural influences and their contribution to Australian identities.

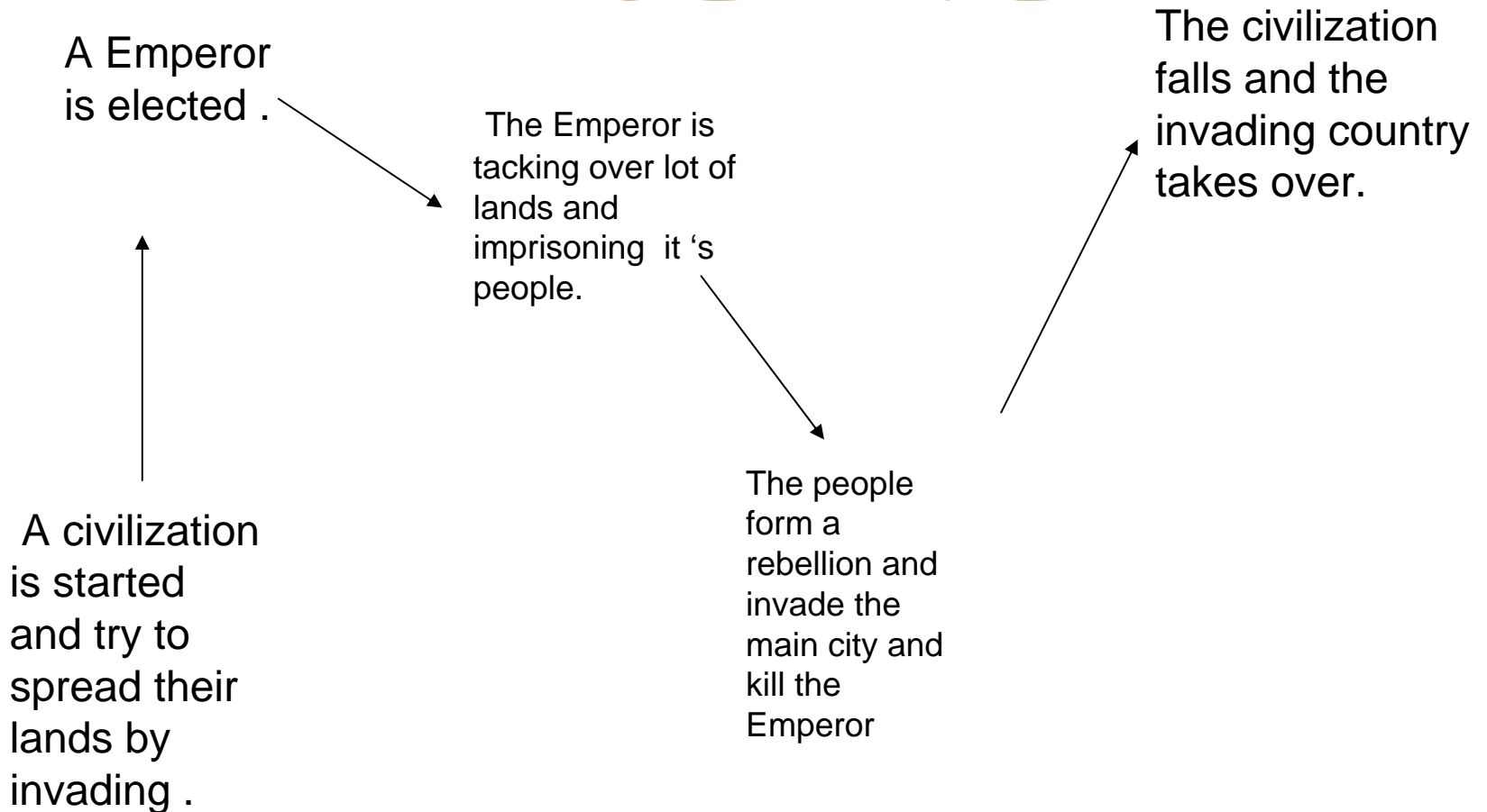
Relationship with Places

ENS3.6 Explains how various beliefs and practices influence the ways in which people interact with, change and value their environment.

Unit	Stage 2: Enrichment Workshops Enduring Understanding: History In The Making		
ESSENTIAL QUESTIONS: What are the perspectives of the enduring understanding?		IMPORTANT KNOWLEDGE: What specific knowledge do I want the students to gain for each of these essential questions?	
Essential Question 1	How is history made?	Important Knowledge	Significant events and changes in beliefs have shaped the course of history.
Essential Question 2	How and why is history recorded?	Important Knowledge	History is a documentation of past events from a certain perspective. History can be documented through stories, artefacts, written documents, primary and secondary evidence etc. The people in our family are a good source in documenting what has shaped our own lives.

What the kids produce...

A SPIDER WEB *A SPIDER WEB*



What the kids produce...

If you knock down history, it will rebuild itself. Just like if you knock down a building, something different will be built on top of the ruins.

There are many PARTS OF history.

There might be one part of history that is related to another.

Example: Neil Armstrong landing on the moon and human evolution

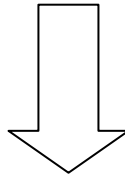
History has many parts to it-The lines on a spider web represent generations in history.

HOW IS HISTORY LIKE A SPIDER WEB

Spider webs get made every day and history never stops.

If a spider gets killed its children will carry it on- just like human history.

A spider web stays where it is and history is solid.



History never ends- it keeps on going

What the kids produce...



Learning Activities- Implementation in the Classroom

How can this curriculum be implemented to suit the learner's needs?

Curriculum implementation is dependent on class and individual profiles that were created earlier in the model's process.

Learning Activities- Implementation in the Classroom

IUM is not a differentiated unit of work based on one model. It employs a number of different models such as:

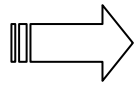
- Bloom's Taxonomy
- Williams
- Vygotsky
- Csikszentmihalyi, 1982
- The Chaffey Provision Model

The models selected depend on the identified needs of the students and designed to build up the student's belief in their ability.

SCAFFOLDING using The Information Literacy Process

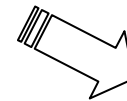
DEFINE

What is the topic?
What are you going to research?



LOCATE

Where can you find the information?
There are many different sources of information to choose from.

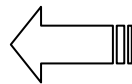


SELECT

What is the information that I need?
What are the key words for this idea?
Select the important ideas from the sources you are using.

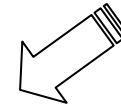
PRESENT

How will my research be presented?
What is the best way to present my work to a group of people or individuals?
What are the products I will be presenting?
Presentation is a very important part of the information process.
This shows what you have learnt through your research.



ORGANISE

What is the best way to use my time?
How will I organise the information I have found?



Information Literacy

- Metacognitive skills based lessons have a focus on the Information Literacy Process so that the students are able to gain skills which then allow them to work at a more independent level.

Profile the Classic Classroom

Why?

Who's Who in Your Class?

- Achievers
- Underachievers
- Invisible Underachievers

Profiles that are effective

- Class profile so that their “brain food” is appropriate and their diet is varied.
- Personal taste: Behaviour, attitudes, self perception, assessment, other factors.

Self-efficacy

- Enhancing Self efficacy,
- Tricycle
- Poor perception of their ability.

Contributing Factors

There are three major contributors to self-efficacy

- Mastery experiences
- Vicarious experiences
- Verbal Persuasion

How to raise Self-efficacy

- When raising Self-efficacy there has to be work expectation that is based on current performance level not at the perceived level.
- The experience for the student needs to be positive so that the next task can increase in complexity and the student feels confident enough to attempt the task.

Bloom's Wheel

- The Wheel is a tool that can be individualised for the variety of students that are in your class.
- Students can modify their wheel based on their own preferences.

What the kids do....

The learning experiences designed may be implemented in a variety of ways.

This will depend on:

- The interests of the students
- Prior learning
- The availability of resources
- The learning styles of the students

Integrated Underachievement Model

