# Whole school planning for Curriculum: Designing a conceptual framework

**By Deb Vietri May 2018 (draft)**

Whole school curriculum design is a rigorous and complex process. For a Conceptual Framework to be successful, attending to both the demands of the curriculum as well as the questions, interests and needs of students, we need to attend to several layers of whole school curriculum design:

1. Development of a Conceptual Framework: Throughlines (P-6)
2. A Scope and Sequence mapping the implementation of the Throughlines over a 2 or 3 Year Cycle
3. Selection of developmentally appropriate topics that are engaging for students
4. A process for planning inquiry-based units or topics that is flexible and responsive to student voice.

*NB: The terms 'Conceptual Framework' and 'Throughlines' are used interchangeably and for the purposes of this document mean the same thing.*

## 1. Developing a Conceptual Framework

### What is a concept?

Lynn Erickson describes a concept as:

- A concept is an organising idea; a mental construct…
- Timeless
- Universal (usually)
- Abstract and broad
- Represented by one or two words
- Examples show common attributes.

In the Domains of Victorian Curriculum that we generally draw content from to frame up our 'Integrated Inquiry' units we find many big concepts that are introduced in the Early Years and are then expanded through the higher levels. These Domains are: History, Geography, Civics and Citizenship, Economics and Business, Science, Health (Health and PE), Intercultural Capability and Design Technologies.

Examples of broad concepts

- Sustainability
- Diversity
- Change (cause and effect)
- Systems
- Relationships
- Interdependence

### What is a Conceptual Framework?

A Conceptual Framework is an approach to managing the curriculum by linking together big concepts across Domains, in a logical and organised way.

There are many areas of study, or topics, that students may explore throughout Primary school that draw on several areas of the curriculum in a seamless way. For example, a topic such as endangered species draws heavily from the Domains of Science and Geography, and may also connect to Civics and Citizenship, Economics and Business and Design Technologies (both in content and skills). In the process of investigating the topic 'Endangered Species' students will also need to use skills and dispositions from Critical and Creative Thinking, Personal and Social Capability, English, Mathematics, Ethical Capability and Digital Technologies.

When engaged in the topic 'Endangered Species' students are learning about more than just factual knowledge about the animals in question, they are exploring the related concepts of ecology, interdependence, earth systems, cause and effect and sustainability. Through this they begin to develop deeper conceptual understandings about the 'Earth and Environment'. At other levels of the school students might also be exploring concepts around the 'Earth and Environment but through different topics such as 'Ecosystems' or 'Climate Change' or through creating a sustainable garden.

In a conceptual framework (Throughlines) the 'big ideas' or concepts in the curriculum are grouped together in logical ways connecting content from multiple Domains where relevant.

> *"They are… a connecting theme based on a big idea or concept that weaves through different areas and levels of the curriculum*
>
> Tina Blythe1998 'The Teaching for Understanding Guide'

When a school designs a 'Conceptual Framework' they name the big ideas or connecting themes that weave through the Victorian Curriculum in a way that will be relevant and purposeful for their students.

The following is an example of a 'Conceptual Framework' designed by the staff at St Anne's Sunbury:

This Framework/Throughlines contains all of the main concepts from the content areas of the Victorian Curriculum but organises them in a logical and connected way. Teachers then design topics or units that sit under these throughlines that are developmentally appropriate for their students.

| | |
|---|---|
| Science & Discovery | We believe that by learning about Science & Discovery, our students will develop a deepening awareness of key scientific principles and practices and how the exploration of science changes and deepens our understanding of the world.<br>We aim for students to build an understanding of the processes that can be used when undertaking scientific investigation, and of the importance of curiosity, questioning and research in finding out how things work and why things happen. |
| Health & Wellbeing | We believe that by learning about Health & Wellbeing, our students will develop a deepening awareness of the physical, emotional, social and spiritual components that contribute to human wellbeing and personal identity.<br>We aim for students to build an understanding of how and why individuals change physically and emotionally as they grow, and of the decisions that they can make to contribute to their own health and personal fulfilment. |
| Design & Innovation | We believe that by learning about Design & Innovation, our students will develop a deepening awareness of how products and ideas are created or improved to meet the changing needs and wants of societies.<br>We aim for students to build an understanding of the processes that can be employed when designing, of how tools and materials can be selected and used, and of the centrality of imagination and creativity. |

| | |
|---|---|
| Earth & Environment | We believe that by learning about Earth & Environment, our students will develop a deepening awareness of the diversity of the world's environments and of the interdependence of living things within them.<br>We aim for students to build an understanding of the interrelationships that exist between components of the Earth's systems, how science helps us learn about our world and how humans can both utilise and impact the Earth, its environment and its resources in different ways. |
| History & Tradition | We believe that by learning about History & Tradition, our students will develop a deepening awareness of significant individuals, groups of people, places and events in their own lives and in the broader national and global context.<br>We aim for students to build an understanding of how these people, places and events have shaped our lifestyle and culture today, while developing an appreciation for the fact that some things change over time and others remain constant. |
| Communities & Citizenship | We believe that by learning about Communities & Citizenship, our students will develop a deepening awareness of local, national and global communities and where, how and why they have been established.<br>We aim for students to build an understanding of the many connections that exist within and between communities, how members of communities work to provide for their needs and wants, and how a community requires its members to balance rights with responsibilities. |

## Why use a Conceptual Framework?

*So why would you develop a conceptual framework and not just target one Domain per term/unit eg. History?*

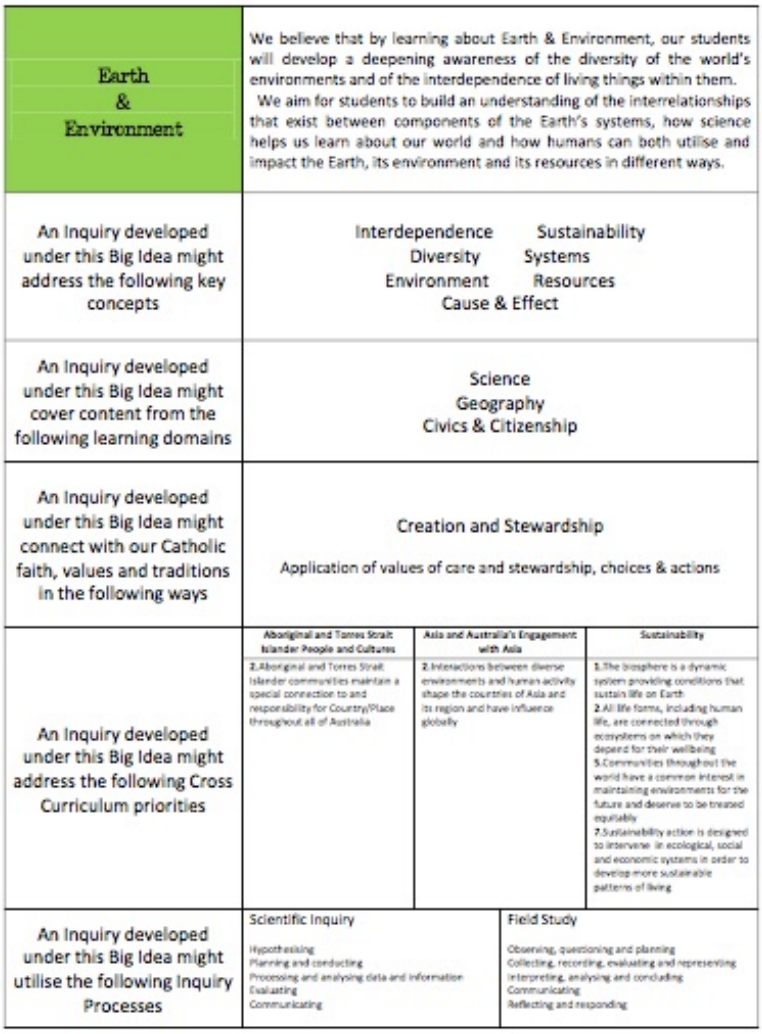
By organising the curriculum to connect key concepts across Domains we are able to make the learning more connected and meaningful for the students. The 'Throughlines' a school chooses in its Conceptual Framework gathers together relevant content and big concepts from different Domains in ways that make sense to students. It also enables students to connect learning across the years, building on previous understandings when engaging in a new topic from the same throughline. By designing units from a 'Throughline' rather than a Domain focus (eg Earth and Environment rather than Geography), teachers are better able to focus on teaching towards the big ideas and concepts with their students. This encourages students to think deeper and go beyond factual knowledge to develop conceptual understanding.

> *…Throughlines (concepts) can be a valuable teaching tool. They help students to see the purposes that underlie their daily work, make connections among various topics and assignments, and track their own developing understandings"*
>
> Tina Blythe1998 'The Teaching for Understanding Guide'

Using a Conceptual Framework also enables teachers to design curriculum and address the constant concern of 'coverage' in a way that is more relevant to students than trying to teach one Domain at a time. In a time poor profession it enables us to 'work smarter'. By strategically cycling through each of the Throughlines in the Conceptual Framework over a 2-year cycle teachers can feel confident that they will enable their students to explore the content prescribed in the Victorian Curriculum, and be able to assess and report to the Standards in these areas.

> *Traditional Curriculum Design has been more "topic-based" rather than "concept-based."*
> *There are 2 major problems with topic based models*
>
> *1. They fail to engage and develop the personal intellect at a deep level.*
> *2.They are inefficient—instant information is now a keystroke away. So how should we use our class time?*
>
> *A Concept-based approach*
>
> - *Is idea-centered. Facts provide a foundation to understand conceptual, transferable ideas.*
> - *Ensures intellectual depth. A conceptual lens or focus requires mental processing on the factual and conceptual levels- producing intellectual depth in thinking and understanding.*
> - *Allows the brain to make connections and see patterns.*
> - *Develops the intellect to handle a world of increasing complexity and accelerating change.*
>
> Lynn Erickson: *Concept-based Curriculum* 2007

Once a set of 'Throughlines' are decided upon by a school in their 'Conceptual Framework', they tease out the big ideas and concepts, and identify the Domains they could be connecting



| | |
|---|---|
| Earth & Environment | We believe that by learning about Earth & Environment, our students will develop a deepening awareness of the diversity of the world's environments and of the interdependence of living things within them. We aim for students to build an understanding of the interrelationships that exist between components of the Earth's systems, how science helps us learn about our world and how humans can both utilise and impact the Earth, its environment and its resources in different ways. |
| An Inquiry developed under this Big Idea might address the following key concepts | Interdependence Sustainability<br>Diversity Systems<br>Environment Resources<br>Cause & Effect |
| An Inquiry developed under this Big Idea might cover content from the following learning domains | Science<br>Geography<br>Civics & Citizenship |
| An Inquiry developed under this Big Idea might connect with our Catholic faith, values and traditions in the following ways | Creation and Stewardship<br>Application of values of care and stewardship, choices & actions |
| An Inquiry developed under this Big Idea might address the following Cross Curriculum priorities | Aboriginal and Torres Strait Islander People and Cultures: 2.Aboriginal and Torres Strait Islander communities maintain a special connection to and responsibility for Country/Place throughout all of Australia<br>Asia and Australia's Engagement with Asia: 2.Interactions between diverse environments and human activity shape the countries of Asia and its region and have influence globally<br>Sustainability: 1.The biosphere is a dynamic system providing conditions that sustain life on Earth 2.All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing 5.Communities throughout the world have a common interest in maintaining environments for the future and deserve to be treated equitably 7.Sustainability action is designed to intervene in ecological, social and economic systems in order to develop more sustainable patterns of living |
| An Inquiry developed under this Big Idea might utilise the following Inquiry Processes | Scientific Inquiry: Hypothesising Planning and conducting Processing and analysing data and information Evaluating Communicating<br>Field Study: Observing, questioning and planning Collecting, recording, evaluating and representing Interpreting, analysing and concluding Communicating Reflecting and responding |

to in units designed under each throughline. Here again is an example from St Anne's in Sunbury:

This expansion of the Throughline Earth and Environment identifies the big concepts that can be explored as well as Curriculum areas that have content that can be connected.

Teachers use this framework to help them choose topics that are relevant and developmentally appropriate for their students.

Once the topic is chosen they select concepts to be explored and use them to write understandings for the unit that go beyond factual.

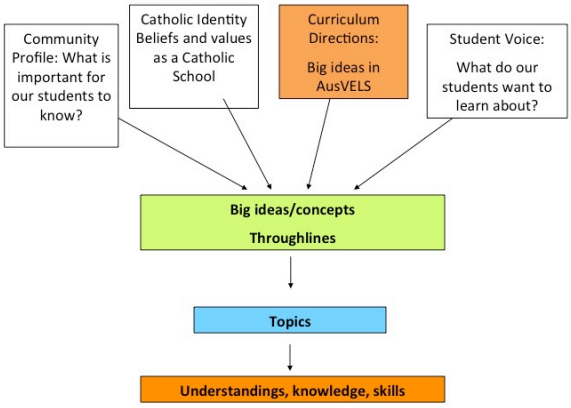
***There are different types of knowledge***

- Factual
- Conceptual
- Procedural
- ***Think of***
- *Factual Knowledge* which is locked in time, place or situation
- *Conceptual Understanding* which transfers through time, across cultures, and across situations

Lynn Erickson 2007

## How to develop a Conceptual Framework

When undertaking a process to design a whole school approach to curriculum through a Conceptual Framework schools draw upon the Victorian Curriculum as well as their own knowledge of their school, their students and their community.




The process involves identifying what is important for the students at your school to know and understand.

It then involves breaking open the content Domains of the Victorian Curriculum and identifying the big ideas/concepts within them.

This is then repackaged into threads, or themes, that can provide a meaningful context for the students.

## 2. Developing a scope and sequence

Once the Conceptual Framework is designed schools then develop a scope and sequence over a 2-year cycle eg. Years 1/2, 3/4 and 5/6 with prep as a standalone year, or they use a 3-year cycle incorporating P-2. This ensures each 'Throughline' is addressed at least once during the cycle allowing for maximum coverage of curriculum across the content Domains

| | Term 1 | Term 2 | Term 3 | Term 4 |
|---|---|---|---|---|
| **Prep** | **Earth and Environment**<br>Water | **Communities and Citizenship**<br>**History and Tradition**<br>Let's Celebrate | **Earth and Environment**<br>Animals | **Science and Discovery**<br>How do things move?<br>**Design and Innovation**<br>Can we make things that move? |
| **1** | **Design and Innovation**<br>**Earth and Environment**<br>Farm to Table | **Science and Discovery**<br>Let's be Scientists: Sound Light Chemical reactions, electrical circuits | **Communities and Citizenship**<br>Aboriginal Studies<br>**Health and Wellbeing**<br>How does our Body Work | **Health and Wellbeing**<br>How do we keep our bodies healthy?<br>**History and Tradition**<br>What was life like in the past? |
| **2** | **Communities and Citizenship**<br>What's our Story? Exploring culture. | **Earth and Environment**<br>Minibeasts | **Science and Discovery**<br>Exploring the Weather | **Design and Innovation**<br>How can we design and make a puppet performance? |
| **3** | **Health and Wellbeing**<br>Identity & Health | **History and Tradition**<br>Australian traditions and celebrations | **Earth and Environment**<br>What makes Melbourne the most liveable city? | **Science and Discovery**<br>How can things change? |
| **4** | **Communities and Citizenship**<br>Communities – class, school, local – building a community | **History and Tradition**<br>Settlement of Australia | **Earth and Environment**<br>Adaptations and environments | **Design and Innovation**<br>How can design and innovation improve our lives? |
| **5** | **Health and Wellbeing**<br>Ourselves as Learners | **Science and Discovery**<br>Contemporary science in our World | **Earth and Environment**<br>Earth's systems and natural phenomenon | **History and Tradition**<br>Migration |
| **6** | **Communities and Citizenship**<br>Learning & Leadership<br>Giving back to our community | **History and Tradition**<br>Perspectives on war and conflict | **Earth and Environment**<br>Diversity of world environments, focus on resources | **Design and Innovation**<br>Back to the drawing board |

## 3. Topic Selection

A Conceptual Framework gives us the whole school curriculum map, but the selection of appropriate topics for your students and the planning of those topics to balance both curriculum requirements and student voice. The Victorian Curriculum points us in the direction of what is developmentally appropriate for students, but the teachers' knowledge of their students, and the gathering of prior knowledge (what they know, don't know, are confused about and are interested in) prior to planning a topic is equally important.

*We want to give our students time to explore what intrigues them, and we want to make sure they visit the important sites they might miss without guidance. Teachers need to map out the landscape and highlight some of the most important places to stop.*

Adapted from Tina Blythe

When selecting topic the Teachers' first port of call is the Throughline. When looking closely at the Throughline statement teachers ask themselves:

- What possible topics would be a vehicle for our students to explore some of the big ideas within this Throughline? (It is not expected they 'cover' it all in one topic)
- Which of these would really engage and interest my students? (You could consult the students on this)
- What content is outlined in the Victorian Curriculum at this level? (Within the Domains connected to the Throughline)

Tina Blythe outlines *Key features of generative topics*

- Central to one or more domains
- Issues within the topic are also of interest to professionals in the field
- Interesting to students
- Interesting to the teacher
- Accessible
- Offer opportunities for multiple connections- they can always be explored more and more deeply.

## 4. A process for planning inquiry-based units/topics

If we are to plan integrated inquiry units that are reflective of curriculum requirements as well as giving the students the opportunity to explore the things that intrigue them, one thing is clear, we cannot plan a unit from start to finish before we start teaching!!! Instead, what we need to do is 'plan in chunks', reflecting on what has been learned and how students are responding at each stage. Giving the students opportunities to articulate their thinking and have a voice in how the unit proceeds.

The Building-Investigating-Applying (Deb Vietri) approach to unit design is an example of how teachers can 'plan in chunks' and be responsive to student voice.
This 3 step process involves the following stages:

- **Building:** Students build foundational knowledge of the topic through careful planning and sequencing of learning experiences by the teacher. This provides a sound platform from which students ask informed questions, and ensures curriculum content is embedded.
- **Investigating:** Students investigate more deeply an aspect of the topic that they are particularly interested in. This investigation could be individual, group or whole class depending on the capacity of students to conduct independent inquiries. The focus for teachers is on developing student's capacities as learners and inquirers, and facilitating deep thinking and connection back to prior knowledge in order to build conceptual understandings.
- **Applying:** Students reflect on what they have learned about the topic and about themselves. They implement their learning or take action in order to apply their new understanding or skills in real life context.

An important part of integrated inquiry is establishing each student's prior knowledge of the topic at the beginning of each unit. Research clearly confirms that making connections between students' prior knowledge and experience and their new or developing knowledge is essential for effective learning.

> 'Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught, or they may learn them for the purposes of a test but revert to their preconceptions outside the classroom.'

(Donovan, Bransford and Pellegrino, 1999)

Teachers continue to check in with students throughout the unit using thinking strategies designed to support students to articulate their learning. Using the Building-Investigating-Applying process teachers reflect on what they know now about their student's learning, as well as their interests and questions, before planning the next stage.

## Summary

Having a strategic approach to whole school curriculum design through a Conceptual Framework enables schools to deliver the Victorian Curriculum in a way that is meaningful and rigorous for their school community. It benefits student learning by focussing on deeper thinking and conceptual understandings. It benefits teachers by enabling a streamlined approach to planning. It benefits the whole school community by making the approach to curriculum design clear and focussed.

In the words of Barry McGaw, chairman of the review of the Australian Curriculum in 2014:

> *The school curriculum expresses a nation's aspirations for its next generations. The curriculum must strike a balance between developing young people's understanding … and preparing them for a future that is increasingly global and largely unpredictable. What constitutes essential school learning will always be contested because behind it is a debate about what knowledge is of most worth. Curriculum stirs the passions – and that is a good thing. Curriculum is never completed. It is never perfect and should always be a work in progress. As responsible citizens, we are obliged to provide our future generations with the best possible learning opportunities and outcomes.*
>
> Barry McGaw ACARA's statement to the review of the Australian Curriculum 28/3/14