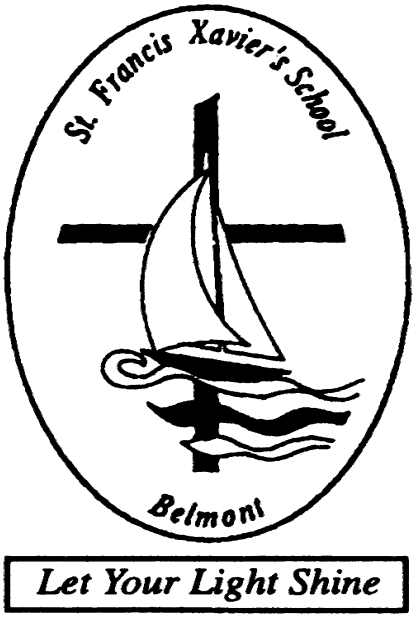
Science and Technology Policy



2011

to be reviewed in

2014

RATIONALE

Science education contributes to developing scientifically and technologically literate citizens who will be able to make informed decisions about their lifestyle, their environment and the kind of society in which they wish to live. They will be able to see the connections between science and people, note the relevance of science and technology to past achievements and current and future development, and be aware of the impact of science and technology on society, the individual and the environment.

Science and Technology are integral parts of our modern world. For personal, social, environmental and economic reasons it is essential in the education of all children that they may become aware and active participants in our modern society.

Teaching the NSW Science and Technology K – 6 Syllabus will better equip children to face the future with an understanding of basic science principles and to accept a shared responsibility for our environment.

Science and Technology are closely related, though the nature of the relationship can vary depending upon particular learning experiences - experiences that would include investigating, designing, making and using technology.

*In Science and Technology students develop competence, confidence and responsibility in their interactions with science and technology. The four broad strands of Science and Technology are:

- Investigating Scientifically
- Designing and Making
- The Natural Environment
- The Made Environment

*(Foundation Statement BOS 2005)

AIMS

At St Francis Xavier's the Science and Technology Policy aims to develop in students the ability to:

1. acquire scientific skills and conceptual knowledge.
2. acquire and use the skills of scientific investigation, reasoning and analysis to ask questions and seek solutions.
3. develop scientific attributes such as flexibility, curiosity, critical reflection, respect for evidence and ethical considerations.
4. recognise and understand the strengths and limitations of science.
5. interpret and communicate scientific ideas effectively.
6. appreciate the dynamic role of science in social and technological change.
7. use information technology to support learning about science and technology and to investigate and communicate ideas.

St Francis Xaviers' staff aims, through this KLA, to develop students' competence, confidence and responsibility through their experiences with science and technology so that this KLA will:

1. enrich students' view of themselves, society, the environment and the future.
2. enthuse students' desire for learning science and using technology.
3. foster students' natural desire for investigating.
4. assist students to think creatively and to use their talents in making and designing.

IMPLEMENTATION

1. All teachers have access to a copy of the NSW Science and Technology Syllabus.
2. Science and Technology is allocated approximately 6%-10% of the weekly teaching time.
3. A School Scope & Sequence of topics is followed to avoid repetition of the following units…
   - Built Environments
   - Information and Communication
   - Living Things
   - Physical Phenomena
   - Products and Services
   - Earth and its Surroundings
4. Students' individual abilities are considered when planning units of work and learning opportunities will be provided that cater for the identified needs of each student.
5. Students' individual progress is monitored using formal and informal assessments (see Assessment Policy).
6. Student progress in Science & Technology is reported at the end of Semester One and Semester Two using the Diocesan A – E Reporting Format. (See Reporting Policy)

TEACHER RESPONSIBILITIES

1. Teachers are responsible for the implementation of the Science & Technology Syllabus in each stage.
2. The staff will follow the school Scope and Sequence to ensure that the content of all the strands are covered across the grades.
3. Development of a differentiated teaching programme.
4. Ensure that expectations are both realistic and challenging.
5. To use and utilise the resources of our school library and internet facilities to deliver this syllabus.
6. To discuss with the schools' librarian and library assistant the units that are being taught each term to ensure that all available resources are utilised.
7. Allocate 6 - 10% of teaching time to the teaching of Science & Technology. This KLA may however be integrated into other KLAs.
8. To maintain ongoing assessment of both their teaching programme and the children's progress.
9. Modify their teaching programme if necessary.
10. Assessment data to be kept to support teaching programme (see assessment Policy).
11. Incursions and excursions are arranged to reinforce topics or units treated. CSO personnel, parents and community members are utilised where possible, to reinforce topics or units treated.
12. To provide information to parents on the progress of their child/children.
13. To submit term overviews which outline what has been covered in Science and Technology.

EXECUTIVE RESPONSIBILITIES

1. To provide leadership in the teaching of Science & Technology.
2. To ensure that the staff are kept up to date with CSO and Board of Studies requirements in relation to Science & Technology.
3. To ensure that teachers are made aware of and provided with suitable professional development opportunities in Science & Technology.
4. To ensure that all teachers are aware of their responsibilities in relation to the programming, teaching, assessment and reporting of Science & Technology.

5. To monitor the programming, teaching, assessment and reporting of Science & Technology in the school.
6. To determine an appropriate amount within the yearly budget for training and the purchase of resources.
7. To lead the development, implementation and review of the school's Science & Technology Policy.

BUDGET

To set an appropriate amount from within the school budget that will ensure the effectiveness of this Science and Technology Policy.

EVALUATION

This policy will be reviewed every 3 years or as required by CSO or Board of Studies amendments. The Assistant Principal is responsible for the co-ordination of policy reviews.

Appendix 1

Science and Technology Units of Work K-6

St Francis Xavier's E.S 1 Science Scope and Sequence - Kindergarten			
Foundation Statement	**Strand Learning Process**	**Outcomes**	**Unit**
Students will identify ways in which familiar products, services and built environments meet the needs of people. Students will identify the characteristics of a range of materials used to make commonly available products and built environments. *Follow guided design process to create products.* Information products, services and built environments *Draw and model designs* *Select and safely use a range of computer based technology and other resources.* *Identify* how properties of natural and man made materials relate to their use. *Identify difference* between natural and built environments. *Model built environments* to suit the needs of users.	• Living Things • Physical Phenomena • Built Environments • Products and Services • Investigating • Designing and Making • Using Technology	Explores and identifies ways in which built environments suit their users. Identifies ways in which living things are different and have different needs. Explores and identifies ways some forms of energy are used in their daily lives. Recognises the relationship between everyday products and people's needs. Investigates their surroundings by observing, questioning, exploring and reporting. Generates own ideas and designs through trial and error, play, modelling and making. Identifies and uses a limited range of equipment, computer-based technology, materials and other resources when undertaking exploration and production.	How do we Grow and Change
Investigates their surroundings by observing, questioning, predicting, exploring and reporting. Generates own ideas and designs through trial and error, play, modelling and making. Recognises and uses various means of communication.	• Living Things • Physical Phenomena • Information / Communication • Investigating • Designing and Making • Using Technology	Identifies ways in which living things are different and have different needs. Explores and identifies ways some forms of energy are used in their daily lives. Investigates their surroundings by observing, questioning, exploring and reporting. Generates own ideas and designs through trial and error, play, modelling and making. Identifies and uses a limited range of equipment, computer-based technology, materials and other resources when undertaking exploration and production.	Our Senses

Identifies and describes ways people and other living things depend upon the earth and its environment. Investigates their surroundings by observing, questioning, predicting, exploring and reporting. Generates own ideas and designs through trial and error, play, modelling and making.	• Living Things • Physical Phenomena • Investigating • Designing and Making • Using Technology	Identifies ways in which living things are different and have different needs. Explores and identifies ways some forms of energy are used in their daily lives. Investigates their surroundings by observing, questioning, exploring and reporting. Generates own ideas and designs through trial and error, play, modelling and making. Identifies and uses a limited range of equipment, computer-based technology, materials and other resources when undertaking exploration and production.	On the Move
Identifies and describes ways people and other living things depend upon the earth and its environment. Investigates their surroundings by observing, questioning, predicting, exploring and reporting. Select and safely use a range of computer based technology and other resources.	• Living Things • Physical Phenomena • Earth and It's Surrounds • Built Environments • Information / Communication • Investigating • Designing and Making • Using Technology	Identifies ways in which living things are different and have different needs. Explores and identifies ways some forms of energy are used in their daily lives. Explores and identifies ways the environment influences their daily lives. Explores and identifies ways in which built environments suit their users. Recognises and uses various means of communication. Investigates their surroundings by observing, questioning, exploring and reporting. Generates own ideas and designs through trial and error, play, modelling and making. Identifies and uses a limited range of equipment, computer-based technology, materials and other resources when undertaking exploration and production.	Kid's Care- Environment

St Francis Xavier's Stage 1 Science Scope and Sequence – Year 1

Foundation Statement	Strand Learning Process	Outcomes	Unit
Conduct guided investigations using computer based technology and other resources *Questioning, making and testing predictions* *Collecting and recording data* *Suggesting possible explanations* *Selecting and using a range of equipment* *Follow guided design process to create products.* Information products, services and built environments *Draw and model designs* *Select and safely use a range of computer based technology and other resources.* *Identify* how properties of natural and man made materials relate to their use. *Identify difference* between natural and built environments. *Model built environments* to suit the needs of users.	• Living Things • Physical Phenomena • Information / Communication • Products and Services • Investigating • Designing and Making • Using Technology	Identifies and describes ways in which living things grow and change. Identifies and describes different ways some forms of energy are used in the community. Creates a range of information products and communicates using a variety of media. Grows makes or processes some products using a range of techniques and materials. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Materials and Structures
Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore. Students follow a guided design process to create products. They draw and model design ideas using accepted methods and practices. They select and safely use a range of equipment, computer-based technology and other resources when designing and making. They communicate messages using a variety of media and technologies.	• Living Things • Physical Phenomena • Information / Communication • Investigating • Designing and Making • Using Technology	Identifies and describes ways in which living things grow and change. Identifies and describes different ways some forms of energy are used in the community. Creates a range of information products and communicates using a variety of media. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Investigating Colour

Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore. They draw and model design ideas using accepted methods and practices. They select and safely use a range of equipment, computer-based technology and other resources when designing and making. Students identify and describe ways in which living things grow and change. Students describe ways in which living things depend on the Earth and its environment. Students identify the difference between natural and built environments and model built environments designed to suit the needs of users. Students describe and apply production processes using a range of materials and techniques to grow products.	• Living Things • Physical Phenomena • Investigating • Designing and Making • Using Technology	Identifies and describes ways in which living things grow and change. Identifies and describes different ways some forms of energy are used in the community. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	What's alive
Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore. Students follow a guided design process to create products, including information products, services and built environments. They draw and model design ideas using accepted methods and practices. They select and safely use a range of equipment, computer-based technology and other resources when designing and making. They identify a variety of energy forms and describe their use in the community. Students describe ways in which living things depend on the Earth and its environment. They identify how the properties of natural and made materials relate to their use. Students identify the difference between natural and built environments and model built environments designed to suit the needs of users.	• Living Things • Physical Phenomena • Earth and It's Surrounds • Built Environments • Information / Communication • Investigating • Designing and Making • Using Technology	Identifies and describes ways in which living things grow and change. Identifies and describes different ways some forms of energy are used in the community. Identifies and describes ways in which people and other living things depend upon the Earth and its environments. Creates, modifies or models built environments to suit the needs of users. Creates a range of information products and communicates using a variety of media. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Place in Time – Weather

St Francis Xavier's Stage 1 Science Scope and Sequence – Year 2

Foundation Statement	Strand Learning Process	Outcomes	Unit
Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore. Students follow a guided design process to create products, including information products, services and built environments.	• Built Environments • Products and Services • Investigating • Designing and Making • Using Technology	Grows makes or processes some products using a range of techniques and materials. Creates, modifies or models built environments to suit the needs of users. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Getting About
Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore. They communicate messages using a variety of media and technologies.	• Products and Services • Information / Communication • Investigating • Designing and Making • Using Technology	Grows makes or processes some products using a range of techniques and materials. Creates a range of information products and communicates using a variety of media. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Let's Communicate
Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore. Students describe and apply production processes using a range of materials and techniques to grow, make or process products.	• Products and Services • Investigating • Designing and Making • Using Technology	Grows makes or processes some products using a range of techniques and materials. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Toy World

Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore.	• Living Things • Physical Phenomena • Earth and It's Surrounds • Investigating • Designing and Making • Using Technology	Identifies and describes ways in which living things grow and change. Identifies and describes different ways some forms of energy are used in the community. Identifies and describes ways in which people and other living things depend upon the Earth and its environments. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Comparison and Evidence

St Francis Xavier's Stage 2 Science Scope and Sequence – Year 3

Foundation Statement	Strand Learning Process	Outcomes	Unit
Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation. Students identify and describe structures and functions in living things and how they interact with each other and their environment.	• Built Environments • Living Things • Investigating • Designing and Making • Using Technology	Creates, models and evaluates built environments reflecting consideration of functional and aesthetic factors. Identifies and describes the structure and function of living things and ways in which living things interact with other living things and their environment. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Our Australia
Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation.	• Physical Phenomena • Investigating • Designing and Making • Using Technology	Identifies various forms and sources of energy and devises systems that use energy. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Stuck on You
Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation. They describe how the properties of materials affect their use. Students identify the ways built environments, products and services are constructed or produced.	• Products and Services • Built Environments • Investigating • Designing and Making • Using Technology	Creates and evaluates products and services considering aesthetic and functional factors. Creates, models and evaluates built environments reflecting consideration of functional and aesthetic factors. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Eating Out

Students conduct guided investigations by following a series of steps that include questioning, making and testing predictions, collecting and recording data, observing patterns and suggesting possible explanations. They select and safely use a range of equipment, computer-based technology and other resources to investigate and explore.	• Earth and It's Surrounds • Investigating • Designing and Making • Using Technology	Identifies some of the features of the solar system and describes interactions that affect conditions on Earth. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Out in Space

St Francis Xavier's Stage 2 Science Scope and Sequence – Year 4

Foundation Statement	Strand Learning Process	Outcomes	Unit
Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation. Students develop and evaluate design ideas recognising the needs of users or audiences. They implement the design process and evaluate solutions using functional and aesthetic criteria. Students select and safely use equipment, computer-based technology and other resources throughout the processes of design and production.	• Built Environments • Living Things • Investigating • Designing and Making • Using Technology	Creates, models and evaluates built environments reflecting consideration of functional and aesthetic factors. Identifies and describes the structure and function of living things and ways in which living things interact with other living things and their environment. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	A Look Inside
Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation. Students develop and evaluate design ideas recognising the needs of users or audiences. They implement the design process and evaluate solutions using functional and aesthetic criteria. Students select and safely use equipment, computer-based technology and other resources throughout the processes of design and production. Students identify and describe structures and functions in living things and how they interact with each other and their environment.	• Built Environments • Living Things • Investigating • Designing and Making • Using Technology	Creates, models and evaluates built environments reflecting consideration of functional and aesthetic factors. Identifies and describes the structure and function of living things and ways in which living things interact with other living things and their environment. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Mini Worlds
Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation. Students develop and evaluate design ideas recognising the needs of users or audiences. They implement the design process and evaluate solutions using functional and aesthetic criteria. Students select and safely use equipment, computer-based technology and other resources throughout the processes of design and production.	• Physical Phenomena • Investigating • Designing and Making • Using Technology	Identifies various forms and sources of energy and devises systems that use energy. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Sounds Great

Students independently implement aspects of a scientific investigation, such as observing, questioning, predicting, testing, recording accurate results, analysing data and drawing conclusions. They demonstrate an understanding of a fair test and identify variables. Students select and safely use equipment, computer-based technology and other resources throughout the processes of investigation. Students develop and evaluate design ideas recognising the needs of users or audiences. They implement the design process and evaluate solutions using functional and aesthetic criteria. Students select and safely use equipment, computer-based technology and other resources throughout the processes of design and production.	• Products and Services • Built Environments • Information and communication • Investigating • Designing and Making • Using Technology	Creates and evaluates products and services considering aesthetic and functional factors. Creates, models and evaluates built environments reflecting consideration of functional and aesthetic factors. Creates and evaluates information products demonstrating an understanding of the needs of particular audiences. Conducts guided investigations by observing, questioning, predicting, collecting and recording data, and suggesting possible explanations. Develops and implements own design ideas in response to an investigation of needs and wants. Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.	Material Worlds

St Francis Xavier's Stage 3 Science Scope and Sequence – Year 5			
Foundation Statement	**Strand** **Learning Process**	**Outcomes**	**Unit**
*Students conduct scientific investigations based on fair testing and collect record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. *Students identify, describe and evaluate interdependent relationships between living things and the environment within ecosystems.	• Living Things • Investigating • Designing and Making • Using Technology	Identifies, describes and evaluates the interactions between living things and their effects on the environment. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**Environment Matters**
*Students conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They evaluate findings and prepare possible explanations. *Students use, select and evaluate equipment and other resources to meet the requirements and constraints of investigations. *Students independently plan, implement and manage the design process and evaluate the results using design criteria. They consider the implications of design and production in relation to aesthetic, cultural, safety and functional factors. *Students select, safely use and evaluate equipment, and other resources to meet the requirements and constraints of design tasks. *Students recognise that built environments are systems created to meet the needs and requirements of people and communities	• Physical Phenomena • Built Environments • Investigating • Designing and Making • Using Technology	Creates and evaluates built environments demonstrating consideration of sustainability and aesthetic, cultural, safety and functional issues. Identifies and applies processes involved in manipulating, using and changing the form of energy. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**Sailing, Sinking Soaring**

*Students conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. *Students use, select and evaluate equipment and other resources to meet the requirements and constraints of investigations & design *Students independently plan, implement and manage the design process and evaluate the results using design criteria. They consider the implications of design and production in relation to aesthetic, cultural, safety and functional factors. *Students recognise that built environments are systems created to meet the needs and requirements of people and communities.	• Earth and It's Surrounds • Physical Phenomena • Products and Services • Investigating • Designing and Making • Using Technology	Creates and evaluates products and services, demonstrating consideration of sustainability, aesthetic, cultural, safety and functional issues. Recognises that the Earth is the source of most materials and resources, and describes phenomena and processes, both natural and human, that form and change the Earth over time. Identifies and applies processes involved in manipulating, using and changing the form of energy. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**Light up my Life**
*Students conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. *Students independently plan, implement and manage the design process and evaluate the results using design criteria. *Students consider the implications of design in relation to environmental, aesthetic, ethical, safety and functional factors. *Students recognise that built environments are systems created to meet the needs and requirements of people and communities. *Students explain how production processes have changed over time.	• Products and Services • Information / Communication • Investigating • Designing and Making • Using Technology	Creates and evaluates information products and processes, demonstrating consideration of the type of media, form, audience and ethical issues. Creates and evaluates products and services, demonstrating consideration of sustainability, aesthetic, cultural, safety and functional issues. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**Food for the Tuckerbox**

St Francis Xavier's Stage 3 Science Scope and Sequence – Year 6

Foundation Statement	Strand Learning Process	Outcomes	Unit
Students independently develop questions for scientific investigation, conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. Students use, select and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of investigations. Students independently plan, implement and manage the design process and evaluate the results using design criteria. They consider the implications of design and production in relation to environmental, aesthetic, cultural, ethical, safety and functional factors. Students select, safely use and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of design tasks.	• Physical Phenomena • Investigating • Designing and Making • Using Technology	Identifies and applies processes involved in manipulating, using and changing the form of energy. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**On the Move**
Students independently develop questions for scientific investigation, conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. Students use, select and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of investigations. Students independently plan, implement and manage the design process and evaluate the results using design criteria. They consider the implications of design and production in relation to environmental, aesthetic, cultural, ethical, safety and functional factors. Students select, safely use and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of design tasks. They identify and describe various sources, forms, uses, transfers and changes in forms of energy.	• Physical Phenomena • Earth and It's Surrounds • Investigating • Designing and Making • Using Technology	Identifies and applies processes involved in manipulating, using and changing the form of energy. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**The best Place to Live/**

Students independently develop questions for scientific investigation, conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. Students use, select and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of investigations. Students independently plan, implement and manage the design process and evaluate the results using design criteria. They consider the implications of design and production in relation to environmental, aesthetic, cultural, ethical, safety and functional factors. Students select, safely use and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of design tasks. Students identify, describe and evaluate interdependent relationships between living things and the environment within ecosystems.	• Earth and It's Surrounds • Investigating • Designing and Making • Using Technology	Recognises that the Earth is the source of most materials and resources, and describes phenomena and processes, both natural and human, that form and change the Earth over time. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**What's The Weather**
Students independently develop questions for scientific investigation, conduct scientific investigations based on fair testing and collect, record and analyse the resulting data. They identify trends in data, evaluate findings and prepare possible explanations. Students use, select and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of investigations. Students independently plan, implement and manage the design process and evaluate the results using design criteria. They consider the implications of design and production in relation to environmental, aesthetic, cultural, ethical, safety and functional factors. Students select, safely use and evaluate equipment, computer-based technology and other resources to meet the requirements and constraints of design tasks. Students explore how natural forces and human interaction cause changes to the Earth over time.	• Living Things • Earth and It's Surrounds • Investigating • Designing and Making • Using Technology	Identifies, describes and evaluates the interactions between living things and their effects on the environment. Recognises that the Earth is the source of most materials and resources, and describes phenomena and processes, both natural and human, that form and change the Earth over time. Conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. Develops and resolves a design task by planning, implementing managing and evaluating design processes. Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.	**An Ancient Land**