Science and Technology Policy

Policy Statement
Science and Technology is one of six key learning areas. Science and Technology in primary schools is concerned with students learning about their world. For students Kindergarten to Year 6 science is about exploring and discovery, the development of knowledge and skills that support investigation, testing, explanations, design and making, problem solving and clarification. Technology supports students in developing knowledge, skills and strategies in using technology purposefully and creatively in order to achieve learning outcomes.
Statement of Purpose
If we are to support students in their capacity to deal with the 21st century effectively, Science and Technology must form part of the school curriculum.

The aim of the NSW State Syllabus for Science and Technology is to:
‘develop in students competence, confidence and responsibility in their interactions with science and technology leading to:
• an enriched view of themselves, society, the environment and the future and
• an enthusiasm for further learning of science and technology.’

(NSW Board of Studies, Science and Technology Syllabus, pg 7)

There are three overlapping stages of development for K – 6 primary schools in Science and Technology. These are:

- Stage 1 – Kindergarten, Years 1 to 2
- Stage 2 – Years 2 to 4
- Stage 3 – Years 4 to 6

The Syllabus is divided into knowledge and understandings, skills, values and attitudes.

Knowledge and understandings include six content areas:

1. Built Environments
2. Information and Communication
3. Living Things
4. Physical Phenomena
5. Products and Services
6. The Earth and its Surroundings

Knowledge, Understandings and Skills includes:

1. Investigating
2. Designing and making
3. Using technology.

Also included are values and attitudes:

1. Towards themselves
2. Towards others and
3. Towards science and technology.

Blaxland Public School will:

- provide continuing teacher professional development in order to develop understandings about Science and Technology and the knowledge and skills to apply appropriate strategies in the classroom;
- provide for consistency in student learning through a planned whole school approach;
- identify individual student needs through ongoing assessment;
- provide in class support for students experiencing learning difficulties;
- provide meaningful learning situations in which students acquire knowledge and understandings through investigations and design and make;
- provide the technology required to support the development of knowledge, understandings and skills in investigation and design and make in order to achieve syllabus outcomes.
- provide positive and constructive feedback for students, affirming what they know and where to next;
- opportunities to review whole or part of the learning cycle;
- review and organise school resources to ensure their appropriateness for optimal learning and teaching in Science and Technology;
- evaluate the whole-school Science and Technology program as part of school planning, to measure the progress being made in the achievement of outcomes and
- report to parents on learning achievements using the standards framework of syllabus outcomes.

Effective Teaching and Learning

The teachers will provide teaching and learning experiences in:

Built Environments:

- man made buildings and surrounding spaces;
- natural environment modified to suit specific needs e.g. land clearing, waterways etc;
- transport systems;
- people and organisations who provide for change in environments;
- effects of change on man made and natural environments;
- provision of services;
- aesthetic and functional qualities of built environments;
- systems and methods to build and control environments;
- refined and processed materials and products their characteristics and their uses;

Information and Communications;

The Information and Communications strand is concerned with:

- the nature of communications;
- methods of communicating between individuals, groups and communities, eg personal conversation, telephones, satellite link-ups;
- systems of information storage and transfer, eg databases, computer systems, videotape libraries, microfiche;
- the people and organisations who produce, use, consume or are affected by information and communications technologies;
- structures and products that exist to access, promote and distribute information, eg magazines, television, films, computer networking, telecommunications;
- changes to information and communication technology over time.

Living Things

The Living Things strand is concerned with:

- the similarities and differences between living things;
- the way that living things interact with one another;
- the processes that occur within living things;
- the way living things adapt to their environments;
- the human body as a complex system that needs to be understood and cared for;
- the ways people use and manipulate other living things to address their own needs and wants;
- how living things change over a lifetime;
- how groups of living things change over long periods of time;
- how natural environments are affected by technological activities;
- the beneficial and detrimental effects of technology on living things;
- how environments provide for the needs of living things.

Physical Phenomena

The Physical Phenomena strand is concerned with:
• relationships between time, space and movement;
• how physical phenomena are used by people to address particular needs;
• forces and their effects;
• sources of energy;
• light and some of its characteristics;
• sound and some of its characteristics;
• heat and some of its characteristics;
• electricity and some of its characteristics;
• magnetism and some of its characteristics;
• availability of energy resources and the uses people make of the various forms of energy, eg solar and wind;
• electrical circuits and their uses;
• the systems that exist and the environmental cost of supplying different forms of energy.

Products and Services
The Products and Services strand is concerned with:

• the processes people use to produce goods commodities and services;
• products people make, process or grow;
• the organisations people develop to produce goods or products;
• means of delivery and distribution;
• systems designed to provide particular services, eg transport, health, education;
• the effect of various products and services on people and organisations;
• the management of materials and resources including waste disposal and recycling;
• the means by which products are marketed;
• the materials and resources used to produce goods and commodities • the way in which the characteristics of naturally occurring materials affect their use;
• how production technologies have changed over time;
• how materials are shaped, joined, formed and finished;
• the environmental consequences of production and consumption.

Earth and its Surroundings
The Earth and its Surroundings strand is concerned with:

• the solar system, planets, Earth, moon and stars;
• aspects of the physical environment, eg the Earth’s crust, its oceans and atmosphere;
• natural changes that occur, such as soil erosion, volcanic eruption, climatic changes and movement of water;
• the passing of time and the natural events that make people aware of this passing, eg daily cycles, lunar cycles and seasons;
• the variety and characteristics of naturally occurring materials;
• the methods people use to obtain and process materials;
• the methods people use to manage natural resources;
• limitations to resources available on Earth;
• renewable resources.

Learning processes
The teachers will provide a learning environment that provides opportunities for students to learn about and engage in:

• the process of investigating; exploring and discovering phenomena and events, proposing explanations, predicting outcomes, testing and modifying understanding and explaining and applying understandings;
- **the process of designing and making; generating and selecting ideas to best meet the design task objectives, using resources to assemble or construct products, systems or environments, evaluating the outcome including processes, products and their social and environmental effects;**
- **the use of technology; understand the nature of the task, select the appropriate technology, develop the necessary skills to use the technology, evaluate the possible benefits of technology in relation to the personal, and social and economic effects of its use.**

**Students will:**
- participate constructively in teaching and learning activities;
- be part of planning for their future learning directions and
- be responsible for their own belongings required for their learning tasks as required by the class teacher, for e.g. pens, sharp pencils, texts etc

**Parents will:**
- support their child with any class requirements such as, project development, pens, pencils, texts etc as suggested by the class teacher