Buddina State School Unit Plan: Year 5 (Term 2 2008)

Title	How is Air travel possible?				
Focus KLAs	**English**	**Maths**	**Science**	**Tech**	**The Arts**

Context:
Through the construction of a flight model and hands on scientific investigations students will learn about actions of forces, and forms and uses of energy, are evident in the everyday world.

Targeted Essential Learnings

English

Ways of Working (Students can do)

Students are able to:

- identify main ideas and the sequence of events, and make simple inferences
- recognise and select vocabulary to describe subject matter
- interpret how people, characters, places, events and things have been represented
- construct simple literary and non-literary texts by planning and by using prior knowledge and experience to match an audience and purpose
- make judgments and justify opinions about their enjoyment and appreciation of texts using personal knowledge, experiences and direct references to the texts
- reflect on and identify how language elements in texts represent people, characters, places, events and things in similar and different ways
- reflect on learning to identify new understandings.

Knowing and Understanding (Students know)

Writing and designing

Writing and designing involve using language elements to construct literary and non-literary texts for audiences in personal and community contexts.

- The purpose of writing and designing includes entertaining, informing and describing
- Text users make choices about grammar and punctuation, to make meaning.
- Writers and designers use a number of active writing strategies, including planning, drafting, revising, editing, proofreading, publishing and reflecting and by referring to authoritative sources
- Fluent handwriting using Queensland Modern Cursive script has uniform slope, size and spacing.

Speaking and listening

Speaking and listening involve using oral, aural and gestural elements to interpret and construct texts that achieve purposes in personal and community contexts.

- The purpose of speaking and listening includes informing, presenting simple arguments, negotiating relationships and transactions, and seeking opinions of others
- Speakers can adopt different roles, and make language choices appropriate to the level of formality
- Spoken texts have different structures from those of written texts
- Words and phrasing, modulation of volume, pitch, pronunciation and pace enhance expression of ideas, can be adjusted to match the purpose, audience and context, and are

Evidence

Then we need evidence of students ability to:

Note: We need evidence of higher order thinking

Explanation

- Write an explanation describing the design and construction of an object demonstrating the principles of flight.
- Plan, draft, revise, edit, proofread and publish an explanation.
- Write in fluent Queensland Modern Cursive script.
- Write a glossary of technical terms used.

Language elements

- Paragraphs separate ideas in texts and contain a topic sentence.
- A sentence can be either simple, compound or complex
- Text connectives signal how things, ideas and information are related
- Time connectives and tense are used to locate characters or action in time
- Sentences can indicate what is happening (verbs), who or what is taking part (nouns), what it looks like (adjectives), and the circumstances surrounding the action (prepositional phrases and adverbs)
- Conjunctions signal relationships between things, ideas and events.
- Punctuation marks, including commas, apostrophes and speech marks, signal meaning in texts
- Vocabulary is chosen to express ideas and information in a commonsense or technical way

Oral presentation

- Present an oral speech on the construction process, identifying the principles of flight and explain the result of their construction.
- Use the information gathered in their explanation and digital images to support the speech.
- Use body language, facial expressions and gestures, to match the audience, purpose and situation.
- Listen to identify the topic, main ideas and opinions, retell

	monitored by listeners. • Nonverbal elements, including body language, facial expressions and gestures, enhance expression of ideas, can be adjusted to match the audience, purpose and situation of a text, and are monitored by listeners • Active listeners identify the topic, main ideas and opinions, retell information accurately, ask clarifying questions and volunteer information. • In presentations, speakers make meaning clear through the selection and sequencing of ideas and information and the use of visual aids as support • Speakers and listeners use a number of strategies to make meaning, including identifying purpose, activating prior knowledge, responding, questioning, identifying main ideas, monitoring, summarising and reflecting. ***Reading and viewing*** **Reading and viewing involve using a range of strategies to interpret and appreciate written, visual and multimodal texts in personal and community contexts.** • Purposes for reading and viewing are identified and are supported by the selection of texts based on an overview that includes skimming and scanning titles, visuals, headings, font size, tables of contents, indexes and lists • Readers and viewers draw on their prior knowledge of language and texts when engaging with a text • Words, groups of words, visual resources and images can be included or excluded to elaborate ideas and information and to portray people, characters, places, events and things in different ways. • Comprehension involves using language elements and contextual cues to interpret, infer from and evaluate texts in personal and community contexts • Unfamiliar words and their meanings are decoded using the integration of the three cueing systems (grapho-phonic, syntactic and semantic), small meaning units and base words • Readers and viewers use a number of active		information accurately, ask clarifying questions and volunteer information. ***Language elements*** • Auditory, spoken, visual and nonverbal elements add meaning to the subject matter and focus the audience's attention **Reading Non fiction and electronic texts about;** • Flight • History of flight • Principles of flight **Reading and viewing** When reading and viewing students • Skim and scan titles, visuals, headings, font size, tables of contents, indexes and lists • Draw on their prior knowledge of language and texts when engaging with a text • Make connections with words, groups of words, visual resources and images can be included or excluded to elaborate ideas and information and to portray people, characters, places, events and things in different ways. • Improve reading fluency by the use of decoding strategies, prediction, monitoring meaning and self-correction, in combination with a developing vocabulary and prior knowledge of subject matter • Comprehend through using language elements and contextual cues to interpret, infer from and evaluate texts in personal and community contexts • Decode unfamiliar words and their meanings using the integration of the three cueing systems (grapho-phonic, syntactic and semantic), small meaning units and base words • Use a number of active comprehension strategies to interpret texts, including activating prior knowledge, predicting, questioning, identifying main ideas, inferring, monitoring, summarising and reflecting.

	comprehension strategies to interpret texts, including activating prior knowledge, predicting, questioning, identifying main ideas, inferring, monitoring, summarising and reflecting. ***Literary and non-literary texts*** **Making choices about literary and non-literary texts involves identifying the purpose, audience, subject matter and text structure.** • Texts represent Aboriginal and Torres Strait Islander knowledges, peoples, places, events and things in different ways • Non-literary texts report, inform, present and seek opinions, present arguments, persuade and negotiate. • Information and news reports, articles, features, simple arguments, descriptions, explanations, group discussions and formal presentations are types of non-literary texts. • Main ideas are established by identifying who, what, where, when, how and why. • Reports and arguments have structures, including an introduction or a general statement, elaboration of information or reasons, and a conclusion.		
Science			
Students are able to: • plan activities and investigations, identifying and using elements of a fair test • collect and organise data, information and evidence • evaluate information and evidence to support data gathered from activities and investigations • select and use tools, technologies and materials suited to the activities and investigations • draw conclusions that are supported by evidence, reproducible data and established scientific concepts • communicate scientific ideas, data and findings, using scientific terminology and formats appropriate to context and purpose • identify and apply safe practices • reflect on and identify different points of view and consider other people's values relating to science • reflect on learning to identify new understandings and future applications	***Science as a human endeavour*** **Science relates to students' own experiences and activities in the community.** • Scientific ideas can be used to explain the development and workings of everyday items • Science can contribute to people's work and leisure • Cultures from around the world, including those of Aboriginal people and Torres Strait Islander people, have contributed to scientific understanding ***Energy and change*** **Actions of forces, and forms and uses of energy, are evident in the everyday world.** • The greater the force on an object, the greater the change in shape or motion • Forces may act at a distance or may need to be in contact with an object to affect it • Energy can be transferred from one object to another		**Scientific experiments** Conducting scientific experiments on: • Different types of aerofoils to create lift. • Wing design and length (wing shape and types) • Moving air and air pressure.. • Propulsion (including jet propulsion) • Ailerones and rudder • Holicopter rotors. **Communicate scientific ideas, data and findings:** • using scientific terminology and formats appropriate to context and purpose • use methods for collecting and organising data • Select and use tools, technologies and materials suited to the activities and investigations • Draw conclusions that are supported by evidence, reproducible data and established scientific concepts • identify and apply safe practices

Technology		
Students are able to: • generate design ideas that match requirements • communicate the details of their designs using 2D visual representations • select resources, techniques and tools to make products • plan production procedures by identifying and sequencing steps • make products to match design ideas by manipulating and processing resources • identify and apply safe practices • evaluate products and processes to identify strengths, limitations, effectiveness and improvements • reflect on and identify the impacts of products and processes on people and their communities • reflect on learning to identify new understandings and future applications	***Technology as a human endeavour*** **Technology influences and impacts on people, their communities and environments.** • Different ideas for designs and products are developed to meet needs and wants of people, their communities and environments • Aspects of appropriateness influence product design and production decisions • The products and processes of technology can have positive or negative impacts ***Information, materials and systems (resources)*** **The characteristics of resources are matched with tools and techniques to make products to meet design challenges.** • Resources have particular characteristics that make them more suitable for a specific purpose and context • Techniques and tools are selected to appropriately manipulate characteristics of resources to meet design ideas	**Construction of a flight model** • Generate design ideas that match requirements for a flight model • Draw up design of their flight model using 2D visual representations • Select appropriate resources, techniques and tools to make flight model • Plan production procedure of flight model by identifying and sequencing steps • Identify and apply safe practices when testing their flight model. • Test the model to see if meets the requirements. • Evaluate their flight model and design processes to identify strengths, limitations, effectiveness and improvements (construct a table) • Reflect on learning to identify new understandings and future applications
The Arts		
Students are able to: • present arts works to informal and formal audiences, using arts techniques, skills and processes	***Visual Art*** **Visual Art involves selecting visual arts elements, concepts, processes and forms (both 2D and 3D) to express ideas, considering different audiences and different purposes, through images and objects.** • Colour shades (adding black to a colour) and tints (adding colour to white) are used to create balance, contrast and patterns • Continuous, broken and hatched lines are used to create balance, contrast, space and patterns • Curved, angular, symmetrical, asymmetrical and overlapping shapes are used to create balance, contrast and patterns • Texture creates contrast and patterns using lines, rubbings and markings	

This will lead to the deep understandings of:
Actions of forces, and forms and uses of energy, are evident in the everyday world especially in the area of flight.

Catering for Diversity

Enrichment Activities	Students requiring support
Students can: Investigate an issue related to the use of flight. (Flying Doctors, spread of decease, customs problems etc.)	**Students can:** Will be supported in their science activities by the visiting 'Hot Scientist'.

Integrated ICT Opportunities (Guide towards Pedagogical Certificate)

Brief description of ICT integrated task				
Focus area	**Expectations**	**Indicator**	**Check**	**Evidence**
Professional Knowledge	I understand that ICT can be used to benefit teaching and learning and is most effective	PK	✓	Using digital images to support the student's oral presentations.
Professional Practice	When planning, I incorporate the use of ICT in achieving curriculum goals	PP1	✓	Using web sites to support research, and digital images to support knowledge.
	I provide opportunities for students to use ICT as part of their learning	PP2	✓	Students use digital cameras and MS Photostory 3- and weekly visits to the computer lab as well as classroom computers .
	I provide opportunities for students to use ICT to gather information and to communicate with	PP3	✓	Use of teacher directed web sites to locate information. Communicate with peers by using own digital images.
	I use a range of ICT resources and devices for professional purposes	PP4	✓	Use of CX and The Learning Place to gain professional information and skills. Use of digital cameras, scanners, data projectors and printers.
	I use ICT to locate, create and record information and resources	PP5	✓	Oneschool
	I can store, organise and retrieve digital resources	PP6	✓	Use of school's network
	I use ICT to access and manage information on student learning	PP7	✓	Oneschool
Professional Values	I can identify when professional learning is required to effectively implement planning	PV1	✓	Seek support at school base (teaching partners, computer support aide).
	I select ICT resources appropriate for student learning in a range of contexts and for a	PV2	✓	Selection of appropriate software to suit the learner.
	I operate safely, legally and ethically when using ICT.	PV3	✓	EQ code of conduct and ICT agreement.
Professional Relationships	I use ICT to communicate with others for professional purposes.	PR		

ICT Cross Curriculum Priority

Inquiring with ICTs	Evaluate the data and information gathered for usefulness, credibility, relevance and accuracy (by reviewing web sites on flight)
Creating with ICTs	Express and represent ideas, information and thinking (taking digital images of their model construction and ability to flight)
Communicating with ICTs	Use a variety of digital media to improve communication (use digital images of their model construction and ability to flight to support the oral presentation).
Ethics, issues and ICTs	Identify owner(s)/creator(s) of digital information sources and apply sound practices to acknowledge them (discussion on recognising ownership of digital images and information on featured web sites).
Operating ICTs	

Key Resources

English	Science	Technology	ICTS
Bulk loan: How is Air travel possible?	Materials to match investigations	Learning Object: Heroes of the Sky Materials to construct models	www Digital cameras MS Photo Story 3

Assessment

The Assessment Tasks	Learning Experiences	
Description of tasks	Provided learning activities	The assessment tasks need to include:
Explanation Explanation describing the design and construction of an object demonstrating the principles of flight.	**Explanation** Discuss and model: • The generic structure of an explanation. • Methods for planning, drafting, revising, editing, proofreading and publishing an explanation. • Writing paragraphs to separate ideas in texts and which contain a topic sentence. • Constructing sentences that are either simple, compound or complex • Text connectives to signal how things, ideas and information are related • How time connectives and tense are used to locate characters or action in time • How sentences can indicate what is happening (verbs), who or what is taking part (nouns), what it looks like (adjectives), and the circumstances surrounding the action (prepositional phrases and adverbs) • How conjunctions signal relationships between things, ideas and events. • Use of punctuation marks, including commas, apostrophes and speech marks, signal meaning in texts • Appropriate selection and use of vocabulary to express ideas and	**Explanation** • The generic structure of an explanation. • Planned, drafted, revised, edited and proofread explanation. • Paragraphs to separate ideas. • Topic sentence. • Simple, compound or complex sentences • Text connectors and time connectors. • Conjunctions. • Punctuation marks: including commas and apostrophes. • Appropriate use of technical vocabulary. • A glossary of technical terms used. • Written in fluent Queensland Modern Cursive script

	information in a commonsense or technical way • Writing in fluent Queensland Modern Cursive script	
Oral presentation Present an oral speech on the construction process, identifying the principles of flight and explain the result of their construction.	**Oral presentation** Discuss and model: • Auditory, spoken, visual and nonverbal elements which add meaning to the subject matter and focus the audience's attention • Use of body language, facial expressions and gestures, to match the audience, purpose and situation • Listening techniques to identify the topic, main ideas and opinions, retell information accurately, ask clarifying questions and volunteer information.	**Oral presentation** • An oral speech on the construction process, identifying the principles of flight and explain the result of their construction. • Information gathered in their explanation and digital images to support the speech. • Auditory, spoken, visual and nonverbal elements which add meaning to the subject matter and focus the audience's attention • Use of body language, facial expressions and gestures, to match the audience, purpose and situation. • Listening techniques to identify the topic, main ideas and opinions, retell information accurately, ask clarifying questions and volunteer information. (complete a checklist).
Scientific experiments Conducting a series of scientific experiments. Communicate scientific ideas, data and findings	**Scientific experiments** Facilitate the conducting of scientific experiments on: • Different types of aerofoils to create lift. • Wing design and length (wing shape and types) • Moving air and air pressure.. • Propulsion (including jet propulsion) • Ailerons and rudder • Helicopter rotors. Discuss and model: • Methods for collecting and organising data, information and evidence • Evaluating information and evidence to support data gathered from activities and investigations • Appropriate selecting and use of tools, technologies and materials suited to the activities and investigations • Drawing conclusions that are supported by evidence, reproducible data and established scientific concepts • Identifying and apply safe practices Discuss and model the writing up an investigation in a scientific method, including: • Communicating scientific ideas, data and findings, using scientific terminology and formats appropriate to context and purpose	**Scientific experiments** Scientific experiments on: • Different types of aerofoils to create lift. • Wing design and length (wing shape and types) • Moving air and air pressure.. • Propulsion (including jet propulsion) • Ailerons and rudder • Helicopter rotors. Communicate scientific ideas, data and findings: • using scientific terminology and formats appropriate to context and purpose • use methods for collecting and organising data • Select and use tools, technologies and materials suited to the activities and investigations • Draw conclusions that are supported by evidence, reproducible data and established scientific concepts • identify and apply safe practices

Construction of a flight model Design and create a flight model that matchs the specified requirements. **The Arts**	**Construction of a flight model** Discuss and model: • Design ideas that match requirements for a flight model • Methods for drawing up a design of the flight model using 2D visual representations • The selecting of appropriate resources, techniques and tools to make flight model • Methods for planning a production procedure of the flight model by identifying and sequencing steps • Identification and application of safe practices when testing their flight model. Discuss methods for: • Evaluating their flight model and design processes to identify strengths, limitations, effectiveness and improvements (construct a table). • Reflecting on their learning to identify new understandings and future applications **The Arts** • Colour shades (adding black to a colour) and tints (adding colour to white) are used to create balance, contrast and patterns • Continuous, broken and hatched lines are used to create balance, contrast, space and patterns • Curved, angular, symmetrical, asymmetrical and overlapping shapes are used to create balance, contrast and patterns • Texture creates contrast and patterns using lines, rubbings and markings	**Construction of a flight model** • Generate a design idea that matches the specified requirements for a flight model • Draw up a design of their flight model using 2D visual representations • Select appropriate resources, techniques and tools to make flight model • Plan production procedure of flight model by identifying and sequencing steps • Test the model to see if meets the requirements. • Identify and apply safe practices when testing their flight model. • Evaluate their flight model and design processes to identify strengths, limitations, effectiveness and improvements (construct a table). **The Arts** • Colour shades (adding black to a colour) and tints (adding colour to white) are used to create balance, contrast and patterns • Continuous, broken and hatched lines are used to create balance, contrast, space and patterns • Curved, angular, symmetrical, asymmetrical and overlapping shapes are used to create balance, contrast and patterns • Texture creates contrast and patterns using lines, rubbings and markings

Making Judgments

KLAs Assessable Elements *(highlight elements assessed through this unit context ensuring both dimensions knowing and understanding and ways of working are assessed)*

English	Maths	Science	Technology	SOSE	The Arts	HPE
- knowledge & understanding	- knowledge & understanding	**- knowledge & understanding**	**- knowledge & understanding**	- knowledge & understanding	**- knowledge & understanding**	- knowledge & understanding
- interpreting texts **- constructing texts** **- appreciating texts** **- reflecting**	- thinking and reasoning - communicating - reflecting	**- investigating** **- communicating** - reflecting	**- investigating & designing** **- producing** **- evaluating** **- reflecting**	- investigating - communicating - participating - reflecting	**- creating** **- presenting** - responding - reflecting	- investigating - planning - implementing and applying - reflecting