

Summary of Years 6 (2010) and 7 (2011)

ENGLISH:

Talking and Listening:

In a home education situation, both XX and YY have had ample opportunity to develop their talking and listening skills because there is only generally 3 or 4 of us in a room in any given situation. In particular they have:

- Collaborated and negotiated with us and between themselves when exploring ideas, solving problems, justifying opinions and developing arguments.
- Developed note-taking and information gathering skills when listening to oral presentations (eg: when watching science DVDs)
- Developed conversational skills and improved turn-taking – in both personal and telephone conversations
- Experienced listening to presentations (Museum of Australian Democracy) – and discussed the techniques used for visual aids, answering questions etc
- Developed practice in reading fiction and poetry aloud (Jabberwocky, Peter Pan etc) to practice intonation, expression, humour etc
- Use technology (Skype) to talk to their friends online and outline instructions.
- Understand the difference between opinion and facts.



Reading:

Both XX and YY are very competent readers – utilising strategies and reading material that is above Stage level. They both read widely for pleasure – we visit the local library weekly and they both check out several novels each a week. They are starting to progress onto (appropriate) young adult fiction. Some examples of their reading include:

XX:

- Time Riders series (Alex Scarrow)
- Hitchhikers Guide to the Galaxy series and Dirk Gently (Douglas Adams)
- Hunger Games (Suzanne Collins)
- Geeves series (PG Wodehouse)
- Agatha Christie
- Discworld series by Terry Pratchett

YY:

- Tomorrow When the War Began (John Marsden)
- Twilight (Stephanie Meyer)
- Hunger Games (Suzanne Collins)



They both have ample opportunity to read aloud, to develop their expression, pause and emphasis, which they are both excelling at. We also read aloud books that we are studying together and these have included:

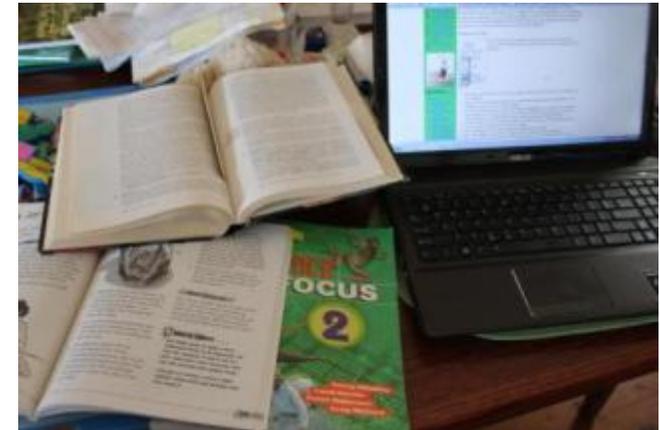
- The Gebra Named Al/The Chemy Called Al – Wendy Isdell
- Who Really Killed Cock Robin? – Jean Craighead George
- Anne of Green Gables – LM Montgomery
- Alice in Wonderland
- Peter Pan

We have also started literary analysis of texts. These include picture books:

- Weslandia – Paul Fleischman
- Home – Narelle Oliver
- Way Home – Libby Hathorn
- Belonging – Jeannie Baker

and novels:

- Alice in Wonderland
- Peter Pan



We also read widely for information. We have started to refine note-taking skills, using scaffolds primarily. We utilise both print and digital resources and are starting to develop research skills to select relevant and accurate information. Both children are developing their skills in using strategies for finding information (eg: skimming, scanning, using indexes etc).

They are able to competently follow quite complex procedures (eg: instruction manuals, recipes, science experiments) most often independently.

Both kids are able to process and interpret ideas that are implicit in a range of complex narrative and information texts. They are able to analyse and evaluate evidence in persuasive texts and identify language features to infer an author's intended purpose and audience.

Writing:

The children have struggled with writing in the past – a combination of perfectionism, anxiety and also poor executive functioning skills. My goal has been to show them that writing has a purpose and make any writing tasks we undertake relevant and meaningful. While their writing is still not prolific, they have experienced creative and persuasive writing, it is reasonable quality and they are starting to gain more confidence in their abilities.

Their grammar, vocabulary and spelling are generally above stage level – we back up writing tasks with some worksheets from Excel, however most of their skills come from writing in context. Some of their writing tasks have included:

- Freewriting – narratives (with editing and revision)
- Poetry (about me/identity)
- Letters of opinion (acid spills)
- Information reports (alternative energy; Powerpoints on Australian animals)
- Persuasive writing practice



In addition, we are starting on the task of literary analysis. Much of this work is verbal reflection/arguments, which are then written up in paragraphs. We are moving onto learning the essay form of writing (Peter Pan tasks).

We have also completed a unit of work on Graphic Novels, which incorporates analysis of comics and movies.



MATHEMATICS:

Both children enjoy mathematics and move easily through most concepts. I generally pre-test them and choose appropriate activities for their level. XX is generally working at high Stage 4 level (Yr 8) and YY at Stage 5 (Yr 9/10) for most aspects of mathematics. We tend to work in-depth on our current topic, going through the Stages until they have "had their fill".

Number:

- Strategies in addition, subtraction, multiplication and division
- Order of operations
- Operations with fractions, decimals, percentages
- Rounds figures to a specified number of significant figures; expressing recurring decimals in fraction form
- Squares, square roots, cubes and cube roots
- Multiples and factors
- Prime numbers and factor trees
- Special series of numbers (Fibonacci sequence, square numbers, triangular numbers, palindromic numbers, ABACABADABACABA patterns)
- Number systems from the past
- Number systems not based on 10 (binary, base 5 etc).
- Directed numbers, number line, operations with integers and the number plane



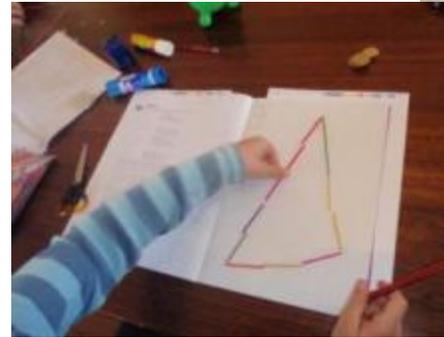
Measurement:

- length
- perimeter
- area
- volume
- capacity
- mass
- time
- length conversion



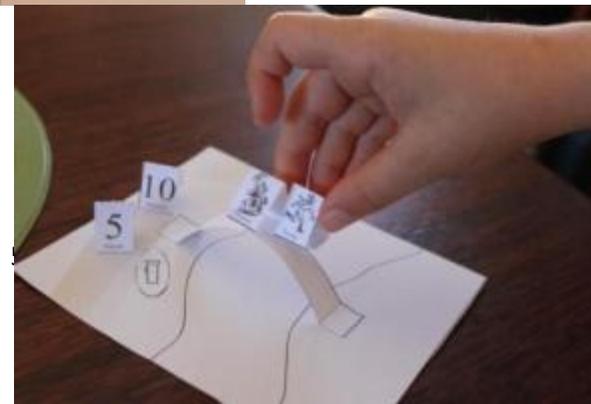
Geometry:

- types of angles
- naming angles
- measuring and constructing angles with a protractor
- bearings and map coordinates
- types of triangles
- types of quadrilaterals
- polygons
- polyhedra (constructing polyhedra from nets)
- symmetry
- transformations
- Pythagoras' theorem
- angle sum of triangles and quadrilaterals
- angles and parallel lines (co-interior, corresponding, alternate)
- constructing triangles
- golden ratio – Fibonacci spiral
- developing geometric proofs



Patterns and Algebra:

- using rules
- pronumerals
- writing and finding formula
- problem solving using algebra
- algebraic expressions
- like terms
- substitution (including positive and negative numbers)
- working with grouping symbols
- simplifying expressions
- expanding and collecting like terms
- working with indices
- equations
- balancing equations
- inverse operations
- solving word problems
- solving equations with pronumerals on both sides
- rearranging formulas
- inequalities
- linear relationships

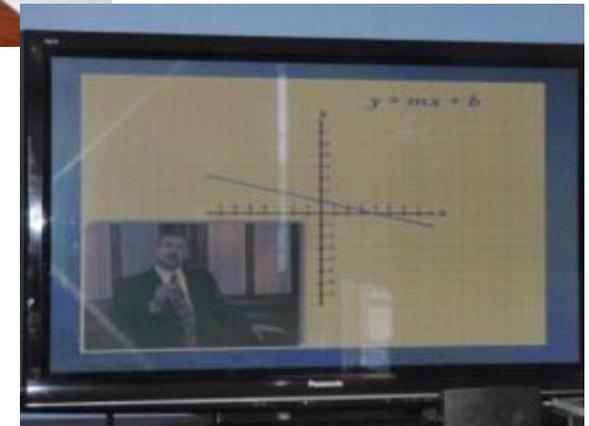
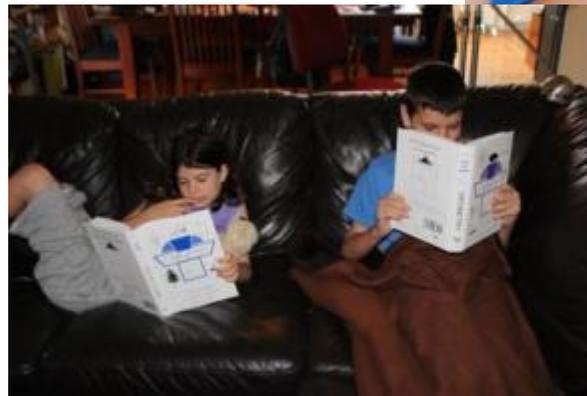


- plotting linear equations on the number plane
- gradient and y-intercept
- finding the equation of a straight line
- two point formula
- plotting quadratic equations

Data, probability and working mathematically:

We will work more formally on these next year, but we have covered:

- collecting data
- using tables
- creating a table and graph and looking for patterns
- representing data graphically
- calculating averages
- constructing climate graphs
- reading and interpreting data presented in graphs and statistical information
- using technology to create a spread sheet
- using trial and error
- discussing the difference between inductive and deductive reasoning
- using the process of elimination

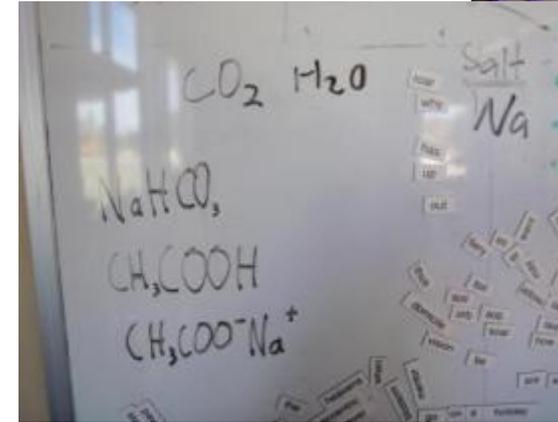


SCIENCE AND TECHNOLOGY:

Both XX and YY are generally working above Stage level, and in particular, XX's content knowledge is probably at the Stage 6 level for many aspects of science. My main aim in science and technology was to give them new content, but ensure they have the necessary scientific and technological skills to support this knowledge. We enjoy many hands-on activities and enjoy recording knowledge in lapbook format.

Chemistry:

- able to describe matter in terms of particles that are continuously moving and interacting
- expansion and contraction of matter in terms of particles
- density in terms of particles and energy
- pressure in terms of particles
- states of matter and changes in state (freezing, melting, boiling, condensing, subliming)
- classify elements as metals and non-metals
- understanding the periodic table/symbols for elements
- structure of atoms (location of protons, neutrons and electrons)
- difference in elements/atomic number
- understand difference between elements, compounds, mixtures; atoms and molecules
- solutions, solvents and solutes
- chemical reactions – rearranging atoms
- law of conservation of mass
- diffusion/Brownian motion
- neutralisation reactions
- characteristics of acids and bases
- balancing chemical equations



Results
A chemical reaction is any change which alters the chemical properties of a substance or forms a new substance. In the experiment, the vinegar (acetic acid) reacts with the bicarbonate of soda to produce carbon dioxide gas, which fills and inflates the balloon. Water and a salt called sodium acetate are also produced. The reaction is shown below in a chemical equation, which is a way for scientists to describe what changes actually happen. Chemical equations consist of chemical formulas and symbols that show what elements are present and how many atoms are involved in the reaction.

$$\text{HC}_2\text{H}_3\text{O}_2 + \text{NaHCO}_3 \rightarrow \text{NaC}_2\text{H}_3\text{O}_2 + \text{H}_2\text{O} + \text{CO}_2$$

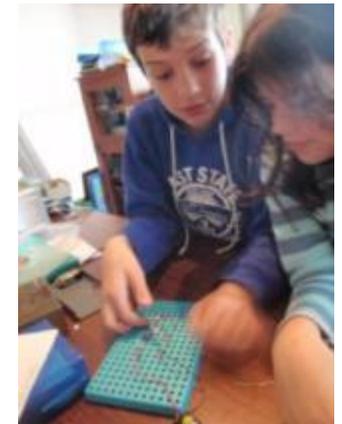
Acetic Acid + Sodium Bicarbonate → Sodium Acetate + Water + Carbon Dioxide

CHEMFACTS!

In bread, yeasts break down sugar and produce a gas (carbon dioxide), which makes the bread rise. The fizz in soft drinks is due to carbonic acid which is formed as a result of

Physics:

- different forms of energy (kinetic, potential, light, electrical, friction, sound, electrostatic)
- law of conservation of energy/energy transformations
- electrical circuits – series and parallel
- construct and draw electrical circuits
- describe qualitatively and quantitatively the relationship between voltage, resistance and current (XX)
- everyday situations observing different forms of energy
- pendulum/motion studies (XX)
- quantitatively describe the relationship between force, mass and acceleration (XX)
- describe waves as carriers of energy (XX)
- qualitatively and quantitatively describe the relationship between wavelength, frequency and speed of waves (XX)



wave



Earth science:

- lunar eclipses
- components of the universe
- inner structure of the Earth (crust, mantle, outer core, inner core)
- water cycle
- greenhouse effect
- formation of rocks/rock cycle
- sedimentary/igneous/metamorphic rocks
- fossils and extinction and geological time
- theory of plate tectonics/contribution of scientists to theory
- formation of volcanoes



	Mount Vesuvius	Agulhas
Age	10,000	15,000
Shape	Conical	Shield
Temperature	Low temp	100° & 1500°
Change in shape over time	Large things / large rocks and steep	Builds up over time and low temp
'Underground' structure		
Chemistry of 'magma' and 'lava'	Andesitic / basaltic / silica / carbon dioxide	Hot and pressure causes rocks to melt



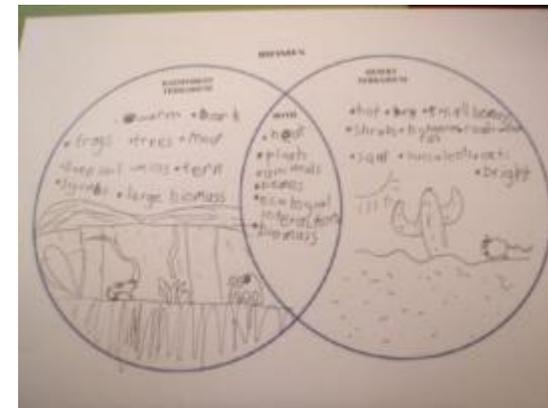
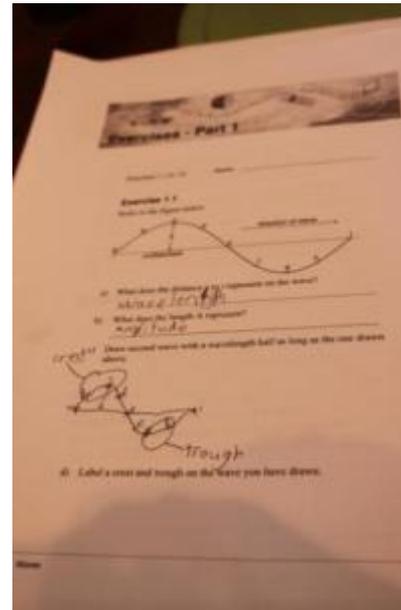
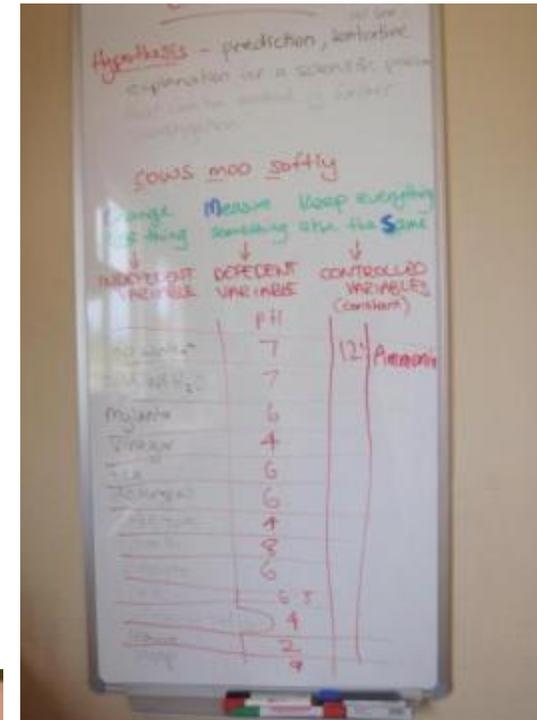
Biology/Ecology:

- living things are made of cells
- distinguish between unicellular and multicellular organisms
- structure and function of parts of the cell
- classify living things based on structure and function of their adaptations
- benefits and harmful effects of micro-organisms
- concepts of species
- autotrophs and heterotrophs
- nutritional requirements for maintaining humans
- adaptations
- systems theory
- natural resources, catchments
- biotic and abiotic features of ecosystems
- balancing human needs with needs of the ecosystem
- renewable and non-renewable sources of energy
- micro-organisms, pathogens, diseases



Skills:

- identifying sources of data for an investigation
- identifying variables
- specifying independent and dependent variables in controlled experiments
- selecting appropriate equipment
- risk management
- following set procedures
- use a range of data collection strategies
- represents data and information
- gathers information from secondary sources



HUMAN SOCIETY AND ITS ENVIRONMENT (GEOGRAPHY/HISTORY/CIVICS)

- key figures and events that have influenced the development of Australian democracy
- Magna Carta and democracy/absolute monarchy
- Sir Henry Parkes and the development of Federation
- human rights issues – sovereignty
- significant sites (Snowy River scheme)
- investigate different Australian environments
- influence of current events (elections, politics)
- geographical information of Australia and the rest of the world
- geographical terminology - latitude and longitude, time zones
- effects of humans on natural environments
- ecological sustainable development of natural environments
- built heritage sites (Old Parliament House)
- State and Federal government systems
- electoral processes
- using a range of primary and secondary resources (excursions, websites, book, CD-ROMs etc)
- present information and demonstrate understanding in a variety of ways (Powerpoints, oral narratives, posters, worksheets)
- construct time sequences using time lines
- understand various points of view
- participated in Murder Under the Microscope 2012
- used a variety of maps, globes, and digital resources
- understand the importance of accuracy in mapping

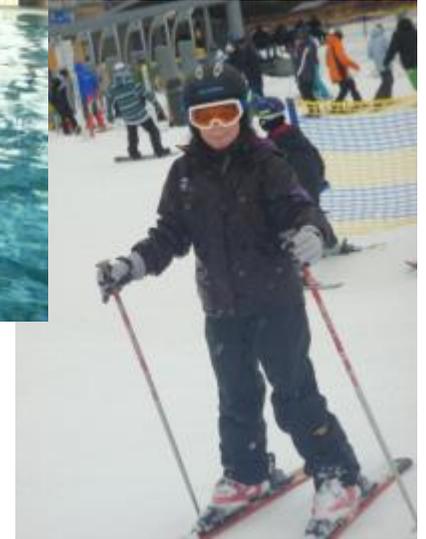




Personal Development Health and Physical Education

Our goals in PDHPE have been to develop XX and YY's knowledge, skills and values to enable them to lead a healthy and fulfilling life by informed decisions and positive attitudes to physical activities. Outcomes achieved include:

- use of leisure time – balancing work/play/exercise
- developing community contacts for outside interests (chess, piano, swimming)
- discussion about lifestyle risk factors – diet, exercise, drugs, smoking
- stretching muscle groups
- setting a physical activity program
- moderate to vigorous activity (swimming, running, tennis, bike riding, trampolining)
- monitoring personal fitness (running progress, swimming progress)
- aquatics (stroke development, water safety)
- discussion about appropriate/inappropriate touching
- discussion about nutrition (studying nutrient panels, shopping, meal planning)
- changes at puberty
- methods of coping with stress – meditation, time management, exercise
- discussion of values and morals
- developing and maintaining friendships



Creative and Performing Arts

Our aim in our CAPA program is to ensure XX and YY gain an increased understanding and appreciation of Visual Arts, Music, Drama and Dance.

- make artworks informed by their investigations of the world as subject matter,
- appreciating their own artworks and those of others,
- recognising the roles of artists, audiences and how the world can be interpreted (National Art Gallery and National Portrait Gallery)
- performing music of different styles and from different times and cultures by singing, playing and moving using musical concepts
- organising sound into musical compositions using musical concepts
- listening to and discussing their own music and that of others
- making drama collaboratively by taking on roles and creating imagined situations shaped by the elements of drama
- performing drama by actively engaging in drama forms
- appreciating their own dramatic works and those of others (The Mousetrap – Agatha Christie)
- composing their own dances using the elements and contexts of dance
- appreciating their own dances and those



of others.

