FLYING ARTS ALLIANCE INC

Connecting Arts with School Curriculum
Teacher/Artist Collaboration

Visual Art/Science

Small School Mentorship Program
As an extension of Flying Arts' Connecting Arts with School Curriculum (CASC) program, the Small Schools Mentorship Program (SSMP) is for schools with 50 or less students in regional and remote Queensland. This unique mentor program offers the support of a registered primary teacher/artist to collaborate with your school to plan and deliver an in-school arts rich curriculum experience. Ongoing support is a unique feature of this specialised program.

This program is intended to develop: confidence in the planning and delivery of arts rich experiences in the classroom; better understanding of how to deliver on arts curriculum and how to connect arts into other areas of curriculum to enhance teaching and learning; and to enhance practical skills in the visual and media arts.
This template and materials are intended as a resource and source of ideas for educators to use as a model.

SCHOOL	Glenmorgan State School	**TEACHER**	Penny Sullivan
LOCATION	West Downs Region, near Surat	**ARTIST**	Therese Flynn-Clarke
YEAR LEVEL	P-6	**LESSON NAME**	Chemical Science/Art Immersion day

INTRODUCTION

Students at Glenmorgan were studying the chemical science component of the properties of materials, their purpose, and changes that can be made to a variety of materials. We decided to explore this concept within a visual art capacity by eco dyeing (using paper fabric plants and heat), papermaking and basketry skills with natural and recycled materials.

LESSON IDEA

A series of Visual Art activities were planned to link closely to the Chemical Science strand the students have been studying. These included eco dyeing, paper making and basketry related sculptural weaving. As there were waiting times involved with these activities (e.g. boiling pot, drying paper etc) students were immersed in a range of activities throughout the day. Discussion were held as regards to the similarity between artists and scientist investigating materials, their properties and possibilities.

AUSTRALIAN CURRICULUM LINKS

Science - Chemical Science
F Objects are made of materials that have observable properties (ACSSU003)
Sorting and grouping materials on the basis of observable properties such as colour, texture and flexibility (Basketry Materials)
Thinking about how the materials used in buildings and shelters are suited to the local environment
Yr 1 Everyday materials can be physically changed in a variety of ways (ACSSU018) (Papermaking with recycled paper)
Predicting and comparing how the shapes of objects made from different materials can be physically changed through actions such as bending, stretching and twisting
Exploring how materials such as water, chocolate or play dough change when warmed or cooled (Papermaking, Eco Dyeing)

Year 2 Different materials can be combined, including by mixing, for a particular purpose (ACSSU031)
Exploring the local environment to observe a variety of materials, and describing ways in which materials are used (Eco Dyeing, Weaving)
Investigating the effects of mixing materials together (Eco dyeing eg gum leaves, rusty iron etc)
Suggesting why different parts of everyday objects such as toys and clothes are made from different materials
Identifying materials such as paper that can be changed and remade or recycled into new products (handmade paper from scrap paper and from plants)
Yr 3 A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)
Investigating how liquids and solids respond to changes in temperature, for example water changing to ice, or melting chocolate (Heating process in Eco Dyeing)
Exploring how changes from solid to liquid and liquid to solid can help us recycle materials (Papermaking- deckle and frame)
Predicting the effect of heat on different materials (Eco Dyeing)
Yr 4 Natural and processed materials have a range of physical properties; these properties can influence their use (ACSSU074)
Describing a range of common materials, such as metals or plastics, and their uses (random weave materials- plant fibres and recycled materials)
Investigating a particular property across a range of materials
Selecting materials for uses based on their properties (Basketry-weaving)
Considering how the properties of materials affect the management of waste or can lead to pollution
Yr 5 Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)
Recognising that substances exist in different states depending on the temperature
Observing that gases have mass and take up space, demonstrated by using balloons or bubbles
Exploring the way solids, liquids and gases change under different situations such as heating and cooling (Eco dying- leaves print onto fabric under heat. Solids changing.)
Recognising that not all substances can be easily classified on the basis of their observable properties (Basketry; Eco Dyeing)
Yr 6 Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting (ACSSU095) (Eco dyeing using rusty objects and vinegar)
Describing what happens when materials are mixed (Eco Dyeing; Papermaking- paper and water)
Investigating the change in state caused by heating and cooling of a familiar substance (Eco dyeing eg onion skins heated with fabric or paper)
Investigating irreversible changes such as rusting, burning and cooking (Eco Dyeing)
Exploring how reversible changes can be used to recycle materials (Basketry; Papermaking)

Visual Arts
F-Yr 2 Explore ideas, experiences, observations and imagination to create visual artworks and design, including considering ideas in artworks by Aboriginal and Torres Strait Islander artists (ACAVAM106)
Use and experiment with different materials, techniques, technologies and processes to make artworks (ACAVAM107)
Yr 3-4 Use materials, techniques and processes to explore visual conventions when making artworks (ACAVAM111)
Yr 5-6 Develop and apply techniques and processes when making their artworks (ACAVAM115)

APPROACH AND SEQUENCE OF LESSON

1. Check in with students as to what they've covered in regards to chemical science processes, change and materials.
2. Look at Artist's (www.thereseflynnclarke.com) website to view images of eco-dyeing. Discuss process and plan for the day making links between science and visual art component.
3. In a wet or outdoor area model the process for creating clamped watercolour paper samples to be dyed and

fabric bundles (the students each had a cotton white pillowcase to dye).

4. Large pots of tank water, dyeing materials and natural mordants were placed over an open fire, looked after by parent volunteers. The students 'bundles' to be dyed were put into the pot and boiled up for an hour or so. Safety considerations were implemented prior to this.
5. While the pot was simmering the papermaking process was modelled using the recycled paper pulp the students had prepared prior to the artist visit. The students had also collected Kangaroo Poo (after viewing a Science resource web link on papermaking with 'Roo Poo') and had boiled and processed this to also be incorporated into the papermaking. With the two Frame and Deckles students began the paper making process.
6. While students took turns to make a few sheets of paper each. We began some random weaving using soaked plant fibres and recycled materials. The class teacher, Penny, had prepared some chicken wire frames for the younger students to use and the older students created their own framework using soaked cane and wove a wire structure within the cane framework which they could begin random weaving a variety of materials.

RESOURCE REQUIREMENTS

Eco dyeing

- Gas stove/stove/fire pit: Open fire and something to sit cooking pots on over fire OR portable heating element OR Gas stove e.g. camping stove
- Enough materials/power/gas to 'brew' for at least an hour. It's preferable to do the boiling up outside if possible
- Access to water to fill pots (can be pre-filled with water)
- matches
- large pot/saucepan/s (not used for cooking)
- tongs- long handled preferred
- Onion skins- brown and purple (start saving!)
- Tiles- able to fit into saucepan- minimum 10cm width (15cm-ish is better) half a dozen or so.
- Large bulldog clips- fold back ones (to clamp around two tiles) 2-4 per set of tiles
- Rusty things to put in pot as a mordant- flattish rusty pieces to put into 'bundles' to create a 'print' on paper and fabric eg old washers, rusty nails, bottle tops etc; old copper pieces eg copper pipe
- Gum leaves and other plants, berries etc
- Watercolour paper- needs to be robust as we boil it up for an hour (see School Art Supplies)
- Fabric- scraps of white/cream/plain 100% wool,100% silk (animal fibres take up the dyes better) 100%cotton (eg Cotton t-shirts, pillowcases etc) rinsed in vinegar and water before hand or washing up liquid and water. Lots of strong string for bundling fabric
- Paddle pop sticks and Artline marker for naming bundles
- Elastic bands/marbles etc if students want to try tie-dyeing techniques

Paper making

- Paper torn into small pieces, pre-soaked for a few days, blended (old blender or drill with a paint stirrer attached) with plenty of water. Leave 'pulped' paper in separate colour containers. Can also leave a few days- makes better paper!
- Frame and deckles
- Large tub filled with water – big enough to put the paper pulp and water into and 'dip' in the frame and deckle

- Pieces of fabric- (slightly wider than frame and deckle) e.g. old ripped sheets (can be in long strips- we can fold over) or large 'chux' dishcloths also in strips wider than frame and deckle. Will need plenty as students will make a few pieces of paper each- one piece of fabric per sheet of paper required
- Large sponge e.g. car washing sponge
- Pegs and line to hang up work
- 2 pieces of wood/ply etc (to put above and below the paper sheets when finished)
- Bricks or weights to place over wood (helps drain the water out)

Basketry- Random Weave Sculptures

- Cane or vines for 'framework'.
- Plant fibres (gathered dried and soaked prior to activity- wrapped in an old towell ready for use)
- Old towels to wrap damp fibres
- Recycled materials- plastic, feedbags cut into string, bailing twine plastic packing tape- anything that can be woven.
- Bottle tops, bread tags seedpods etc students can add as embellishments
- Drill- to put holes in bottle tops etc
- Fine weavable wire; insulated electrical wire etc

Additional Resources

- 'Roo poo paper' clip: http://splash.abc.net.au/home?WT.tsrc=Email&WT.mc_id=Innovation_Innovation-Splash|Primary_email|20150826#!/media/1759101/roo-poo-paper
- Science behind Eco Dyeing Clip: http://splash.abc.net.au/home?WT.tsrc=Email&WT.mc_id=Innovation_Innovation-Splash|Primary_email|20150826#!/media/1589896/dyeing-with-red-cabbage-

PHOTOGRAPHS

Make up the bundles of plant fibres and rusty objects etc tightly bound and clamped ready to go into the dye pots.

Dye pots on the fire in the Principal's backyard!

This student loves horses and used the rusty bits!

Some eco dyed paper revealed.

Unwrapping the fabric bundles.


Beginning the paper making process.


Sheets of paper (some with ‘Roo Poo’ incorporated) drying on the line. When dry they will be peeled off the backing fabric.

And beginning the weaving....

Photography: Therese Flynn-Clarke