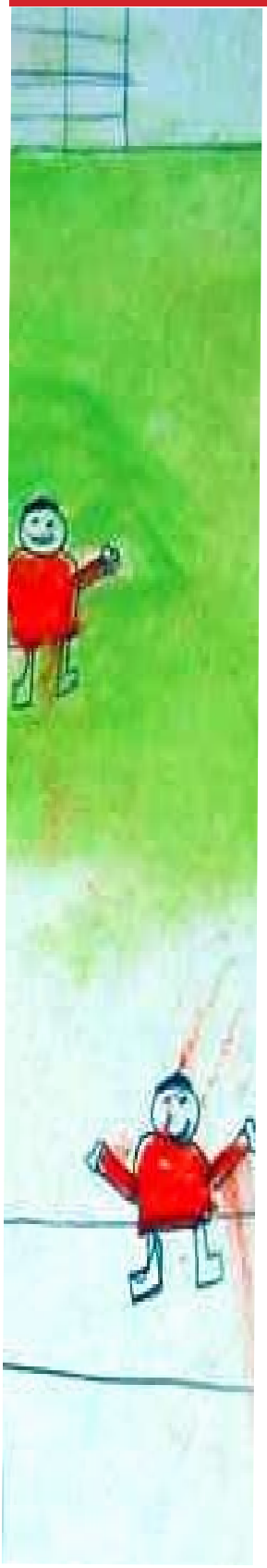
ARTE 320

Art information Handout

For further information please see the technician in room 1129

SAFETY IN THE ART CLASSROOM



Children are more at risk from poisons and other harmful materials than most adults. As a result special care is needed when working with any materials or products in the classroom. Substances enter the body though either skin contact, inhalation, or ingestion.

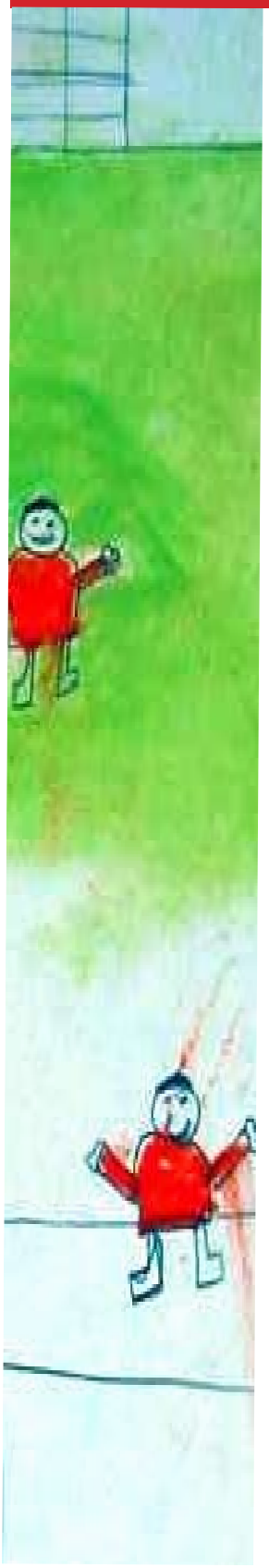
SAFETY POINTS

Choose age appropriate materials
Purchase only art materials approved for children. Do not let children use adult art materials that contain toxic solvents, glues, metals, acids, or alkalis.

Be knowledgeable about the materials students are working with
Always read the packaging label on any arts and crafts product or tool . Follow carefully the directions and precautions listed on the label. If the arts and crafts product label does not have enough information for you to decide whether it is safe, contact the manufacturer. Look for the company's phone number or address on the label. Ask the manufacturer about product use with young children. Also, ask for a copy of the Material Safety Data Sheet (MSDS). The MSDS gives specific information about flammability, toxicity, ingredients, and use. When reading the product label, look for these phrases: Non-toxic, or Certified Product (CP) or Approved Product (AP).

Protect against exposure
Avoid skin contact by having the children wear protective clothing such as gloves, long sleeves and pants, aprons, or other covers. Do not allow food or drinks in the art area because of the risk of contamination. Have children wash their hands carefully after doing arts and crafts. Safety Supplies you should have available include: working aprons, gloves and even dust masks.

SAFETY IN THE ART CLASSROOM

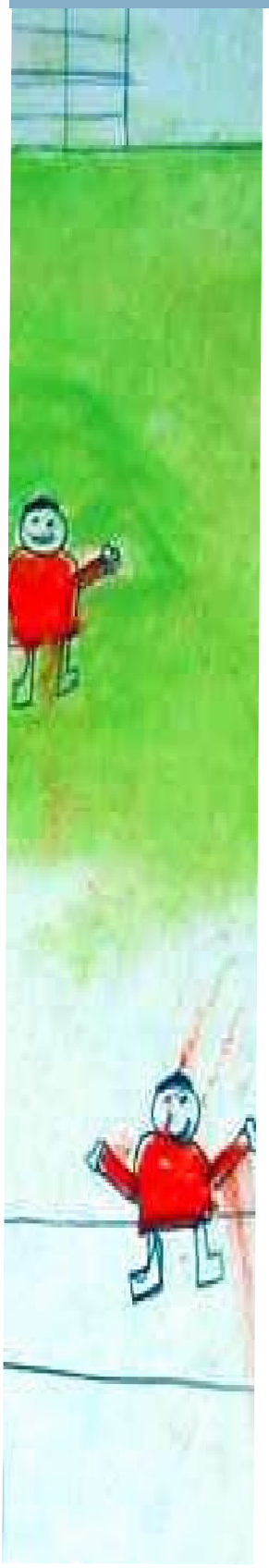


Store materials safely
Keep containers tightly closed when not in use. Keep products in their original containers so your staff members can read the label or directions. Never store materials in food containers.

Ventilate the classroom
For the children's safety, ventilate the craft area. Consider using a fan to blow air out one window while fresh air is coming in another window; this is called cross ventilation.

See the resources page for more information on health & safety in the arts

Art techniques & materials



Art techniques & materials

Drawing

Pencil, charcoal, conte, felt pens, pencil crayons, ink, wax crayons, oil pastels, chalk pastels.

Painting

Water colour paints, tempera paints, acrylic paints

Sculpture

Clay, papermache, recycled and found object scuplture

Textiles

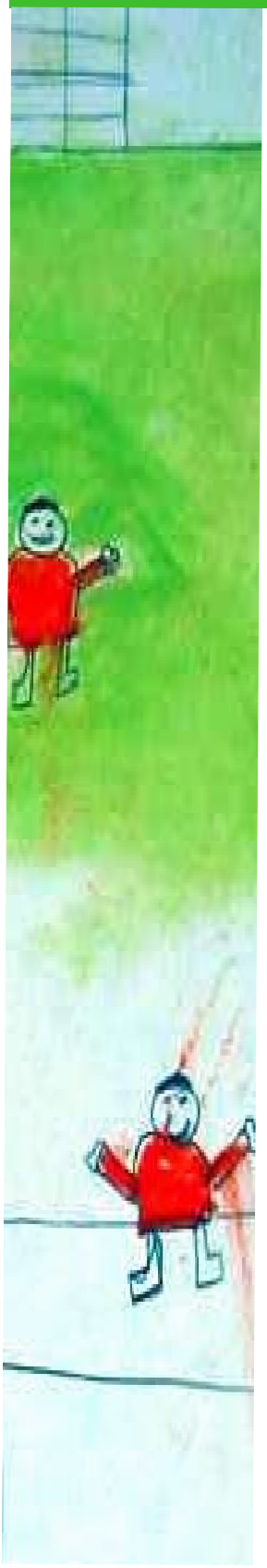
Quilting, weaving, sewing.

Printmaking

Rubbings, sponge prints, stamping, block printing (using safety kut blocks - available at Opus or Loomis art stores - see resource page information), stencil prints, styrofoam prints, mono-prints, collagraph prints.

(Speedball lesson plans for printmaking: http://www.speedballart.com/)

Environmental Education



Sustainability

1. Teach the three R's - **Reduce**, Reuse, Recycle.
2. Provide a recycle bin for paper and plastic in the classroom.
3. Encourage students to not waste art materials by only using what they need.
4. Teach students about where the resources they are working with come from.
5. Develop projects that involve using recycled materials, at the end of the project think about involving students in deconstructing and recycling their creations.

Green art supplies

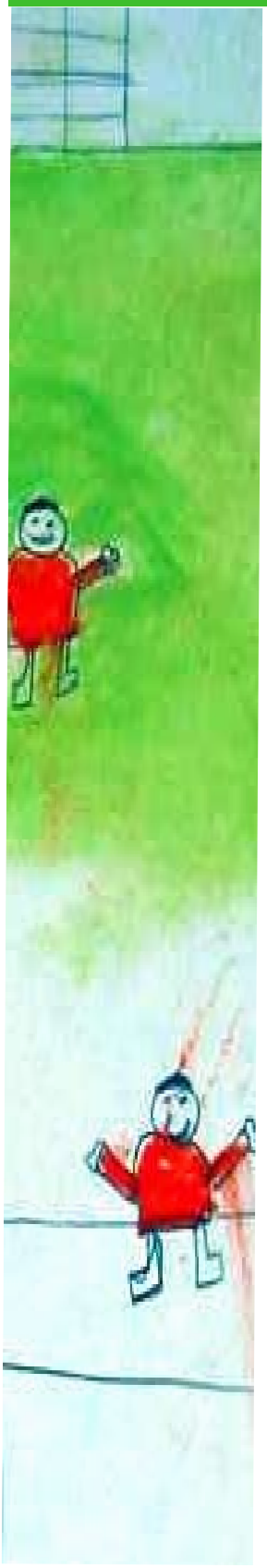
1. Recycled paper can be bought from most major suppliers. Buy recycled paper with a high post-consumer waste content.
2. Purchase non- toxic materials for the art classroom. Most children's art materials should be labeled as non-toxic or Certified Product (CP) or Approved Product (AP).
3. Recycling Materials. Look for opportunities to buy or collect old, or used materials for art activities.
4. Alternative art materials. Urban Source is an art and craft store in Vancouver which sells a great variety of recycled art materials. http://www.urbansource.bc.ca/

Environmental Organizations

Many of the local environmental organizations offer great workshops either in class, or on location.

Green Street is a program which links schools in Canada to reputable Environmental Education organizations across the country. Organizations in BC offering programs through this program include:Ducks Unlimited, The Sierra Club of Canada, The Canadian Parks and Wilderness Society, and many more. See their website for full details: http://www.green-street.ca/home/index_e.html

Environmental Education



WILD BC offers many workshops including one specifically for teachers who are interested in learning how to integrate environmental education into the curriculum.
http://www.hctf.ca/wild.htm

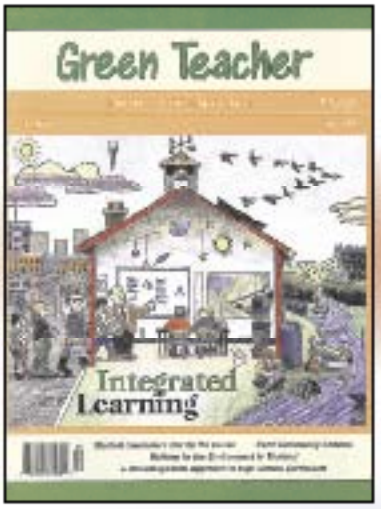
EPSEA. The BCTF (BC Teachers Federation) includes 33 provincial specialist associations (PSA's) which provide channels for members to share common interests. The EPSEA is one of these and stands for Environmental Educators' Provincial Specialist Association. A one year subscription includes subscription to two of the best environmental education magazines available - Clearing magazine, and the Green Teacher journal. You also receive the EEPSA newsletter, and an opportunity to attend other events and to meet teachers with similar interests.
http://www.bctf.bc.ca/psas/EEPSA/

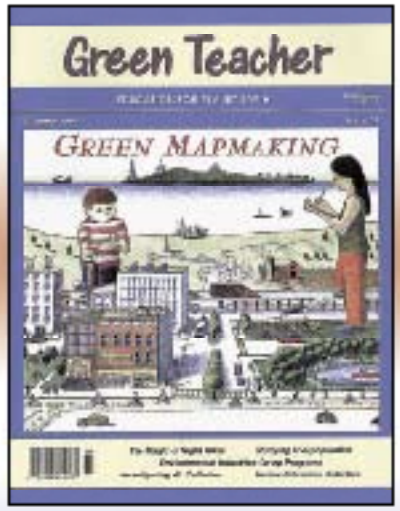
RESOURCES

Green Teacher Magazine: http://www.greenteacher.com/
Landscapes published by FORED BC:
http://www.landscapesmag.com/common/movie.cfm
Pembina Institute. Green Learning resource:
http://www.greenlearning.ca/home/index.php
Clearing Magazine: http://www.clearingmagazine.org

THINK GREEN - Reduce, Reuse, Recycle.

Is global and environmental awareness a goal in your education program?





It could be. And Green Teacher magazine provides the inspiration, the ideas and the classroom-ready materials to help get you there.

- Perspective articles – rethinking education in light of environmental and other global problems
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CERAMICS

Health, Safety & Technical information Handout

For further information please see the technician in room 1129

CERAMICS

What is clay?

Clay is a natural material found in the earth all over the world. Formed from igneous rocks (formed as molten rock cools and hardens) by being crushed and mixed with other minerals by the forces of wind, ice, water and pressure from other rocks in the earths crust.
Clay occurs naturally in a range of colours from white, through yellows, reds and browns to black. The colour depends on the level of impurities such as iron, other minerals, and organic matter that the clay has picked up during its transformation.

Clays can be classified according to the firing temperatures at which they mature, and broadly fall into two main groups:
Earthenware clays are relatively **low-firing**, between 926–1150°C degrees Centigrade. They are the most widely used in schools.
Stoneware clays are high-firing, between 1200 and 1300 degrees Centigrade.

For more information on working with clay see :
OPUS Art Supplies. The Basics of Clay PDF handout:
http://www.opusframing.com/library/pdf/basics_of_clay.pdf

Definitions

Wedging: This is what you do to get all of the air bubbles out of your clay. Basically you roll the clay around on a flat surface “pushing” and “pulling” the clay so all of the air comes out. Clay right out of the box is already wedged ... you don’t have to worry about air bubbles with new clay.
Kiln: This is a large, hot oven that is used to fire the clay. You need to fire your clay in a kiln in order for it to be permanent. A kiln can reach temperatures of 2500 degrees F. and higher. Your oven at home maybe reaches 500 degrees F.

Earthenware: This is the type of clay often used in schools. It comes in white or red and it is fired to a temperature of approximately 1000 degrees C. or 1830 degrees F.

CERAMICS

Definitions

Slip: This is liquid clay ... clay with a lot of water added to it. It is used in ceramics (poured into molds). **It is also sometimes used as a sort of glue to hold clay pieces together. You need to use slip to "fasten" pieces of clay together so that they don't fall apart in the kiln. You see, clay shrinks as it dries so if you haven't made sure that your clay pieces are firmly attached, they will separate in the kiln. It isn't enough to simply "pile" one piece of clay on the next. Use watered down clay as your glue.**

Leather-Hard: This is what we call clay that has dried for a few hours. **It should feel slightly cool to the touch.** Leather-hard clay is not dry enough for firing in a kiln ... If a piece of clay is put into the kiln while it is still wet, it could explode. When water gets hot ... it boils right? Well, your pottery piece will literally "blow up" if it contains water or moisture that boils when it gets hot in the kiln.

Greenware: When clay has dried and is ready to be fired in a kiln, it is referred to as greenware. Usually clay should air dry for **about a week depending on the thickness of the piece.**

Bisque: This is the first firing. Clay is usually fired in a kiln twice. Once at a lower temperature (the bisque firing). After a piece is bisqued, it can be glazed, painted or left as is. If the clay is glazed, it then goes in the kiln for a second firing.

Glaze: This is used to decorate clay that will hold liquid. It is essentially "liquid glass" or glass particles (mixed with colors or pigments) that have been ground down. Glaze melts at a high temperature and turns into the coatings that you see on a finished pottery piece.

Cone: The temperature that a kiln is set to depends on what type of clay you are firing. Some clay is referred to as cone 4 while some clay is referred to as cone 6. These are simply temperature gauges. An cone - designed to melt at a certain temperature - is used to gauge the temperature. Earthenware is usually fired to cone 06 - approximately 1000 degrees C. or 1832 degrees F. Your oven is only about 500 degrees F.

CERAMICS

HEALTH & SAFETY

Participation in all areas of the arts requires being knowledgeable about the materials you are working with.

In working with clay you should be aware of the potential hazards associated with ingredients of not only clay in general, but also the individual components of each specific clay or glaze used. By law, all suppliers of the raw materials used in the clay artist's studio are required to make available Material Safety Data Sheets (MSDS) to anyone who requests them. Each MSDS for a clay or glaze lists all ingredients used, along with potential side effects associated with these materials.

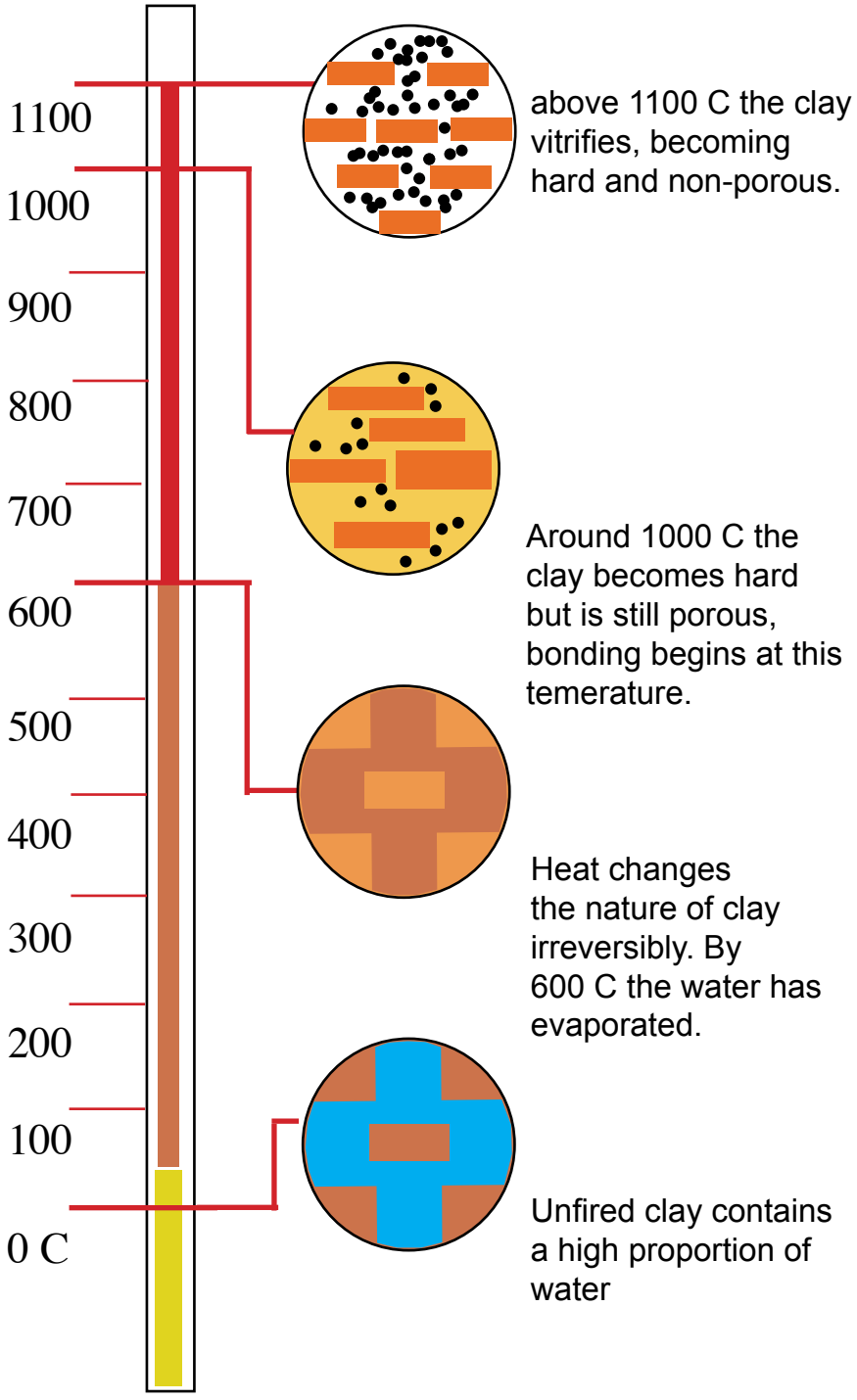
CLAY DUST

Dust from ordinary clay and several other materials contain some free silica that is too fine and heavy to be expelled from the lungs. Over time this can cause fatal **silicosis** if breathed often enough. **Never carelessly produce dust**. Use only wet cleaning methods. Vacuum sweepers and brooms do not filter out the fine problematic particles, but simply make them airborne so they are inhaled easier. Never leave scraps of clay or slip where they are walked on.

KEEP THE STUDIO CLEAN & DUST FREE

CERAMICS

FIRING CLAY



CERAMICS

FIRING CLAY

After a piece of pottery has been formed and dried completely, it must be fired to achieve permanency. Without the chemical transformation that occurs through firing, an uncooked bowl dissolves back into mud once it comes in contact with water. The kiln heats up the clay to a selected temperature at this point the clay composition changes from being weak to strong, durable, crystalline glass like in form.

What kind of clay you have determines the temperature you will fire the kiln at. Most general school clays low temperature clays this means that they will be an earthenware clay needing a temperature between 1700 to 2100°F (926–1150°C).

Before clay is fired it needs to completely dry, bone dry. The term used to describe clay at this stage is ‘greenware’. Clay is extremely fragile at this stage and should be handled carefully.

Depending on the size of the work it can take up to a week of drying for larger pieces of work. **If the work is cool or cold to the touch, it is not bone dry** and should be left longer. If you put clay work in the kiln while it is still moist it can explode. This is caused when the moisture in the clay turns to steam and forces its way out (explodes) during the firing.
There are two types of firings ‘bisque’ firing and ‘glaze’ firing. This is called a ‘bisque’ firing as it is done in order to make the work strong enough to handle. In schools you will normally only be dealing with ‘bisque’ firing.

CERAMICS

PACKING THE KILN

Example of a front loading electric kiln

kiln elements

kiln shelves

kiln posts

Bisque ware can be stacked, glaze ware cannot be stacked during firing.

There are many different forms of electric kiln, front loading and top loading, manual using pyrometric cones for temperature control, and computerized which require programming.

An assortment of kiln furniture is needed to hold and support ware during a firing including **shelves** and **posts.** For manual kilns you will also need to select the correct cone to put in the part of the kiln called the ‘kiln sitter’. **Pyrometric cones** are slender and pyramid shaped and are designed to melt at a certain temperature. As the cone nears its maturing range, it softens and the tip begins to bend, releasing the kiln sitter and shutting the kiln off at the correct temperature for the clay.

CERAMICS

PACKING THE KILN

1. Place the bottom shelf on 1 inch stilts to aid circulation of heat around the kiln, and keep ware 1 inch away from the elements and kiln walls.
2. Start placing the clay pieces on the shelf (unglazed pieces may touch each other). Remember to leave room for the next set of stilts to hold the second shelf.
3. Place the second shelf on top of the stilts and again fill it with the clay pieces.
4. Do not overfill the kiln. At least 2 inches of space should be left between the top layer of clay work and the lid of the kiln.
5. Balance the load. When planning how to load the kiln, keep in mind that the centre of the kiln is generally hottest. Therefore you will want to distribute the load with the larger, thicker pieces towards the middle and the smaller, thinner pieces towards the top and bottom.
6. Place the right temperature cone in the kiln sitter.
7. Turn the elements on to low for three hours (depending on the size of the work and the load), then to medium for a few hours, before turning all elements on to high.
8. Don’t open the kiln until it has completely cooled.

CERAMICS

RECYCLING CLAY

There is no need to abandon dried out clay, it can be easily recycled with a little bit of effort.

SOAKING

Dry out all your old clay and keep it in a bag for recycling until you are ready. Tip all the dried clay into a bucket and fill up to the top level with water. (Wear a dust mask). Let it soak for a few hours (best overnight). The clay should have a soft consistency - slushy that is! Add more water if necessary.

DRYING

Draw off the remaining water from the bucket.Transfer the slurry to an assigned recycling canvas table (a plaster drying table is also often used instead of a canvas based table to aid quicker drying).

The clay will firm up in about two-four days depending on the conditions in the studio. You may need to cover the clay with plastic to prevent it drying out too fast on the edges etc. When the bottom half has dried a bit, turn over. When the clay has the right overall consistency, cut up into small chunks and wedge.

WEDGING

It should still be soft but peel up cleanly from the drying table when it is ready. The clay has to now be wedged to remove air before it is ready to be used. You can either do this by hand, or you can use the pugmill. **There are full instructions on how to use the pugmill next to the mill in the glaze room.**

Clay Decoration techniques & materials

There are endless alternatives for decorating fired clay.
A layer of **acrylic medium** can be applied to seal the clay surface after decorating.


Acrylic paint


Tempera paint


Watercolour paints


Watercolour crayons


Watercolour pencils


Chalk pastels


Pencil base, white tissue


Fabric

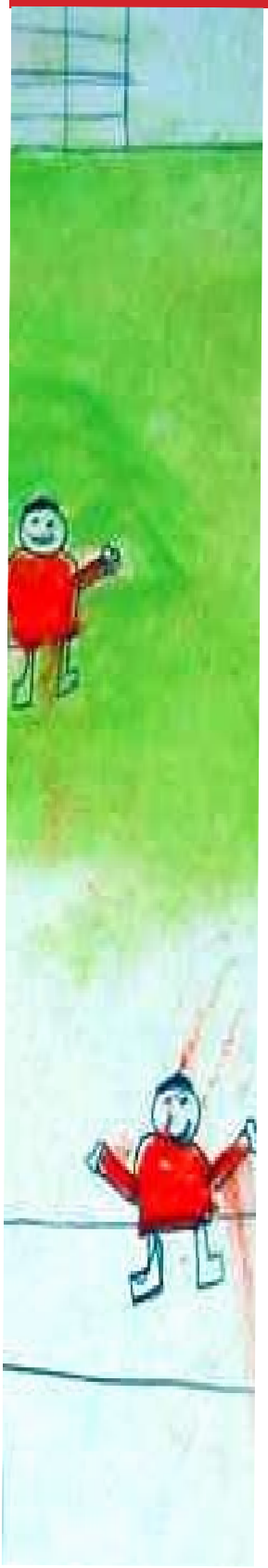

Threads


Watersoluble marker
acrylic medium


Coloured pencil
tissue paper


Tissue paper
acrylic medium

RESOURCES



Suppliers

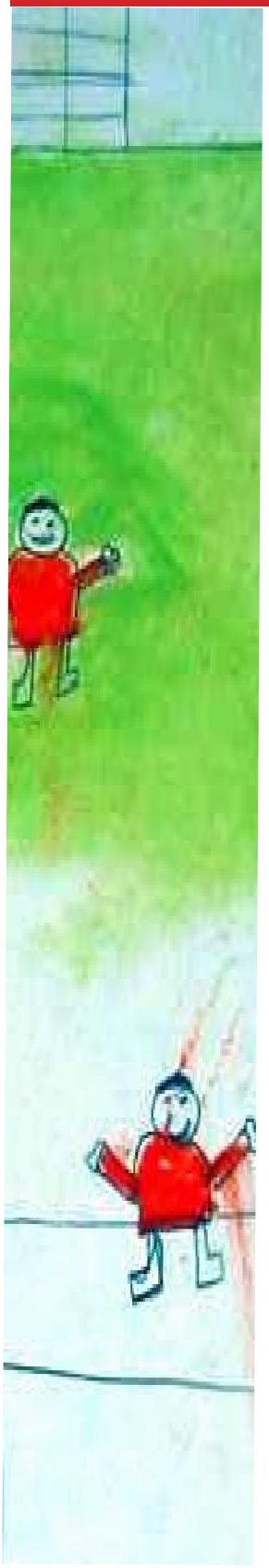
ART MATERIALS
Creative Children:
http://www.creativechildreneducational.com/
Opus framing and art supplies:
http://www.opusframing.com/
Loomis Art store: http://www.loomisartstore.com/
SAX Art and Craft Supplies: http://www.saxarts.com/

CLAY
Greenbarn clay supplies: http://www.greenbarn.com/
The Mad Potter clay supplies: http://www.themadpotter.ca/
If you don't have a kiln in your school, you can rent kiln space at

Information

HEALTH & SAFETY
Canadian Child Care Federation: **h**ttp://www.cfc-efc.ca/docs/cccf/rs021_en.htm
'The Artist's Complete Health & Safety Guide' Monona Rossol, Allworth Press, 2001.
Searchable database of health & safety information for artists.
http://www.ci.tucson.az.us/arthazards/
Art Teacher Be Aware: A Booklet About the Safe Use of Arts and Crafts Materials for Elementary School Teachers. Health Canada. 1994.
Its Your Health. Arts and Crafts Materials. Health Canada Website.
http://www.hc-sc.gc.ca/english/iyh/products/arts.html
Health & Safety in the Arts
A Searchable Database of Health & Safety Information for Artists. Click on 'Child Art' to see a full list of concerns in this area.
http://www.ci.tucson.az.us/arthazards/medium.html
Toxic Nation Fact sheets:
http://www.environmentaldefence.ca/toxicnation/resources/factsheets.htm
Toxic Nation Healthy Artist Guide to a Less Toxic Studio
Material Safety Data Sheets 101
Toxic Nation Guide to Less Toxic School Supplies
Education Guidelines. California Office of the Environment:
http://www.oehha.ca.gov/education/art/artguide.html

ARTE 320



END OF TERM

At the end of your class all projects must be removed.

Do not leave **ANY projects, or supplies** in the studio area. It is your responsibility to remove all items on the last day of class.

Do not throw heavy articles into the garbage bins in the studio. They must be put directly into the large dumpster which is outside on the basement level loading zone.

Please put back equipment or supplies that you used or borrowed in the correct place.

Technician:

Kirsty Robbins. Room 1129. Tel:604 822 5382.
kirsty.robbins@ubc.ca