

The Art of Science, or the Science of Art?  
Grades 1-3

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**Program Structure:** The elementary science program has been designed as a series of five topics for each grade. Each topic may be developed as a separate unit of study or linked to other topics and other subject areas.

## **Why not link science with art???**

### **Topics:**

- Grade 1:      Creating Colour  
                  Seasonal Changes  
                  Building Things  
                  Senses  
                  Needs of Animals and Plants
- Grade 2:      Exploring Liquids  
                  Buoyancy and Boats  
                  Magnetism  
                  Hot and Cold Temperatures  
                  Small Crawling and Flying Animals
- Grade 3:      Rocks and Minerals  
                  Building with a Variety of Materials  
                  Testing Materials and Designs  
                  Hearing and Sound  
                  Animal Life Cycles

# Teacher Resources

This is just a partial list of some EXCELLENT art resources that you might want to check out!

## 1. The Arty Facts series

This series of books is published by Crabtree Publishing, and does a wonderful job of linking art with science! Their website is [www.crabtreebooks.com](http://www.crabtreebooks.com) and is worth checking out! Their series of twelve art/science books include topics:

Animals	Space
Insects	Structures
Plants	Our Bodies
Planet Earth	Communication
Light and Colour	Machines and Transportation
Oceans	Weather

The books begin by providing some readable background information, and then provide directions for art projects related to that page's topic. Each book includes approximately 20 project ideas.

## 2. Usborne Books

My favorite series of art books - and they keep coming up with more! My favorite series is Art Ideas, Art Skills and Art Projects. They also have some amazing thematic art books (for specific holidays or topics such as dinosaurs, wizards, pirates, Christmas etc).

There is usually an Usborne display at Teacher's Conventions, where you can order any of the books. However, if you miss this display, I am including a contact who you can call to order the books over the phone:

Calgary: Carol Cooper 1.403.278.4391

There is a wonderful new title from Usborne called the **Big Book of Science Things to Make and Do** that is excellent! It is filled with all sorts of arts and crafts lessons that are science-linked.

My favorite series from Usborne continues to be the Art Projects, Art Ideas and Art Skills series, which has recently been bound into one jumbo book. There are enough ideas in this series of books to last you your entire teaching career!

## **As the Calendar Turns**

Students can keep track of the season, month, day and date with this changeable calendar. This is a great tie-in to the “Seasonal Changes” unit in grade 1 science.

### Materials:

brad fasteners

2 - 12x12 pieces of cardstock per student

crayons

scissors

circle tracers

### Procedure:

Students trace four 6-inch diameter circles out of cardstock (provide them with circle tracers), and then cut them out.

Next, they take one of the pieces of cardstock, and divide it into four sections. Create a window in each section, near an outer edge, by drawing a rectangle in each section. Cut out the openings.

Decorate each section with bright colours, showing different aspects of the different seasons.

To make the movable wheels, place each circle behind a section so that a small portion sticks out slightly beyond the edge. Hold in place with brad fasteners.

Write January in one opening. Turn the wheel so that you can no longer see it and then write February. Continue through the rest of the months. Use this same technique to fill in other three circles with the four seasons, the seven days of the week, and 31 days of the month.

Students can use this movable calendar to track the season and date!

## **Bug Prints**

This is one of the easiest projects to prepare! All students need are tempera paints, paper and their fingers... and they create wonderful little fingerprinted bugs! Perfect for the grade 2 unit on "Small Crawling and Flying Animals."

### Materials:

tempera paints

paper

thin black pen

### Procedure:

Brainstorm as many types of bugs as the students can name. Their challenge is to create as many as possible using their fingerprints!

Demonstrate a few creations in front of the class - a ladybug, a caterpillar, etc.

Provide students with a selection of tempera paint colours. They can then work on their own bug designs. Leave them to dry.

Once dry, students can add details using a thin black marker. These bugs are adorable!!

## **Bugs Take Shape**

Imagination and problem-solving go to work as children check out real bugs and create their own. Students use Crayola “model magic” or plasticine to create bug sculptures.

Materials:

Crayola Model Magic OR plasticine  
craft sticks or plastic dinnerware

Procedure:

Look at butterflies and moths, ladybugs, spiders, worms, and a variety of other insects. Talk about the shapes, colours, patterns and body parts.

Using the Model Magic or plasticine, for some 3D bugs. Students can either create a realistic looking bug or a fantasy bug.

Students might want to use modeling tools such as plastic knives or craft sticks to cut and shape the dough.

Put these bugs on display for all to see!

## **Complementary Colour Paintings**

Students learn the concept of complementary colours, and how colours can change the way a painting feels! This is a great addition to a grade 1 unit on Creating Colour.

Materials:

2 - 8x11 white paper per student

11x17 black paper

tempera paint - 3 primary and 3 secondary colours

paintbrushes

Procedure:

Have students learn about the colour wheel. Demonstrate what complementary colours are (red and green, blue and orange, yellow and purple).

Students paint a picture using the six colours on the colour wheel. They should paint their picture using the traditional colours of items (eg. green grass, blue sky).

The second picture should be painted using the complementary colours. Instead of a blue sky, it should be orange; instead of green grass it should be red.

After the pictures are dry, ask the kids how the pictures make them feel. Do different colours bring out different feelings? What colours are calm? Which colours are energetic?

## **Felt Friends**

These felt friends have an entire wardrobe of clothing to wear - something for every season! Students create a backdrop of the four seasons, and felt dolls to dress up in appropriate clothing. This project is a fun complement to the “Seasonal Changes” unit in grade 1.

### Materials:

11x17 black construction paper  
4 - white 4 inch labels  
4 - 4x4 inch pieces of white paper  
felt material  
doll and clothing tracers  
google eyes  
yarn

### Procedure:

Ahead of time, have parent volunteers prepare sets of clothing and doll tracers. The doll should be about 6 inches tall, and the clothing should fit the dolls. There should be a variety of clothing styles for different seasons. You might want to have a parent volunteer stay for this lesson to help with the tracing and cutting.

Students take their black paper and make a hot dog fold so that the paper is divided one-third and two-thirds. Staple this on the narrow ends so that it creates an envelope.

Students colour in a background scene for each season on each of the four pieces of white paper. These get glued down across the top of the wide side of the paper.

Students write the names of the four seasons on each of the white labels, and stick them underneath each seasonal picture.

Students trace and cut out a felt doll, as well as a variety of clothing. They use the tracers to trace and cut out the felt clothing. They add hair (yarn) and google eyes. As they dress their dolls (by laying the felt clothes on the doll), they can place them in the appropriate season’s pocket.

## **Fingerprinted Snowmen**

This is such a cute winter project - students make a series of fingerprinted snowmen, decorated with bits of acrylic paint and fine black markers. Perfect for a cold project in the “Hot and Cold Temperatures” unit in grade 2!

### Materials:

heavy light blue or grey paper  
acrylic paints  
curly ribbon  
thin black markers

### Procedure:

Students make a full page of snowmen using their thumbprint and middle finger print. The thumbprint becomes the lower half of the snowman and the middle finger print is the upper half. Leave these to dry.

Once dry, students use the fine black markers to draw on the snowmen’s faces, buttons arms and hair. They should try to make different expressions and positions for all the snowmen, so that no two are alike. Next, students use a very fine paintbrush to paint on carrot noses. They then use the fine brush to add a variety of accessories to the snowmen - making each snowman look different. Some wear hats, some scarves, etc.

When all the paint is dry, cut two small slits on either side of some of the snowmen, just below their head. Push a small piece of curly ribbon through one slit and then up through the other slit from the back. Tie the ribbon together to make a scarf, and trim the long ends.

It is such a cute wintry display!

## **Foil Figures**

Swiss artist Alberto Giacometti built hundreds of stick people in different poses. Students will sculpt their own people using tin foil and pipe cleaners! This building project complements the grade 3 unit on “Building With a Variety of Materials.”

Materials:

tin foil

poster putty

pipe cleaners

scissors

Procedure:

Students begin by twisting together several pipe cleaners to make the basic figure of a person. They may want to crumple up a small ball of tin foil to form the shape of the head.

Once the figure is secure, roll two balls of poster putty and push the end of the pipe cleaners into them. Squash them so that the figure stands up.

Cut many strips of tin foil. Wrap them around all the pipe cleaners and scrunch them tight. Cover the putty with foil as well. Pose the figure into a believable position.

Students can then challenge themselves to create other figures and animals. This makes for a fun display!

## **Magnetic Pictures**

Students will love making this movable magnetic picture that incorporates a magnet into their illustration! A perfect art lesson for the “Magnetism” unit for grade 2 science!

### Materials:

paper clips  
one magnet per student  
white drawing paper  
felt markers  
small piece of cardstock

### Procedure:

Students illustrate a mode of transportation of some sort - whether it be a train track, a river, a highway, a roller coaster track or a walkway. This can be drawn and coloured using felt markers, on the white drawing paper.

Next, using the small piece of cardstock, students illustrate a vehicle that would travel on their transportation network (a boat, car, bicycle, etc). They then cut out this vehicle, and attach a paper clip to the back of it.

Students set this vehicle on their roadway, and place a magnet beneath it, on the OTHER side of the paper. The magnet will attract the paper clip through the paper. When you move the magnet, it will appear that the vehicle is also moving along the roadway... creating a moving, magnetic picture!

## **My Great “Web” Site**

Students create their own “web” site that communicates a little bit about themselves, while learning about the structure of spider webs! This is a quirky complement to the grade 2 “Small Crawling and Flying Animals.”

### Materials:

black pipe cleaners

wooden skewers

small photos and memorabilia of each student

### Procedure:

Place three skewers together in a star shape, and wrap them together with a piece of black pipe cleaner.

Use the black pipe cleaners to create a web shape around the skewers - wind them out in a spiral shape, wrapping the pipe cleaner around each skewer as you go.

Attach small photographs and small memorabilia to the web - now students have their own “web” site!

## **Painted Rocks**

Students have a lot of fun personalizing their rock collections! You can work with one theme, or let them go wild when painting! This project complements the grade 3 “Rocks and Minerals” unit.

### Materials:

large smooth rocks

acrylic paints

fine paintbrushes

pictures of whatever items or symbols student want to draw

### Procedure:

There are some wonderful rock painting books that you can show to the students to give them some painting ideas. Give them a chance to flip through the books, or any other picture books for ideas.

Insects, small animals, and cartoon characters make good rock paintings.

Students begin by painting the backgrounds of the rocks, and letting them dry. It is probably a good idea to paint in a lighter colour.

Students can pencil on their outlines of their items to be drawn onto the rocks.

Using the fine brushes, students carefully paint their designs on the dry rocks.

Create a wonderful rock garden art display in a school showcase!

## **Polished Rock Chessboards**

This makes an amazing Father's Day gift - a handmade chessboard made from polished rocks and hard board. This is a slightly more expensive project, but works as a great tie-in to the "Rocks and Minerals" unit in grade 3!

### Materials:

hard board (16 inch by 16 inch)  
acrylic paints (including gold paint)  
polished rocks (32 per student - 16 white, 16 black)  
meter sticks  
pencil

### Procedure:

Students begin by dividing their piece of hard board into a chessboard - 8 squares by 8 squares – each square is 2 inches wide. You might want to have a few volunteers to help with this stage. Make sure the kids use the meter sticks carefully so the measurements are accurate.

Students choose two colours of acrylic paint to paint the chessboard. This will likely require two coats of paint. This is a time-consuming process, so plan for several periods to work on this.

Students choose 16 white and 16 black polished rocks, and paint them with the opposite colours (black on white, and vice versa). They simply paint the first letter of the piece on each rock (eg. B for bishop, K for knight). On the king and queen, they can paint a gold crown in addition to the letter.

### Extensions:

Since chess is such a great game to teach the kids for problem solving, have kids play a mini chess tournament with their games! OR, if they are not confident with chess, they can simply turn the pieces over, and use 12 per side to play a game of checkers.

## **Scratched Life Cycles**

Life cycles make a great subject for an art project! Students will create their own life cycle art using oil pastels and black paint. This project works very well with a “Animal Life Cycles” unit in grade 3.

### Materials:

brown parcel paper or cardboard  
black acrylic paint mixed with a little water  
oil pastels  
toothpicks  
pictures of animals and life cycles

### The Fun Stuff:

Show the students some pictures of different animals’ life cycles.

Begin the art project by giving each student a piece of parcel paper, or a piece of cardboard. Have them cover the entire paper with oil pastels - in stripes, blobs, checkers - whatever they want. Make sure that the entire paper is covered, and that no brown shows through.

Mix black acrylic paint with a little water, and paint over top of the entire pastel-covered paper.

When the paint is ALMOST dry, use a toothpick to scratch designs onto the paper of animals in different stages of their life cycle. The brightly coloured oil pastels will show through the scratches. The end result is a student masterpiece displaying an animal life cycle.

## **Sound Art!**

This is a neat curriculum connection with Language Arts - a unit on sounds and Onomatopoeia! Students try to visually represent a sound that they hear, by making the word “look” like the sound it makes! This is a great project to complement the grade 3 “Hearing and Sound” theme.

### Materials:

12 x 18 white drawing paper  
felts  
pencil and eraser

### Procedure:

Brainstorm as many sound words as possible, and write them on the board. Examples include Oink! Boom! Splash! Shatter! etc.

Using scrap paper, students experiment with lettering styles, attempting to make the letters do what sound they make. For example, SHATTER could have all of the letters appearing to break into pieces.

Students choose one word to illustrate, and use felts and pencil crayons, to recreate the word on paper.

## **Sound Off! Board Game**

Students design and build a board game demonstrating what they have learned about Hearing and Sound! This is a perfect end-of-unit activity for the grade 3 “Hearing and Sound” unit.

### Materials:

cardboard or posterboard  
colourful cardstock  
paints and felt markers  
research books about sound

### Procedure:

Examine different types of board games. Brainstorm what items need to be included in a board game in order for it to work well.

In partners or small groups, have students design a board game based on their understandings of the Hearing and Sound unit. Students may choose to focus on one aspect of the unit, or a full summary of the unit.

Students design the board, and plan playing pieces, cards, and any other parts that are needed.

When done, students can challenged each other to play the games! What a great way to review the unit!

## **Spotted Frogs**

This unique project allows kids to paint frogs at various stages of their life cycle... using watercolours and lemon juice! This project works well with the grade 3 “Animal Life Cycles” unit.

### Materials:

watercolour paper and brushes  
watercolour paints (greens)  
lemon juice

### Procedure:

Begin by doing a watery watercolour wash in pale green over top of the paper. Leave this to dry.

Use more intense green watercolours to paint several pear-shaped bodies all over the watercolour paper. Paint the frog’s front and back legs coming out of the body, adding curved lines for the feet. Add three little dots at the end of each line for the sticky pads.

Once the paint is dry, dip your paintbrush into some lemon juice, and paint dots of juice all over the frogs. Dab off the juice with a tissue - it will lift off some of the paint, leaving brightly coloured dots.

Add frog eggs, tadpoles and froglets in amongst the frogs, using the same painting techniques.

## **Textured Touch Art**

The sense of touch comes from the layer of skin called the dermis, which is filled with tiny sense receivers called receptors. Students stimulate their sense of touch by creating their own textured artwork using recycled materials from home and school. This is a great supplement to the grade 1 "Senses unit.

### Materials:

variety of materials that have different textures

eg. cotton balls      sponge tissue    foil

glue

poster board

### Procedure:

Each student will be given a piece of poster board. They begin by dividing this board into 4 or 5 sections.

Students then create different textures in each section, by scrunching up pieces of tissue paper, rolling up string, etc. They glue these different textured items to each section of the poster board.

Have students close their eyes and see if they can identify what textures are on their classmates' art projects.

## **Torn Paper Boats**

This is a good project for the Boats and Buoyancy unit in grade 2 Science. Students create a torn-art illustration of a water scene with or without a boat.

Materials:

construction paper scraps (or faded paper)

wallpaper scraps

glue sticks

large sheets of construction paper (for background)

The Fun Stuff:

Have kids compose a list on the board of all the things you might find in a lake or ocean scene. What kind of boats are you more likely to see on the ocean? On a lake?

Demonstrate the technique of paper tearing. Show them how they can tear using the edge of a ruler, or just freehand.

Students create a picture of a water scene - whether it be above or below the water levels.

I never allow them to use pencil first - they need to “eyeball” the paper and start tearing!! (Kids tend to make the shapes too small and too detailed if they use pencil, so I just eliminate that problem entirely!)

Rip and tear - then glue. As easy as can be!

## **Tree For All Seasons**

Students will use a water painting technique to create the same tree as it transforms from season to season! This is a great complement to the grade 1 “Seasonal Changes” unit!

### Materials:

watercolour paper  
watercolour paints and brushes  
pencil

### Procedure:

Have student look at pictures of trees during different seasons. What do they notice about the changes between seasons?

Students begin by folding their paper into four quadrants, then unfolding the paper. They then begin by drawing the outline of a simple tree shape in each of the four quadrants, trying to keep the shape the same. Students will want to add the shapes of leaves to their summer and spring pictures, and fewer to the autumn picture. There should be no leaves on the winter picture.

One tree at a time, students paint the trees with water. While the tree shape is still wet, paint blobs of colours inside it. The blobs of colours will run together. Leave the paper flat to dry.

The seasonal trees look beautiful!

## **Washable Calendars**

This makes a great Father's Day or Mother's Day present! Students make a reusable wipe-off calendar. This project ties in nicely with the grade 1 unit on "Seasonal Changes."

### Materials:

11x17 construction paper  
variety of stickers  
photo of each child  
8x11 photocopy of a blank calendar (no month listed)  
dot stickers  
magnetic strip (optional)

### Procedure:

Students begin by placing a coloured dot sticker on the top left corner of each space on the calendar. They can mount this on coloured paper, and glue it to their large 11x17 paper.

They can mount their photo onto coloured paper as well, and attach this to the large paper.

Lastly, students decorate their calendars with stickers and/or die cuts.

Laminate the calendars for the kids, and they can give them as gifts! The calendars can be used month after month!

You might want to attach some magnetic strip on the back of the calendar so that it can be used as a fridge calendar.

## **Wax Resist Butterflies**

This is a beautiful painting full of colourful butterflies - a perfect complement to the “Small Crawling and Flying Animals” unit in grade 2.

### Materials:

watercolour paper  
watercolour paints and brushes  
oil pastels

### Procedure:

Draw the outline of some butterflies with a yellow oil pastel. Add as much detail as you wish.

Mix two or three other colours of watercolour paint, and paint part of each butterfly. Students should not worry if the colours overlap, as they will bleed together a bit. The oil pastel will resist the paint.

As the paint dries, you can add smaller dots and spots to the butterflies. They should not bleed as much because the paper is drying by now.

To create a splattered background effect, dip the paintbrush into some sky blue paint. Hold the brush above your paper and flick the bristles with a finger. The paint will splatter dots over the paper.