

IDEAS JR

THE NEWSLETTER
OF THE
ONTARIO
ASSOCIATION
OF
JUNIOR
EDUCATORS

SEPTEMBER
2009



Off to a great start!

CLASS CHRONICLER



At the beginning of the school year, when you are deciding on all of the classroom responsibilities that need to be shared by everyone in the community - feeding the fish, emptying the pencil sharpener, tidying the bookshelves - establish a NEW job, that of Class Chronicler.

The Class Chronicler uses a small digital camera to record ONE and only ONE photograph each day of the week that he/she has that job. The photo needs to show something about that day in the life of the classroom community. At first you will find that your students take quick snapshots of their friends - but then they start to realize that they have to be more selective and thoughtful as events happen later in the day. Allow only ONE photo to be taken each day - eventually the Class Chronicler for a particular week will ask if there is going to be anything interesting they should hold their photo for. (direct them to your daybook to make their own judgement)

Every two weeks print one copy of the photos and arrange them in a line which will eventually wrap around the room. You have made a concrete timeline - one photo for each day.

In June take down the photos, return them to the students who took them and have them write about what was happening on that particular day and who is pictured in the photograph. Captions can be printed on file cards and attached to the back of the photos. The photos can then be coil bound into a book.



Classroom-ready Ideas for Teachers of Grades Four Through Six

Math Puzzle with Dice



For the demonstration activity, you will need 3 dice. It works best to use large ones without rounded corners.

For a small group activity, you will need up to 4 dice for each group of three students.

Make a tower by placing the 3 dice in a vertical column. Have the students notice that you can see most of the dice faces by moving about, but you cannot see them all.

Challenge the students to quickly calculate the SUM of the sides (faces) of the dice that cannot be seen without touching or moving them. Once they determine an answer, check the sum by lifting the dice, one at a time, and having them add up the total.

Now, tell your students that you can calculate the SUM of the hidden faces much faster. Tell them that you will even cover your eyes as a designated student stacks the tower of dice. You will be able to open your eyes and immediately tell them the answer.

Here's the secret:

Opposite sides on a six-sided die always add up to 7. The die at the bottom of the tower and the die in the middle each have two opposite sides that are covered. That means a total of 14. The top die has one side covered but the opposite side is visible. This means that you know the covered side by subtracting the value of the top side from 7.

For example, if the top number on the tower is 3, the opposite side of that die must be 4. Add 4 to the 14 (7+7) from the bottom two dice and you get a total of 18.

An even easier way to calculate this is to subtract the number on the very top from 21. (in a three dice tower) If you try a four dice tower the total is found by subtracting the top number from 28.

As students work with this challenge, provide hints or have students who have solved the puzzle share their hints.

JOIN OAJE FOR
FREE!



The Ontario Association of Junior Educators (OAJE) provides a network for education professionals to share ideas and resources, to assist and support teachers and to advocate on behalf of students and teachers in the Junior grades.

Members of OAJE receive a newsletter outlining news, events, conferences and teaching tips. They are also invited to provide input, information and opinions for the Ministry of Education about issues of importance to Junior Division teachers. And, by joining, you will be sure to receive all future editions of this newsletter, along with lots of other valuable teaching ideas.

To become a member of OAJE, simply register online at <http://oajemembership.eventbrite.com>



Creating the
Curious Classroom

Magic Milk

Before you teach anyone anything,
you **FIRST** have to get their attention.

In this activity, students carefully observe the interaction of liquids.

Each group of students will need:
a small aluminum pie plate or tart tin,
homogenized milk,
food colouring (red, blue, yellow),
a toothpick,
a drop of liquid dish detergent.

Let the milk warm to room temperature. Pour a small amount of milk into an aluminum pie plate, just enough to cover the bottom.

Add a few drops of food colouring at various spots in the milk. Use a toothpick to swirl the food colouring into a pattern. Once you are satisfied with your design, dip the toothpick into a small drop of liquid dish soap and hold it in the dish of milk.

What did you observe at each step of the activity?

Why do you think this is happening? How could you check your hypothesis?

Try this activity using different liquids - 2% milk, skim milk, coffee creamer and see what happens.

Free Teaching Resources

Mining Matters is an organization whose mission is to provide education to teachers, students and the public about minerals, metals and mining.



They have produced a resource for Junior Division teachers entitled "Deeper and Deeper" which includes lesson plans outlining hands-on learning activities.

You can learn about this resource and the many other activities of this organization at www.pdac.ca/miningmatters

On Sunday, March 7th 2010 the folks at Mining Matters are planning a special event for teachers at the Metro Toronto Convention Centre. This teacher's day program of displays and workshops is being offered for a registration cost of \$25.00. They are also offering an opportunity for teachers to bring their students to the 2010 Mining Industry conference in Toronto on Monday, March 8th to view displays and participate in hands-on activities. You can visit their website for more information.

Resource on Homelessness



The Canadian Homelessness Research Network has recently developed curriculum units for teachers and students in grades 3-12. The purpose of these materials is to raise awareness of the issue of homelessness in our society and around the world. If you are interested, this unit can be found at www.homelessness.ca/Education

Have you seen our newest resource?

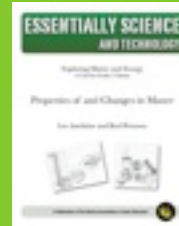
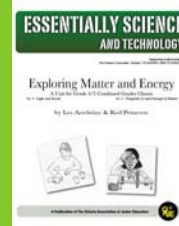
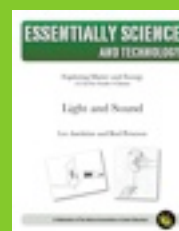
ESSENTIALLY SCIENCE AND TECHNOLOGY

The Ontario Association of Junior Educators has recently produced some NEW and EXCITING science resource books for teachers.

- ✓ a unit for each of the FOUR STRANDS in the Ontario Curriculum for Science & Technology: Grades 4-6
- ✓ specially designed units for COMBINED GRADE CLASSES
- ✓ focusing on SKILLS of inquiry, problem solving, and communication
- ✓ addressing ENVIRONMENTAL EDUCATION
- ✓ challenging students to DESIGN & CONSTRUCT
- ✓ using simple, easily found materials
- ✓ supporting authentic ASSESSMENT
- ✓ linking NUMERACY and LITERACY skills

The first five titles in this series are NOW available. Titles for straight and combined grade classes will be produced for ALL four strands of the curriculum throughout this school year.

For more information and a sample package, check out our website at www.oaje.org and click Publications - Resources button.



A Curriculum Resource from The Ontario Association of Junior Educators

Project-Based Learning

Throughout our programs we teach students new skills, expose them to new concepts and ideas and challenge them to consider new ways of looking at the world we live in. However, if all that we do is ‘practice’ new skills outside of a real-life context, the students do not see the connection to the world that they live in. In our own lives as students there are many skills and information that we were ‘taught’, but in the absence of actually applying that skill or knowledge, it is soon lost.

Project-based learning is an approach which engages students in solving ‘real-world’ problems. Teachers create tasks with topics and complexity that reflect the challenges young people will meet during their adult lives.

A project should have a depth and complexity that challenge, interest, and motivate students to utilize skills and knowledge to seek innovative solutions. As students work on a project, they acquire and apply problem-solving, communication, collaboration and planning skills.

Dr. Sylvia Chard, Professor Emeritus at the University of Alberta and co-author of “Engaging Children’s Minds: The Project Approach” states:

“One of the major advantages of project work is that it makes school more like real life. In real life, we don’t spend several hours at a time listening to authorities who know more than we do and who tell us exactly what to do and how to do it. We need to be able to link what the person is telling us with what we already know. And we need to be able to bring what we already know and experiences we’ve had that are relevant to the topic to the front of our minds and say something about them.”

Proponents of a project based learning approach cite a number of research-documented results, ranging from increased test scores and reduced absenteeism to fewer disciplinary problems.

Dr. Seymour Papert, Professor Emeritus at the prestigious Massachusetts Institute of Technology and co-founder of the world-famous Artificial Intelligence Lab there, is a strong proponent of a project based teaching/learning approach. He believes when children are given the gift of exploration, society benefits, both in practical and in theoretical ways.

“This is the way that mathematics started - not as this beautiful, pure product of the abstract mind. It started as a way of controlling the water of the Nile, building the pyramids, sailing a ship . . . and gradually, it got richer and richer.”

For me classroom projects present an opportunity for my students to experience what it is like to use your skills and knowledge to accomplish real tasks. Real tasks are ones that have relevance and purpose outside of the classroom - a sense of audience. The tasks are meaningful and important.

A class of students, many of whom are Inuit and Gwich’in heritage, decide to create a website to inform students from schools and communities in the south about their way of life. Weary of misconceptions about the North, often communicated in letters and requests for information from students doing a school project, the students in the school decide that a project of their own - using stories, articles, and pictures - will help others understand how their lives are just like many other people outside of the North - and how they are unique and different.

Project-based tasks always start out the same way - with an idea. Sometimes the ideas come from the students themselves, emerge from the curriculum, or from the teacher. Occasionally the project is a serendipitous discovery. The project should be something that the students can use to apply and refine their communication, research, organization, planning and inquiry skills. There is usually a finished product or result involved, although sometimes a project is about communicating ideas - and the tool used for that communication is the product.



A local church, built in 1871 experienced a fire in its record storage area. Unfortunately, all of the records about burials in the adjoining cemetery were lost. This small cemetery, last used in the 1970's, is a treasure trove of history from our community. Reading about this loss, our class decided to volunteer to undertake a project to map the cemetery and rebuild some of the lost records.

Students organized the small cemetery into a grid - each pair undertaking to map and record all of the information from the stones and plaques within their area. They made rubbings of the symbols and images on some of the stones.

When we were done our field work, we researched the meaning of the symbols, and tried to discover as much as we could about the person who was buried beneath each of the stones in each grid area. We discovered the graves of soldiers who died in the War of 1812, leaders of our community for whom buildings and roads were named, and people who had died at the hands of American rebels called Fenians . We found that some years a lot of infants died - and looked in historical records to see if we could find out why. In the end, we helped reconstruct a part of our communities' heritage and, at the same time, used our skills and knowledge to learn about this important part of our past.

Once a project is chosen, we undertake to brainstorm all of the tasks and activities that need to happen. The most important feature of brainstorming is that all ideas are accepted and recorded. Once we have gathered all possible ideas, we start to organize and prioritize them. This can happen through a 'carousel brainstorm/input' activity where students move in groups from chart paper to chart paper and identify those ideas and suggestions that they feel would be most important to do.

The complexity of a project can and should depend on the age and skill level of the students. Two of the originators of "The Project Approach", Dr. Sylvia Chard and Dr. Lillian Katz, did most of their research and work with very young children in the early years. However, large scale projects - demonstrations of learning - are very successful with children/students of all ages.

A class of grade three students undertake an effort to clean up litter in the school yard. As they are picking up the litter, they keep track of where it is located and classify the litter they are finding to see if there is a pattern in the littering. They conduct an observational study where students watch for school yard litterers and keep track of whether they are young students, older students or adults. They determine whether the litter found on the playground is from students at the school, whether it has been left by people outside of school hours, or whether it has blown from other areas of the neighbourhood. When they are finished their data gathering and research, they set about with a campaign to reduce litter in the school yard. They use the information from their study to decide if their campaign is being successful.





A class of grade six students undertake to convince their local municipal government to install a traffic light at an intersection near their school. They conduct a survey of neighbours and parents from the school, gather information about accidents and 'near misses' which have happened at the school.

After contacting and interviewing a local city councillor, the students undertake to develop a public awareness campaign intended to convince people that the traffic light is needed. They end up presenting their case in front of City Council - and, in the end, with the support of local police and their city councillor, they achieve their goal - a traffic light at a dangerous intersection.

Assessment Tool Box

Group Members: _____ Date: _____

WHO DID WHAT?

Record each thing your group did to complete this activity. Record the name of the person who worked on each part.

What We Did	Who Did It

Of course, it is important to assess the learning as students are working through a project.

It can be as simple as having each group of students keep track of what was accomplished each time that they work on the project - and report on 'who did what?'

Name: _____ Date: _____

THIS WORK IS DONE WHEN...

This work is done when...	Comments
<input type="checkbox"/> Done <input type="checkbox"/> Not Done	
<input type="checkbox"/> Done <input type="checkbox"/> Not Done	
<input type="checkbox"/> Done <input type="checkbox"/> Not Done	
<input type="checkbox"/> Done <input type="checkbox"/> Not Done	
<input type="checkbox"/> Done <input type="checkbox"/> Not Done	
<input type="checkbox"/> Done <input type="checkbox"/> Not Done	

One challenge with some students is helping them to determine when work is complete. Start by having the students identify the characteristics of the work when it is 'done'. Then use a tracking sheet to have them take on the responsibility for reporting on when work is completed according to the expected characteristics.

Name: _____ Date: _____

THREE PLUSES AND A WISH

Three things I like about your work are	I liked it because
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____

One thing I wish could be improved is _____

You could improve it by _____

Learning to provide constructive feedback is an important skill. Often, without direct instruction, students will offer nice comments like "I like your work." when asked to provide feedback to a classmate about his/her work. Help your students to provide a balance of positive and constructive advice - three pluses and a wish. In this assessment strategy, students provide three specific examples of what they liked about another group's work - and offers some advice about how it might even be better.