

JR S EAS IDEAS

THE
NEWSLETTER
OF
THE
ONTARIO
ASSOCIATION
OF
JUNIOR
EDUCATORS

JANUARY
2010



Essentially Science & Tech

Engaging students in science and technology doesn't necessarily take fancy equipment or complex investigations. Observation is critically important in the development of inquiry skills.

We recently collected a number of empty, plastic drinking water bottles and decided to investigate some properties of water as it freezes before the bottles hit the recycle bin. Our school is an older one - with large sills outside our classroom windows, making a perfect place for us to observe the bottles first hand as the water in them froze.

We made a list of questions that we wanted to investigate, and then small groups of students set out to design an experiment to explore one of the questions. Here are some of them.

- *What happens when you fill a plastic bottle with water and freeze it?*
- *How does the temperature of the water in a bottle affect the colour/transparency of the ice when it freezes?*
- *How does adding some salt to water affect its ability to freeze?*
- *How does leaving the screw cap off of a plastic bottle of water affect its rate of freezing?*

Over the course of a cold week the students used any available time they had to do their experiment, gather their observations and draw their inferences and conclusions.

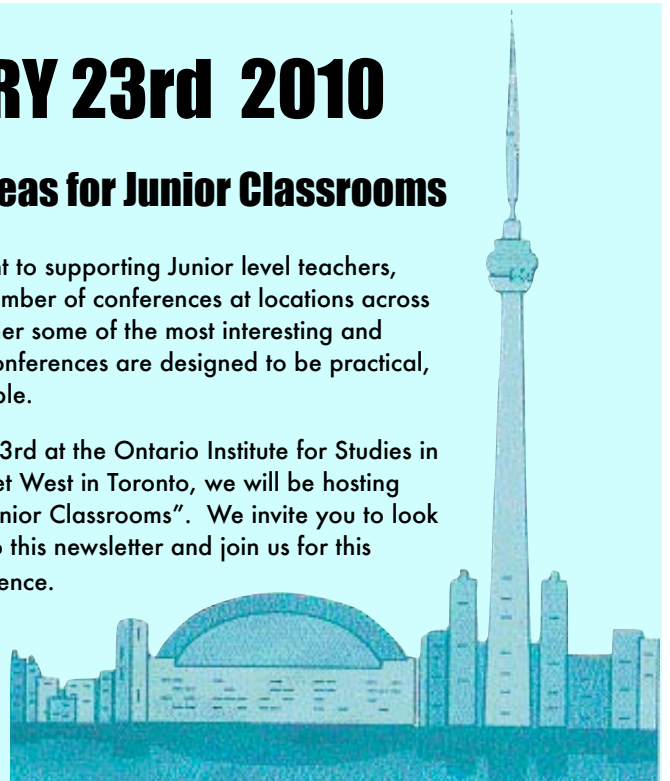
JANUARY 23rd 2010

Building Big Ideas for Junior Classrooms

As part of its commitment to supporting Junior level teachers, OAJE has provided a number of conferences at locations across Ontario. Bringing together some of the most interesting and exciting speakers, our conferences are designed to be practical, meaningful and affordable.

On Saturday, January 23rd at the Ontario Institute for Studies in Education on Bloor Street West in Toronto, we will be hosting "Building Big Ideas in Junior Classrooms". We invite you to look over the flier attached to this newsletter and join us for this exciting, one-day conference.

Check out the flier attached to this month's newsletter.



About that December Newsletter

No . . . you didn't miss the arrival of the December edition of the OAJE newsletter in your email inbox. It just didn't happen. The arrival of a new grand baby, merged with increasing work responsibilities that combined with pre-holidays busyness in a perfect storm of distractions. My apologies. One of my New Year's resolutions is to do better in the future.



Classroom-ready Ideas for Teachers of Grades Four Through Six



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>

Winter Survival

It all started with a ladybug.

In the middle of a January freeze a lone ladybug was found crawling along the window ledge in our classroom, prompting the inevitable questions “How did it get there?” and “How do ladybugs survive in the winter time?”

We just happened to be starting the Grade four life science strand and this seemed like the perfect introduction to how animals rely on features and conditions of their environment for survival. Most importantly, it connected the upcoming science unit to something that the students had expressed both an interest in and a curiosity about.

I am sometimes asked about what happened to the ladybug we found on that winter’s day. If we left it be, it would likely starve as there were no aphids to be found in our classroom - and releasing it to the frigid outdoors would mean certain death. I’ve included a postscript about our ladybug inspiration to the end of the activity description.



Winter brings below-freezing temperatures to all of Ontario at some time during the season. In some areas low temperatures can last for weeks, even months. Animals living in such conditions survive the winter weather in a number of different ways. Some animals, like birds, migrate or travel to warmer areas. Some animals, such as many insects, reptiles, amphibians, and bats, pass the cold winter months in a deep sleep called hibernation, during which their body temperatures cool down and their breathing and heart rates slow significantly. Other animals, such as bears and raccoons, sleep through much of the winter without appreciably slowing down their life systems. Some animals, like squirrels, sleep for part of the winter, but are active during periodic warm spells. True hibernators rely on stored fat deposits for nourishment while they are dormant. Throughout the fall months they are very active, eating all that they can to build up food reserves in their bodies. During this time, they also select winter sleeping sites that will protect them from the harshest of winter temperatures and weather. This selection of a winter sleeping site is very important because the sleeping animal can freeze to death if the temperature of its sleeping site drops too low for a long period of time.

THE CHALLENGE

In this activity, students will locate places that they believe would best protect a winter-sleeper from freezing. The students test their choices by placing imaginary winter animals (containers of liquid gelatin) in the selected areas and noting how long it takes for the gelatin to set. At the end of the activity, the students hold a freeze-off to discover which area provides the most protection - by allowing for the longest gelatin setting time.

MATERIALS

For each student, you will need:

- 5 small plastic pill bottles, OR 5 small paper cups OR 5 small plastic sandwich bags
- 1 litre of liquid gelatin for every 6 students (this can be provided in empty plastic water bottles that are going to be recycled or discarded)

For the class, you will need:

- a watch with a second hand
- a thermometer

LOCATION, LOCATION, LOCATION

While this activity is quite doable on your school playground area, if there is a nearby park or natural area with interesting nooks and crannies it will be more interesting for the students and generate more varied results. Trees, bushes, mounds of soil, piles of leaves, fallen wood or rock piles all make for interesting possibilities. Plan this activity for a day when the air temperature is 5 degrees Celsius or colder.

Outside Temperature	Approx. Setting time
-20 to -10 degrees C	5 to 10 minutes
-10 to -5 degrees C	10 to 15 minutes
-5 to 0 degrees C	15 to 20 minutes
0 to 5 degrees C	20 to 30 minutes

Approximate times for liquid gelatin to set in an unprotected area

Immediately before the activity, mix the powdered gelatin according to the directions on the package. You can either pour out portions of liquid gelatin in empty plastic water bottles or, if the location is a bit further from the school, carry it in thermoses and pour it out just before each trial. Have the students mark the pill bottles at the half-full level so that they can pour equal amounts of gelatin for each trial. The temperature of the liquid gelatin should be between 10 and 15 degrees Celsius for the start of the freezing trials. Keep track of its temperature with your thermometer.

It is important to note that unflavoured gelatin sets up faster than flavoured gelatin.

At temperatures below -20C, you can use plain water at 10C instead of gelatin, but then again it is likely way too cold for you to be doing an outside activity for any length of time with students. In any case, **MAKE SURE THE STUDENTS DRESS WARMLY.**

Before running the activity, experiment with various gelatin starting temperatures to arrive at one that will yield about a ten-minute gelling time for the unprotected areas of your site. By using half the amount of water called for in the gelatin mixing directions, you can make a more concentrated gelatin which can be used on warmer days, when the outside temperature is 6C to 12C.

IN ACTION

1. Explain that a hibernating animal like a chipmunk or a winter sleeper like a raccoon must select a sleeping spot that will provide protection from the winter cold. If the temperature of the sleeping spot falls too low, the sleeping animal may freeze to death. Ask the students to imagine that they are animals looking for a winter sleeping spot that will protect them from freezing. They will test their selections by placing gelatin animals (hold up a pill bottle) in the sleeping spot and noting how long it takes for the animals to freeze (gelatin sets too firm to pour).
2. Give the students five to ten minutes to select likely sleeping spots. Hand out digging tools (old spoons) and explain that burrowing and building with non-living materials is permitted. After describing the boundaries of the area the students can use, let them search out their sleeping spots.
3. Call them together and hand out one gelatin animal to each student. Have them go back to their selected sleeping spot and announce to them "Put your animals in place" and start the timing. You should set one gelatin animal out in the open and unprotected at the same time to serve as a control. The trial ends when most of the gelatin animals freeze. Remind the students that their animals are frozen when the gelatin will not pour. While the students are waiting for their gelatin animals to set, encourage them to visit each other's sleeping spots and determine why they were chosen.
4. After two or three trials, announce that it is time for a 'freeze-off' between the best spots the students found. Ask each student to select his/her trial sleeping spot that offers the best protection from the cold. Hand out the gelatin animals and hold the freeze-off to discover which spot allow the gelatin to remain liquid the longest, hence provides the best protection.

DEBRIEF THE LEARNING (back in the classroom)

Challenge the students to think about what features the sleeping spots with the best protection had in common. Have the students discuss questions which allow them to consolidate and refine their thinking - 'why would a gelatin animal always eventually freeze in very cold temperatures but a living rabbit would not?' - 'if you were stranded in a winter storm without a fire, how could you keep from freezing?' - 'where might animals that live in ponds (turtles, frogs, salamanders, crayfish) go in the winter to avoid freezing?'

TAKING THE LEARNING FURTHER

Provide insulating materials such as wool, paper, feathers from a craft store, etc. and repeat the activity to see how the results change.

Use the same containers, but this time double the volume of liquid gelatin. What happens? After experimenting with the gelling time of different volumes of gelatin, ask the students if they think small or large animals have a more difficult time conserving their heat in the winter time.

You may even wish to modify this activity and use it in your Grade Five Matter and Materials unit of study, focusing on how different proportions of water to gelatin powder gel at different rates.

About that Ladybug . . . we called a local greenhouse operator and asked if she used chemical or biological controls for aphids and other pests in her operation. She actually purchases large numbers of ladybugs and other predator insects to manage the populations of insects that feed on her crops and we were able to bring our winter ladybug to her greenhouse and release it there . . . learning about another fascinating science topic.





THE NAME GAME

a project-based learning activity linking to the Grade 5 Aspects of Citizenship and Government strand in the Ontario Curriculum

Our local community had gone under a process of amalgamation a number of years ago. Emergency workers, post office staff and numerous others complained about the confusion and duplication of street names that now existed. Civic leaders announced that a number of streets were going to be renamed and invited the community to offer suggestions and a rationale for the name(s) they were proposing. This looked like a perfect project for our fifth graders to undertake.

The first step in the process was a whole class activity to brainstorm what we thought we already knew about the naming of streets and to develop a list of questions we needed answered. When we looked at our questions, we realized that they really fell into a number of categories.

- *What are the current names of streets in our community?*
- *What do those street names represent? (names of people, places, events, animals, plants, numbers, rocks/minerals, First Nations groups, food - we were surprised by the variety of names)*
- *Why were those names chosen? (a very difficult question to answer for many of the older street names and we ended up having to rely on conjecture or anecdotal information)*
- *What is the process for naming new streets? (this meant having to contact our local community government and gather information)*
- *What are the rules about naming streets? (we were surprised to find that some communities don't have any written rules or guidelines)*
- *Which streets had a different name originally than the one they have now? (this came up in our research . . . as we found that some names were changed during time of war or conflict and never reverted to their original name)*

They researched existing street names in our community and made a number of surprising discoveries. Almost all of the street names that recognized notable citizens were named after men.

The students organized into a number of groups. The groups worked for a set period of time each day - planning their tasks, accomplishing the work and developing further questions and issues to explore. Each day the whole class met and a representative from each student group reported on what had been accomplished and all members of the class offered ideas or possible solutions to issues raised.

- *A group to research the names of streets currently in use in our community*
- *A group to research and develop strategies for communicating with local civic officials*
- *A group developing a list of possible alternative names and conducting a survey of students, parents and other community members on preferred names*
- *A group of students planning a communication strategy for campaigning for specific street names, developing information pieces for the school newsletter, a presentation for the School Council and possible contacts with local media*

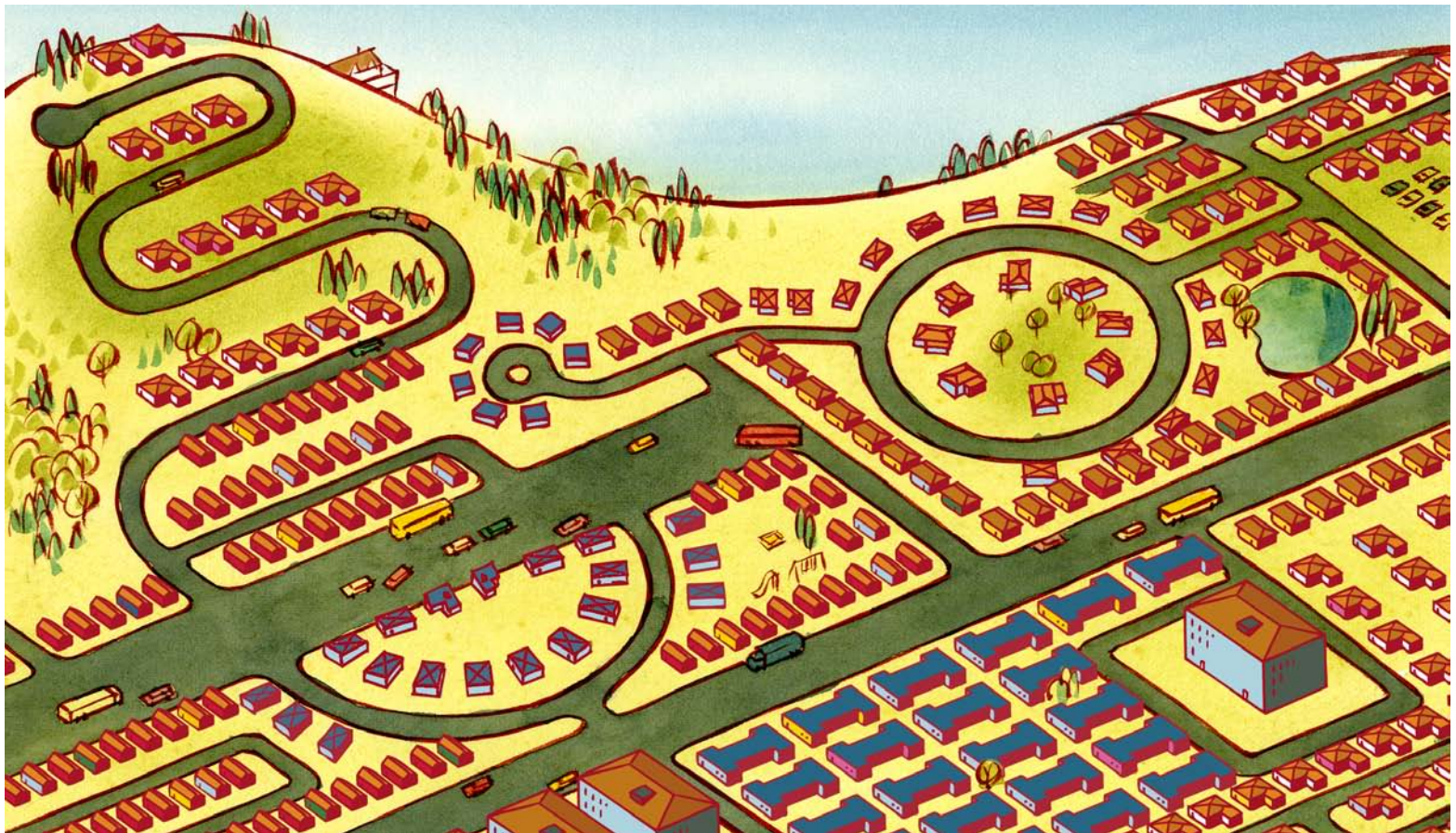
They set about to research and develop a list of possible street names and conduct a survey to determine the street names they select to propose to local government officials.



In the course of this project, students discovered how streets in their local community are named - the process and the rules which govern the naming. They learned how to engage in the decision making processes of their municipal government in order to have their suggestions considered and/or adopted.

This project was a wonderful blend of social studies, language, mathematics, oral communication, research . . . with a one-hour block of time committed to it each day for a two week period.

A project such as this doesn't have to depend on whether your community is planning on renaming streets. In many communities across Canada new housing subdivisions or other developments are planned and constructed each year. Why particular street names are chosen may sometimes be a carefully planned and thought out process that your students can engage in - or it may be an opportunity to have students affect how your community makes these decisions. In our city, one group of students will forever know that a number of streets were named as a direct result of their input and engagement in the activities of their community.





Building Big Ideas in Junior Classrooms

Hosted by the Ontario Association of Junior Educators



8:30 to 2:30 on Saturday January 23, 2010 at OISE/UT
252 Bloor Street West, Toronto, Ontario M5S 1V6

Program

Deadline for registering is January 20, 2010

Register at www.oajebigideas.eventbrite.com or through mail order by January 10 with form below

\$50 for general admission including lunch

\$30 for teacher candidates at any faculty of education including lunch

8:30 Registration and Publishers Displays

9:00 **Keynote: Guilt-free Teaching in a Crowded Curriculum** (Les Asseltine & Rod Peturson, Authors & Consultants)

10:30 to 12:00 Breakout 1

- **Inside and Outside the Story** (Bob Barton)
- **Creating the Physically Literate Student** (Julie Anderson)
- **Keeping the Sense of Wonder Alive** (Rod Peturson & Les Asseltine)
- **Your Place and Time!** (Sybille Parry and Byron Stevenson)

12:00 Lunch (provided) and Publishers Displays

1:00 to 2:30 Breakout 2

- **Differentiating MATH through OPEN tasks** (Lindsay Sirois)
- **A Vision for Arts Education** (Mervi Salvo)
- **Good Books Matter** (Larry Swartz)
- **Wiki Anyone?** (Byron Stevenson and Astrid DeCairos)

Program Details

Inside and Outside the Story (Bob Barton)

This practical session will help participants experience drama expectations by working inside and outside a text using strategies that promote questioning, storytelling and role playing.

- **Bob Barton** has been an educator for over 40 years and is renowned for his work with story. He is the author of a number of books including *Telling Stories Your Way*, *Poetry Goes to School* and *Story Works* as well as the folktale collection *The Bear Goes North*. Bob currently teaches additional qualification courses at OISE/UofT and performs in schools through *Prologue to the Performing Arts*.

Creating the Physically Literate Student (Julie Anderson)

Individuals who are physically literate have the knowledge, skills, and attitudes to lead healthy lifestyles for themselves and assist others in acquiring this ability as well. Skills learned in health and physical education can help students develop the commitment, capacity and comprehension in order to lead healthy active lives. This session will provide teachers with strategies that help students develop the skills and knowledge needed to enjoy being active throughout their lives as well as the personal movement competence needed to participate.

- **Julie Anderson** is an Educator, life-long learner and advocate: these words describe the work of Julie Anderson. Working as a Health and Physical Education Consultant, Julie's main focus is implementing a Healthy School approach in all York Region communities and advocating for all elementary school students to have opportunities to be physically active during the instructional day. It is her belief that health and well-being are essential for people to reach their full potential.

Keeping the Sense of Wonder Alive (Rod Peturson & Les Asseltine)

How can you help your science and technology activities become the most enjoyable and engaging part of your week? This workshop will explore practical strategies and ideas for making sure that both you and your students look forward to this part of

your program - whether you are teaching in a straight or a combined grade classroom . . . and how you can cultivate a sense of wonder in your students.

- **Les and Rod** have authored many professional books and curriculum resources throughout their careers, including the most widely used elementary science and social studies programs in Canada. One of their latest programs - *Reading for Real* - is a series of seventy-two non-fiction books designed to support guided reading strategies. Their most recent publication, developed in partnership with the Ontario Association of Junior Educators, is a series of teacher resources entitled "Essentially Science and Technology", directed at helping teachers in grades four to six straight and combined grade classrooms.

Your Place and Time! (Sybille Parry and Byron Stevenson)

See how the junior social studies program can utilize real world, authentic learning to promote critical/historical thinking skills. Explore activities that encourage students to examine evidence to make decisions about their world. Participants will also explore resources that promote a global perspective and active citizenship. You can bring your social studies curriculum to life using primary sources and peer-reviewed lessons.

- **Sybille Parry** has been a teacher for 20 years, and a teacher-librarian for 10. She integrates media literacy into the library program, and maximizes teacher collaboration for student success. She has been involved in the social justice project, *Be the Change*, for 3 years, sponsored by the Ontario Library Association, which blends the Ontario curriculum with action for positive social change.
- **Byron Stevenson** is a Social Studies Instruction Leader with the TDSB. He is an avid user of ICT and he strives to integrate critical thinking activities in his lessons. He has written Africentric curriculum for the TDSB and he has taught students in the intermediate and junior divisions.

Differentiating MATH through OPEN tasks (Lindsay Sirois)

This workshop will explore DI in the juniormath classroom. What does it look like, sound like and feel like for both the teacher and student? Also included - practical methods of assessment for learning and descriptive feedback.

- **Lindsay Sirois** is a Student Achievement Officer for the Literacy Numeracy Secretariat, working in Toronto schools and with the Numeracy committee.

A Vision for Arts Education: An Introduction to the Revised Elementary Arts Curriculum (Mervi Salo)

The 2009 revised elementary Arts document is here with exciting changes! There is an increased emphasis on CREATING in, through, and about the arts. There is inclusion of the cognitive and affective domains, connections between art and culture, social justice, anti discrimination, and global issues. Two artistic processes (creative process and critical analysis process) are defined and integral to the revisions. Changes in format include direct links between the overall expectations and specific expectations, inclusion of teacher prompts and more. This workshop is a blend of quick activities, presentation, discussion and interaction (including implementation resources).

- **Mervi Salo** is an Education Officer with the Ministry of Education. She is project lead for the revision of the 2008 elementary document: *The Arts, Grades 1 to 8 (Dance, Drama, Music and Visual Arts)*. She was an Arts consultant in the Toronto DSB, an Arts AQ instructor through York U. and OISE/UT., and past president of an Arts subject association. She has many years experience as a teacher, in a variety of grade levels and programs, in both Peel DSB and Toronto DSB.

Good Books Matter (Larry Swartz)

This session will offer participants a framework for choosing and using literature in the junior classroom. Novel titles appropriate for this level will be highlighted, along with strategies for responding orally to texts. Handout provided.

- **Larry Swartz** is an instructor at OISE/U of T. He is the author of a number of teacher resources including *LITERACY TECHNIQUES, THE NEW DRAMATHEMES, THE PICTURE BOOK EXPERIENCE, THE POETRY EXPERIENCE* and *THE NOVEL EXPERIENCE*

Wiki Anyone? (Byron Stevenson and Astrid DeCairos)

Take a moment during this hands-on session to catch up on new educational technologies that can offer differentiated learning activities. Use wiki and Smartboard technologies to facilitate critical thinking and understanding in your social studies and language program. Explore a combined junior social studies unit and see how you can use images, websites and wikis to promote student learning.

- **Byron Stevenson** is a Social Studies Instruction Leader with the TDSB. He is an avid user of ICT and he strives to integrate critical thinking activities in his lessons. He has written Africentric curriculum for the TDSB and he has taught students in the intermediate and junior divisions.
- **Astrid DeCairos** is an experienced classroom teacher and teacher librarian. She has been a member of the TDSB ICT learning community for several years and she has presented workshops on different software programs and learning strategies. She facilitates programs with teachers to highlight critical thinking and literacy skills. Astrid enjoys the arts and she is an environmental leader within the school.

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MAIL ORDER REGISTRATION

Payment must accompany order

Please make cheque payable to OAJE and mail by January 20 to:

OAJE Conference

C/o Charles Sturt University • 860 Harrington Court

Burlington, Ontario • L7N 3N4

Ticket	Quantity	Unit Price	Total
Regular Admission		\$50.00	
Teacher Candidate		\$30.00	
Tickets include a light lunch		Grand Total	

Please indicate preference for breakout sessions

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