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EDUCATION FOR TODAY AND TOMORROW – L'EDUCATION - AUJOURD'HUI ET DEMAIN

THE IMPORTANCE OF TEACHING EARTH SCIENCE

25th ANNIVERSARY 1993-2018

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How has Earth Science become the poor cousin in the STEM-related universe? Has an interest in the natural world, the stuff that lives all around us, deteriorated just like the environment? We're pleased to report that this isn't the case, necessarily. As concern about our planet grows and ice caps melt and green house gases proliferate, schools and teachers are encouraging students to get 'hands on' with the earth's elements. Students can, literally, get their hands-on soil, water, and rocks to name some elements. It is important for students to understand the processes to which these natural elements are subjected, if, in the future, they are to be the stewards of the planet. One simple, effective method, is teaching students to garden, an activity well within the range of most schools, even those that are modestly funded. Earth Science may not be as sexy as some of the other STEM subjects, but its importance shouldn't be understated.

In a slight departure, we are pleased to present a student perspective, one that explores the importance and role of Grade Point Averages (GPA), in assessment and evaluation. Sabina Bacino, a high school junior from Marin County in California, vows that writing essays and taking tests don't contribute positively to her learning. Her point is that too much emphasis has been placed on achieving high marks to the detriment of knowledge acquisition. Marks have become a high stakes game where decisions about desirable universities and beyond and lucrative careers, rise and fall on the GPA. Whereas, any given student is a lot more than the sum of their marks. Some universities realize this and marginalize the GPA in the assessment of student applications.

Referencing universities and further, careers, after leaving formal schooling, we explore career-focused programs and the knowledge and skills required for the very near future. What will be the next significant tech wave and how will it impact the work force? Will it consist of Robotics, Artificial Intelligence, and Virtual Reality? Or something else? Preparing students for future careers is a constantly moving target. We hope this article by Meagan Gillmore will bring some clarity to this important topic.

For those looking to chill out, we have a list of Mindfulness field trips for you to undertake. And we lay out some examples of classroom management apps in Webstuff, tools for the busy teacher (and when are teachers not busy?).

Please check out our latest resources: *The Life and Times of Sir Wilfrid Laurier*, (***www.sirwilfridlaurier.com***), *Suffrage: Canadian Women and the Vote* (***www.canadiansuffrage.com***), *The Road to Confederation* (***www.roadtoconfederation.com***) and *Dystopia 2153* (***www.dystopia2153.com***).

Until next time,
Wili Liberman, Editor
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THE IMPORTANCE OF TEACHING EARTH SCIENCE

IS EARTH SCIENCE STEM'S POOR COUSIN?

by Adam Stone

Earth science has long been the poor cousin of STEM programs. It takes a back seat to technology and even among the straight sciences, rocks and rivers get short shrift alongside the physical sciences—properties of matter, motion, gravity.

"It's the least glamorous, it requires the least specialized equipment, it's not as shiny. And the modern applications of it are less straightforward and less clear," said Michael Walker, a high school teacher at The Village School, a 1,200-student K-12 institution in Houston.

Walker is among those calling for a bigger role for earth science in the STEM curriculum. "Our students have to start making decisions about how we use our resources, and that means they have to know what is there, how is it used and what are the consequences," he said.

Let's look at ways to implement earth science in the K-12 classroom.

Make It Hands On

From a pedagogic point of view, earth science has a big advantage in that it is inherently tangible. The very opposite of abstract or theoretical subjects, it can be talked about in practical terms: water, air, rock. Oceans, meadows, volcanoes. These are the basics of the shared human experience, and teachers can leverage that edge to get kids excited.

"A lot of the topics that are part of an earth science curriculum are relevant to a person's daily life," said Jacqueline Huntoon, provost at Michigan Technological University. She has been helping to develop the new middle school science curriculum Mi-STAR, for Michigan Science Teaching and Assessment Reform.

Her approach relies heavily on hands-on experience.

"In the past students would be asked to memorize 50

different minerals or some set of chemical formulas. That's not really intriguing or interesting to every kid on the block," she said. "We like to start with something tangible and concrete, so that all the students can have a shared experience. We'll look at those 'helicopter' seed pods, for example. When you drop them, they spin. Why do they spin? You can make a model of that. You get the kids to figure out as of much of this on their own, with the teacher as a guide, before you start lecturing about the concepts."

Look at Processes

Earth science can be more than just a summation of facts: It can be a descriptor of processes, a way of understanding how complex actions and interactions unfold in the natural world.

A professor of earth sciences in the School of Science at Indiana University, Gabriel Filippelli has taken this approach in working with high school students and teachers to incorporate earth science into the STEM classroom. He counts the effort a success if kids leave knowing three core processes:

- How climate change causes ocean acidification and what that does to coastal regions
- How lead poisoning impacts neurological development, as seen by following lead through the environment and learning how the body processes it
- Elemental synthesis in stars as a marker of the age of the universe

Taken together, these processes incorporate much of the nature world: physics and chemistry, ecology and astronomy. By teaching processes, he's encouraging kids to synthesize all that they are learning, to begin to develop a large-scale vision of the interrelationship of scientific ideas.

Moreover, the process-based approach helps students to ground the earth science ideas in their own experiences.

"You want to teach the theory, but you also want to show them why these things matter in nature. So you show them how, as the ocean warms, the amount of oxygen in the ocean goes down and what the consequences are of that. Those are the things that students remember in the long term," he said.

Even a modestly funded school can find ways to introduce earth science processes. "One easy thing is species presence or the timing of species arrival, or the timing of first buds. Right there in the school yard they can observe and measure. When I sit here, how many amphibians do I see? What bird species do I see? The teacher then can keep this going over time, and that becomes the core of citizen science. They can reflect on how it changes from year to year," he said.

Observe the processes near at hand, then connect these to larger processes. From there it's a short leap to core concepts of earth science, which in turn can be connected to other topics across the sciences.

Teach Cycles

Just as Filippelli talks about "processes," Walker likes to emphasize "systems" as a way to make earth science come alive.

How do rocks form, change, shift over time? How does water enter the ecosystem, where does it go? "By looking at entire systems, it gives you a useful tool for taking any large, complex idea and breaking it down into manageable components," he said.

"When you first learn about something like plate tectonics, that is a big concept, thinking that the entire surface of the Earth is always moving and being transformed. When students try to think about these big ideas it can be a little bit overwhelming. Turning it into a system makes it a little more accessible, a little less intimidating," he said.

He'll let the kids throw in their own ideas: Let's consider the "system" of soccer, or of a banana. Almost anything can

be slotted in to the basic format, with students asking where it comes from, how it may grow and change, what kinds of outcomes it may generate.

"You can apply the systems approach at multiple scales. One system can be nested within another system. So within the rock cycle you can break down sedimentary rock into a smaller system. Or you could scale up, to see how the rock cycle fits into the formation of the solar system. It's all the same basic kind of thinking," he said.

Dig in the Dirt

"One of the best ways to put earth sciences into any STEM program is to provide students with opportunities to garden," said Donna Grim, principal of Green Valley Elementary School in Danville, Calif.

"Calculating the rate of growth and the many variables found in the growing cycle is an excellent way to incorporate earth science vocabulary, and meaningful hands on activity," she said. "Tools and approaches used can vary but students allowed to experiment can use cameras for documentation, create graphs to compare growth, make iMovies to explain lessons learned and more. The use of technology should be a natural extension of the earth science experience."

Huntoon extends this idea of connectedness, encouraging teachers to help kids interface with their own local ecosystems as a way to engage in earth sciences.

"We have really focused on a place-based approach. We want to make everything we teach relevant to students' lives, so we focus on their local areas as much as possible. This helps to connect them, which helps to make them more informed about how science can help us make good decisions," she said.

In this way, earth science becomes a doorway into a wider understanding of science as a foundational pursuit. "Kids need to use science as a tool to look at problems in their local communities. That's really powerful: Now they know what science is all about and just how powerful it can be as a force for making good decisions," she said.

Go Online

Not surprisingly, the internet offers a range of valuable tools to help educators introduce earth science into the STEM classroom. A few select examples:

- ClimateSim offers a web-based climate change simulator. Advanced high school students can tinker with emissions levels and watch greenhouse gas levels rise. For more on the topic, ***ExplainingClimateChange.ca*** offers a range of teaching materials.

- For the zoological side of earth science, BBC presents NATURE Wildlife, which offers video clips of animals and a detailed exploration of prehistoric life for use with K–12 students.

- Earthquake: Virtual Seismologist Training introduces students to the concepts of seismology, showing how scientists graph and measure seismic activity.

- At Grades of Green, educators can tap into 40+ hands on activities and projects highlighting environmental stewardship.

- NASA's Jet Propulsion Lab offers a number of online resources, including teaching tools to help explain the rising seas and a variety of classroom activities built around space topics.

Advocates say these and other tools can play a vital role in getting kids to explore their surroundings. The tools of earth science can take students beyond the textbook, related basic STEM learning to tangible outcomes and practical experience.

"I don't have anything against pure theoretical chemists, but most of us have to deal with the nuances in the real world," Filippelli said. "When you spill a chemical and it goes into the ground water, organisms take it in at a certain rate. That requires an understanding of how biology and chemicals and earth materials work together—and that is exactly what we do."

A seasoned journalist with 20+ years' experience, Adam Stone covers education, technology, government and the military, along with diverse other topics.

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MORE THAN JUST MY GPA

by Sabina Bacino

I'm Sabina Bacino, a high school junior in Marin County, California, and I'm writing this essay with the hope of improving the education system by modifying the way GPAs are calculated and valued.

The grades that make up a student's GPA are just a tiny portion of what they achieve throughout the year. I can confidently say I have learned the least from taking tests and writing essays, but the most through the process, for example, collaborating with peers. Every day, I continue to learn about what kind of student, learner, and hard worker I am. I have made vast improvements throughout my academic career, but all of my hard work is not reflected on my transcript. I only have a three-digit number.

As dramatic as this may sound, GPAs may be harming students. According to a Penn State University study, "because 'students are faced with a tremendous amount of pressure to get good grades,' there is a significant amount of evidence that 'their mental well-being is at risk,' with the possible risk of suicide and other serious mental health issues."

In addition to being unhealthy, grade obsession can cause students to learn the wrong way. They can become so intent on achieving a high GPA that they forget the sole purpose of education—to learn, understand, and analyze the information taught. When a student prepares for a test using flashcards for example, they may receive a good grade, but the information will quickly leave their mind because they did not actually learn the topic; instead they just memorized terms. If this student wasn't so obsessed with getting a perfect score, they might take time to think deeply about the information and therefore truly comprehend it.

The Penn State University study also found that even though "grades do provide the desirable incentive to perform better, they also cause the undesirable effect of restricting student learning." Grade obsession can alter a student's creativity, as "constantly thinking about what the teacher wants or what the rubric says for a paper injects a fear of not meeting standards for a good grade."

A lot of people believe that achieving a high GPA is the only way to get a high paying job and have a successful future. The problem is that GPA does not accurately measure intelligence. One student could have an 89.9% while another could have 90%. The difference is just 0.1%, but it is also the difference between an A and B; a 3.0 and a 4.0. According to Mercaid.mercyhurst.edu, "Admission counselors from top colleges and universities revealed that a numerical figure such as a GPA is not truly a comprehensive and relevant way to judge an applicant." Swarthmore College, the top ranked private college in the Princeton Review's Best Value rankings, sees GPA as "artificial" so they do not even bother to look at it. While true college applications consist of more than one's GPA, often it is the deciding factor as to whether an admission board continues to look at the rest of the application.

I'm not saying the education system should completely expel GPAs, but there are other factors that should be considered equally important.

For example, many different types of people are intelligent in different ways. Some people are book smart, some are street smart, some are creative or athletic, or have an eye for fashion, even a passion for music. We are all different, so why are we all graded the same?

Students would also benefit more from written feedback than a letter grade. By receiving written feedback, a student can learn from his or her mistakes instead of solely feeling discouraged or rewarded without a valid reason why.

Also, the way GPA is measured should change. If a student has 80%, their GPA should be different than a student with an 89%.

My hope is, that, one day, future generations will have the opportunity to be evaluated and rewarded for all of their talents, not just a small portion of their abilities that make up a GPA.

In closing, I'm currently rocking a 4.0 so this isn't about me. This is about all those students who promise to always try their hardest in spite of their GPA—that has to count too.

Sabina Bacino is a junior high school student in Marin County, California.

Preparing Students for Future Careers

by Meagan Gillmore

If students can't specifically define their career goals, don't think they're avoiding the question. They could just be more aware of the situation than anyone realizes.

Teachers have always tried to make their lessons relevant to the world outside the classroom. High school teachers especially have always been a "lighthouse to look out there and see what's evolving," says Ron Canuel, president and CEO of The Learning Partnership, an organization that helps prepare students for the workforce.

If that's true, teachers are shining the light on an environment of constant change. Today's students are inheriting a world of job disruption. According to a 2016 report from the World Economic Forum, more than 7 million jobs could be lost worldwide between 2015 and 2020. More and more, the jobs available are low-paying contracts, often without benefits and pensions. An aging population means people may work for longer, and need to be re-trained several times throughout the multiple careers they may have.

Granted, anxiety about the future is not new, but today's students face many new challenges. More recent technologies, like 3D printing, cloud technology or devices connected to the Internet, drive many work and labour changes. Unprecedented amounts of information are now available instantaneously, causing information overload and social anxiety.

Gone are the days where students could assume specific education will lead to a specific job. "No one is going to pay these students for what they know anymore," says Peter Cudmore, a high school teacher at Arnprior District High School in Arnprior, ON.

This means educators need to involve students in crafting class assignments and evaluation, says Michael Furdyk, co-founder of TakingITGlobal, an organization that helps educators use technology to help students respond to pressing social issues, like climate change and poverty. If students co-create what they experience in class, they'll be more useful in the workforce. The business world is about outcomes. Employers ask for results, they don't necessarily describe processes, says Furdyk. Students need to be taught to creatively solve problems and work together. Teachers can help by introducing them to current working conditions, teaching them technical skills and equipping them to engage with problems.

"Seeing is believing," says Canuel. The Learning Partnership's flagship program is the annual Take Our Kids to Work Day, where students visit workplaces across Canada. In

to help expose students to more opportunities. Teachers need to visit workplaces with their students, too, says Canuel. This way, they can see for themselves how offices and businesses have changed.

Teachers can also bring businesses to their classes.

Margot Arnold's entrepreneurship class is one students rarely skip. It's not because they're motivated, though many are. It's partly because they can earn money. For the past few years, her students at Weyburn Comprehensive School in Weyburn, SK, have run businesses as part of Junior Achievement Saskatchewan. Junior Achievement's programs around the world prepare students for the workforce and connect students with volunteer mentors from local businesses. Arnold's students create original businesses. They write business plans and develop compensation scales, create products, attend trade shows, and, donate 15 percent of their earnings to a local charity. Classes have made items like popcorn seasonings and mixes for baked goods. At the end of the semester, they deliver a final shareholders' report and receive money based on the compensation they determined.

> **… many educators seem unaware of how much robotics is rapidly changing the workforce across industries.**

They also learn about the importance of personal values and teamwork. Each company must have a stated vision and values, an exercise that is informed by the students' own personal values. They create executive teams. They make mistakes and learn to solve problems together.

Arnold wants students to understand the logistics of running a business—writing plans, attending formal meetings, engaging with customers—and the interpersonal skills like cultivating a hard work ethic and positive attitude. Employees can control these skills, regardless of their employer or workplace, she says.

Still, teachers need to make sure students are up-to-date about emerging technologies, like robotics.

Peter Cudmore has helped with his school's *FIRST Robotics* team for eight years, and taught a robotics class for four. The club came first. So many students were engaged with it and creating such great work, that the administration thought they deserved school credit. Each year, students build robots based on the challenge developed by *FIRST Robotics Canada*. Industry mentors provide them with resources. The robots compete in sport-based events against robots developed by other teams.

"The joke is that we're the only high school sport where everyone can go pro because there's more jobs than there

are people who are capable of filling it," says Cudmore. Even students with little interest in engineering or science participate. Some use their writing skills to create fundraising materials. Artistic students design team T-shirts.

The vast appeal of robotics doesn't surprise Dennis Kambeitz, founder of *robots.education*, an organization that teaches robotics to elementary and secondary schools through presentations and camps. What does shock him is how many educators seem unaware of how much robotics is rapidly changing the workforce across industries. Kiosks have replaced counter staff at fast food restaurants. Drones are being tested to provide medical response to people who have had heart attacks. He has met fashion industry workers who list 3D printing as a top skill for their occupation.

"Anyone who is graduating from our high schools without robotics literacy is going to have a hard time finding a job," says Kambeitz. Robotics, he says, isn't just about building robots, or even artificial intelligence. Robotics is a literacy, a layer that will influence all parts of society and jobs, he says. Robotics will be in the future what computer technology is now—something that impacts every part of life and work, whether or not people are trained to exclusively work with them. As robotic applications become more common in workplaces, the most successful managers and workers will be those who understand how to use robotics well. Giving students the tools to understand, robotics will only increase what they bring to workplaces, he says.

But despite technological changes, the workplace will always contain people. Students must learn to work together, and not just on projects or products. Research bears this out. The same World Economic Forum report that predicts a staggering loss of jobs, also highlights the need for specialized sales representatives who can explain new products to potential buyers, and managers who are adept at leading organizations through rapid change.

Students need to learn that problem-solving involves working with people. At TakingITGlobal, Michael Furdyk and his team provide assistance to educators who use technology to help students tackle large social problems like climate

change. The organization has recently partnered with the Canadian government through the Canada's Service Corps to give grants to help students start organizations to make positive social change. Students don't have to just use technology to make media giants like Facebook, says Furdyk. They can also create effective charities.

Perhaps the greatest problem students will encounter in the workplace is one the education system has helped create: fear of failure. The emphasis on differentiated learning hasn't always helped students, says Cudmore. Learning opportunities that appealed to each students' specific strengths and interests can contribute to a mindset where students believe they are only good at few things. They ignore their ability to learn new skills because they want to do what they're good at. This doesn't promote a growth mindset that learns from mistakes.

Perhaps the best way teachers can prepare students for the ambiguous, changing workforce is to engage with it themselves. Kambeitz says he can explain the importance of robotics in layman's terms because he's not a roboticist or an educator. He learned about the power of robotics when he had a production company making promotional videos about good vacation spots. Cudmore studied physics in university and some programming—but nothing with robotics. "All the skills I have, I didn't have eight years ago," he says, noting he constantly needs to learn: in his time with the robotics club, he has used five different motor controllers. Even his students who pursue robotics after graduation will likely have to learn new technologies and that is why he doesn't think focusing on one specific tool or program is helpful. "Learning a specific language isn't what's useful," he says. "It's learning what it means and what problems you can solve with it."

Even teachers whose own career paths seem straightforward have adapted their roles. Margot Arnold has always loved business and teaching, so teaching students about business seemed a natural fit. But she used to teach her entrepreneurship class with a textbook and had students make hypothetical business plans, not run actual businesses. Implementing the Junior Achievement program meant she had to learn to step back and guide her students through solving problems instead of handing them the answers. Arnold begins each semester by having students list their goals so they can see how they change during the course. "You shouldn't be the same person you walked in at the beginning of the semester as you are walking out," she says. The same could be said of teachers.

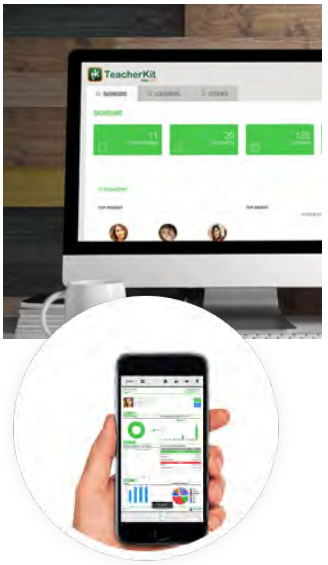
Meagan Gillmore is a freelance writer in Toronto, ON.

Classroom Management Apps

In a teacher's day-to-day schedule, there is a tremendous amount of information to keep track of—countless things to teach, learn, and manage. One of the most important areas to master is classroom management. If there is a loss of control in the classroom, nothing else will unfold as it should. Here are a few apps that might make management a simpler task.

TeacherKit
(iOS and Android – Free)

With over a million users worldwide, TeacherKit is a free personal organizer for educators. It allows for the tracking and monitoring of the classroom seating, schedule, attendance, grades, and behaviour of students. The logging of all of this information in one convenient, user-friendly place can definitely make the school day a little easier.



ClassDojo
(iOS and Android – Free)

This free iOS app makes it easy to keep students attentive and on-task. Incorporating fun, colourful animations, this app allows teachers to record behaviours and accomplishments of students right in class. Through the app, teachers can improve student behaviour and engagement by encouraging skills such as "working hard" and "teamwork", and by recording and awarding feedback. ClassDojo also makes learning part of a bigger, meaningful community. Teachers can bring parents into the classroom by sharing photos, videos, and announcements. Teachers can also instantly message with parents through the app.

Too Noisy Pro
(iOS and Android
– Under $6)

This app is a simple, engaging tool that helps teachers keep the classroom noise levels under control. Too Noisy Pro graphically displays the background noise level in a room in a fun way. The app also allows for the adjustment of the acceptable noise level in the classroom, depending on the activity. When the noise level is exceeded for more than 3 seconds an audible alarm is sounded. The app also appears to shatter the screen of the device, and a counter, displayed on the noise meter, increases by one—keeping track of the number of incidents that were just "Too Noisy".

Teacher's Assistant Pro
(iOS – $8.49)

Featured in USA TODAY as one of the best teacher apps, Teacher's Assistant Pro allows teachers to keep track of student actions, behaviours, and achievements in the classroom. The app stores the name of the action/ behaviour, the date and time, where it occurred, attached photos, a detailed description, the teacher action that was utilized, and whether the parent had been notified. Data can be shared with other Teacher's Assistant Pro users via email, Dropbox, or backup your data in iTunes.

SUFFRAGE:
CANADIAN WOMEN AND THE VOTE

CURRICULA

FOR GRADES
9 TO 12

The following is a lesson plan excerpt from *Suffrage: Canadian Women and the Vote*, an interactive graphic novel and resource. To see the full lesson plans or to learn more, please visit ***canadiansuffrage.com***.

LESSON 3:
Suffragist versus Suffragette

Canadian suffragists worked toward achieving their goals of suffrage for women by trying to influence the general opinion of the public, primarily politicians. Their efforts were mostly peaceful and always within the boundaries of the law. This was not true of suffragists in Britain and the United States during the same time period. Some American suffragists engaged in acts of civil disobedience; some British suffragists, popularly known as suffragettes, engaged in violent acts as well as protest. Many of these women were arrested and incarcerated.

It is tempting to simply frame Canada as a kinder, gentler, law-abiding nation when trying to explain the difference in the approach of suffragists to getting the vote, but the reality may, in fact, be more complex. Encourage students to look at the suffrage movement(s) in each country and compare some of the following: The level of unity within the movement(s); The extent of racism within the movement(s); The reasons behind the struggle for suffrage; The level of frustration within the movement(s); The reasons different methods were chosen and their effectiveness; The effect of the First World War; The effect of changing suffrage laws in other countries.

SUBJECTS

Citizenship, Global Citizenship, Canadian History, Social Studies, Political Studies

DURATION

3 to 4 classes

KEY VOCABULARY

Franchise: the right to vote

Suffrage: the right to vote in political elections

Suffragist: a person who supports or recommends extending the right to vote, especially to women

KEY CONCEPTS AND ISSUES

Canada had some similarities with other democracies at the time. It was strongly influenced by Britain's legal system and worldview, as well as the politics, economy, attitudes and ideas of its southern neighbor, the United States. Canada, however, was a distinct society shaped by its own unique history and people. Comparing the similarities and differences between the Canadian suffragists approach to winning the vote with those of the United States and Great Britain may help students gain a better understanding and insight into our country and its history.

Students will consider these questions: How long did it take for suffrage to be won in Canada? In America? In the United Kingdom? What was the effect of the First World War on suffrage in Canada? America? The United Kingdom? How were suffragists in Canada, Great Britain, and the United States similar or different in their views, approaches, and methods of achieving suffrage? What do these differences reveal about attitudes and culture of these societies?

Students will apply what they have learned as they discuss civil disobedience, and create podcasts or YouTube videos that reveal comparisons between suffragists (and suffragettes) who advocated a variety of approaches to achieving their goals.

EXPECTATIONS/OUTCOMES

Students will:

- Discuss the methods with which Canadian suffragists attempted to get the vote;
- Examine the effect of media on society then and today and the role it played in promoting the suffrage cause;
- Examine the difference and similarities in views, approaches, and methods of achieving suffrage by suffragists in Canada, Great Britain, and the United States, including words (letters, posters, petitions, articles, etc.), group protests, rallies, acts of civil disobedience, violent acts;
- Compare how, and when, suffrage was achieved in Canada, Great Britain, and the United States;
- Draw conclusions from these comparisons, such as analyzing what, if any, these differences and similarities reveal about attitudes and cultures of different societies.

MATERIALS REQUIRED

- *Suffrage: Canadian Women and the Vote* graphic novel
- Computers or devices with Internet access
- *http://thecanadianencyclopedia.ca/en/collection/womens-suffrage-in-canada/#*
- Materials as required for the preparation of podcasts and YouTube videos

BACKGROUND

Although there was a national suffrage organization in Canada, many women allied with their local and provincial organizations to fight for municipal and provincial voting rights. There was a common will and goal among women, but not much of a united front towards achieving suffrage.

In the struggle for suffrage, Canadian women rarely stepped outside the law. They chose to pressure parliament for change. They tried to educate both legislators and the public to change attitudes and beliefs. They used methods such as petitions, meetings with politicians, lectures, speaking engagements, public meetings, and a variety of public events. They set up organizations and leagues. They largely depended on peaceful campaigning,[1] and as a result, were not jailed or met with violence by police or those opposed to their stance.

According to historians however, the suffrage movements in Britain and the United States were the most powerful among the movements simultaneously occurring in European countries, as well as Canada, Australia, and New Zealand. The reason being, a strong press and laws that favoured association between organizations. They shared some of the same approaches and methods as Canadians, but there were differences.

For example, in the United Kingdom, the suffrage movement was always united in its focus on gaining the parliamentary vote. Racism was not too pronounced within the British suffrage movement, however, there was a wide class gap. In 1918, women in Britain were finally given the vote, but only those who were over 30 and owned property in Britain. (Universal suffrage did not come until 1928.)

In Britain, many small groups joined together to form the National Union of Women's Suffrage Societies (NUWSS) that united women across the country and raised the country's awareness of the suffrage issue.[3] The NUWSS

organized a huge protest in 1907, known as Mud March that was attended by thousands of women.

When media and politicians began to lose interest in the suffrage cause and the momentum lost energy, Emmeline Pankhurst began and led a separate militant organization of suffragettes, known as the Women's Social and Political Union (1903-1917).[4] Its slogan was, "Deeds, not words." To shock the nation into taking the issue seriously, Pankhurst encouraged violent action. The suffragettes' methods included smashing shop windows, burning unoccupied houses and churches, and bombing public buildings. They sent letter bombs and cut telephone lines. Between 1906 and 1914, there were 1214 court appearances by suffragettes. In 1921, 240 people were sent to prison for militant suffragette activities.

The WSPU did win attention for the cause, but also lost the support of many who had joined the movement. Although many credit Pankhurst with helping achieve women's suffrage in Britain, historians point out that it was the NUWSS that ended up working with the government.

In the United States, many women believed the best approach meant winning suffrage state by state. Then, just before 1900, the movement reunited in an effort to win the federal vote. Racism was more evident in the American suffrage movement. There was an early split in the national suffrage organization over whether to support the 15th Amendment against racial discrimination on the path to women's rights. Black women ended up forming their own suffrage movement.

Many suffragists in the United States advocated a non-violent approach, perhaps because many of the suffragists were Quakers and pacifists, but some did advocate militancy. For example, in 1910, Alice Paul, a Quaker, returned from a trip to Britain inspired by the tactics of Emmeline Pankhurst and formed a separate suffrage organization, the National Women's Party. Its tactics were more militant. For example, the National Women's Party organized mass parades and demonstrations, and put on spectacular pageants. They organized a daily picket (except for Sundays) of the White House, something that no other group had ever done. They kept this up for a remarkable year and a half, from 1917 until mid-1919; they were often confronted with violence from onlookers. As well, many of the picketers were arrested and placed in solitary confinement. This prompted a new strategy, hunger strikes, that in turn, led to beatings and force-feedings. In 1919, they burned an effigy of the president.

The work of suffragists in Great Britain and the United States definitely inspired and influenced Canadian suffragists. In 1889, after an inspirational visit from prominent American suffragist, Dr. Anna Howard Shaw, Canadian doctor, Emily Stowe, created the Dominion Women's Enfranchisement Association. Well-known American suffragist, Susan B. Anthony visited later that year to address the group. In 1909, the International Council of Women meeting was held in Canada and activists from across Europe and North America attended. Emmeline Pankhurst and fellow British suffragist Ethel Snowden also visited Canada more than once to give stirring speeches and encourage women to join the struggle.

The First World War played perhaps the most significant role in finally precipitating suffrage in many countries caught up in the conflict, including Denmark, Austria, the Netherlands, Germany, Russia, and Sweden. Women's involvement on the home front and overseas, as volunteers and nurses, changed public attitudes about the role and abilities of women in general. As the War progressed and various countries began to legislate women's suffrage, other countries felt increased pressure to follow suit. For this reason, and because of Prime Minister Borden's own political reasons for supporting the cause, suffrage for some women (Quebec women were excluded) was temporarily legislated within Canada during the War years. In 1919, directly after the war's end, the majority of Canadian women attained suffrage.

Although women in the United States began achieving suffrage state by state, beginning with Washington in 1910 and California in 1911, Oregon, Kansas, and Arizona in 1912, and Illinois in 1913, they did not achieve national suffrage until 1920. It was not until 1928 that women in England gained universal suffrage, equal voting rights to men.

STEP ONE: TEACHER-LED DISCUSSION

Review with students the methods with which Canadian suffragists attempted to get the vote. Have them refer to specific pages in the graphic novel "*Suffrage: Canadian Women and the Vote*" to provide evidence. Discuss the reasons why Canadian women chose these particular methods.

Discuss the power of words and the role of the media in the suffrage movement. Ask students: *How effective were the words that Canadian suffragists used in achieving their goal? How did the Canadian suffragists eventually achieve their goal?*

The Canadian media splashed stories of the violent methods of the British suffragists across the front pages. Ask students: *What do you think was the effect of this on members of the Canadian suffrage movement and on the public?*

Discuss the various forms of media today (newspapers, magazines, radio, Internet, television, social media) and the power of media in influencing attitudes and affecting policies and changing laws. You might want to discuss with students the role of social media during the Arab Spring.

STEP TWO: CIVIL DISOBEDIENCE FACE-OFF

Have students define the term "civil disobedience:" purposeful disobeying of laws as for moral or political purposes. Tell them it is usually nonviolent.

Have students suggest potential examples of civil disobedience (sit-ins in government or private offices; blockades of roads; refusing to pay taxes or fines; hunger strike; going against a curfew; shackling oneself to a tree or fence so as not to be moved).

Provide them with several historical examples, such as the Boston Tea Party, 1772 (Sons of Liberty refusing to pay a British tax on tea and dumping the tea in the harbour); the Salt March, 1930 (when the British placed such high taxes on Indian salt that Indians couldn't afford it, Gandhi led a march of protestors to produce it and sell it, that was illegal at the time); Greensboro sit-in, 1960 (four Black students had a sit-in at the "whites-only" lunch counter Woolworth's store in Greensboro, North Carolina in 1960).

Have students relate what laws the protestors broke, what risks they may have run engaging in the action, and why they did it.

Have pairs of students discuss with each other their own views about civil disobedience, including whether it is ever warranted; if so, why, and if not, why not.

STEP THREE: COMPARING SUFFRAGE MOVEMENTS

Read students the following quotes and ask for, and discuss, their responses:

American Black rights activist Sojourner Truth, advocating direct action (late-1800's):

> "If women want any rights more than they's got, why don't they just take them, and not be talking about it?"

Canadian Lillian Beynon Thomas, in a 1944 letter:

> "We resented very keenly the fact that some English women came out and tried to stampede us into taking violent methods. We had not yet used peaceful methods and we refused to do anything violent until we had. We did not need anything like that."

Emmeline Pankhurst, February 16, 1911:

> "The argument of the broken pane of glass is the most valuable argument in modern politics."

Morning Post (a London newspaper), March 2, 1912, at the height of the WSPU's window-breaking campaign:

> "Nothing could indicate more plainly their lack of fitness to be entrusted with the exercise of political power."

Tell students that some suffragists used civil disobedience, including violence, during the struggle to get women the vote.

Divide the class into thirds. Assign each group, the Canadian suffragist movement, the American suffragist movement, or the British suffragist movement, and have group members research:

- Whether all, some, or none of the suffragists in this movement participated in acts of civil disobedience or violence
- If they did, what these acts were, why they were undertaken, (i.e., frustration/anger, for shock value, to motivate others to act) and the results
- If they did not, why not, what alternative methods they used, and the results
- Have them share, and compare, their results with the class. Ask, what do these differences reveal, if anything, about attitudes and culture of different societies?

STEP FOUR: COMPARING INDIVIDUAL SUFFRAGISTS

Have students consider the role of individual suffragists within larger movements, especially the leaders. Ask: *Why would certain women become leaders? Who might these women be (economic status, educational status, attributes or privileges, oppressions)?*

Have students consider their attitudes about how to effect change, and their influence on others. For example, have them reread the section in the graphic novel Suffrage: Canadian Women and the Vote about Flora Dennison, pointing out her interest and support of Emmeline

Pankhurst. Ask: *Why did the Canadian Suffrage Association force Dennison to resign as president in 1914?*

Have student pairs research three prominent suffragists, one Canadian, one American, and one British. They will note the main events in their lives and times; whether they were maternal feminists or equal-rights feminists; why each decided to use/not use militant direct-action tactics (for example, American Alice Paul encouraged non-violent methods, such as mass marches and hunger strikes; British Emmeline Pankhurst promoted violent methods, such as bombings and breaking of windows), and how they influenced others. (They will use this research further in Step Five.)

(To help them choose a Canadian suffragist, they may wish to access this website: *http://thecanadianencyclopedia.ca/en/collection/womens-suffrage-in-canada/#* that provides information about 38 Canadian suffragists.)

Gather as a class and invite students to make comparisons between the individual suffragists and their role in the suffrage movements.

STEP FIVE: SHE SAID-SHE SAID

Tell students they will use their research from Step Four to create a mock podcast or YouTube video. Students will write a script in which they "interview" their three research subjects. They ask questions and prepare answers to allow the interview subjects to explain the contexts, worldviews, and motivations. They will prepare the material as a mock podcast or YouTube video and share it with the class.

After the presentations, have a class discussion, asking for responses to this question: how has researching these individuals provided us with greater insight and understanding into women's suffrage in Canada and our country in general?

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Mindfulness Workshops for Educators

There are many benefits to the practice of mindfulness. Some schools across Canada have already introduced mindfulness activities into classrooms with positive results in the lives of students. The first step to include mindfulness into schools, is to provide training to teachers. Here are just some of the many mindfulness educator workshops offered in Canada.

Mindful Foundations
This 4-week Mindful Foundations course was created with the intention of reaching out to people and encouraging them to live their lives to the fullest. Located in Barrie, Ontario, Mindful Foundations is an ideal course for individuals wanting to start a mindfulness practice, or for people who want to strengthen their foundation in mindfulness. This course, based on the work of Jon Kabat-Zinn, combines stress management theory, interactive group discussions, mindfulness principles and practices, gentle stretches, and home practices. To learn more, visit ***www.coachambermcauley.com***.

smartEducation
smartEducation, a 9-session renewal program, is an evidence-based program designed to address the needs of K-12 educators and professional support staff. Originally developed in the US, it is now managed by smartUBC, a not-for-profit unit of the University of British Columbia, and coordinated through the Faculty of Education, UBC Okanagan campus. The training involves experiential activities in mindfulness that promote concentration, attention, awareness and understanding of emotions, empathy, compassion, and positive interpersonal communication. Weekly meetings include presentations and group discussions. Read all about the program using the search term smartEducation at ***www.education.ok.ubc.ca***.

Mindful Schools
The Mindful Schools' year-long certification program is designed for educators interested in deepening their personal practice and becoming leaders in their school communities. The objectives of the program focus on deepening one's personal mindfulness practice, to become a more skilful and embodied facilitator of mindfulness in youth-service oriented environments, and to join a large network of leaders integrating mindfulness in their work with young people around the globe. The program includes, interactive online 10-month training, and a week-long retreat at the end of the program. They also offer group rates and benefits to support schools and organizations, and have instructors located in various locations across Canada. Check out the closest location at ***www.mindfulschools.org***.

The Centre for Mindfulness Studies
The Centre for Mindfulness Studies offers various mindfulness programs. They offer mindfulness for beginners—a full-day immersive workshop that acts as a great starting point. Participants learn how to establish mindfulness practices, learn about resources used to regulate stress, and also have open discussions about mindfulness and meditation practices. They also offer intensive training on how to teach mindful self-compassion in a 6-day program, located in Toronto. This is intended for those who wish to integrate mindfulness in their own professional activities. The Centre for Mindfulness Studies offers other personal programs that can be found in different locations in Canada all year long. They offer mindful programs for self-compassion, stress, and anxiety. They also feature mindfulness in twenty-minute drop-in sessions. Learn more at ***www.mindfulnessstudies.com***.

Practical Wellbeing
Located in Calgary, Practical Wellbeing offers an 8-week mindful self-compassion program in which participants learn to understand and practice self-compassion. Mindful self-compassion is a skill that involves learning to respond to life's difficulties and challenges with emotional strength and resilience. Workshop activities include experiential exercise, meditation, discussions, and home practices. Read more at ***www.practicalwellbeing.ca***.

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