



DURHAM DISTRICT SCHOOL BOARD

This Meeting Will Be Live Streamed

NOTICE OF MEETING

Standing Committee PUBLIC SESSION

7:00 p.m.

Monday, June 3, 2019

BOARD ROOM

Chairperson:

Carolyn Morton

Vice-Chairperson:

Darlene Forbes

Liaison Superintendent:

Director Lisa Millar

Recording Secretary:

Kim Cox

DATE: Monday, June 3, 2019

TIME: 7:00 p.m.

LOCATION: Education Centre

ROOM: Board Room

ATTACHMENTS: Agenda

Copies to:
All Trustees
Director of Education
All Superintendents

**STANDING COMMITTEE MEETING
OF THE
DURHAM DISTRICT SCHOOL BOARD
Monday, June 3, 2019 – 7:00 p.m.**

	<u>PAGE</u>	<u>TIME</u>
1. <u>Call to Order</u>		
2. <u>Declaration of Interest</u>		
3. <u>Motion to Approve Agenda</u>		
4. <u>Community Presentations</u>		
5. <u>DDSB Presentations</u>		
(a) Engagement Annual Report (Superintendent Heather Mundy)	1 – 4 & Under Sep.Cover	7:00 – 7:15
(b) Indigenous History Month (Superintendent Mohamed Hamid)	5 – 8	7:15 – 7:30
(c) Maxwell Heights SS – Recipient of EQAO Dr. Bette. M. Stephenson Recognition of Achievement Award (Superintendent Jamila Maliha)	9 – 12	7:30 – 7:45
(d) Ontario Tech University (OTU) Engineering Outreach Specialist (EOS) (Superintendents Silvia Peterson/ Anne Marie Laginski/Jamila Maliha/ Mohamed Hamid)	13 – 20	7:45 – 8:00
6. <u>Recommended Actions</u>		
7. <u>Information Items</u>		
(a) Student Trustee Report (Student Trustees Sally Meseret/ Tyler West/Risann Wright)	Verbal	

	<u>PAGE</u>	<u>TIME</u>
7. <u>Information Items (Continued)</u>		
(b) OPSBA Report (Trustee Donna Edwards)	Verbal	
8. <u>Committee Reports</u>		
(a) Equity & Diversity Ad Hoc Committee Meeting of May 28, 2019 (Trustee Patrice Barnes)	Verbal	
9. <u>Correspondence</u>		
10. <u>Other Business</u>		
11. <u>Adjournment</u>		

ADMINISTRATIVE REPORT

REPORT TO: Durham District School Board

DATE: June 3, 2019

SUBJECT: Engagement Annual Report

PAGE NO. 1 of 4

ORIGIN: Lisa Millar, Director of Education
Heather Mundy, Superintendent of Education

1. Purpose

To provide Board of Trustees with information on the activities of the Durham District School Board Engagement Portfolio for school year 2018-2019.

2. Ignite Learning Strategic Priority/Operational Goals

This report supports the goals outlined in the Ignite Learning Strategic Plan in the following ways:

Well-Being – *Create safe, welcoming, inclusive learning spaces to promote well-being for all students and staff*

- Providing parents/guardians sessions on supporting welcoming and inclusive schools

Equity – *Promote a sense of belonging and increase equitable outcomes for all by identifying and addressing barriers to success and engagement*

- Collaborating with equity department to provide resources/information on equity initiatives for parents/guardians

Engagement – *Engage students, parents and community members to improve student outcomes and build public confidence*

- Gathering parent/guardians voice through Parent Involvement Committee/ Ignite Learning Survey and exit tickets from events

3. Background

The Engagement Portfolio supports the DDSB Engagement Priority to engage students, parents, and community members to improve student outcomes and build public confidence. Engagement works collaboratively with Parent Involvement Committee, Parents as Partners Committee and other departments to promote and provide sessions for parents/guardians which increases student success.

4. Analysis

4.1 Parent Involvement Committee

The Parent Involvement Committee (PIC) provides the school board with information and advice to help engage parents. The PIC undertakes activities to help parents support their children's learning at home and at school. They also share information with and support School Community Councils.

The PIC was integral in the success of the Volunteer of Distinction Ceremony in October 2018. The Parent Involvement Committee has supported three Regional SCC Nights (November 2018, February 2019 and May 2019). The PIC also supported the annual Parents as Partners Symposium held at Maxwell Heights Secondary School in April 2019.

Appendix A – Parent Involvement Committee Year End Report

4.2 Parents as Partners Symposium

The Parents as Partners (PAP) committee developed, planned and executed a very successful K to 12 parent and student symposium, “Igniting Imagination, Inquiry and Innovation” on April 13, 2019. The PAP committee is comprised of parents, teachers and administrators who meet regularly to coordinate this event that had more than 350 participants including parents/guardians, students and community members. The annual event was held at Maxwell Heights Secondary School this year, where staff and students went above and beyond to volunteer during the actual event.

The keynote speaker Michael Furdyk, co-founder of TakingITGlobal (www.tigweb.org) provided an engaging and informative session on the importance of global competencies and empowering our youth through digital tools. Positive feedback was provided throughout the day not only on the keynote but also on the variety and quality of the parent and student workshops which were selected based on the DDSB Ignite Learning Core Priorities.

The PAP Symposium modeled leveraging digital. Chromebooks were available for day of registration and volunteers had access to live registration updates to assist participants. This was possible through a Parents as Partner’s Website which was created for registration by one of our DDSB Technology Coaches. This website provided graphics and workshop descriptions and an online format for parents/guardians to register. www.bit.ly/PARENTSASPARTNERS2019

4.3 Collaborative Parent/Guardian Events

The Engagement portfolio has worked with other departments to promote and support events for parents and guardians. These events include:

- “Guidance for Higher Studies and Career Information Workshop 2019” (Association of Sri Lankan Graduation of Canada & Durham Educators’ Network for South Asians and DDSB Engagement) on March 30, 2019

- “Together We Are” Family Empowerment Program for Black Families (Ministry of Community and Social Services, John Howard Society of Durham Region, Side-by-Side Access Services and DDSB Engagement) during February – April 2019
- “Identity Matters – Connect, Learn, Thrive” (DDSB Engagement, DDSB Equity, DDSB Inclusive Student Services) on May 2, 2019
- “Connection is the Key: The Power of Positive Caregiver-Child Relationships” (DDSB Engagement, DDSB Well-Being) on May 14, 2019

4.4 School Based PRO Grants

Engagement supports schools in executing parent engagement initiatives utilizing the PRO Grant funds provided by the Ministry of Education. 102 DDSB schools received PRO Grants in 2018-2019. These grants allowed School Community Councils to increase parent/guardian engagement through a variety of activities meeting the needs of their individual school communities.

Appendix B: PRO Grants 2018-2019 Brochure

5. Financial Implications

The Ontario Ministry of Education provide \$101,275 in school based PRO Grants and \$7500 in Regional PRO Grants (Durham Educators’ Network of South Asians). Other initiatives were supported through the Engagement portfolio.

6. Evidence of Impact

Engagement has worked collaboratively with other departments to provide sessions for parents/guardians. There has been consistent participation and positive feedback from events.

7. Communication Plan

The Parent Involvement Annual Report and Ignite Engagement Video will be posted to the DDSB website.

8. Conclusion

This report has been provided to the Board of Trustees as information including the Annual Parent Involvement Committee Report as per DDSB Regulation #1220 and Ontario Regulation 330/10.

9. Appendices

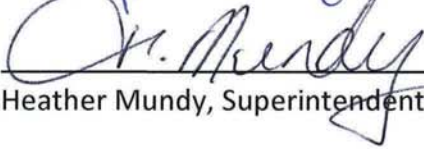
Appendix A – Parent Involvement Annual Report for 2018-2019

Appendix B – DDSB PRO Grants Brochure 2018-2019

Report reviewed and submitted by:



Lisa Millar, Director of Education



Heather Mundy, Superintendent of Education

ADMINISTRATIVE REPORT

REPORT TO: Durham District School Board**DATE:** June 3, 2019**SUBJECT:** Indigenous History Month**PAGE NO.** 1 of 4**ORIGIN:** Lisa Millar, Director of Education
Mohamed Hamid, Superintendent of Education**1. Purpose**

In recognition of Indigenous History Month, the purpose of this report is to share with the Board of Trustees two of the initiatives the Indigenous Education Department has undertaken to support the implementation of the Truth and Reconciliation Calls to Action for educators, the implementation of the updated Social Studies, History and Grade 10 World Studies curriculum and the specific supports for Indigenous students.

The Indigenous Culturally Relevant and Responsive Pedagogy (CRRP) projects and Indigenous Leadership and Pathways Exploration Gathering will be highlighted. These initiatives reflected the Durham District School Board's commitment to reconciliation and Indigenous student success and well-being.

2. Ignite Learning Strategic Priority/Operational Goals

Well-Being - Create safe, welcoming, inclusive learning spaces to promote well-being for all students and staff.

- Indigenous students were provided with experiences that allowed them to deepen their understanding of identity and a sense of belonging as they connected with Elders, Knowledge Keepers and the Indigenous resources and supports.

Equity - Promote a sense of belonging and increase equitable outcomes for all by identifying and addressing barriers to success and engagement.

- As a result of the Indigenous culturally relevant and responsive learning opportunities provided, Indigenous students see themselves reflected and gain an increased sense of pride.

Success - Set high expectations and provide support to ensure all students and staff reach their full potential every year.

- Both the Indigenous CRRP Projects and Indigenous Leadership Program provide opportunities for Indigenous student to engage in rich learning opportunities that equip them with transferable life skills to enhance their career path development and post-secondary pathways planning.

3. Background

Indigenous Culturally Relevant and Responsive School Projects

This year the Indigenous Education Department invited schools to participate in Indigenous Culturally Relevant and Responsive School Projects. Within these projects, school teams engaged in deep learning about Indigenous content and pedagogy and are leading their colleagues and school communities in creating culturally relevant and responsive learning environments that embrace reconciliation and support the implementation of the update Social Studies/History and World Studies curriculum.

Indigenous Leadership and Pathways Exploration Gathering

Through the Ministry of Education grant funding and a partnership with Student Success, the Indigenous Education Department offered its second annual 4 day/3-night Indigenous Leadership and Pathways Exploration Camp from May 21 to May 24. Indigenous students in Grades 8-12 explored post-secondary pathways at Fleming College and Trent University with integrated Indigenous cultural learning opportunities.

4. Analysis

Indigenous Culturally Relevant and Responsive Pedagogy Projects

19 Elementary schools and 6 Secondary schools are currently involved in the Indigenous CRRP Project. Each school-based team includes 3-5 teachers and an administrator. Involved schools have a high Indigenous self-identification population and a keen interest in Indigenous education. Participating schools have committed to 2 years of learning about and effectively leading Indigenous education in their schools.

Indigenous CRRP Project Goals:

- Provide teacher-driven professional development that deepens teacher knowledge of Indigenous histories, contribution and perspectives through a coaching model of support.
- Enhance teacher capacity to support Indigenous learners and reconciliation through the integration of Indigenous content, resources and pedagogy.
- Build internal leadership and program sustainability through collaboration and knowledge sharing.
- Enhance the creation of an inclusive and safe school environment that is reflective of Indigenous students' lived experiences.

All Indigenous CRRP schools have participated in Indigenous Cultural Competency training and a variety of individualized school-based professional learning opportunities that reflect the school's readiness and entry level. Schools have participated in school-based book clubs lead by the Indigenous Education Department, Lunch and Learns, staff meeting presentations and have welcomed numerous Indigenous guests to support and guide the learning. All Indigenous CRRP

teams work in partnership with the Indigenous Education Department. The Indigenous Officer, Facilitator and Coach provide ongoing mentoring, coaching, co-planning and co-teaching opportunities to all participating school.

Indigenous Leadership and Pathways Exploration Gathering

40 Indigenous students from across the DDSB participated in the second annual Indigenous Leadership and Pathways Exploration Camp from May 21-May 24, 2019. This experience connected Indigenous youth from all areas of the DDSB and helped to foster the building of community and provide students with an opportunity to find and share their voice. Students were provided with experiences that allowed them to deepen their understanding of identity and sense of belonging as they connect with Elders, Knowledge Keepers and the Indigenous resources available at the 2 Post-Secondary Institutions, Fleming College and Trent University.

This 4-day gathering was co-designed with input from, Indigenous students, Indigenous community partners and the DDSB Indigenous Education Advisory Circle. Programming was culturally relevant and responsive to traditional, land-based practices essential for Indigenous student leadership and exposed students to post-secondary pathways opportunities. Students were provided a unique opportunity to learn from traditional knowledge keepers, Elders, mentors and peers. This assisted them in developing transferable life skills to enhance career path development.

Students participated in Indigenous ceremonies, land-based learning, visited the Petroglyphs, heard from influential Indigenous leaders, engaged in learning alongside Knowledge Keepers and Elders and toured and experienced programs at both post-secondary campuses including culinary arts and Health Sciences. Returning students became leaders and peer resources for students attending for the first time.

Educators involved in the programming gain experiential knowledge of Indigenous cultures, histories and current leadership practices that support Indigenous student engagement, success and well-being.

5. Financial Implications

Indigenous Culturally Relevant and Responsive Pedagogy Projects are funded through the Indigenous Education Board Action Plan funding.

Indigenous Leadership and Pathways Exploration Gathering is financially supported through the Ministry of Education grant funding and Student Success support.

6. Evidence of Impact

Indigenous Culturally Relevant and Responsive Pedagogy Projects

- 25 schools involved in Indigenous CRRP Collaborative Inquiry

- Surveys indicate 80% of teachers involved “agree to strongly agree” that they feel more comfortable and prepared to deliver Indigenous content in their classrooms.
- Changes in classroom pedagogy have been observed through coaching and Indigenous Education Department ongoing involvement, including:
 - teachers engaging in inquiry around the land acknowledgment with students
 - learning on the land
 - exploring social justice issues
 - partnerships with Indigenous Knowledge Keepers

Indigenous Leadership and Pathways Exploration Gathering

Following the 4-day Leadership Gathering, students will have follow up meetings with the Indigenous Coach and Facilitator to debrief the experience and finalize their recommendations for Indigenous and decolonizing education.

Students completed a post-survey to determine if there has been a change in how they feel around post-secondary opportunities access to culture, supports, connection to school community, representation in curriculum, wellbeing and identity.

Student voice was collected throughout the gathering.

7. Communication Plan

Indigenous Culturally Relevant and Responsive Pedagogy Projects

- Application email sent to school leaders- September 21, 2018.

Indigenous Leadership and Pathways Exploration Gathering

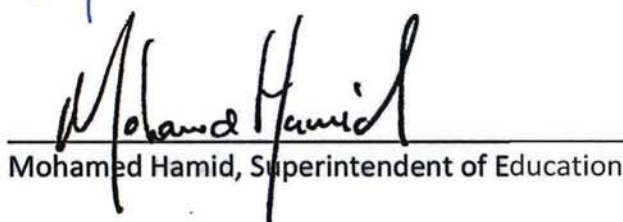
- Invitation sent to Indigenous School Contact- March 27, 2019.
- Indigenous Coach visited schools to invite students- April 1-12, 2019.

8. Conclusion

This report is provided for Trustee information

Report reviewed and submitted by:


 Lisa Millar, Director of Education


 Mohamed Hamid, Superintendent of Education

REPORT TO: Durham District School Board**DATE:** June 3, 2019**SUBJECT:** Maxwell Heights Secondary School - Recipient of
EQAO Dr. Bette M. Stephenson Recognition of
Achievement Award**PAGE NO.** 1 of 2**ORIGIN:** Lisa Millar, Director of Education
Jamila Maliha, Superintendent of Education/Family of Schools/Innovation**1. Purpose**

To provide information to trustees regarding the EQAO Dr. Bette M. Stephenson Recognition of Achievement Award 2018.

2. Ignite Learning Strategic Priority/Operational Goals

Success: *Set high expectations and provide support to ensure all students and staff reach their full potential every year*

Equity: *Promote a sense of belonging and increase equitable outcomes for all by identifying and addressing barriers to success and engagement*

Engagement: *Engage students, parents and community members to improve student outcomes and build public confidence*

3. Background

According to EQAO, "The Dr. Bette M. Stephenson Recognition of Achievement program began in 2009 to recognize schools across the province for their use of data to enhance and support the progress of their students. Through this recognition, EQAO aims to assist other schools by sharing the promising practices of the schools it profiles."

Criteria for the selection for this award vary each year to highlight different areas of focus in public education. This year, EQAO is celebrating schools that supported students' passion, which led to academic success in math. Over the last three years an outreach team analyzed EQAO results and Maxwell Heights Secondary School is among the 22 public schools recognized for fostering strong attitudes and improvements in math.

We are very proud of Maxwell Heights Secondary School and their Mathematics Department for the exemplary work they have done over the past three years to increase math scores as well as student attitudes toward mathematics.

4. Analysis

As can be seen in Appendix A, an infographic was created by EQAO outlining the learning journey Maxwell Heights Secondary School embarked on to improve student mathematics scores and attitudes toward math over the past three years. Through transition planning, focus students, informed instruction, common assessments and moderated marking, the math department showed continuous improvement over time in academic achievement.

Appendix B highlights Maxwell Heights' improvement over the past 5 years; an improvement of 26% for students at the Applied level and 16% for students working at the Academic level.

"We believe all students can learn mathematics. They need to be taught the foundation knowledge and skills explicitly and cumulatively by teachers who care about math and have strong subject knowledge." Matthew Goad, Department Head of Mathematics, Maxwell Heights SS

5. Communication

A press release was issued by the Education Quality and Accountability Office (EQAO) on May 10, 2019 and a media release was issued by the DDSB on the same date.

6. Recommendations

This report is provided to the Board of Trustees for information purposes.

7. Appendices

Appendix A: EQAO School Report – Grade 9 Assessment of Mathematics, 2017-2018

Appendix B: Data and Schools: A Journey of Learning

Report reviewed and submitted by:



Lisa Millar, Director of Education



Jamila Maliha, Superintendent of Education/Family of Schools/Innovation

Grade 9 Assessment of Mathematics, 2017–2018

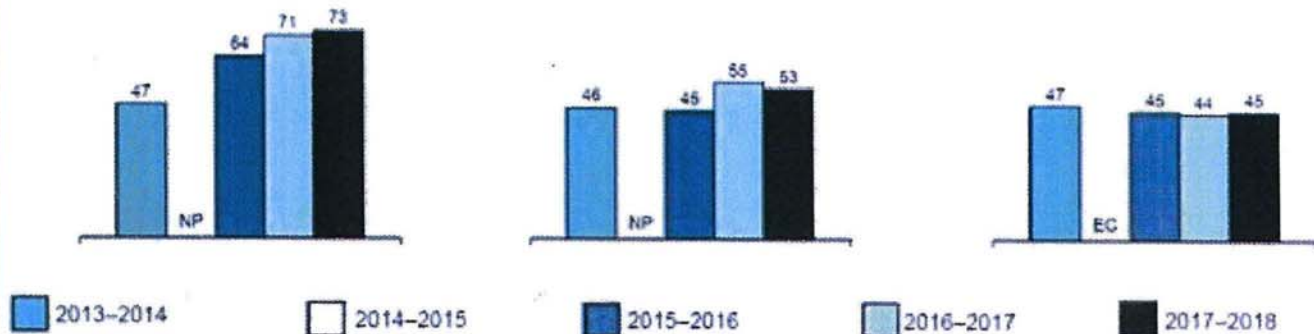
PERCENTAGE OF ALL STUDENTS AT OR ABOVE THE PROVINCIAL STANDARD (LEVELS 3 AND 4) OVER TIME

APPLIED MATHEMATICS

School

Board

Province



NP = Non-Participation due to job action

EC = Extenuating Circumstances

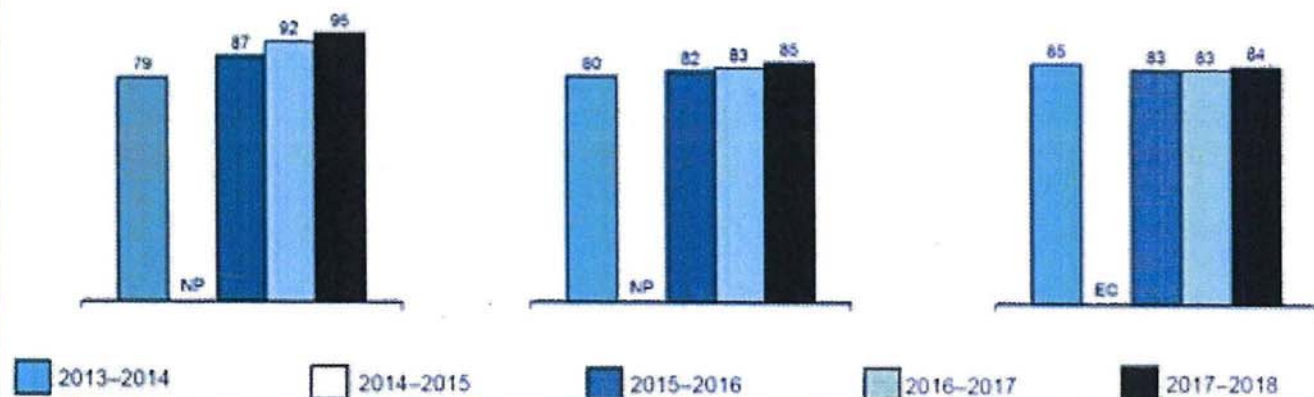
(only the winter session of Grade 9 Math was administered and therefore EQAO did not publish the overall outcomes)

ACADEMIC MATHEMATICS

School

Board

Province



DATA AND SCHOOLS: A Journey of Learning



Maxwell Heights Secondary School

Durham District School Board



9-12 1652 Students

The Maxwell Heights Secondary School community is very diverse. Many families are new to the area. Some families have moved from larger urban centres, and some families are new to Canada.



Parents and guardians are very involved with their children's transition to high school. About 85 per cent of parents and guardians attend the first day of school with their Grade 9 students.



“We believe all students can learn mathematics. They need to be taught the foundation knowledge and skills explicitly and cumulatively by teachers who care about math and have strong subject knowledge.”

— Department Head of Mathematics

Analysis



1 Transition Planning

At the beginning of the school year, educators review individual students' Grades 3 and 6 EQAO results to support students through interventions and gap closing.

2 Groups of Interest

Administrators and teachers review the EQAO data, looking at how specific groups have performed and comparing their results to the overall board and provincial results.



3 Informing Instruction

Next, the detailed EQAO Item Information Report is reviewed to compare board results to the school's results on specific questions. Observations inform instruction with future cohorts.

4 Moderated Marking

Following the administration of the EQAO Grade 9 math assessment, the math team moderates the marking of the entire assessment. Teachers look for patterns and trends in student performance to help them identify areas of strength and gaps in skills or knowledge. In response, teachers adjust their teaching strategies to fill in the gaps for the following semester or subsequent year.



Action

One Class for All

Maxwell Heights' Grade 9 math classes consist of both applied and academic-level students. Multi-level math classes allow for peer modelling and peer mentoring, which help to maintain a learning-focused classroom environment. Students benefit from the combined-level structure, as indicated by increasing percentages of students performing at or above the provincial standard. Teachers have also indicated that the learning-focused culture of the classroom has had a positive effect on all students.

Common Assessments and Moderated Marking

A common assessment is administered at the start of the Grade 9 math course to inform teacher instruction and to allow students to set goals for themselves. This is followed by cumulative assessment at mid-term. This allows teachers to possibly replace some marks from Term 1 assessments if they see student growth in any particular skills.

The team of Grade 9 math teachers are released to mark the EQAO Grade 9 math assessment. To ensure fairness and equity each teacher is assigned a particular question to assess for all students. Each question is discussed to inform teacher practice and improve curriculum delivery.

The diagnostic assessment administered at the beginning of the course and the EQAO Grade 9 math assessment both allow teachers to monitor and measure student learning over the entire year.

ADMINISTRATIVE REPORT

REPORT TO: Durham District School Board**DATE:** June 3, 2019**SUBJECT:** Ontario Tech University
Engineering Outreach Specialist (EOS)**PAGE NO.** 1 of 8**ORIGIN:** Lisa Millar, Director of Education
Jamila Maliha, Superintendent of Education
Anne Marie Laginski, Superintendent of Education
Mohamed Hamid, Superintendent of Education
Silvia Peterson, Superintendent of Education**1. Purpose**

The purpose of this report is to inform the Board of Trustees about the Ontario Tech University (formerly UOIT) Faculty of Engineering's Engineering Outreach Specialist (EOS) partnership with the Durham District School Board.

2. Ignite Learning Strategic Priority/Operational Goals

This initiative relates to the following strategic priorities for the DDSB:

Success: *Set high expectations and provide support to ensure all students and staff reach their full potential every year*

- The program provides engaging opportunities for students to develop Design Thinking skills and support greater academic success in STEM related curricula

Equity: *Promote a sense of belonging and increase equitable outcomes for all by identifying and addressing barriers to success and engagement*

- It is important for elementary students to develop the skill of Design Thinking and for students to see STEM pathways as a viable option for all students

Engagement: *Engage students, parents and community members to improve student outcomes and build public confidence*

- By involving students in highly engaging STEM activities early in their educational pathway, we can build their knowledge and skills in Science, Technology, Engineering and Mathematics

Innovation: *Reimagine learning and teaching spaces through digital technologies and innovative resources*

- By reimaging innovative programming we can increase educator and student learning and capacity in the area of STEM education.

ADMINISTRATIVE REPORT

3. Background

The focus of the Ontario Tech University Faculty of Engineering's Engineering Outreach Specialist (EOS) partnership with the Durham District School Board is to build teacher efficacy in the area of STEM education and Design Thinking in two Durham Elementary School: Viola Desmond Public School in Ajax and Northern Dancer Public School in Oshawa. The innovative program was launched in schools in January of 2019 and was designed to increase educators' confidence with infusing and integrating STEM more naturally into their regular teaching practice. With equity in mind, the development of student learning of Design Thinking through co-developed activities will allow students to see a career in STEM as a viable pathway. Together, the Durham District School Board and OTU will set the stage for future partnered work within other DDSB schools.

The Engineering Outreach Specialist partnership program philosophy relates to a larger societal call to action for a greater number of Canadians to pursue STEM-related employment. Canada has emerged as a world leader in many science, technology, engineering and math fields, and many new jobs and career opportunities that have emerged in recent years are STEM-related.

As more and more businesses and organizations seek to innovate and to modernize and grow their businesses, the demand for people who can fill STEM-related jobs will only continue to increase. We need to ensure that our workforce can meet the challenges of the future (Government of Canada, 2018).

Engineers Canada CEO Gerard McDonald (Engineers Canada, 2018, February 27) states that "strengthening diversity in engineering is critical to Canada's innovation agenda, promoting productivity, and addressing future skilled labour needs." Engineers Canada recognizes a gender-gap in STEM-related fields and as a result, their organizational goal is to raise the percentage of newly licensed engineers who are women to 30 percent by the year 2030 (Engineers Canada, 2018)

Supporting Proportional Outcomes for our Students

The EOS collaboration sits uniquely within a K-12 provincial response to academic equity of outcomes by focusing on our Board's capacity to prepare students for these opportunities in an equitable way through a partnership with a post-secondary institution (Ontario Tech University Engineering) within a community/industry organization's mandate (Engineering Change Lab).

By beginning this equitable initiative in elementary schools, it is hoped that the project will be able to impact future choices for our students, particularly our female students. Early learners are perfectly adapted to learn STEM concepts. By tapping into their natural and innate curiosity about the living world, allowing students to ask questions about authentic problems and investigate possible solutions, we can engage them in the process of Design Thinking. When students are engaged in these STEM activities they develop confidence in their skills, enabling them to see themselves in possible career roles linked to these fields.

ADMINISTRATIVE REPORT

DDSB STEM Plan and Ontario Tech University Partnership

Our current DDSB STEM plan (Appendix A) integrates inquiry, the Engineering Design Process with the innovation and creativity process found in our K-12 Arts curricula. When students have the opportunity to integrate their learnings in Language Arts and Mathematics with scientific testing and design (STEM), they are able to create networks of thinking that allow them to problem solve and collaborate in innovative ways.

The unique partnership, unlike any other program both provincially and nationally, between the OTU Faculty of Engineering and the Durham District School Board will allow our organizations to share in the development of innovative pedagogical approaches to STEM education and Design Thinking. This partnership will also help inform outreach STEM programming by organizations outside K-12 to better support equitable outcomes for our students.

Discussions between the DDSB and the Faculty of Engineering at OTU were initiated to explore approaches to instill STEM engineering design in the practices of classroom teachers and in the experiences of students.

Project Timeline and Plan

2018	DDSB formalized a partnership between OTU Faculty of Engineering for the Engineering Outreach Specialist (EOS) program
January 2019	The EOS began working with Viola Desmond Public School, Northern Dancer Public School
2019-2020 School year	The EOS will continue to work with Viola Desmond Public School, Northern Dancer Public School
2020-2021	The EOS will begin working at two different DDSB elementary schools

For this project, an EOS works two days per week at each school. It is important to note that the EOS is not a teacher but rather a skilled STEM professional with expertise in the area of Engineering Design and the Ontario Science and Technology curriculum. The EOS co-plans and co-teaches alongside the practicing classroom teachers who wish to build their understanding of STEM by infusing Design Thinking and principles into their work with their students.

The research focus of the DDSB relates to the impact of the enhanced practices on student engagement and, more longitudinally, the impact on student choice pertaining to STEM career pathways. Consequently, this report provides preliminary examination and suggested next steps for our on-going partnership.

ADMINISTRATIVE REPORT

4. Analysis

The purpose of this data collection was to understand the effect of the relationship between the EOS and classroom teachers in the promotion of STEM for elementary students.

DDSB Schools in Partnership with OUT Engineering Outreach Specialist

The EOS has been working with teachers in the 2 elementary schools through the co-planning of classroom STEM activities.

- Viola Desmond Population: 671 students and 20 participating teaching staff
- Northern Dancer Population: 696 students and 15 participating teaching staff

Since January, 2019, the EOS has completed over 60 co-planning sessions with teachers which has led to instructional time in classes where both a Guided and Co-teaching model were utilized.

Initial Baseline, Exit Surveys and Anecdotal Conversations

An initial baseline was established to determine teacher attitude and awareness around STEM and Design Thinking at the two schools that were participating in the EOS project. In this initial survey it was noted that only 6% of the teaching staff have a STEM degree (Science, Technology, Engineering Math).

Anecdotal conversations and exit surveys for teachers who have worked with the EOS were conducted to determine if there was a shift in their attitude and awareness around STEM and Design Thinking through their work with the EOS. Over 85% of teachers indicated that they would like to continue working with an EOS in the following areas: Co-designing student learning in STEM Education and Co-assessing of student learning related to STEM Education.

Survey Criteria	Initial Baseline	Exit Surveys
<i>Comfort-level in delivering the Science and Technology Curriculum</i>	<ul style="list-style-type: none"> • 23% of educators felt comfortable 	<ul style="list-style-type: none"> • 67.2% of educators felt comfortable (↑ of 44.2%)
<i>Comfort-level with incorporating aspects of engineering into the classroom</i>	<ul style="list-style-type: none"> • 18.6% of educators felt comfortable 	<ul style="list-style-type: none"> • 50% of educators felt comfortable (↑ of 31.4%)
<i>Comfort-level in designing STEM programming with intentional outcomes for math applications</i>	<ul style="list-style-type: none"> • 23% of educators felt comfortable 	<ul style="list-style-type: none"> • 28.6% of educators felt comfortable (↑ of 5.6%)

ADMINISTRATIVE REPORT

5. Financial Implications

- Funding for the Engineering Outreach Specialist was provided through grants received by UTO for this work.
- Teachers planned collaboratively with the Engineering Outreach Specialist during their in-school prep time. No additional funds were required.

6. Evidence of Impact

Through this initiative, we have already seen an increased teacher capacity in STEM and Design Thinking and in the sharing of innovative pedagogical approaches. The impact of the EOS in classrooms has been twofold: increasing student engagement and instilling teacher confidence. The EOS has been able to create a willingness in staff to try new approaches and to shift their instructional practices along with harnessing student engagement in STEM learning.

Early feedback from our pilot sites reveal that the project has been positively received. Staff report that few have STEM backgrounds which makes the availability for collaboration with the EOS valuable to them. 80% of teachers participating in our Post Survey indicated that they would like to continue working with an EOS in the following areas:

- Co-designing student learning in STEM Education
- Co-assessing of student learning related to STEM Education

Educators feel more confident in infusing and integrating these areas more naturally into their regular teaching practice.

The program has also encouraged creativity and innovation in both teachers and students. Students have strengthened their understanding of STEM pathways and can see it as a viable future career option for them. Although this is a small group, the promising feedback warrants further exploration.

7. Communication Plan

The DDSB Communication Department is doing a “Good News” article in June 2019 that will showcase the initiative on various social media platforms.

8. Conclusion

The program was launched in January of the 2018-2019 school year. A more comprehensive research study is being designed for implementation in the 2019-2020 school year to explore the relationship between the teacher-EOS collaboration and student impacts and equitable access and outcomes.

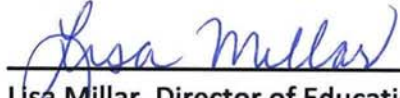
Next Steps

- The program will continue for the full 2019-2020 school year at both Viola Desmond Public School and Northern Dancer Public School.

ADMINISTRATIVE REPORT

- If the grant funding for an EOS continues for the 2020-2021 school year, the program will be expanding to two different DDSB elementary schools. The two new schools will be Priority Schools.
- Although the capacity of our educators to embed to STEM education and Design Thinking into their regular classroom will have increased, our STEM facilitator will be available to continue to support educators at both Viola Desmond Public School and Northern Dancer Public School after the EOS begins working with other schools in the 2020-2021 school year.

Report reviewed and submitted by:



Lisa Millar, Director of Education



Jamila Maliha, Superintendent of Education



Mohamed Hamid, Superintendent of Education



Anne Marie Laginski, Superintendent of Education



Silvia Peterson, Superintendent of Education

ADMINISTRATIVE REPORT

Reference:

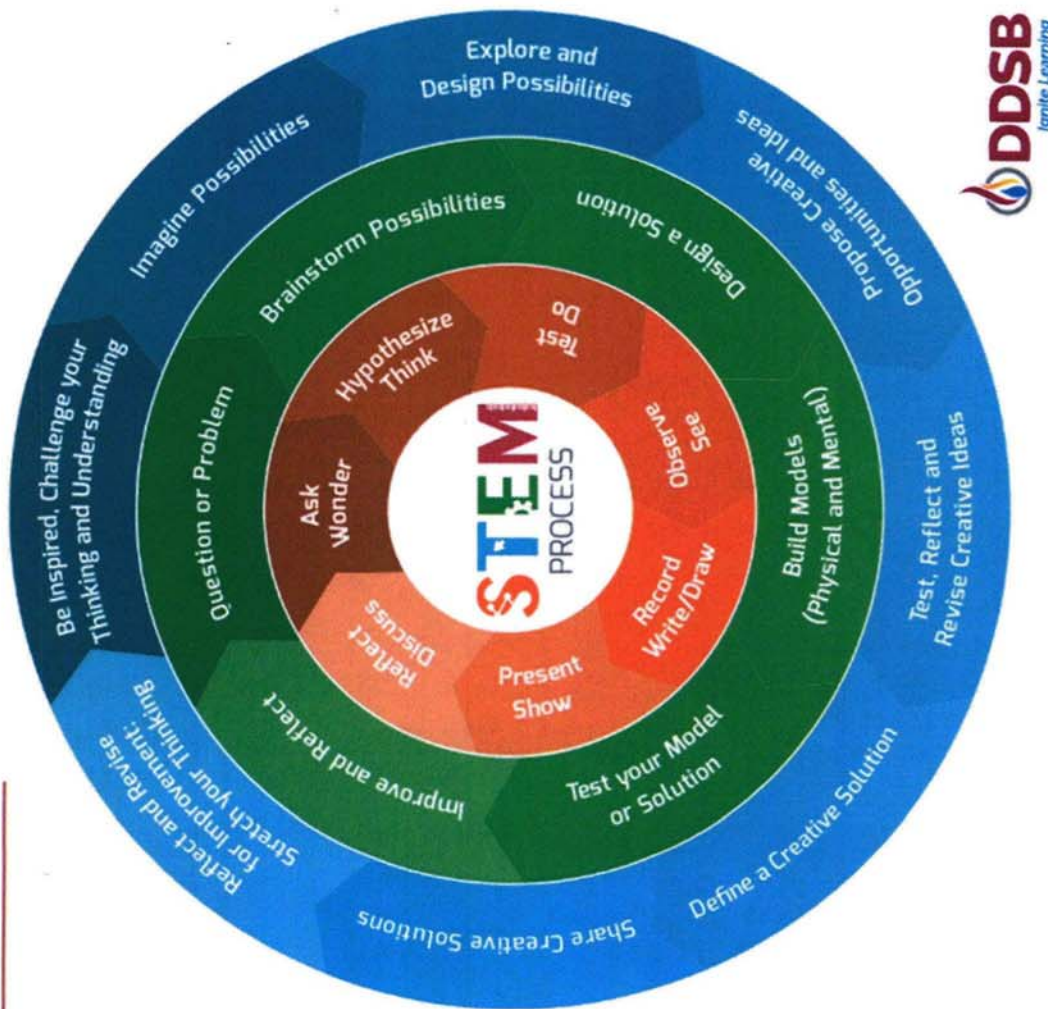
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Appendix A: DDSB STEM PLAN



DDSB STEM Education Plan

STEM: Science, Technology, Engineering and Mathematics

STEM Education, an interdisciplinary approach for the curriculum disciplines of Science, Technology, Engineering and Mathematics, is a cohesive learning paradigm designed to support student learning as it relates to real-world applications. STEM Education promotes the development of essential 21st Century Skills and knowledge to best prepare students for the robust and evolving global society.

The School Effectiveness Framework (Ministry of Education) identifies innovation as an essential component of teaching and learning in the 21st Century classroom. STEM Education invites and reinforces students' creative thinking abilities, making innovation a cornerstone of the teaching and learning process.

INQUIRY PROCESS



ENGINEERING DESIGN PROCESS



INNOVATION AND CREATION

