



SCIENCE EDUCATION PARTNERSHIP



2020-2021

Annual Report

A better world through hands-on, minds-on science education

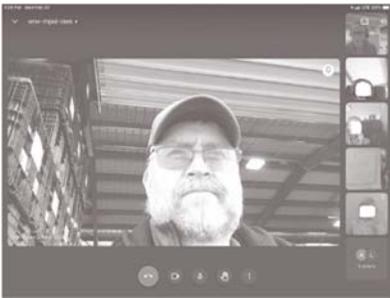
Science Education Partnership

2020-2021 KEY ACHIEVEMENTS

The 2020-2021 school year was like no other since the Science Education Partnership was formed in 1992.

Challenges presented by the Covid-19 pandemic resulted in operational changes for all SEP programs. As a positive outcome, those same challenges sparked the development of creative new ways to support educators as they taught science in their classrooms.

These new resources and outreach models will not be a temporary bridge to keep SEP programs relevant for teachers until school returns to “normal”. They were designed to become permanent and exciting new components of what the SEP can offer elementary educators in the years to come.



PIVOTING IN A PANDEMIC

- Safe Science Kits
- Science Discovery Squad Volunteer Program Virtual Library
- A Reimagined National Engineering Month Activity
- Taylor Talks Environmental Science Series
- Canada Agriculture Day Goes Virtual

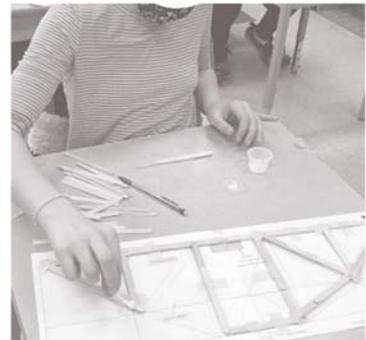


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SCIENCE EDUCATION PARTNERSHIP: AN INTRODUCTION

The Science Education Partnership (SEP), formed in 1992, consists of the Lambton Kent District School Board (LKDSB), the St. Clair Catholic District School Board (SCCDSB), local businesses, industries, and community partners. A historical timeline of the SEP appears in Appendix B.

The SEP was formed for the purpose of expanding and supporting a quality “Hands-on, Minds-on” science program for students from Kindergarten to Grade 8. All science education programs made available for teachers through the SEP provide students with learning opportunities that develop and encourage collaboration, creativity, problem solving, and science literacy using hands-on materials. It is recognized that these skills ultimately help our students to become more responsible and more successful adults in the working community.

Our Mission

We are dedicated to supporting the elementary school science curriculum and teachers who inspire knowledgeable, responsible, and innovative students who are critical thinkers and become contributing members of society

THE FOUR FOCUS AREAS OF THE SCIENCE EDUCATION PARTNERSHIP

SCIENCE KIT PROGRAM: The SEP provides educators with hands-on science materials and equipment in the form of education kits. All SEP kits support the grade level expectations as described in the “Ontario Curriculum, Grade 1-8, Science and Technology (Revised 2007)”.

SCIENCE DISCOVERY SQUAD VOLUNTEER PROGRAM: In February 2019, this newly reorganized SEP volunteer program was unveiled. The *Science Discovery Squad* was created to allow all SEP volunteer elements to come together in one cohesive program whose purpose is *connecting community with classrooms*. Volunteers with a background or interest in science visit classrooms to share their knowledge with students through interactive presentations. The four divisions of the program are: Agriculture, Bridge Building, Coding, and Science.

PARTNERS: SEP business and community partners have strongly supported the partnership through both financial and human resources means over the past 26 years. This support is invaluable as provincial funding is insufficient for schools to purchase all the science equipment that is required. The SEP continually seeks expansion through partner recruitment efforts and emphasizes partner recognition in all activities.

SCIENCE RESOURCE CENTRE: The Science Resource Centre, located at Errol Road Public School in Sarnia, serves as the hub through which teachers can access all SEP science education programs.

Focus Area Report: SCIENCE KIT Program

2020-2021 HIGHLIGHTS & STATISTICS

- A safety protocol was developed in November 2020 for shared materials in consultation with the local Public Health Units.
- A trial circulation period occurred from November 2020 to February 2021 with 5 titles available for booking.
- Five more titles were added to the list in early February.
- Communication continued to all schools via the SEP website.



Science kits impacted an estimated 2,500 students over the course of the school year.



LOOKING FORWARD TO 2021-2022

- Upon approval from Public Health and both School Boards, full circulation of all science kits will resume.
- Kit revision will resume once release time is approved for curriculum team teachers to meet.
- Communication to teachers will continue through the SEP website, board Elementary Program Departments, the SEP Twitter account, and via email.



78 elementary sites across Chatham-Kent and Sarnia-Lambton had access to SEP programs.

Focus Area Report: Science Discovery Squad VOLUNTEER Program

2020-2021 HIGHLIGHTS

- Short, dynamic SDS demonstrations were filmed to produce provocation and concept summary videos. Hands-on activity packages for classrooms were created to supplement video topics. Meet-the-Volunteer videos introduced students to presenters.
- The National Engineering Month structural engineering activity was revamped into a Truss Building Challenge. Students individually designed, drew plans, and built their own truss structure. Unique testing devices were created to allow teachers to easily perform in-class testing, measuring the load at which each truss failed.
- A new environmental science initiative called Taylor Talks was introduced to classrooms throughout the district.
- SDS volunteers were available for synchronous video-conferencing visits to in-person and virtual classrooms.
- Virtual Canada Agriculture Day visits were scheduled throughout the month of February.
- Coding volunteers reconfigured both the “unplugged” and “plugged” versions of a cup-stacking activity which focuses on conceptual thinking for junior grades.
- The SDS Virtual Library was created to provide a single, organized access point for educators to all SDS virtual resources. The link to the library was placed on the SEP website.



2020-2021 STATISTICS

- 26 Videos were created featuring SDS volunteer demonstrations, activities, or events.
- 21 classrooms signed up to participate in NEM Truss Building Challenge, using more than 30,000 wood craft sticks to build their structures.
- The SDS Virtual Library was used by 59 educators
- 89 classrooms signed up for the first Taylor Talk Environmental Science Session on Earth Day, April 22, 2021. A second session on Drinking Water was attended by 90 classrooms.
- 11 SDS Agriculture volunteers virtually visited 36 classrooms to celebrate Canada Agriculture Day.

Focus Area Report: Science Discovery Squad VOLUNTEER Program



LOOKING FORWARD TO 2021-2022

- The SDS Virtual Library will continue to expand to include additional:
 - Science demonstration videos
 - Agriculture-related resources
 - Taylor Talk sessions & follow-up
 - Information on other SDS activities and events including National Engineering Month and Coding initiatives.
- A monthly Taylor Talk will be offered targeting all elementary grades over the course of the school year.
- Pending approval from Public Health and both School Boards, in-person volunteer visits to classrooms will resume.
- Volunteers will continue monthly networking meetings.
- Feedback received from educators will be factored into planning for all new videos and activities.
- Communication to teachers will continue through the SEP website, board Elementary Program Departments, the SEP Twitter account, and via email.



A total of 215 classrooms participated in SDS learning opportunities in 2020-2021. This involved 35 volunteers and impacted an estimated 5,100 students.



Focus Area Report: PARTNERS

2020-2021 PARTNER RECOGNITION

Appreciation is extended for the continued financial support from the following partners:

- Association of Professional Engineers of Ontario Lambton Chapter
- Imperial
- Lambton Kent Agriculture in the Classroom Committee
- Sarnia Lambton Golden K Kiwanis
- Enbridge Volunteer Bursary for Agriculture and NEM Volunteer Robert Sterling.

SEP Education Partners



SEP Business & Community Partners



Focus Area Report: SCIENCE RESOURCE CENTRE



LOOKING FORWARD TO 2021-2022

- The SEP Science Resource Centre will continue to be the key contact location for all elementary educators in the LKDSB and SCCDSB.
- The Science Partnership Technician will continue to collaborate and communicate with personnel in school boards, and with all community and business partners.
- Communication to educators will continue through the SEP website, board contacts, the SEP Twitter account, and via email.
- The SEP Steering Team will address creation of a new long-term plan.

APPENDIX A: SEP Five Year Plan 2017-2022

<p>SCIENCE RESOURCES – educational resources provided for teachers</p>		<p>PARTNERS The SEP is dedicated to recruiting program partners and having our partners help monitor and manage programs.</p>	<p>SCIENCE RESOURCE CENTRE The science resource centre is responsible for managing, maintaining, and distributing science resources and coordinating supplementary programs efficiently.</p>
<p>SCIENCE KIT PROGRAM The science kit program provides educators with “Hands-on, Minds-on” science material and equipment in the form of educational kits.</p>	<p>SCIENCE DISCOVERY SQUAD VOLUNTEER PROGRAM In Feb. 2019 all SEP volunteer initiatives were combined into one cohesive program; The SDS Volunteer Program, which connects community volunteers who have an interest or background in science with classrooms to enrich the science curriculum.</p>		
<p>Five Year Objective:</p> <ul style="list-style-type: none"> ○ Increase program usage ○ Increase program awareness ○ Complete a cyclical kit review schedule 	<p>Five Year Objective:</p> <ul style="list-style-type: none"> ○ Increase the number of volunteers ○ Increase number of volunteer opportunities for classrooms ○ Increase Science Discovery Squad program awareness by continuing to promote volunteer opportunities that connect community with classroom 	<p>Five Year Objective:</p> <ul style="list-style-type: none"> ○ Increase number of contributing partners ○ Recognize and acknowledge partners and the SEP within the community 	<p>Five Year Objective:</p> <ul style="list-style-type: none"> ○ Enhance the effectiveness and efficiency of service from the SEP
<p>Measurable Indicators:</p> <ul style="list-style-type: none"> ○ Total annual bookings ○ Number of schools participating/total schools ○ Number of teachers using kits vs. total number of classrooms at each school 	<p>Measurable Indicators for each division:</p> <ul style="list-style-type: none"> ○ Number of volunteers ○ Number of requests for volunteer assistance ○ Number of schools participating ○ Number of teachers participating in SDS program initiatives ○ Qualitative responses from teachers via feedback form 	<p>Measurable Indicators:</p> <ul style="list-style-type: none"> ○ Number of newly recruited partners ○ Total number of contributing partners ○ Total of all partners financial contributions 	<p>Measurable Indicators:</p> <ul style="list-style-type: none"> ○ Number of bookings per kit title ○ Number of filled and unfilled kit requests ○ Number of filled and unfilled Science Discovery Squad bookings
<p>OVERALL EFFECTIVENESS MEASURE</p> <ul style="list-style-type: none"> ○ Total number of teachers participating in all SEP science resource programs vs. the total number of classrooms within both systems ○ Total number of schools accessing the SEP science resource programs vs. the total number of schools ○ Qualitative feedback, periodically collected on a cyclical basis, from a survey of all teachers in the system 			

APPENDIX B: Financial Report July 1, 2020 to June 30, 2021

A special note regarding 2020-2021 expenditures:

Neither the SEP Science Kit Program nor Science Discovery Squad Program were run at full capacity in 2020-2021. This is reflected in reduced expenses outlined below.

Account	Opening Balance	Receipts	Expenditures	Closing	Donation NOTES
Arlanxeo	4,084.08	0.00	-356.29	4,440.37	1
RBC	695.08	0.00	216.94	478.14	1
Imperial	4,273.60	6,995.75	3,533.63	7,735.72	2
Misc. Grants	170.00	0.00	13.21	156.79	3
LKAITC	18,062.09	5,000.00	567.15	22,494.94	1,2
OPG/BWP	376.89	0.00	0.00	376.89	1
Pioneer	1,755.40	0.00	0.00	1,755.40	2
Kiwanis	3,364.79	0.00	366.10	2,998.69	1,2
TOTAL	32,781.93	11,995.75	4,340.74	40,436.94	

Donation Notes:

- Funds designated for kit development and refurbishing supplies. (Increase to Arlanxeo account is due to accounting adjustments from the 2019-2020 school year between budget lines in early September.)
- Funds designated Science Discovery Squad costs.
 - Donations from Imperial (\$5000), Sarnia Lambton Golden Kiwanis (\$1000) are directed to the Science and Coding Division.
 - A portion of LKAITC donation (\$5,000) are designated for the Agriculture Division as well as refilling agriculture-related science kits.
 - Funds designated for Science Discovery Squad Bridge Building Division include donations from the Professional Engineers of Ontario, Lambton (\$895.75) and a Benevity grant from Enbridge on behalf of volunteer Rob Stirling (\$100).
- Funds designated for facility, staff development, and in-service expenses.

Expenses by Activity 2020-2021

Program	Totals
Science Discovery Squad Expenses	3,533.63
Science Kit Expenses	793.90
Facility/Staff Development/Inservice Expenses	13.20
TOTAL EXPENSES	4,340.73

APPENDIX C: History of the SEP

The Science Education Partnership is a unique enterprise that has thrived for over 25 years. Key details in the development of the SEP are listed below.

1992

- Dow approached the Lambton County Board of Education, (now the Lambton Kent District School Board) and the Lambton County Roman Catholic Separate School Board (now the St. Clair Catholic District School Board) to form the Lambton County Science Education Partnership.
- A one-time grant from the Ministry of Education and Training was received. This funding was dedicated to in-service training of teachers as new science kits were developed.
- A primary (grades K-3) and junior (grades 4-6) curriculum team was established to build science kits.

1993

- Polysar (now Alanxeo) became a partner and provided funding to be used to renovate and furnish the Science Resource Centre.
- The first science kit, “Primary Bounce, Roll and Spin”, was built and tested in two classrooms. The pilot teachers and curriculum team members finalized the inventory, and this was duplicated into multiple copies. An in-service to introduce the kit to teachers was held with one teacher from every school attending. This process would become the model for development of all future science kits.

1994

- A technician for the Science Resource Centre was hired.
- The Science Resource Centre, housed at St. Joseph School in Sarnia, officially opened in November.

1995

- Imperial Oil joined as a human resources partner. Retired engineers, scientists and technical people became involved in the Adopt-a-Scientist Program. Volunteers in this program assisted with “hands-on” science activities in classrooms.
- Sarnia Hydro (now Bluewater Power) committed their support to build a “Power of Electricity” kit for the junior division.

1996

- Interprovincial Pipeline (now Enbridge) became a partner.

1997

- Via the community group, Friends of the St. Clair River, funds were donated from the Ministry of the Environment, Canada Trust Friends of the Environment, and Shell Environmental Fund. This was used to build a River Science Kit.
- Cabot Carbon joined the SEP

1998

- Amalgamation of school boards occurred resulting in the co-terminus boards from Lambton and Kent counties joining, thereby doubling the district size. A transition team was formed to determine how the partnership would expand to service the entire district.
- The official name, Lambton County Science Education Partnership changed to Science Education Partnership.
- The new “Ontario Science and Technology Curriculum Grades 1-8” was introduced. The curriculum teams worked to align all science kits to this new curriculum.
- Imperial Oil, previously a human resources partner, became a financial partner.
- Other new partners contributing within the year included Meritor Industries and the Maple City Optimists.

1999

- An intermediate curriculum team was formed to build kits for grades 7-8.
- Navistar and Siemens Tilbury Plant became new partners.

2000

- A satellite centre was established in Chatham. It was staffed half time to service the schools in the south part of the district.
- New contributors to the SEP included Pioneer Hybrid (now Monsanto), and Kent Agriculture in the Classroom.

2001

- A grant from the Ministry of Energy, Science and Technology was received and used to build and copy three new kit titles.
- Several members of the Steering Team presented a session on the SEP at the province-wide Science Teachers Association of Ontario Conference in Toronto.

2002

- Due to the impending closure of St. Joseph School in Sarnia, a relocation committee was formed to find a suitable site for the Science Resource Centre. The committee successfully determined that Errol Road Public School was the most viable option, and the centre was re-established there in July.
- A tenth anniversary open house was held at Bayer in June. The celebration consisted of a timeline display, refreshments, and hands-on activities.

2003

- Suncor pledged support to produce two Ecosystems pilot kits for Grade 7.
- Ontario Power Generation agreed to fund two kit titles, Electricity for Grade 6 and Conservation of Energy for Grade 5.

2004

- Basell and Nova Chemicals each submitted a donation to the Partnership as a result of an aggressive letter campaign by the Recruitment Committee. Dow, Bayer, Cabot Carbon, Imperial Oil and Kent Agriculture in the Classroom continued their support of the Partnership for another year.
- The office at the Sarnia Resource Centre was renovated and a new laptop was purchased.
- The Science Education Partnership website was launched.
- The Science Education Partnership was nominated for a 2004 Technology Innovation Award sponsored by The Learning Partnership
- The Science Education Partnership was nominated for a National Science and Engineering Research Council of Canada Michael Smith Award for Science Promotion.

2005

- As a result of a partner recruitment letter campaign, Union Gas and Guspro in Chatham became partners. Dow, Lanxess (formerly Polysar, Bayer), Imperial Oil, Cabot Carbon, Nova, Laidlaw, Ontario Power Generation, and Kent Agriculture in the Classroom continued their support of the Partnership.
- The Adopt-a-Scientist Program marked the tenth year of helping with “Hands-on, Minds-on” science in the classroom.

2006

- Partners, Bluewater Power Distribution Company and Pioneer all renewed their commitment to the SEP.
- Adopt-a-Scientist Volunteers were named on the Mayor’s Honour List in Sarnia.

2007

- A district-wide Teacher Resource Fair was organized to include over 25 booths that included educational vendors, school board resource programs, local community organizations that offer programs for students.
- A new five-year strategic plan was developed to guide SEP activities from 2007 to 2012.

2008

- The Ontario Curriculum, Grade 1-8, Science and Technology document was revised in 2007. Curriculum teams performed a gap analysis of our science kits to determine which areas needed to be addressed.
- Volunteers Fern Noel and Don Murray presented a session on Solutions and Mixtures at the provincial conference of the Science Teachers Association of Ontario.

2009

Science Education Partnership

- Ontario Power Generation returned as a partner in the SEP.
- Bridge Building Engineering Week activities coordinated through the SEP involved the largest number of students involved in one project province wide.
- Adopt-a-Scientist requests reached an unprecedented 115 requests.

2010

- A “Getting Started” document was developed for each Intermediate level (Grade 7/8) kit.
- Pioneer and Union Gas returned as financial partners in the SEP.
- SEP outreach activities included a presentation to the Golden Kiwanis Club, presentation of an informational booth at both the Lambton and Kent County Science Fairs, and a science activity booth at a City of Sarnia children’s festival, *Kids Fun Fest*.
- The Sarnia and Chatham Science Resource Centres were consolidated into one location at the Sarnia Errol Road Public School site in May 2010.

2011

- Bluewater Power returned as a financial partner.
- Four new volunteers joined the Adopt-a-Scientist Volunteer Program.

2012

- Adopt-a-Scientist volunteers developed a Gr. 8 Water Systems demonstration that was offered district-wide to help celebrate the International Year of Chemistry.
- A new five-year plan was created to span 2012-2017.

2013

- Farm Credit Canada was welcomed as a partner. Their contributions were used to build new kindergarten kits.
- The Science Education Partnership celebrated 20 years of “Hands-on, Minds-on” science education. Close to 600 students participated in a science fun fair held over two days in Sarnia and Chatham.

2014

- This year marked the 10th anniversary of Engineering Month Bridge Building Activities. This opportunity is offered district wide annually, and all but 4 schools in the district have participated. Two hundred and ninety-four classes have taken part, and volunteers have logged more than 4000 hours in the classroom since the project began.

2015

- The Seaway Kiwanis joined the SEP as a partner.
- This was a record year for science kit and Adopt-a-Scientist booking numbers.

2016

- The 20th Anniversary of the Adopt-a-Scientist Volunteer Program was celebrated with an assembly at Errol Road Public School.

2017

- New record high statistics were reached for both Science Kit and Adopt-a-Scientist program usage.
- Working with the Lambton Kent Agriculture in the classroom committee, volunteering farmers visited 58 classrooms to speak with students and celebrate Canada Agriculture Day in February of 2017.
- The RBC Foundation joined the SEP as a financial partner.
- A new five-year plan was developed to continue all SEP programs into June of 2022.

2018

- Sarnia Lambton Golden Kiwanis joined as a partner.
- A subcommittee was formed to focus on development of a marketing plan to recruit new volunteers for Adopt-a-Scientist.

2019

- Dresden Rotary Club and Corteva Agrisciences became SEP Partners.
- A presentation about the SEP was given at the Science Teacher’s Association of Ontario annual conference in Toronto in November of 2018.

- All SEP volunteer elements were reorganized into one cohesive program and rebranded as the Science Discovery Squad Volunteer Program. A news conference showcasing volunteer activities was held on February 21, 2019. This resulted in wide coverage in local papers and radio.
- A “Virtual Volunteer” format of the Bridge Building activity was tested in Chatham-Kent where teachers worked through the bridge building activity by using instructional videos.

2020

- Schools were closed from March 16, 2020, to June 30, 2020, due to the Covid-19 pandemic. Although science kits could not be distributed to educators during this time, SDS volunteers rallied to create short, science themed activities that could be presented to classrooms meeting virtually.

2021

- A safety protocol complying with all Public Health directives was created to allow for the limited distribution of science kits.
- All volunteer initiatives were offered in a virtual format.
- A Virtual Library was created to allow educators from both boards to access videos of volunteer demonstrations and activities. Twenty-six videos were created throughout the year and shared in this manner.
- Taylor Talks was developed as an environmental science learning opportunity. An efficient virtual meeting delivery model saw close to 100 classrooms take part for two sessions in the spring of 2021.

APPENDIX D: SEP Steering Team Members 2020-2022

Lambton Kent District School Board

Ben Hazzard	Superintendent of Education
Mary Lynn Anderson	Coordinator of Student Achievement, Elementary
Pam Gallant	Program Consultant
Adam Townsend	Vice Principal, Errol Road Public School, Sarnia
Erin Van De Wiele	Principal, McNaughton Public School, Chatham

St. Clair Catholic District School Board

Laura Callaghan	Superintendent of Schools
Brenda Corchis	Elementary Catholic Curriculum Coordinator
Renee VanDamme-Marcus	Technology Support Teacher

Industry & Community Representatives

Bryce McGarvey	Imperial Oil Limited
Judy Krall	Lambton Kent Agriculture in the Classroom Committee
Ron Laflair	Science Discovery Squad Volunteers
Dennis Loucks	Sarnia Lambton Golden Kiwanis Group

Science Resource Centre Staff

Wendy Hooghiem	SEP Science Resource Centre, Sarnia
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Science Education Partnership

Errol Road Public School
989 Errol Road East, Sarnia, ON N7S 2E6

Phone: 519-336-1500 ext. 31580

Web: <https://www.lkdsb.net/Elementary/ScienceEducationPartnership/Pages/default.aspx#/≡>

Twitter: @SEPSciCen