



Pandemic Report

2020 – 2021 &
2021 – 2022



University
of Manitoba

MISSION STATEMENT

We envision the youth of Manitoba inspired and empowered by the possibilities of science, engineering and technology. We envision a Manitoba where all youth, regardless of background, gender or socio-economic status are enriched in their science, math and technology education. The young people today will become Manitoba's vibrant and diverse workforce of leaders tomorrow; these youth will be empowered by their knowledge and appreciation for science, engineering and technology.

OUR MANDATE

WISE Kid-Netic Energy works to ignite an interest and life-long passion of science and engineering in all Manitoba youth.



A network
member of

actüa

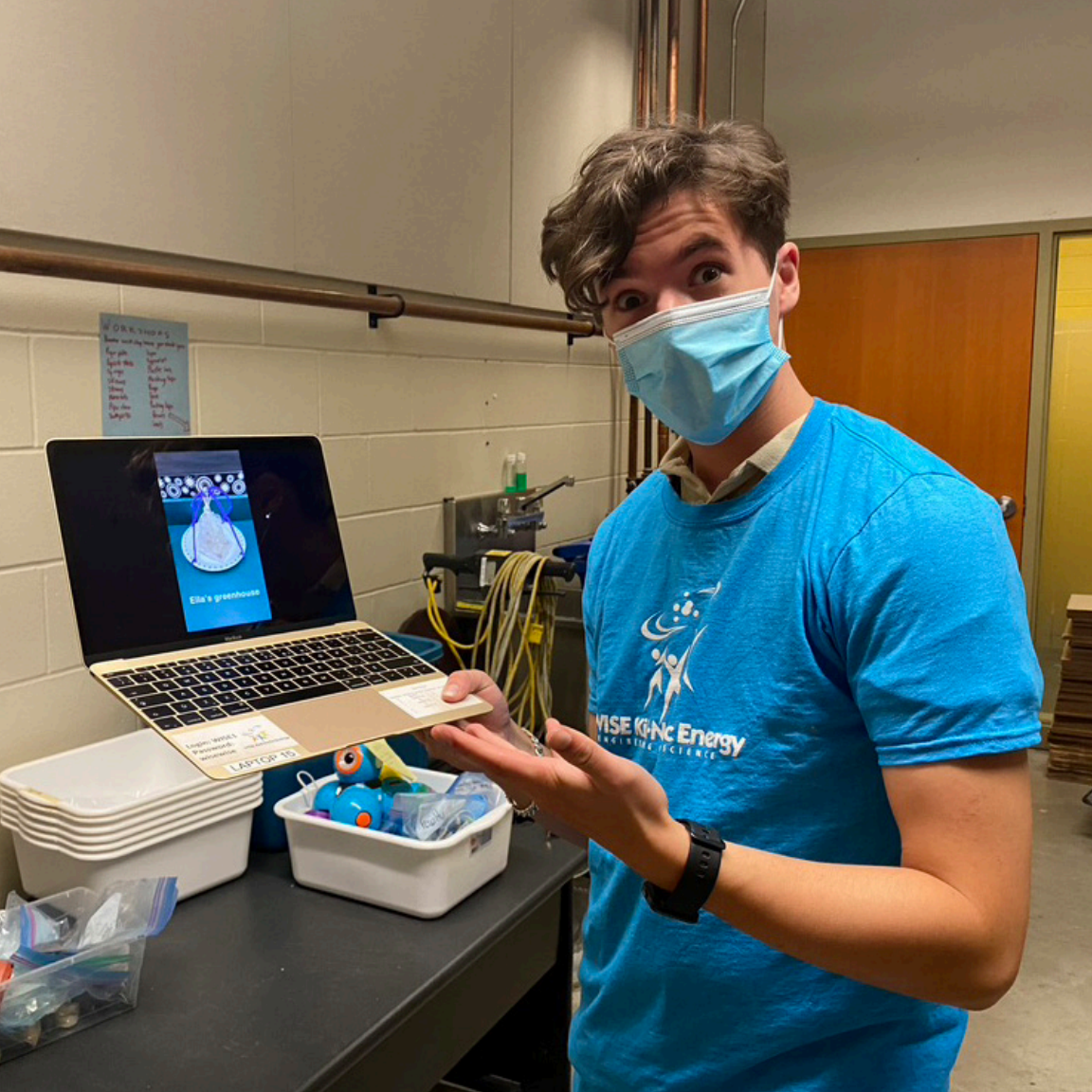
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INTRODUCTION

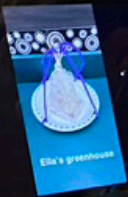
In 1990 WISE (Women in Science and Engineering) Kid-Netic Energy was formed at the University of Manitoba. It has grown to be one of the largest STEM (Science Technology Engineering Math) not-for-profit outreach programs in Canada. Our organization offers science and engineering workshops, clubs, camps and events to youth from kindergarten to Gr. 12 throughout the entire province of Manitoba. Annually we reach between 25 000 and 50 000 youth depending on funding levels. Our approach is simple – present STEM in messy, memorable and engaging ways so Manitoba youth feel motivated to learn more and more. We reach all Manitoban youth. We particularly target underrepresented youth like girls, Indigenous youth and youth facing socioeconomic challenges. There is a saying, “You can’t be what you don’t see”,

and in response to this saying we try and get as many youth doing hands-on, experiential activities with amazing young role models pursuing undergraduate degrees in science and engineering. We hope you enjoy reading this annual report. Please contact us if you have any questions or concerns.

These past two fiscal years have been unprecedented. We’ve combined the past two years into one report because they’ve been so unique. We moved to remote delivery the best that we could. We developed science activity booklets to support learning of youth without devices and/or internet. We developed social media content and hosted online events and clubs. We continued to serve youth from a safe distance. We continued to employ as many undergraduate as possible.



WORKSHOPS
Basic and advanced projects for
- Paper plane
- Paper airplane
- Paper rocket
- Paper helicopter
- Paper glider
- Paper parachute
- Paper boat
- Paper car
- Paper airplane
- Paper rocket
- Paper helicopter
- Paper glider
- Paper parachute
- Paper boat
- Paper car



WISER: WISE
K&Nc Energy
ENGINEERING
INTERNSHIP
LAPTOP 15

WISE K&Nc Energy
ENGINEERING INTERNSHIP



WISE KID-NETIC ENERGY DURING THE PANDEMIC

In March 2020, with the COVID-19 pandemic causing widespread lockdowns, WISE Kid-Netic Energy had to change the ways we did things in order to safely continue our youth outreach. Schools moved to remote learning, so our in-person school workshops were cancelled, as well as our clubs and events such as Girls Club, Dissection Club, Make Your Move, Go Code Girl, Go Eng Girl, Robot Fight Club and our STEM camps. Starting in the summer of 2020, we employed instructors to create STEM activity booklets based on the Manitoba kindergarten to Grade 8 science

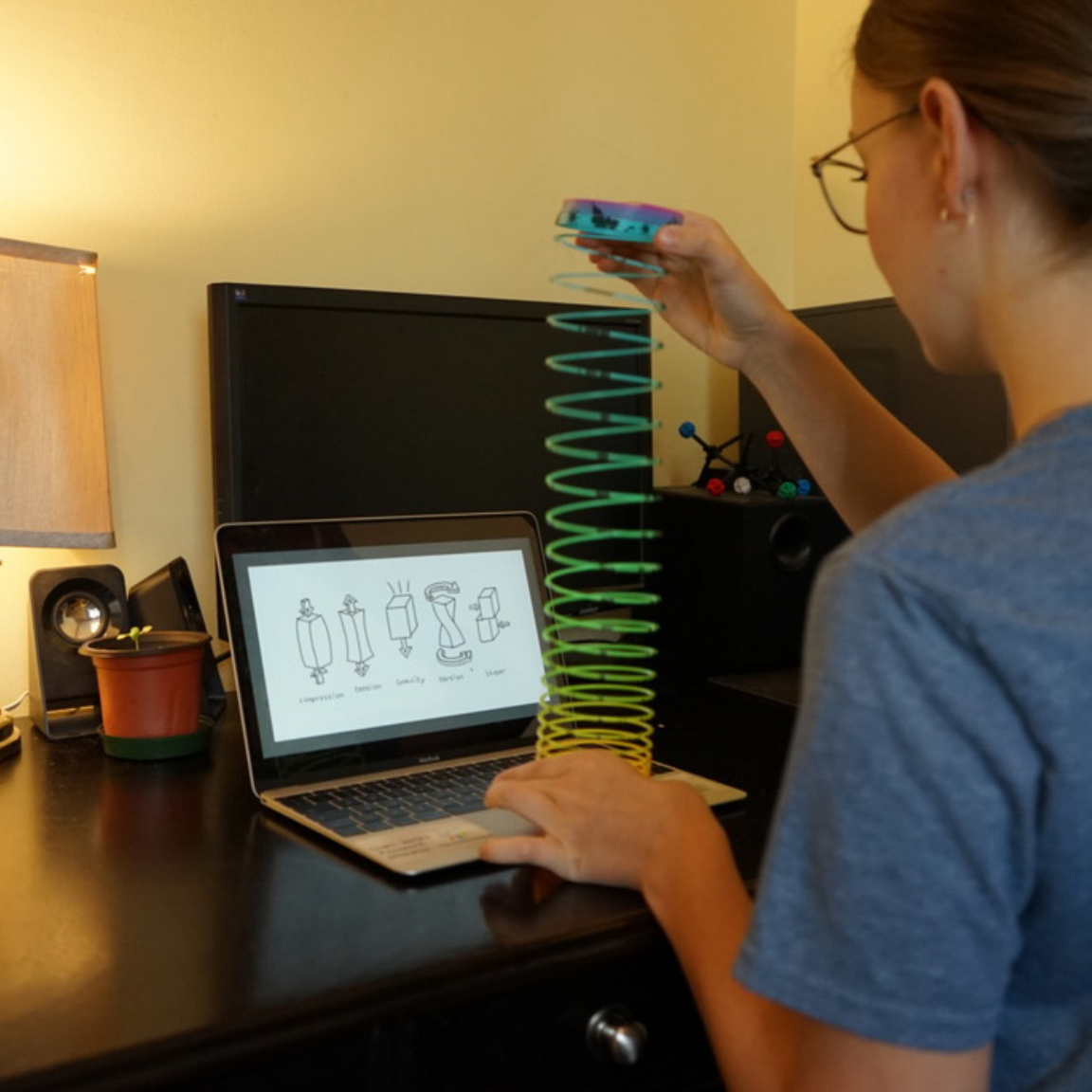
curriculum outcomes, so we could still spread our passion for science in a safe manner. We changed our delivery methods to remote options which allowed us to connect with schools through remote workshops (2021-2022), and Manitoba youth through our virtual Go Eng Girl (2020), Go Code Girl (2021), Summer Clubs (2021), and Girls Clubs (2021) events which were all hosted on online platforms. Starting in January 2022, we were able to return to delivering in-person workshops in schools in Winnipeg and surrounding areas and resume the delivery of our Dissection Club.

OUR INSTRUCTORS

Our instructors are our champions. All of our instructors are undergraduate university students pursuing engineering, science, or STEM-related degrees. From that pool we preferentially hire women, Indigenous peoples, and other minorities. We pride ourselves on hiring undergraduate students that reflect the diversity of students throughout Manitoba. Each is trained to deliver all of our Manitoba science curriculum-based workshops. They also receive classroom management, gender equity and Indigenous cultural training. We provide meaningful employment for our instructors to develop strong leadership and presentation skills.

During the fall and winter our instructors work part-time delivering outreach close to Winnipeg to accommodate their classes and labs. In the spring and summer of 2020 and 2021 they worked full-time to engage Manitoba youth in STEM learning experiences through the development of our STEM Activity Booklets and online Summer Clubs.





OUR WORKSHOPS

Showcasing a variety of science and engineering topics, our workshops are highly interactive, and bring technology and hands-on activities to classrooms.

wisekidneticenergy.ca/workshops

OUR WORKSHOPS

With schools moving to remote learning starting in March 2020 and remaining that way for the remainder of the 2020 school year, our in-person workshops were cancelled. We spent time developing our remote workshops so we could continue to connect with passionate educators across Manitoba to engage students from kindergarten to Grade 12 in hands-on learning experiences, based on the Manitoba science curriculum. We created remote workshops that could be delivered by mailing supplies to the location first, and then connecting our instructors with schools and community groups to lead the workshops through a video call. With the support of AgTech funding we developed 4 remote workshops, which featured lessons on the Three Sisters crops, agricultural simple machines, DNA detection and greenhouses. In May 2021, we began delivering our remote workshops and have since gone on to deliver 201 remote

workshops between May 1, 2021 and March 31, 2022. Beginning in January 2022, we were able to return to delivering our in-person school workshops, where teachers had a choice of 20 different curriculum-based workshops to choose from. We facilitate dissections, design-build-test challenges and plenty of fun educational games. We bring all the supplies and clean up afterwards. With our workshops we charge minimally and offer the same rates for schools within and outside the city of Winnipeg. We strive to spark curiosity and build momentum towards positive experiential learning. Please go to our website (www.wisekidneticenergy.ca) to view our current workshop catalogue in French and English.

FUN FACTS ABOUT WORKSHOPS

- Total audience of 10 210 from Kindergarten to Grade 12
- 479 workshops delivered April 1, 2020 – March 31, 2022

“Quite a few students said it was the best day of their life! ... It will be an activity they remember for a long time.”

- C. Rose, Teacher, Lakewood School





WORKSHOP DELIVERY BROKEN DOWN BY SCHOOL DIVISION

April 1, 2020 – March 31, 2022

| DIVISION | KIDS PER DIVISION | DIVISION | KIDS PER DIVISION |
|--------------------|-------------------|-----------------------|-------------------|
| Borderland | 249 | Red River Valley | 116 |
| Franco-Manitobaine | 362 | River East Transcona | 1158 |
| Flin Flon | 87 | Seine River | 574 |
| Garden Valley | 92 | Seven Oaks | 662 |
| Hanover | 952 | St. James Assiniboia | 128 |
| Interlake | 113 | Sunrise | 84 |
| Kelsey | 101 | Swan Valley | 12 |
| Lord Selkirk | 477 | Winnipeg | 913 |
| Louis Riel | 353 | Other/Private | 1158 |
| Mountain View | 71 | | |
| Mystery Lake | 235 | | |
| Pembina Trails | 1564 | | |
| Portage la Prairie | 271 | | |
| Prairie Rose | 316 | | |
| Prairie Spirit | 159 | | |
| | | TOTAL STUDENTS | 10 163 |

“It was great how there was a hands on aspect of the workshop. Holding the canoes and tree cookies helped the students to be engaged. As well, the movement part of growing into trees was very age appropriate for Kindergarten! Thank you!”

N. Garland, Teacher, St. Andrews School



OUR ACTIVITY BOOKLETS

STEM Activity Booklets are developed based on the Manitoba kindergarten to Grade 8 science curriculum. They include games, activities and experiments and are offered in English and French.

wisekidneticenergy.ca/activity-booklets

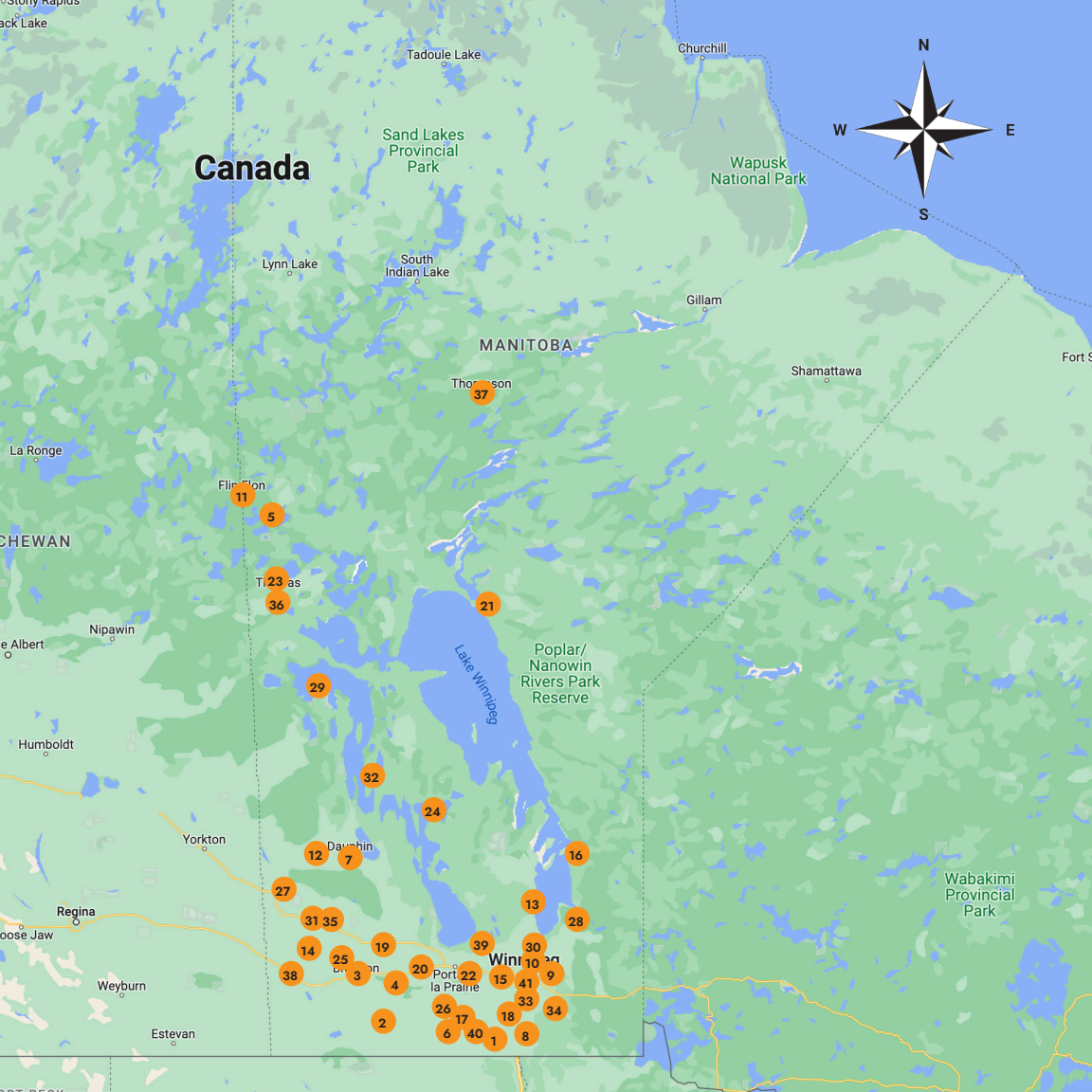


OUR ACTIVITY BOOKLETS

In the summer of 2020, we began the development of our STEM Activity Booklets. We developed the Activity Booklets to support learning for youth without electronic devices and/or internet. All of the games, activities and experiments included in them are based on the Manitoba kindergarten to Grade 8 science curriculum. We created these STEM Activity Booklets as a way to connect with youth during the Covid-19 pandemic, when we were unable to provide our outreach in person. We have English and French versions of the Activity Booklets and provide them free of charge. Through our Actua network membership we received

support to develop our Activity Booklets. Our 2020 volumes of the Activity Booklets were created with the support of CanCode funding, which is a federal government initiative that aims to promote education in digital literacy and computational thinking. Our 2021 Activity Booklets were created with the support of Actua AgTech funding and feature agricultural themes. We printed and delivered over 50 000 of our STEM booklets to locations around Manitoba in 2020 and 2021 and have had over 39 000 downloads of the booklets from our website since we launched them. You may visit our website to download free copies of our various STEM

Check out where our booklets went on the map and list on the next pages!



OUR BOOKLET DELIVERY LOCATIONS

1. ALTONA
2. BELMONT
3. BRANDON
4. CARBERRY
5. CRANBERRY PORTAGE
6. DARLINGFORD
7. DAUPHIN
8. DOMINION CITY
9. DUGALD
10. EAST ST. PAUL
11. FLIN FLON
12. GILBERT PLAINS
13. GIMLI
14. HAMIOTA
15. HEADINGLEY
16. HOLLOW WATER FIRST NATION
17. MIAMI
18. MORRIS
19. NEEPAWA
20. NORTH NORFOLK
21. NORWAY HOUSE CREE NATION
22. OAKVILLE
23. OPASKWAYAK CREE NATION
24. PINAYMOOTANG FIRST NATION
25. RIVERS
26. ROSEISLE
27. RUSSELL
28. SAGKEENG FIRST NATION
29. SAPOTAWEYAK CREE NATION
30. SELKIRK
31. SHOAL LAKE
32. SKOWNAN FIRST NATION
33. ST. ADOLPHE
34. STEINBACH
35. STRATHCLAIR
36. THE PAS
37. THOMPSON
38. VIRDEN
39. WARREN
40. WINKLER
41. WINNIPEG



WISE



**Activity
Booklets**

A STEM activity booklet for fun on-the-go learning
Made by WISE Kid-Netic Energy

DIY Activities
Word Search
Colouring
... and more!





Wish you had better energy

CODEMAKERS - Binary Day

Here are the numbers

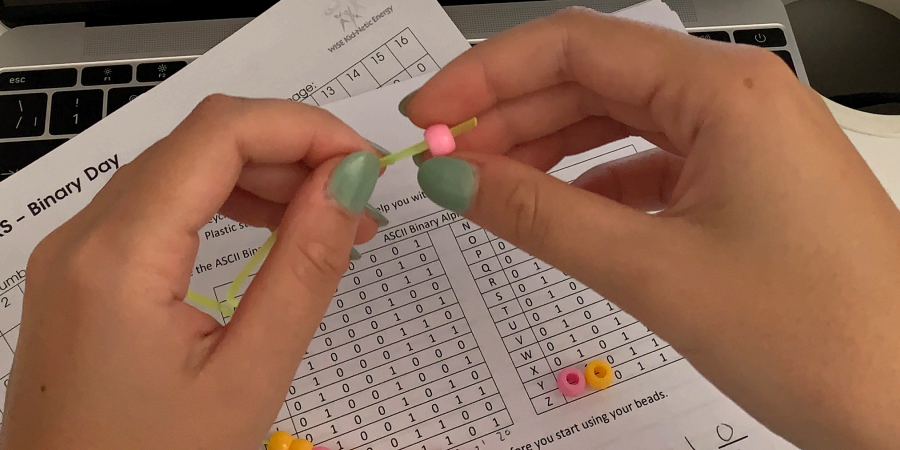
| | |
|---|---|
| 1 | 0 |
| 2 | 1 |
| 3 | 0 |

| | | | |
|----|----|----|----|
| 13 | 14 | 15 | 16 |
| 0 | 0 | 0 | 0 |

ASCII Binary Alphabet

| | |
|---|---------|
| N | 0 0 0 1 |
| O | 0 0 1 0 |
| P | 0 0 1 1 |
| Q | 0 1 0 1 |
| R | 0 1 1 0 |
| S | 0 1 1 1 |
| T | 1 0 0 1 |
| U | 1 0 1 0 |
| V | 1 0 1 1 |
| W | 1 1 0 0 |
| X | 1 1 0 1 |
| Y | 1 1 1 0 |
| Z | 1 1 1 1 |

Here you start using your beads.



OUR SUMMER CLUBS

Summer Club programming is fun, interactive, and features hands-on activities. It was offered in the summer of 2021 as a way to connect with youth virtually and featured everything from creative design challenges to playing with digital technology.

wisekidneticenergy.ca/summer-clubs

OUR SUMMER CLUBS

In the summer of 2021, we ran week-long Summer Clubs for youth around Manitoba to participate in remotely. There were a variety of themes for our clubs, including Extreme Engineering, Space Farm, Codemakers, Go Green, and medical and chemistry-based topics. Participants were sent the supplies in advance and joined our club instructors through a video call to participate in various STEM based activities. This was our first year offering both English and French versions of our summer programming! Overall, we had

258 participants ranging from Grades 3-8 sign up to join us for our Summer Clubs.

As a parent I loved seeing my child's excitement. She especially loved seeing the dissections. Being from outside Winnipeg having the online piece was great for my child to participate.

Parent of a Summer Club Member



WISE Kinetic Energy
PROUD PARTNER FOR THE FUTURE





Patel



OUR CLUBS

Our clubs were offered remotely in 2021. Each club included a variety of hands-on activities led by our undergraduate student instructors. Club members had the opportunity to connect with like-minded youth in order to explore science and engineering on a more in-depth level.

wisekidneticenergy.ca/clubs

GIRLS CLUB

Offering quality extra-curricular science and engineering programs is crucial to the development of Manitoba's future scientists and engineers; making intentional space in these programs for groups who are underrepresented in STEM is a priority for WISE Kid-Netic Energy. We have a well-established Girls Club program that gives kids opportunities to get excited about science and engineering in a setting outside of their science classroom. Due to the pandemic, in 2021 we offered our first ever remote version of Girls Club, with participants

joining virtually each week to connect with each other. We also offered Girls Club for Grades 3-5 and Grades 6-8 in English and French, for the first time ever! In both the French and English Girls Club programs, participants met with their instructors each week to explore a new STEM topic, with a mixture of youth-selected and instructor-selected themes. Overall, we had 129 participants join us for our Girls Clubs, which ran for 8 weekly sessions held on the weekends in winter 2021.

DISSECTION PROGRAM

The goal of this free enrichment program is to offer students an opportunity to prepare for post-secondary labs and classes, and/or discover whether anatomy, biology and even medical science are areas of potential interest to them career-wise. The students had a chance to dissect an eyeball, frog, rat and dogfish. In January 2022, we were able to resume the delivery of our in-person

Dissection Program and we had 34 student participants throughout the 6 weeks of sessions. Special thanks to Winnipeg School Division for sharing their space, and teacher Leanne Romaniuk, who volunteered to supervise the program.

I think this program was really fun and informative overall. I think we learned a lot about the physical structure of the specimen.

Program Member







OUR OUTREACH

WISE Kid-Netic Energy is dedicated to inspiring all youth to explore Science and Engineering. We have special initiatives to provide outreach to underrepresented groups.

wisekidneticenergy.ca/outreach-numbers



ADOPT-A-CLASS

Our Adopt-A-Class Program has been offering inner-city, or socio-economically challenged schools free workshops since 2012. This program recognizes the challenges of certain neighbourhoods, and provides programming to schools that might not otherwise be able to access our services. The schools involved in the program include Brooklands, Champlain, David Livingstone, Dufferin, Elmwood, King Edward, Niji Mahkwa,

Norquay, Pinkham, River Elm, Sisler, Southeast Collegiate and William Whyte School. Between April 2020 and March 2022 we delivered 20 workshops through our Adopt-A-Class program, and visited 386 youth. As always, we are thankful to Actua, The Winnipeg Foundation, and other private donors for their contributions. Learn how you can contribute by visiting our website.

I think the students appreciated the adaptability of the workshop and how they could create their own devices. Really applicable. Electricity is fun!

D. Brown, Niji Mahkwa School, Winnipeg, MB



Welcome to My Class



WELCOME TO MY CLASS

PLEASE RECYCLE

PLEASE RECYCLE

PLEASE RECYCLE



OUR OUTREACH
OUR OUTREACH

INDIGENOUS OUTREACH

To connect with indigenous youth during the pandemic from April 2020 to March 2022, we created remote workshops and STEM activity kits based on the Manitoba kindergarten to Grade 8 science curriculum that were sent by mail to various locations around Manitoba to engage youth in hands-on STEM learning opportunities. We sent these remote workshops and STEM activity kits to Pinaymootang First Nation, Sapotaweyak Cree Nation, Opaskwayak Cree Nation, Skownan First Nation, Norway House Cree Nation, Wanipigow First Nation, Sagkeeng First Nation, and Ma-Mow-We-Tak Friendship Centre in Thompson. We delivered 5687 STEM activity kits and remote workshop kits to these communities.

...the project was perfect for reinforcing what the students had learned about strong and stable structures, as well as methods to effectively grow plants.

K. Moisan, Teacher, École Opasquia School, The Pas





GO ENG GIRL & GO CODE GIRL

Go Eng Girl and Go Code Girl are free of charge public events for girl-identifying youth in Grades 7-9 that explore engineering and computer science/engineering. These events are framed in an encouraging and interactive way through activities and design challenges. A key component of each event is also about providing information and

resources to the students and their parents about how they can continue in these fields. During the pandemic, we offered Go Eng Girl in October 2020 and Go Code Girl in February 2021 for the first time ever as virtual events! Our Go Eng Girl event hosted 139 participants virtually and our Go Code Girl event hosted 220 participants virtually.

I liked the undergrads coming and speaking [at the event]! It was very cool to hear what engineering is like in university. I also liked the design challenge.

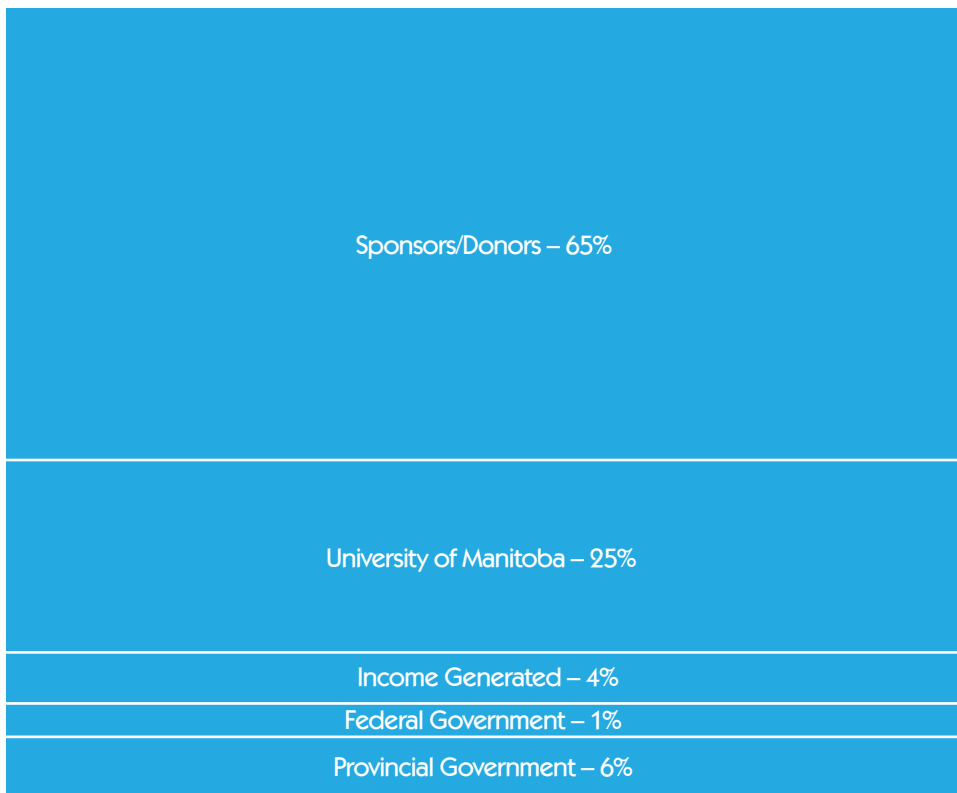
Go Eng Girl Participant

I understand this is the first time you have offered this event online. Mission accomplished! You did a great job of making it interesting, engaging and interactive. Congratulations! You should all be very proud of your work. Thank you.

Go Code Girl Participant Parent

OUR FINANCES: 2020-2022

REVENUE: \$1.4 MILLION*



Note: Due to the shift from in-person to remote delivery during the pandemic, there were cost savings because we were unable to travel. Travel costs typically make up 10-15% of our total annual expenses. We are going to set aside these funds to pay for student and staff wages and increased travel costs in the future.

OUR FINANCES: 2020-2022



EXPENSES: \$1.1 MILLION

Non-Student Wages & Benefits – 43%

Student Wages & Benefits – 42%

Travel – 1%

Materials and Supplies – 14%

I liked how my daughter could learn about engineering and how there is different types of engineering. She is now even interested biomedical engineering!

Event Participant Parent



WISE KidNetic
HAVE YOUR OWN

varia

WISE KidNetic
HAVE YOUR OWN

In Oo Pp Qq Rr Ss Tt W Xx Yy Zz

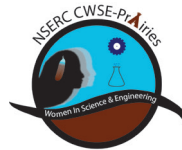
LIA
EVANDE



OUR SUPPORTERS

2020-2022 FISCAL YEAR FUNDERS

We have many generous supporters that make our work possible.



WISE Kid-Netic Energy is a Proud Network Member of Actua

A network member of **actua**

Actua provides training, resources and support to its national network of members located at universities and colleges across Canada in the delivery of science, technology, engineering and mathematics (STEM) education outreach programming. Each year, these members engage over 350,000 youth in 500 communities nationwide. Please visit Actua at www.actua.ca.

2020-2021 ACTUA NATIONAL FUNDERS





All of the pizza has great toppings

Pizza bell

Pizza costs \$100 dollars

It has a soft much cheese

It has all kind of pizza

It includes a child surprise





OUR FUTURE

WISE Kid-Netic Energy looks forward to maintaining close ties with the Price Faculty of Engineering and the Faculty of Science at the University of Manitoba, and aligning ourselves closely with their strategic outreach objectives. We look forward to strengthening our ties with teachers and schools within the province so we can continue to support efforts to attract more youth into careers in Science, Technology, Engineering and Math. Our province has a bright future ahead and we know our talented youth are the conduits to our joint success.





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and Twitter @wisekidnetic!**

