

# Welcome Back!

## Learn What's Brilliant

# *at the* Lab

2024-2025 Teacher Programming



Supporting Innovation In Education For Educators & Youth Since 2013

BRILLIANTLABS.CA | TEACHER PROGRAM 2024-2025 GUIDE



## Welcome Back!

Join us as we celebrate our 10th anniversary!

This school year marks a special milestone for Brilliant Labs as we celebrate 10 years of inspiring innovation! We're excited to invite you to be a part of this journey by participating in our Brilliant Blue Ocean Innovative Competition. Plus, explore our latest Innovation Challenge: Novel Storytelling, where creativity meets cutting-edge technology.

To commemorate our anniversary, we're launching the all-new Brilliant Labs Kits—a collection of our most requested projects over the past decade. These kits are designed to help you and your students dive into transdisciplinary learning while gaining valuable insights into the UN Sustainable Development Goals.

With 45+ STEAM programs, 3 Innovation Challenges, 1 International Competition, 12 ready-to-go classroom project kits, and the BL Project Idea Portal, there's so much to explore! From Cyber Security to Natural Making and Biomaking, there's something for every classroom. Plus, stay up to date with b.Board's AI enhancements and other tools to take learning to the next level.

Join us and explore the endless possibilities in the 2024-2025 Teacher Programming Guide—together, we'll shape the future of learning!



# Let's Explore

## 2024-2025 Teacher Programming

# at the Lab

## About Brilliant Labs

For the past 10 years, Brilliant Labs, an Atlantic Canadian charity, has partnered with teachers and students to transform learning into an exciting, hands-on experience. By combining creativity, innovation, and technology, they've empowered young learners to explore coding and digital skills in a fun, engaging way. Through projects inspired by the United Nations Sustainable Development Goals (SDGs), students are not only learning but also making a meaningful impact in their schools, communities, and beyond. Together, educators and youth are leading the way, proving that when innovation meets purpose, learning becomes truly extraordinary!

## Reach & Impact

### Our Atlantic Canadian Impact – Since 2014

- **60,875+ Summer Opportunities**  
Youth Reached through Summer Camps
- **127,392+ Teacher supports**  
In Class, Virtual, Professional Learning
- **1,161,098+ Youth Experiences**  
Experiences provided through in school, after school, and summer camps
- **13,000+ School and Community Visits**  
BL Project Specialist visits, project and makerspace support
- **9,175+ Special Events**  
Guest Speakers, Coding and Digital Skills Workshops and events
- **400 Brilliant Labs Makerspaces**  
Opening more School and Community Makerspaces Monthly!
- **3000+ Carts & Kits Deployed**  
Maker Carts, Maker Kits, Cyber Security, Prototyping kits
- **6,603+ Projects**  
Student, Teacher, and School -Led Brilliant Projects Funded

**SUPPORTING INNOVATION IN EDUCATION FOR YOUTH AND EDUCATORS**

# Brilliant Blue Challenge

**TEAMS  
WANTED!**

The ocean covers 71% of the Earth's surface and contains 97% of the Earth's water. With a growing population and dwindling resources, we need to find new ways to sustainably use the ocean's resources. Brilliant Blue is an initiative that empowers youth to design, create, and innovate in the blue economy.

Brilliant Blue is a global competition, conceptualized by Brilliant Labs, that challenges students ages 12-18 to develop innovative solutions to some of the oceans' top challenges. For its second iteration, students will be competing in one of three categories: Marine renewable energy, Marine Autonomous systems, and Healthy marine Life. Teams of two to five students from all over Canada, and globally, will be participating in this year's competition.

The competition will virtual on the 24th and 25th of October. To learn more, check out this [webpage](#). Interested in signing up a team but aren't sure where to start? No Problem! Just email [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) and we will connect you with a program specialist who can guide you through the process and even help your students brainstorm ideas!



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# Innovation Fairs!

Join us in celebrating the incredible innovations taking place throughout our schools and Atlantic provinces and challenge students to ask "What IF"!

The New Brunswick Innovation Fair (IF) will take place this spring in Bathurst on April 11th 2025!

The Nova Scotia IF will take place in early May, 2025 in South Colchester!

Last year we had 3,000 visitors and over a thousand student projects making the Brilliant Labs Innovation Fair the largest youth STEAM showcase in Canada.

The IF is open to youth from all backgrounds. You and your students will have a chance to meet makers from the community, industry, and other schools. Learn more about Innovation Fair [here](#)

## Learn More: Watch & Read

We have lots of [resources](#) for you to read and more resources for you to watch! [YouTube Channel](#)

Subscribe now to the BL [Innovation News For Announcements and Updates!](#)



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# Fundrasier Cardboard For Kitty **NEW!**

Cardboard For Kitty is an exciting, youth-led fundraiser happening in **Saint John, NB on November 9th, 2024**. This event raises funds for local cat charities and Brilliant Labs, while inspiring creativity and critical thinking skills in students. Teams of 2-5 people will design and build innovative cardboard homes for cats, encouraging participants to think critically about design, construction, and problem-solving.

We are currently seeking teams from the Greater Saint John area to join us on November 9th at Market Square. Register a team today! Watch this news clip featuring students and their teacher Anne Irvine from Lakewood Hights School.

We are also looking for schools and communities interested in hosting their own **Cardboard For Kitty fundraiser this spring**, helping both cats and kids! This is a fantastic opportunity to engage students in hands-on STEAM learning while supporting a great cause.

If you're interested in getting your school or community involved, please reach out! Let's work together to inspire our students and make a difference for cats and kids.

## Learn more about Cardboard For Kitty

# Cardboard For Kitty!



Lakewood Heights School Cardboard For Kitty Team celebrates after creating three-story cardboard cat condo featuring a carefully designed and coded automatic feeder. (April 6, 2019). The fundraiser is re-lanching November 9th, 2024, at Market Square Atrium, Saint John to support RedHead Strays and Brilliant Labs.

[Watch Global News Feature Here](#)

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# For Your Class

## Kits

BL Kits are designed to help teachers seamlessly integrate transdisciplinary learning into their classrooms, sparking creativity in students while aligning with curriculum outcomes. With easy-to-follow steps, students will explore Sustainable Development Goals (SDGs) through hands-on projects. From kits like [hydroponics](#), [biotextiles](#), [robotics](#), to [smart tattoos](#), [cybersecurity](#), and [more](#), these resources encourage participation in innovation challenges and provide a wealth of project ideas to inspire learning and engagement. Explore [BL Kits now!](#)

## Project Funding

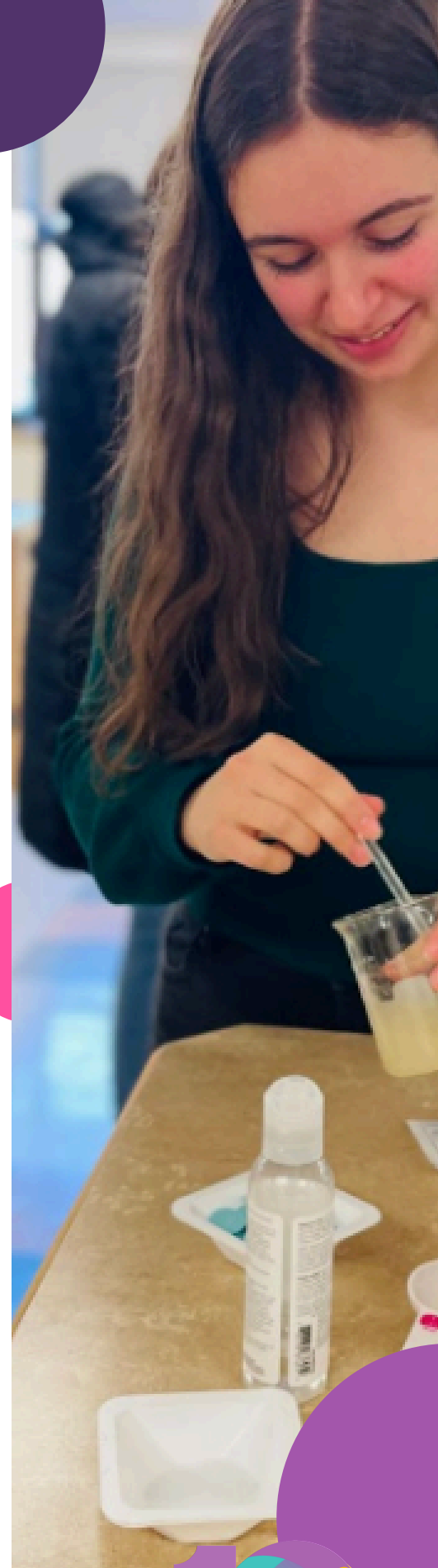
Our project funding supports teachers and students with innovative ideas by providing the materials they need to bring their projects to life. Projects should align with curriculum goals and foster technology creation, drawing inspiration from our kits or even innovation challenges. This funding empowers creative solutions in the classroom, helping to turn ideas into reality. [Learn more](#)

## Innovation Challenges

For teachers eager to take on a challenge and empower their students to innovate and create, our challenges offer the perfect opportunity. Designed to spark creativity without a strict step-by-step guide, these challenges let you, as the educator, lead the way and shape your students' learning experience according to your unique teaching style.

## Classroom Workshops

We are available to support your classroom, in person and virtually. [Contact us](#) and we connect you with a Program Specialist to provide the necessary materials for workshops. Workshop subjects include: coding & digital skills, biomaking, b.Board and more. You can also access [pre-recorded learning sessions](#) for all grade levels.



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# For Your School

## Makerspaces

For the schools looking to enhance its classrooms by providing teachers with access to shared materials and increasing project-based, transdisciplinary learning opportunities. To ensure all students can benefit, these materials will be housed in a supervised space accessible to everyone. For success, the school needs a dedicated individual to manage the space, a collection of project ideas to kickstart initiatives, ongoing support for refurbishments and organization, and a focus on curriculum-based learning to align with educational goals.

[Apply for a makerspace today.](#)

## **Multi-Class or School Wide Projects**

Does your school have many teachers looking to collaborate on an awesome project? Or perhaps your school is taking on a school wide project tied to a United Nations Sustainable Development Goal like Climate Change or Food Security? We can help!

## **Ideas? BL Project Portal Can Help!**

Brilliant Projects aim to support teachers and organizations working with children by providing help with cross-curricular learning tied to STEAM curricular outcomes and UN SDGs. These projects aim to promote the use of technology, coding, creativity, innovation, and entrepreneurship in learning for K-12 students. Explore hundreds of projects and get ideas for your classroom! [We're here to help too. Visit the BL Project Portal](#)



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# Innovation Challenges

This year, Brilliant Labs is excited to present three Innovation Challenges designed to inspire students to change the world. Aligned with the United Nations Sustainable Development Goals (SDGs), these challenges empower students to tackle real-world problems, think creatively, and push beyond their comfort zones, all while achieving key learning outcomes.

We invite teachers and students to join us in creating innovative solutions that make a tangible difference. Together, let's inspire and equip the next generation of problem-finders, problem-solvers and global change-makers!

When you register for an innovation challenge, you can request a BL inspiration kit for your class or your own materials for your students' ideas.

## Novel Storytelling



# NEW!

Explore the concept of novel storytelling, through various mediums, where we encourage participants to think outside the box and explore new ways to intergrate language arts by telling stories using technology and traditional craftsmanship.

The Novel Storytelling Innovation Challenge invites participants to explore new ways of narrating stories by integrating projection mapping, laser-cut sample backgrounds, circuits, electronics, and textiles, which can include laser-cut shapes, b.Board and AI integration, and many other technologies.

This challenge is designed to push the boundaries of creativity, blending art, technology, and storytelling.

Create stories that are not only visually and intellectually stimulating but also interactive, allowing the audience to engage with the narrative in a multi-sensory manner. Be inspired by Wabanaki Quest!

REGISTER



Ben Kelly and his students from Caledonia Regional High School as they dive into the rich history and culture of the Wabanaki people through an innovative board game, 'Wabanaki Quest'. This educational journey is not just about fun and games; it's an immersive experience that weaves Wabanaki history into New Brunswick's curriculum. [Watch here](#)

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# Communities Of The Future



Brilliant Labs is excited to once again challenge youth to reflect on the role of sustainable and equitable communities. The Communities Of The Future Innovation Challenge aims to inspire students to tap into their empathy and ingenuity, exploring how our environment influences community wellness, economy, and longevity.

We invite you to join us in finding innovative solutions to real-world problems affecting our communities. This year, let's focus on key areas such as transportation, energy, green spaces, clean drinking water, innovative building design, and the use of sustainable materials to minimize our environmental impact and carbon footprint.

Together, let's empower our students to create a brighter, more sustainable future. Let's collaborate, innovate, and make a difference!

[REGISTER](#)

## Innovative Fashion



Kick off the new year with innovation! We are happy to announce that the Innovative Fashion Challenge is back this year. Where creativity meets cutting-edge technology. This challenge will ignite students' imaginations, blending fashion with science to create garments and accessories that transform and come to life. From e-textiles and biofabrication to hybrid-body crafts, participants will explore the future of fashion through the lens of technology and ethics. Rethink the fashion industry by making it more creative, ethical, sustainable—and, of course, way cooler with science! Get ready to innovate like never before!

[REGISTER](#)



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anniversary  
BrilliantLABS  
anniversaire  
LABOSCreatifs

# Synthetic Biology

Students can learn all the fundamentals of bioengineering and working with microbes. Teachers and students will be immersed in the basics of amino acid coding creating a codex for interpreting the genome. They will both create models of all the components of a cell's inner machinery and discover new techniques like extraction of DNA and isolation and analysis of proteins. In part of the interpretation and design of genetic code, they will be exposed to freely available tools to make bioengineering in the classroom a reality. More adventurous students can learn about scaling up microbial production with sterile technique.

Please email [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) to share your interest.

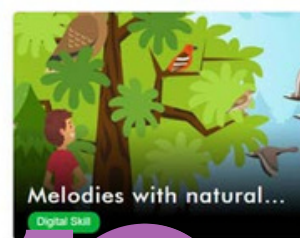
# Natural Making

Teachers, students and families can find free and sustainable tools, materials and resources in their own backyard. The environment around every building is an impressive source of inspiration that all learners can naturally learn from all year long. The natural maker team at Brilliant Labs developed a learning continuum to help explore possibilities and discover your own immersive and natural learning environment.

To access the latest version of the Natural Maker Learning Continuum Guide including pedagogies, teachers tips and success stories, resources from Brilliant Labs and other organisations, visit [Brilliantlabs.ca/natural-making](https://brilliantlabs.ca/natural-making)

You are a teacher and would like to join the Natural Maker Cohorte to connect with other like minded pedagogues, share and get inspired? Contact us.

To learn more about Natural Making contact us or visit [Brilliantlabs.ca/natural-making](https://brilliantlabs.ca/natural-making)



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## Professional Learning

From large groups, to small groups, to one on one and co-teaching, Brilliant Labs is here to help you learn and develop as an educator. Reach out for customized Professional Learning for you and your colleagues.

[Join our Professional Learning Request List](#) to receive updates on PL in your area. Register Now!

## Prepping For Brilliance

We understand how precious preparation time can be for teachers. Our new professional learning initiative for educators, Prepping for Brilliance, helps provide you with a easy and accessible PL. We will come to you, in-person or virtually, set up all materials, and spend your prep time with you and any fellow colleagues at your school who are interested in preparing for brilliance.

## Learning Management System (LMS)

Want to dive into maker-centered learning but can't attend our in-person PL sessions? Explore our free, asynchronous online courses designed to help you develop classroom projects using code-based and digital skills. Our LMS offers 14 self-paced courses, including BioMaking and Machine Learning, with more on the way, allowing you and your students to explore, learn, and earn micro-accreditations. Start your journey at [learn.brilliantlabs.ca](https://learn.brilliantlabs.ca).



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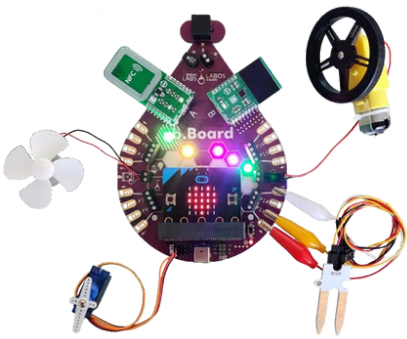




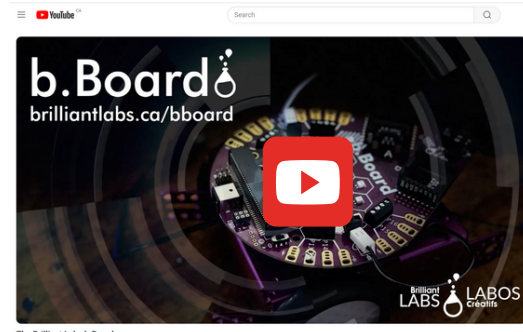
# Rapid Prototyping

The b.Board is an open-source electronics hardware prototyping platform designed by Brilliant Labs. It's designed to be accessible to youth, creators, researchers, and inventors of all ages, use the b.Board to easily bring your IoT, Open or Big Data projects projects to the cloud with onboard WiFi. Create the robot of your dreams or other hardware classroom project ideas from concept to prototype in minutes. The b.Board opens up a new world of design possibilities with its integrated breakout pins, motor drivers, servo pins, high current supply capability, and clickboard™ compatibility, expansion ports and much more! [Learn more visit the Brilliantlabs.ca/bboard](https://www.brilliantlabs.ca/bboard)

## NEW AI!



Did you know the b.Board now had [AI capabilities](#)? You can train machine learning models and use a serial connection, MQTT connection, or process the data onboard with a camera accessory! Email [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) to set up a workshop for your class or find out more!



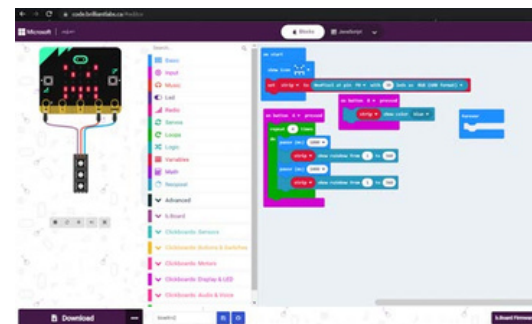
The Brilliant Labs b.Board

## b.board coding cards

Do have b.boards on hand, but are often looking for code to help your students? [View the b.Board cards here.](#)

## Coding the b.Board

Easily code the b.Board with a custom environment designed to help you effortlessly create your projects using blocks, JavaScript, or Python at [code.brilliantlabs.ca](https://code.brilliantlabs.ca). Our platform also includes ready to use project examples and tutorials helping your transform your ideas into inventions and making the b.Board the perfect rapid prototyping solution for makers and students of all ages and abilities.



# Machine Learning / Artificial Intelligence

Did you know Brilliant Labs has developed a Scratch based Machine Learning platform to help elementary and middle school students learn how to train their very own machine learning models? Visit [scratch.brilliantlabs.ca](https://scratch.brilliantlabs.ca) where students can explore machine learning and artificial intelligence through easy-to-learn coding blocks.

We also have b.Board powered A.I. kits to allow students to learn and apply [audio and video recognition machine learning models to their b.Board](#) prototyping projects. There is even a camera accessory that can be hooked up to the b.Board easily to ensure your b.Board project can have computer vision and A.I. superpowers!

Email [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) for more information, workshops, or training related to AI and the b.Board.

## Song writing camps in NB

Experience a transformative journey at the Brilliant Labs Songwriting and Media Camp, designed for aspiring young songwriters and media enthusiasts. This immersive camp offers hands-on workshops, masterclasses, and collaboration with industry pros, helping participants sharpen their musical and technical skills.

Explore songwriting, video production, recording, and documentary-making in a dynamic environment that encourages creativity and experimentation across genres. The 3-day camp culminates in a public showcase, where participants can proudly present their work. Unleash your artistic potential with the tools, mentorship, and technology to bring your vision to life!



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# High School Virtual Co-Op

Brilliant Labs is excited to announce an array of virtual co-op internship opportunities designed to ignite interest and foster innovation among high school students. With 11 different positions available, there's something for every interest and skill set!

All positions are supported by a professional and the placements are intended to allow for new skills development, applying those skills on projects for Brilliant Labs, and building your portfolio for post secondary or the workforce. For an example of what a co-op placement with Brilliant Labs can look like please check out [Brilliant Labs Magazine: Working Together](#) and was created with the help of six co-op students and several students exploring media-based projects.

Students can choose from a wide range of roles, each offering hands-on experience in cutting-edge fields:

- [Game Design](#): Design and develop interactive games, focusing on gameplay mechanics, storytelling, and user engagement.
- [3D Modelling & Animation](#): Learn to 3D model and animate models for use in video games, shorts, and other media.
- [Graphic Design Intern](#): Explore your creativity by designing impactful visuals and graphics for various projects.
- [Digital Marketing Intern](#): Gain insights into digital advertising, social media strategies, and online campaign management.
- [Multimedia Production Intern](#): Explore multimedia content creation, including video editing, animation, and audio production.
- [Magazine/Blog/SEO Writers/Social Media Interns](#): Develop your writing skills while contributing to content creation, SEO optimization, and digital publishing and social media engagement.
- [Cyber Security Junior Analyst](#): Learn essential skills in cybersecurity, including threat detection, prevention strategies, and ethical hacking techniques.
- [Web and App Development Intern](#): Build responsive and dynamic websites or create mobile apps using HTML, CSS, JavaScript, and other web technologies.
- [AI Research Intern](#): Research, develop, and train AI models.
- [3D Printer Technician](#): Dive into the world of additive manufacturing and learn to operate and maintain 3D printers.
- [Hardware & Robotics Engineering](#): Get involved in designing and building electronic hardware components and systems or robots.



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# High School Virtual Co-Op

Participating Students will benefit from:

- **Practical Experience:** Gain hands-on experience in a virtual environment, applying classroom knowledge to real-world projects.
- **Mentorship:** Receive guidance and mentorship from industry professionals passionate about fostering the next generation of innovators.
- **Networking Opportunities:** Connect with peers and industry leaders, expanding your network and potential future opportunities.
- **Flexibility:** Enjoy flexible hours that accommodate your academic schedule and extracurricular commitments.

## Join Our Community!

Over 50 high school students each semester will have the opportunity to join Brilliant Labs' internship program, contributing to a diverse and collaborative learning environment.

## Apply or Inquire Today!

Don't miss out on this exciting opportunity to kickstart your career journey with Brilliant Labs!

Whether you're interested in technology, design, engineering, or digital marketing, Brilliant Labs' virtual co-op internships offer a unique chance to explore your passions and gain invaluable skills for your future career. Apply now and embark on a journey of innovation and discovery!

If you are interested and wish to know more about our programs, or to apply you can email us at [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) and they will get you in contact with our Co-Op Lead!



# CO-OP

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## b.Reads

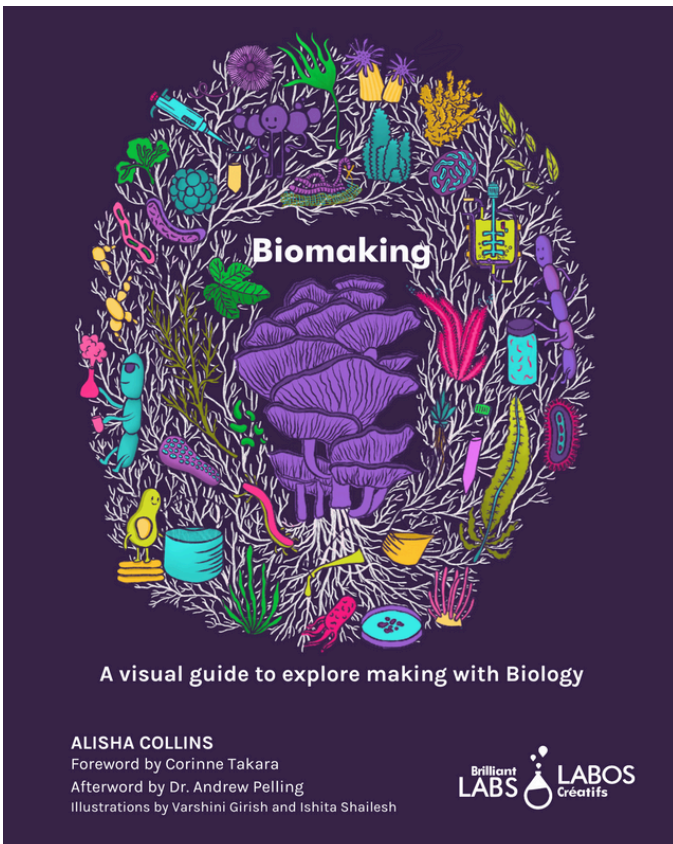
Join Brilliant Labs as we welcome a diverse collection of educational resources for teachers, professional development materials, fiction and non-fiction genres.

Our collection is uniquely authored by both experienced educators and talented students alike, providing a wealth of perspectives and insights into teaching and learning. With our vast range of materials, we strive to inspire, challenge, and engage both educators and students, ensuring a rich and fulfilling educational experience for all.

If you have a book idea connect with us and together we will publish your book.

Contact us at [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca)

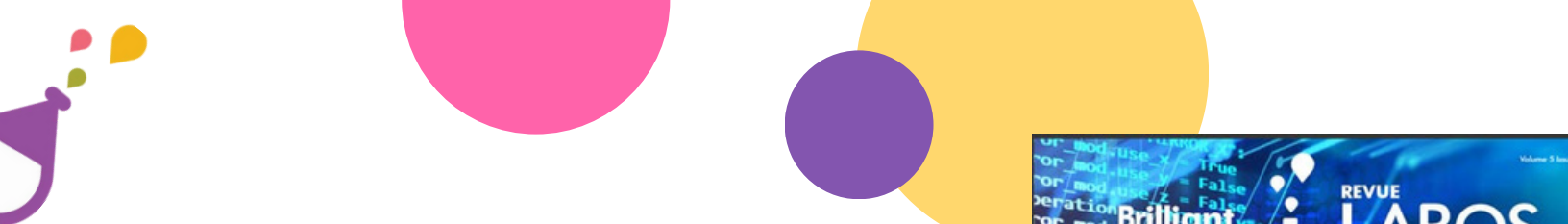
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# Read, Contribute & Subscribe!

## BL Magazine

Each season we offer a more in-depth look at the innovations within our communities and around us. Success stories of our students, interesting innovation ideas, and project ideas you could use in your classroom. Nominate a Teacher for TAKE Five, a regular article, to highlight a champion teacher.

[Read BL Magazine here!](#)

## Teacher & Student Articles / How To's & Tips Wanted!

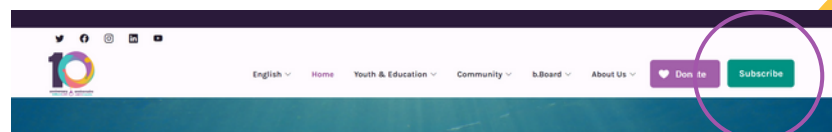
Have an idea? Want to publish your story or inspire your students to research, write and publish an article? [Connect with us](#) and pitch us your idea. Topics can be technology or general advice for teachers.

## Innovation News

Each month we highlight a teacher and a project from each province. Subscribe for news and updates, or to nominate a Teacher or a Project. [Read Innovation News!](#)

[Subscribe to our mailing lists via the contact us page \[brilliantlabs.ca/contact-us\]\(https://brilliantlabs.ca/contact-us\)](#)

OR Click the 'Subscribe' button on our website!



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## Entrepreneurial Support

Do you know a student who is starting a new business venture? Brilliant Labs has Program Specialists, Youth Mentors and Professional Leaders who can work with students to support prototyping, workshops, and design process guides that will entrepreneurs along the way. Plus, our team will support student entrepreneurs from research and prototyping, to patent and market launch!

Need support, tools, technology, funding, or guidance? We're here to help. [Read about Happy Cones! A sustainable and cool journey.](#)

[Contact us at info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) (Subject: [Entrepreneur](#))

## First LEGO League (FLL)

The First LEGO League's three divisions inspire youth to experiment and grow their critical thinking, coding, and design skills through hands-on STEM learning and robotics.

Whether you are brand new to robotics, or an avid LEGO league participant, this well-structured challenge is for you and your students. Participate in a friendly competition where your students will collaborate, discover and where learn while having fun.

Contact us at [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) for instructions and registrations.



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# The Revolution of 3D Graphics in Education

Expanding Creative Horizons with DigiArt Lab and Brilliant Labs: "Imagine a world where your children are not just consumers of technology, but creators of their own digital universe", this is the exciting prospect that DigiArt Lab and Brilliant Labs offers students through its 3D graphics program.

Our partner, DigiArt Lab, places the future at the heart of its teaching approach and provides students with a unique learning experience, while instilling in them key skills for their future in an increasingly digital world.

DigiArt Lab offers an annual subscription program for schools, allowing unlimited access to our online courses and workshops. Thanks to our partnership with Brilliant Labs, discounts are also possible. We use professional software recognized in major industries. For students and teachers, we offer a reduced-rate license for these software, thus guaranteeing access to the most sophisticated tools at an affordable cost.

We believe in the accessibility of quality education. By integrating 3D technology into our educational offer, we provide every child the opportunity to discover and shape the exciting world of 3D graphics. Join us today to be part of this educational adventure.

Learning 3D graphics is more than just a course: it's a journey through a multitude of creative fields, a window into a future full of possibilities. Join us today to start exploring and shaping this future.

For more information visit email [info@brilliantlabs.ca](mailto:info@brilliantlabs.ca) or visit: [www.digiart-lab.com](http://www.digiart-lab.com)



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# BL KITS

This year Brilliant Labs is offering digital skill and maker based education classroom project kits for you and your class. These kits are made with some of our most popular project requests and ready to be shipped out (limited quantities per province). These kits can also serve as inspiration for our different innovation challenges to help your students think creatively. Find all the kits on the next few pages!

## Included in the kits :

- Materials for a classroom (physical and learning resources)
- Introduction guide for the project narrative
- Links with UN sdg's
- Skills and competencies students will develop
- Various levels to make the project and also take it further
- Student and teacher supporting documents
- How to make the project- step by step based on design thinking process
- Troubleshooting
- Glossary
- Other ideas to reuse the materials in other projects.

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# HYDROPONICS

## COMMUNITY OF THE FUTURE INNOVATION CHALLENGE INSPIRATION KIT



What if we could grow food in our class year-round ?

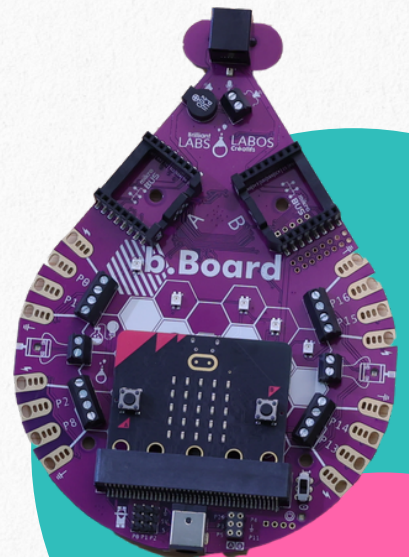
Use our small desktop version hydroponic kit and learn all about growing food year round.

As part of the project, students will learn how to code their hydroponic systems. They will create automated solutions to monitor and adjust conditions such as light exposure, water levels, and nutrient delivery. By coding these systems, they will gain valuable programming skills while ensuring optimal growth for their plants. Throughout the project, students will conduct experiments to visually demonstrate how different light conditions affect plant growth. By adjusting light levels and observing the results, they will deepen their understanding of hydroponics and the essential factors that contribute to successful indoor gardening. This hands-on experience will not only enhance their technical skills but also empower them to contribute to sustainable food practices in their community.

Science: Photosynthesis, Biodiversity and Conservation  
Technology : Coding and Programming, Hydroponic System  
Engineering: Design, Assembling  
Arts: Photography, Written and Oral Communication  
Mathematics: Data Management, Measurement

Suggested grade levels : 4-10

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# Light up WEARABLES

## INNOVATIVE FASHION INNOVATION CHALLENGE INSPIRATION

What if students could modify a piece of clothing that's no longer in use and brighten it up?



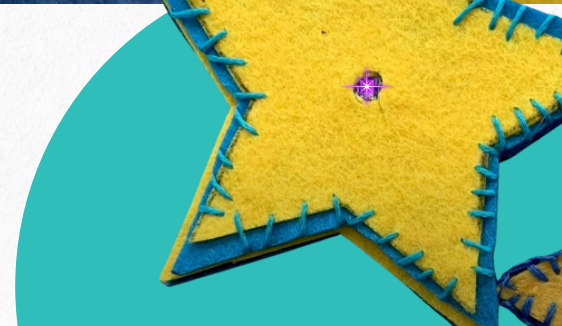
Learn how to sew circuits your clothes.

As the holiday season approaches, stores are going crazy for ugly sweaters at reduced prices. Instead of buying that garment that's probably not ethically made, transform an old garment to give it a festive look by adding lights. Students will design their new garment while learning about light circuits and how to program them. Helping the earth, one project at a time.

Science: Heat and Temperature, Environment  
Technology: Textiles, Circuits  
Engineering: Designing, Coding  
Arts: Sewing, Presenting  
Mathematics: Measurement, Geometry

Suggested grade levels : 4-12

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# HACK-O-WEEN

## COMMUNITY OF THE FUTURE INNOVATION CHALLENGE INSPIRATION

What if we could cut down on consumption and waste for holidays like Halloween?



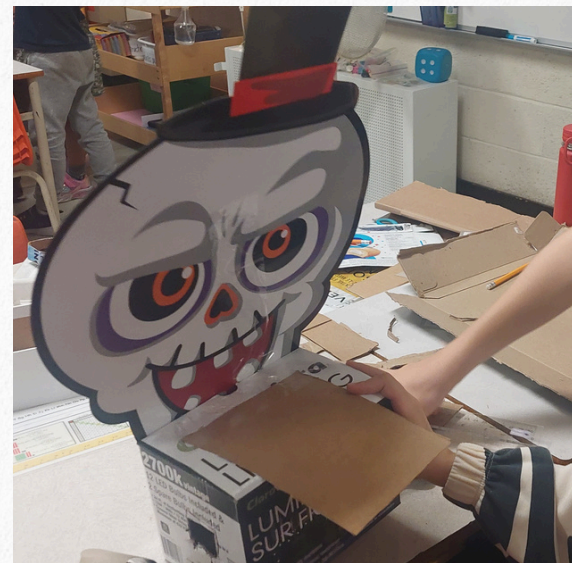
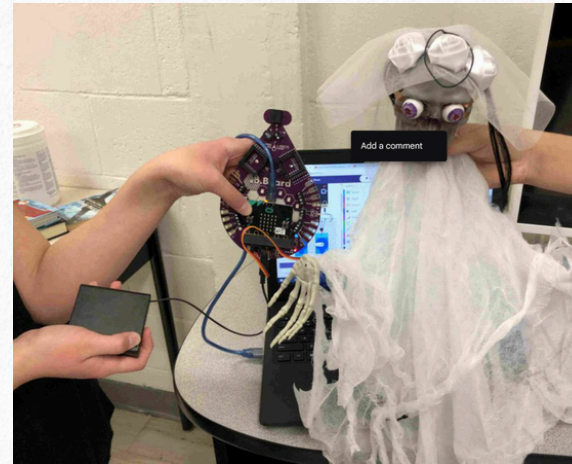
Halloween props using old decorations and adding tech components to them.

As Halloween approaches, stores overflow with sinister decorations and frightening animatronics. Instead of investing in ready-made decorations that may lack originality and have a significant environmental impact, why not opt for a more creative and eco-friendly approach? By using programming skills, old decor elements can be transformed into something truly terrifying. Imagine skeletons coming to life, pumpkins screaming, and ghosts dancing to the sound of your commands. By participating in this project, students will develop their programming skills while creating a stunning atmosphere for Halloween. An incredibly ingenious Halloween, one line of code at a time!

Science: Environment, Electricity  
Technology: Circuits, Coding  
Engineering: Designing, Building  
Arts: Crafting, Presenting  
Mathematics: Number Sense, Algebraic Expressions

Suggested grade levels : 5-12

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# Biotextiles

INNOVATIVE FASHION INNOVATION CHALLENGE INPIRATION

What if we could find solutions for textile waste ?



Students will get hands on with a science experiment and learn how to make bio-thread from algae.

Biomaking is a new concept within makerspaces, where makers explore biological systems in nature and design projects by collaborating with harmless microbes such as fungi, bacteria, yeast, and algae.

Textile pollution is a pressing environmental issue that poses a significant threat to ecosystems, wildlife, and human health. The production of textiles is environmentally damaging due to its high water and energy usage, the involvement of harmful chemicals, and the generation of significant waste. Fast fashion exacerbates this problem by creating a high turnover of clothing, leading to increased waste, while synthetic fibers contribute to pollution through non-biodegradable materials and microplastics. Additionally, the global transportation of textiles increases carbon emissions. Promoting sustainable practices and materials in the textile industry can help mitigate these impacts.

Science : Environmental Science, Biology  
Technology: Materials Science, Waste Management  
Engineering: Product Design  
Art: Environmental Art, Language arts  
Mathematics : Data Analysis, Statistics

Suggested grade levels : 5-12

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# Mission: MARS

## ROBOTICS COMPETITION

What if students can build their own Space Rover?



Students will be building and coding rovers from scratch.

Coding with the b.Board (Mission Mars), students will embark on an exciting journey of exploration. They will not just learn about designing and programming their very own Space Rover using the b.Board, but also get hands-on experience that will challenge their engineering and programming skills. This project is about igniting innovation through their curiosity about traveling and working in areas that are not safe for humans. By engaging in this project, students will not only gain knowledge but also the confidence and capability to envision solutions to global challenges and pave the way for a more sustainable future!

*Science : physics of motion, temperature, humidity*

*Technology: robotics, programming*

*Engineering: Sustainable Design Environmental Science*

*Art: Technical writing Sustainable Art*

*Mathematics : Geometry, measurement, data*

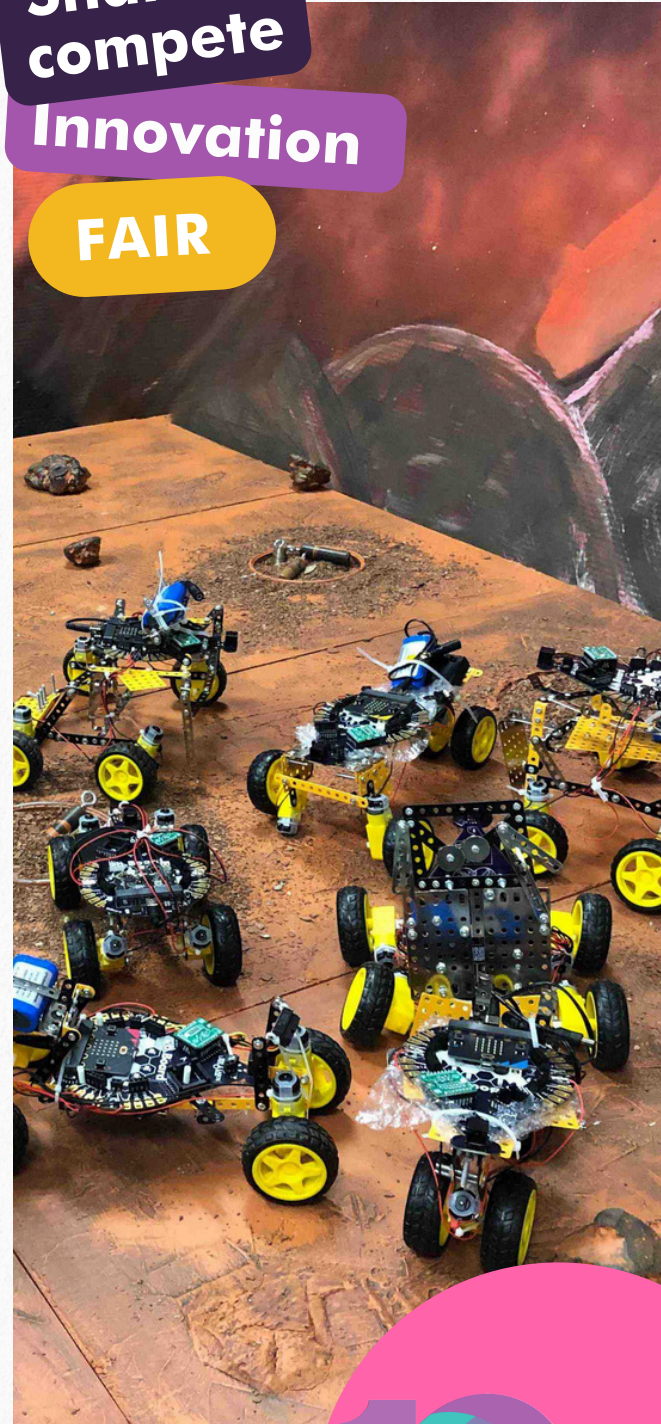
Suggested grade levels : 5-12

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# Unlocking BIOMIMICRY

## COMMUNITY OF THE FUTURE INNOVATION CHALLENGE

What if we could create an invention prototype inspired by something from nature?



Create an invention prototype inspired by something from nature!

Explore the marvels of biomimicry, where nature's ingenious designs inspire revolutionary advancements. This project delves into extraordinary flora and fauna features to spark groundbreaking inventions where a prototype inspired by something from nature! By empathizing with remarkable creatures, we envision integrating their abilities into technology for sustainability.

This project harnesses nature's wisdom to tackle environmental challenges all while learning about electrical circuits.

Science: Biodiversity and Conservation, Environment  
Technology: Coding, 3D Printer  
Engineering: Designing, Creating Models (3D Art)  
Arts: Reading, Drawing  
Mathematics: Geometry, Probability and Statistics

Suggested grade levels : K-12

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# SMART TATTOO

## INNOVATIVE FASHION INNOVATION CHALLENGE INSPIRATION

What if we could decorate our bodies with smart technology to express ourselves in new ways?



Students will explore the concept of Hybrid Body Crafts.

Explore the concepts of Hybrid Body Craft and design to create smart temporary tattoos that change color based on changes in body temperature or exposure to the sun. We will look into ways technology can assist in focusing on health and well-being. Students will also be introduced to computer-aided design and digital fabrication. Overall, students will learn about the integration of technology with personal health monitoring by designing smart temporary tattoos that react to changes in the body and environment.

Science: Heat and Temperature, Human Body Systems  
Technology: Computer-Aided Design (CAD), Tools  
Engineering: Design, prototyping, modeling, 3D  
Arts: Digital Art, Painting, Technical writing  
Mathematics: Number Sense, Algorithms

Suggested grade levels : K-12

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# Robotz Got BRILLIANCE

## ROBOTZ GOT BRILLIANCE ROBOTICS COMPETITION

What if you could make a robot that will do something useful?



Students will build and code robots that can accomplish a task.

Technologies are evolving quickly, but global inequalities persist. While new innovations emerge, developing countries often lag behind.

We typically think of humanoid robots, but robotics also includes systems like car washes. We can create robot prototypes to assist our community with specific tasks.

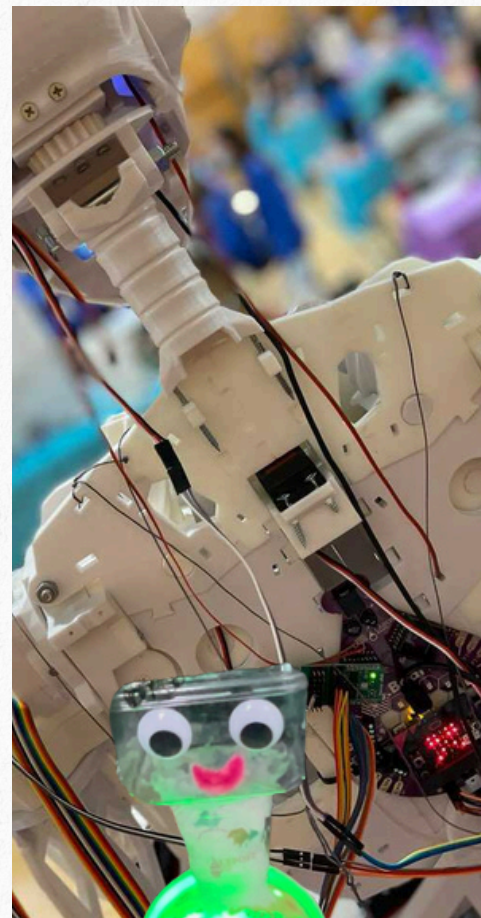
Robots use various components, including cameras and retractable parts. Notable examples include the Canadarm, Dextre, and Perseverance on Mars.

Ultimately, robots perform tasks ranging from complex surgeries to simple functions like toll booths.

Science: Electricity, Motion (kinematics)  
Technology: 3D Modeling and Printing, Coding  
Engineering: Designing, Building  
Arts: Sculpture and 3D Art, Speaking, Story telling  
Mathematics: Equations, Sequences and Series

Suggested grade levels : 5-12

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# Felting : REUSE&RENEW

## INNOVATIVE FASHION INNOVATION CHALLENGE INSPIRATION

What if we could find artistic ways to repair or update clothing instead of adding to all of the textiles in landfills?



Students will mend damaged fabrics with needle felting.

In this project, students will learn to mend and embellish clothing using needle felting, a creative technique that transforms old garments into wearable art and unique expressions of creativity while making a positive impact on the environment. With the fashion industry being one of the largest contributors to global waste, this project provides an opportunity for students to engage in sustainable practices by repurposing clothing rather than discarding it. Through this process, they'll develop fine motor skills, creativity, and an understanding of sustainability by repurposing clothing rather than discarding it. By mastering needle felting, students not only learn a valuable craft but also contribute to solving the global issue of textile waste.

Science: Environmental Science, Sustainability  
Technology: Textiles, Textile tools  
Engineering: Designing, Textile Manipulation  
Arts: Sewing, Representing  
Mathematics: Patterns, Measurement

Suggested grade levels : 3-12

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# FUN with CIRCUITS

## NOVEL STORYTELLING INNOVATION CHALLENGE INSPIRATION

What if you were able to combine electrical circuits with switches to tell a story ?



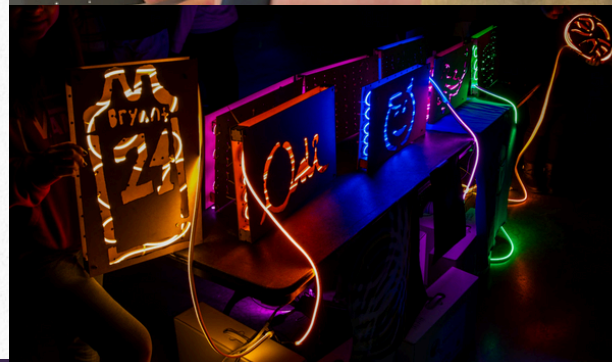
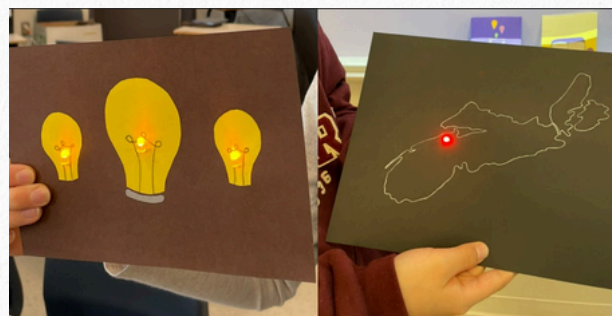
Students will each design and create a circuit that connects to another.

Get ready to light up your creativity! In this exciting project, students will mix art, technology, lights, and switches through paper circuits and other components to craft a stunning collaborative masterpiece. Each student will design their very own light-up story telling experience. This project can also align with the United Nations Sustainable Development Goals (SDGs), specifically promoting Quality Education (SDG 4) by fostering innovation and creativity along with various others depending on the story they create. Let's illuminate the world, one SDG at a time!

Science: Electricity, Magnetism  
Technology: Circuits, Coding  
Engineering: 3D Modeling,  
Arts: Graphic Design, Representing  
Mathematics: Geometry, Number Sense

Suggested grade levels : K-12

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# BIO MAKING

## INNOVATION CHALLENGE INSPIRATION

What if you were able to collaborate with good bacteria to create new materials?



Students will explore different maker activities : Biomaterials, Biofashion, Fungi Based Materials, Food composites

Bio design is an exciting, emerging field that harnesses the power of biological materials and systems to create sustainable products with real-world impact. Across the globe, people are moving bio-technologies out of research labs and into schools and communities, where artists, designers, engineers, and enthusiasts are using living materials to solve critical challenges, craft eco-friendly designs, and bring innovative art to life. Brilliant Labs' Biomaking initiative empowers young minds to dive into the fascinating world of biology, exploring complex natural systems to develop solutions for today's pressing issues. Biomaking is our latest venture, where young innovators collaborate with benign microbes like fungi, bacteria, yeast, and algae to design impactful projects for a sustainable future.

Topics : Fungi, bacteria, yeast, and algae.  
Biotechnology, Ecosystems  
Sustainability, Conservation, Climate Change, Biochemistry, Bioengineering, Materials Science, Ethics, Public Health, Nutrition

Suggested grade levels : 6-12

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LEARN MORE ABOUT THE BIOMAKING GUIDE!

### Check out what's inside the BIOMAKING GUIDE

- Get a range of biomaking recipes and prompts
- Resource for expanding participation in sustainable design and bioengineering ethics
- Emphasizes the importance of storytelling through art and design
- Useful tool for educators and students who want to begin their biomaking journeys



BY ALISHA COLLINS DIRECTOR OF CREATIVE LEARNING BRILLIANT LABS

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# CYBERSECURITY

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CHALLENGE INSPIRATION

What if you were able to empower your community with cybersecurity education?



Students will learn to protect themselves online.

Start building a smarter, safer community by embracing cybersecurity education. Brilliant Labs offers both in-class and virtual support, providing educators with the tools and resources to teach students the importance of online safety, privacy, and staying cyber-secure—whether at home, school, or in the wider community.

Our comprehensive cybersecurity framework includes everything from classroom kits to scripting tutorials, covering key principles such as Ethics, Prevention, Detection, Networking, Scripting, Career Paths, Home Automation Risks, CyberSec Basics, and more. Equip your students with the knowledge, and skills they need to navigate the digital world safely.

Topics : Cryptography, algorithms, probability, statistics, binary, algebra

Suggested grade levels : 6-12

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Unlock a world of possibilities starting with these six innovative ideas

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 Environmental Monitoring Systems

 Renewable Energy Projects

 Sustainable Agriculture Innovations

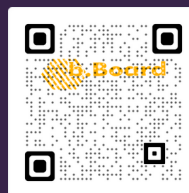
 Waste Management Tech

 Climate Bots



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Sharing tips:

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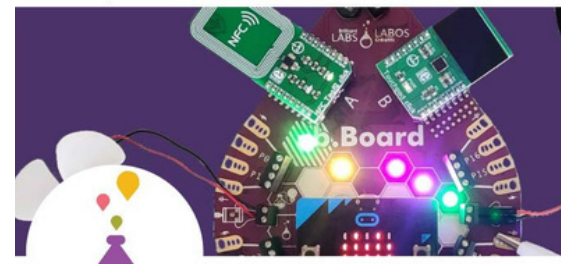
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Sometimes it's nice to talk to someone live. We're here to answer your questions or connect you with a specialist in your area. Let's talk. Give us a call at [506-442-9059](tel:506-442-9059).



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