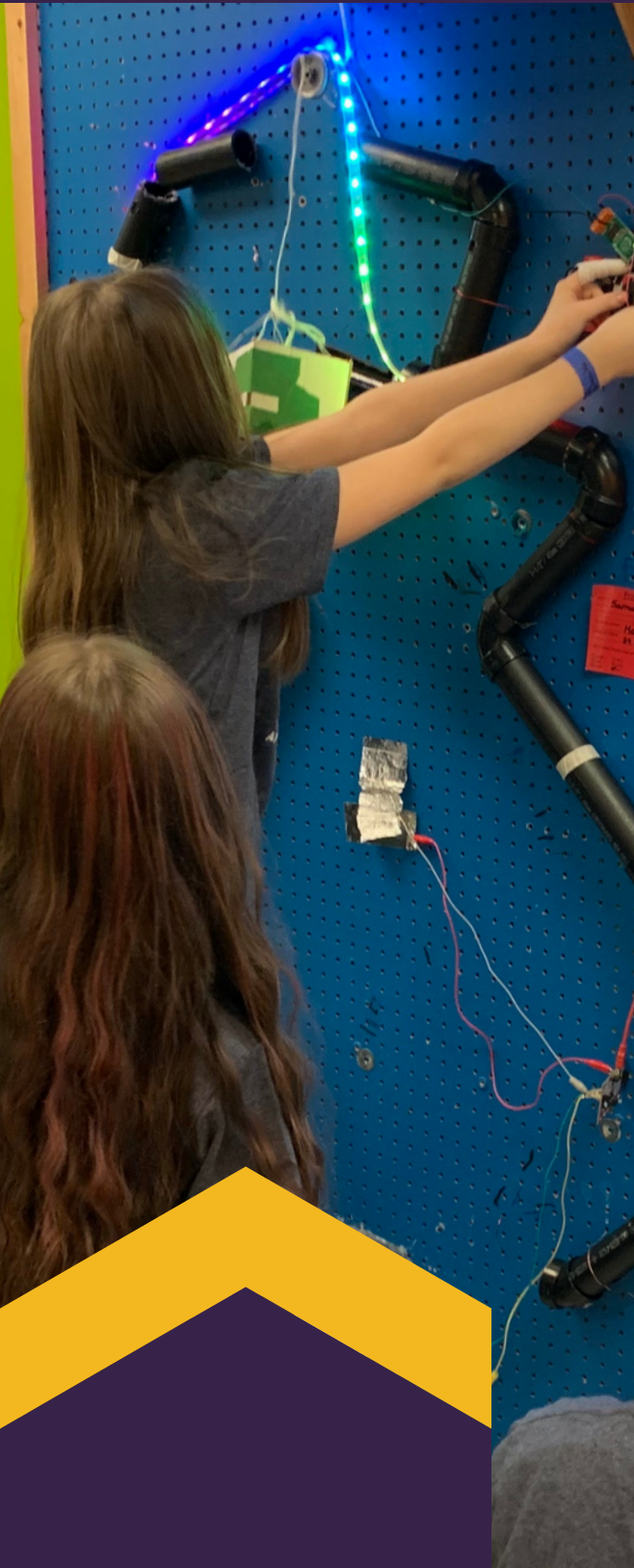


# DESIGN THINKING IN YOUR CLASSROOM



## MAKER EDUCATION & BRILLIANT PROJECTS

Maker education is an interdisciplinary approach to learning by engaging students in making meaningful projects. Maker style projects help students engage in their work, by reflecting on what, why and how they will make.

There are various types of maker projects, from tangible to intangible such as a song, a digital animation, a cardboard city or a 3d printed prosthetic arm. Your students and you will find personalized way to further your learning. Through these types of Brilliant projects we help students not merely consume but also create/construct knowledge in deeper and wider ways. We focus on student centric solutions and not just the problem.

Maker centered learning is where kids learn by doing-making. They are finding solutions to problems by creating authentic projects. In Maker centered learning students immerse themselves through new materials to then develop soft skills on top of learning the curriculum. It extends the learning outside of the 4 physical walls of the building.

Through this method, students collaborate with peers or adults in order to achieve their goal. This personalization of learning fosters creativity and innovation. Through real problem solving, maker centered learning encourages technology innovation.

The role of the educator becomes a maker of experiences, leading to the learning outcomes and opportunities in the classroom and beyond. Just like educators, some students need a guided framework while others need open-ended exploration.

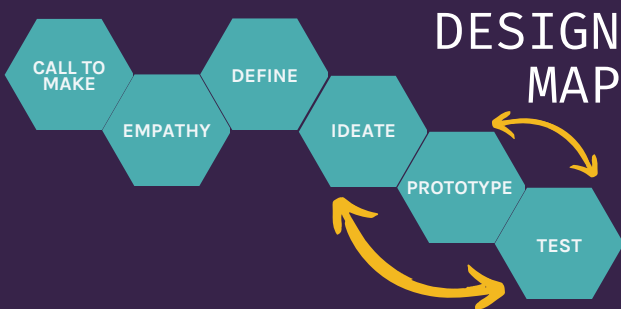
The educator is the creator of the framework in the classroom, the architect of learning.



# THE CALL TO MAKE

A Brilliant Process for Making Brilliant Things

Adapted from the D.School's Design Thinking Framework [Stanford University]



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## Welcome

Are you and your students ready to dive into creating, iterating and prototyping? Let's consider the design thinking process and how we can help students actualize their ideas.



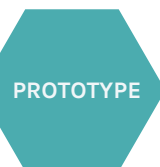
The transition from a non-maker to maker can happen in an instant - this stage is that instant. The moment someone becomes urgently motivated to seek out and combine the raw materials that will actualize their idea.

When makers are empathetic they reflect on the characteristics of themselves, their audience and the community for which the project is made. Can they look at their project with a different perspective, visceral or emotional not just intellectual? How can they look at the project using their 5 senses to get different ideas? They have to go beyond assumptions and identify with other people.

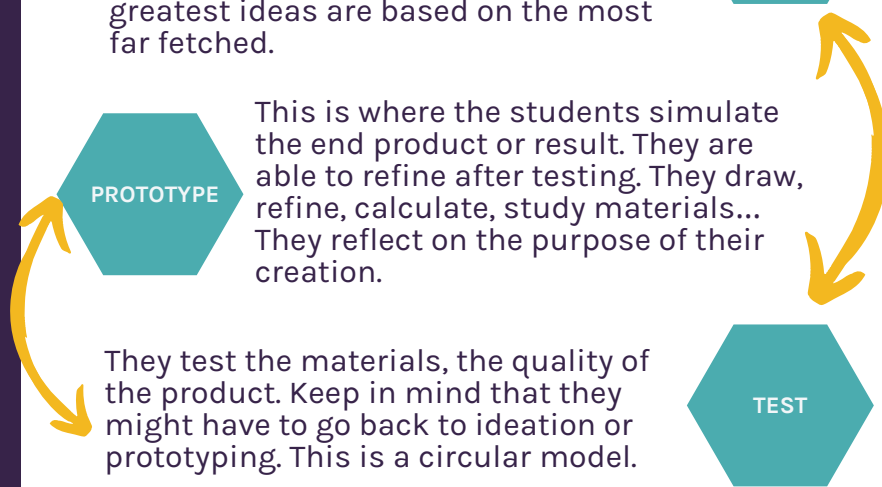


This is where the project starts to take shape. The students will define and start to decompose the project. What are the different parts of the project and options for solutions? Who is this project for and how will they use it? What are the other solutions available that could help you? What are the concepts that you need to learn more ?

This is where students look at all the possibilities, they look into transforming a problem into a variety of solutions. They reflect on the end user's needs in order to offer a variety of ideas. No judgment, sometimes the greatest ideas are based on the most far fetched.



This is where the students simulate the end product or result. They are able to refine after testing. They draw, refine, calculate, study materials... They reflect on the purpose of their creation.



They test the materials, the quality of the product. Keep in mind that they might have to go back to ideation or prototyping. This is a circular model.



## WHY CONSIDER A DESIGN THINKING PEDAGOGY IN THE CLASSROOM ?

Think like a designer. When a teacher takes the perspective of the designer in the classroom, he/she/they focus on the solution rather than the problem.

The design thinking process empowers educators to create their OWN framework for their classroom pedagogy. It enhances creativity in problem solving. They can innovate their classrooms by gaining confidence in their decision making. Being student centric, design thinking helps build confidence, resilience and collaboration. It also gives you reflection time and margin for error.

This spiral disrupter of routine will help guide you through making, from ideating to evaluating. It will enhance your students' experiences by creating a multitude of opportunities.

"I believe that the best way to help people understand the world is to provide them with opportunities to actively explore, experiment, and express themselves."

- Mitchel Resnick

**"WHY?" - Simon Sinek**

### CONSIDER!

Education is at the forefront of political and economical issues. In the past, there have been many overhauls of the educational system (mostly due to financial issues), but often not with educators and students at heart.

We can name over a hundred teaching methods, tools or buzzwords -this can easily become overwhelming.

*-If it is a tool that my principal or colleagues love, does it mean it will work for me?*

*-My friend's daughter seems to love the way that her teacher teaches, will 'that way' work for my students?*

We often forget about ourselves in all those tools and methods. Do we forget what we and what our students love? What are our needs?

This guide is to help you reflect on your practice and help you innovate your classroom 'your way'. In a way that will help students learn and retain the curriculum.

Let's consider how to have a deeper learning experience through play, research and making; while, engaging each other and collaborating on meaningful projects!







## WHAT IS BRILLIANT PEDAGOGY?

- **What if** all students were engaged in their school work?
- **What if** all teachers were passionate educators?
- **What if** we were flexible with our teaching tools?
- **What if** teachers felt empowered to do something new?

## WHY THIS APPROACH?

We believe you can create your own framework. Using your background, passions, interests and skill set, **you will create your own teaching story!** Creating your classroom narrative begins with reflecting on how you teach and what you want to change. Consider the new healthy teaching habits you want to incorporate. These will create sustainable success that will last! Now, let's consider the tools you'll need. This is not a 'One Size Fits All' approach. The tools you choose will suit your sustainable teaching goals and new classroom narrative. **Honestly, trying a glitzy 500\$ cordless power drill to 'Hit The Nail On The Head' will still not be as efficient as the 2\$ hammer.**

**Now, rather than the 'Guide On The Side'. Let's reframe this concept to one of a learning facilitator, or the 'Educator On The Side'.** As you are the educator who will carefully consider your students' projects, where they are on their learning journey, and ask not only the curricular questions, but all the tough questions that challenge the learner to keep going. After all, these not only need to be answered for each grade level, but they're important and will help your students reflect meaningfully on their projects.

Let's connect. **Together we can create your new sustainable classroom goals and narrative!**







CALL TO  
MAKE

## LET'S GET STARTED ON CREATING YOUR PROJECT!

Your call to make comes from the moment where you decide on what problem you would like to solve or **WHAT IF** question you would like to answer. It's the moment where you get an idea!

- Why do you want to create?
- When did you get a call to make?
- What kind of project do you want to make?
- Not sure? What project did you see and hoped you could explore?

### Teachers:

Your call to make comes from the moment where you decide to make the changes in your classroom and teaching practice!

- Why do you want to make changes in your classroom pedagogy?
- Your "project" is the learning experience you facilitate for your students.





## EMPATHY

# REFLECTION ON CHARACTERISTICS OF SELF AND OTHERS

1

When we are empathetic we reflect on the characteristics that make us different, who are our students/teachers, our school members and our community members. Before crafting your project, note who is part of your learning community.

2

What or who is inspiring you to create or innovate?

**Teachers:**  
What is inspiring you to create a new learning experience or innovate in your teaching?

3

There are lots of reasons for which we make a certain project, that empathetic feeling will make our end result different from everybody else's. Take time to look at your project from different lenses.

"DEEP empathy for people makes our observations powerful sources of inspiration."

- David Kelley





# LOOK AT ALL POSSIBILITIES!

You look into transforming a problem into a variety of solutions.

As you plan for your project consider exploring these questions:

Which maker format is the best choice for your project?

What do you need to learn for your project?

What materials or equipment might you need for your project?

How will you know if your project is successful?

## REFLECT!

Sometimes you will think your idea is ridiculous, but don't throw it out yet. Sometimes the greatest ideas are based on the most far fetched ideas or the wrong ideas lead you to the right ones!

## DEFINE



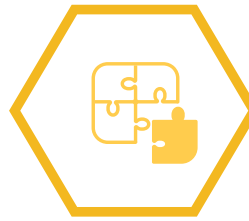
**SERVICE PROJECTS**  
Deeper meaning in the authenticity of the project, very powerful.



**INTRINSICALLY MOTIVATED**  
Makers will identify their own problems and find their own solutions.



**PROJECT BASED/  
ACTIVITY BASED**  
One off activity



**PROBLEM BASED**  
Is there a real life problem you would like to solve in your home or community?



**CHALLENGE BASED**  
A challenge given to you by someone else (could be a teacher).



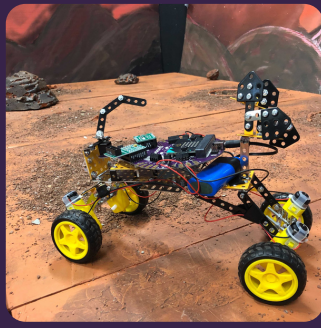
**PLACE BASED**  
The important role of culture in making, how can you create based on your place/community?





# BE INSPIRED!

Looking for project ideas? Check these out! Click on the image for project descriptions, skill set and material lists.



Find more project ideas at  
[Projects.Brilliantlabs.ca](https://Projects.Brilliantlabs.ca)

"It always seems impossible until it's done."

- Nelson Mandela

IDEATE

This is where your project will start to come alive!

## TAKE SHAPE!

This is where your project will start to take shape. What solutions, concepts and ideas will you implement in order to achieve brilliance.

### Teachers:

This is where your learning experience will start to take shape. Here, you will take time to reflect on how you can make a change in your class.

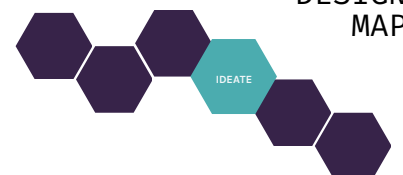
## MAKE IT FLEXIBLE!

As a teacher, you are the one lasting member of your classroom! You will have new students next year, teach a new grade level, maybe a new room or even different school. What you make this year needs to be transferable next year.

## LET'S CONSIDER:

- What attracts you to this project?
- What are you comfortable trying?
- What are you uncomfortable trying? How could you do it differently?
- Did you see something in another project that you could use to add to this project?
- What are your personal interests and skills that you can integrate in this project?
- Will you integrate technology? How?
- What types of technologies will you use?

DESIGN  
MAP



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## PROTOTYPE

# PROTOTYPING PROCESS:

During this phase of the design thinking process, you will start creating your project (**learning experience**), inspired by someone else's or you can create a whole new one.

Often, students that go through this process start simulating the end product in this moment, it is the same for a learning experience

You can start with one plan and finish with a completely different one. Because at some point, someone will ask you a question, something will pop up and you will be inspired to go in a new direction. **That's ok, this is where you get to be flexible!!**

Remember, you'll be able to refine your project (**learning experience**) after you've tried it out! The first pancake usually isn't perfect!

Take time to refine, study materials, and reflect on the purpose of your project. Those moments will help guide your creative process.

DESIGN  
MAP







TEST

## TRY IT OUT!

At this stage it's time to give it a go and test it out!

- How are you going to know if you're done your project?
- Did you take enough time to talk with partners/peers?
- Did you achieve your goal?
- What was creative in your process?
- How were you creative?
- What went well and why?
- What didn't go as planned? Why?
- What did you learn? How do you know?

### Teachers:

it's time to assess students' learning by facilitating the learning experience in your classroom.

- How are you going to assess student learning?
- Did you take enough time to talk with your students?
- Did you achieve your goal?
- What was creative in your process?
- How were your students creative?
- What went well and why?
- What didn't go as planned? Why?
- What did your students learn? How do you know?

As soon as you are done teaching your session, take time to write down a few observations.

- What were your students doing? Saying?

## REFLECT

At this point, you may wish to return to the ideating or prototyping stages. Students should be encouraged to reflect.

DESIGN  
MAP

