

# LAUNCH

INTO DESIGN THINKING



# DISCLAIMERS



# DISCLAIMER #1

Although I am passionate about design thinking, I realize that it is not a magical formula. Instead, it is one of the many frameworks that teachers can use to inspire and facilitate creativity in the classroom. My hope is that there is something in here that you find useful.



# DISCLAIMER #2

I first learned about design thinking over a decade ago. But I never had the “perfect” classroom. I had moments where students checked out, where projects failed, and where I failed as a teacher.

But I also believe in failing forward and iterating through tons of experiments. So, consider this a documentation of what has worked for me — but please remember that the journey was filled with bumpy roads and wrong turns.





# THE DESIGN THINKING MANIFESTO

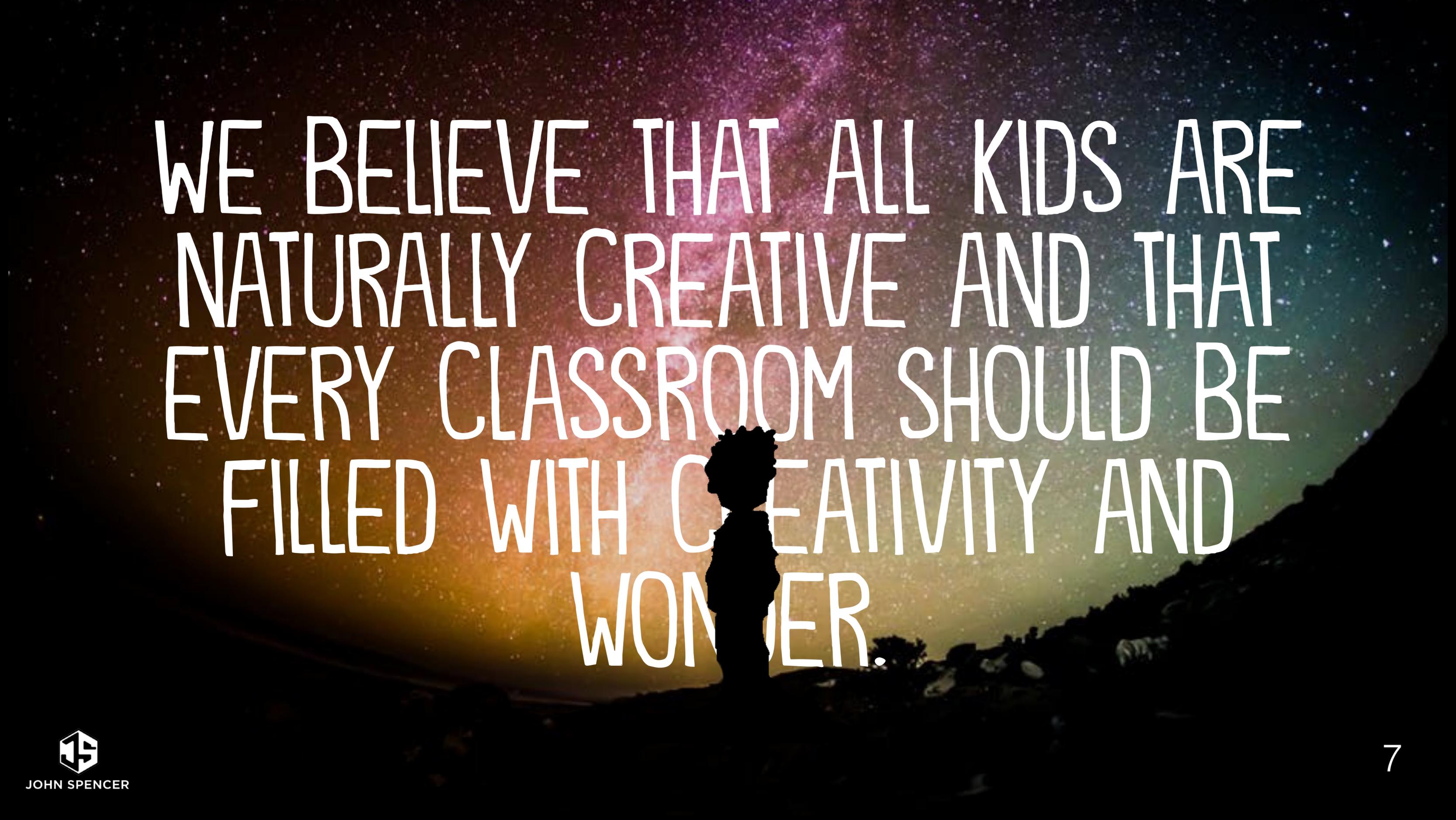


The following is a manifesto that A.J. Juliani and I wrote as we were thinking through the driving idea behind the LAUNCH Cycle. This is, to my core, what I believe about education.



WE BELIEVE

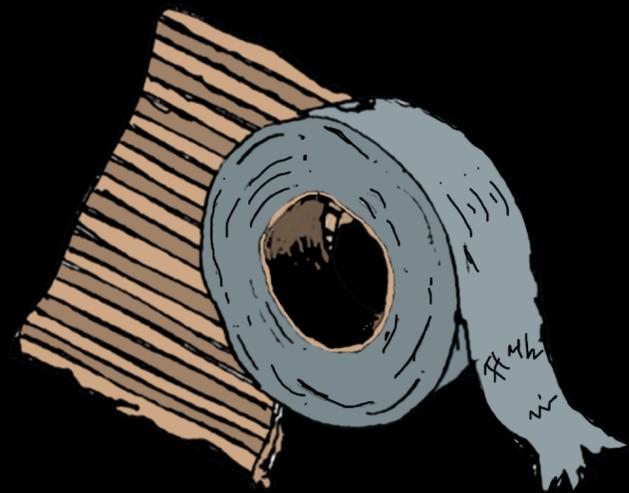




WE BELIEVE THAT ALL KIDS ARE  
NATURALLY CREATIVE AND THAT  
EVERY CLASSROOM SHOULD BE  
FILLED WITH CREATIVITY AND  
WONDER.



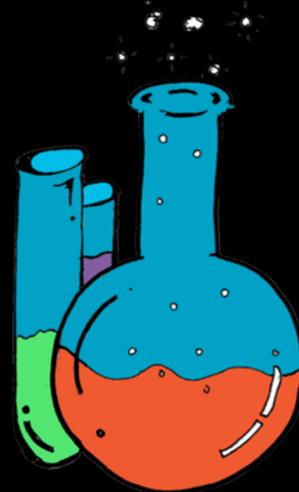
We want to see teachers unleash the creative potential in all of their students so that kids can be makers, experimenters, designers, artists, and engineers.



MAKERS



DESIGNERS



EXPERIMENTERS



ARTISTS



ENGINEERS



We know that school can be busy. Materials can be scarce. The creative process can seem confusing, especially when you have a tight curriculum map. So creativity becomes a side project, an enrichment activity you get to when you have time for it. But the thing is, there's never enough time.



WE CAN DO  
BETTER.



We believe that creative thinking is as vital as math or reading or writing. There's power in problem-solving and experimenting and taking things from questions to ideas to authentic products that you launch to the world. Something happens in students when they define themselves as makers and inventors and creators.



That's the power of design thinking. It provides a flexible framework for creative work. It's used in engineering, publishing, business, the humanities, in non-profit and community work. And yes, it can be used in education! You can use it in every subject with every age group.



We believe all students deserve the opportunity to be their best creative selves, both in and out of school. We believe all kids are unique, authentic, and destined to be original.

Most importantly, we believe this is not an all-encompassing solution, but a start. We believe our role is to empower kids to make an impact on the world around them and fully believe in themselves.

We believe that you have the power to inspire kids and create a ripple effect that lasts for years to come.





# THE POWER OF THE MAKER MINDSET





OUR WORLD IS CHANGING



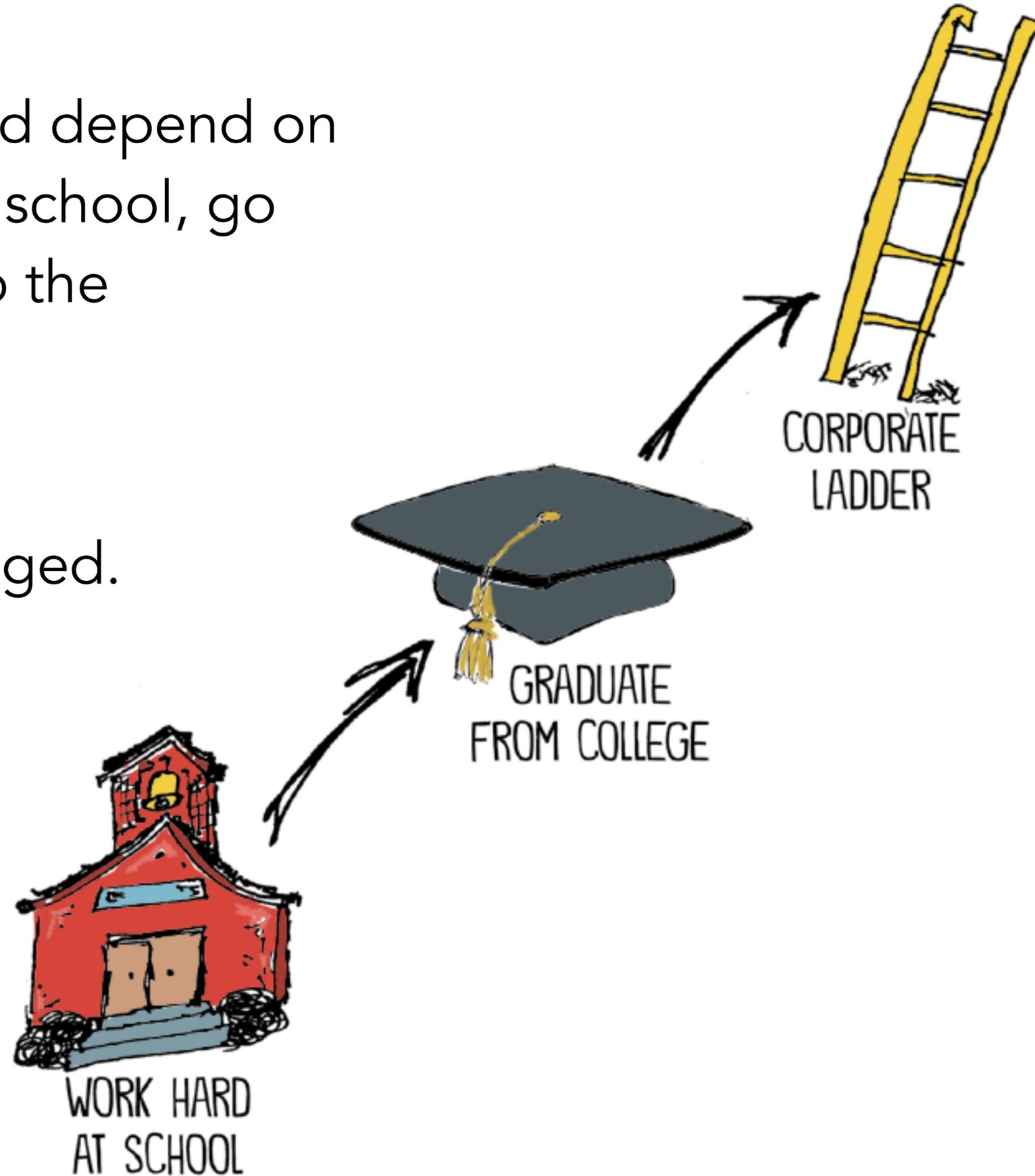
According to Moore's Law, technological developments tend to double every six months. Things that sounded like science fiction a generation ago are now so commonplace we take them for granted. We are in an era of rapid changes in social, technological, and economic systems.

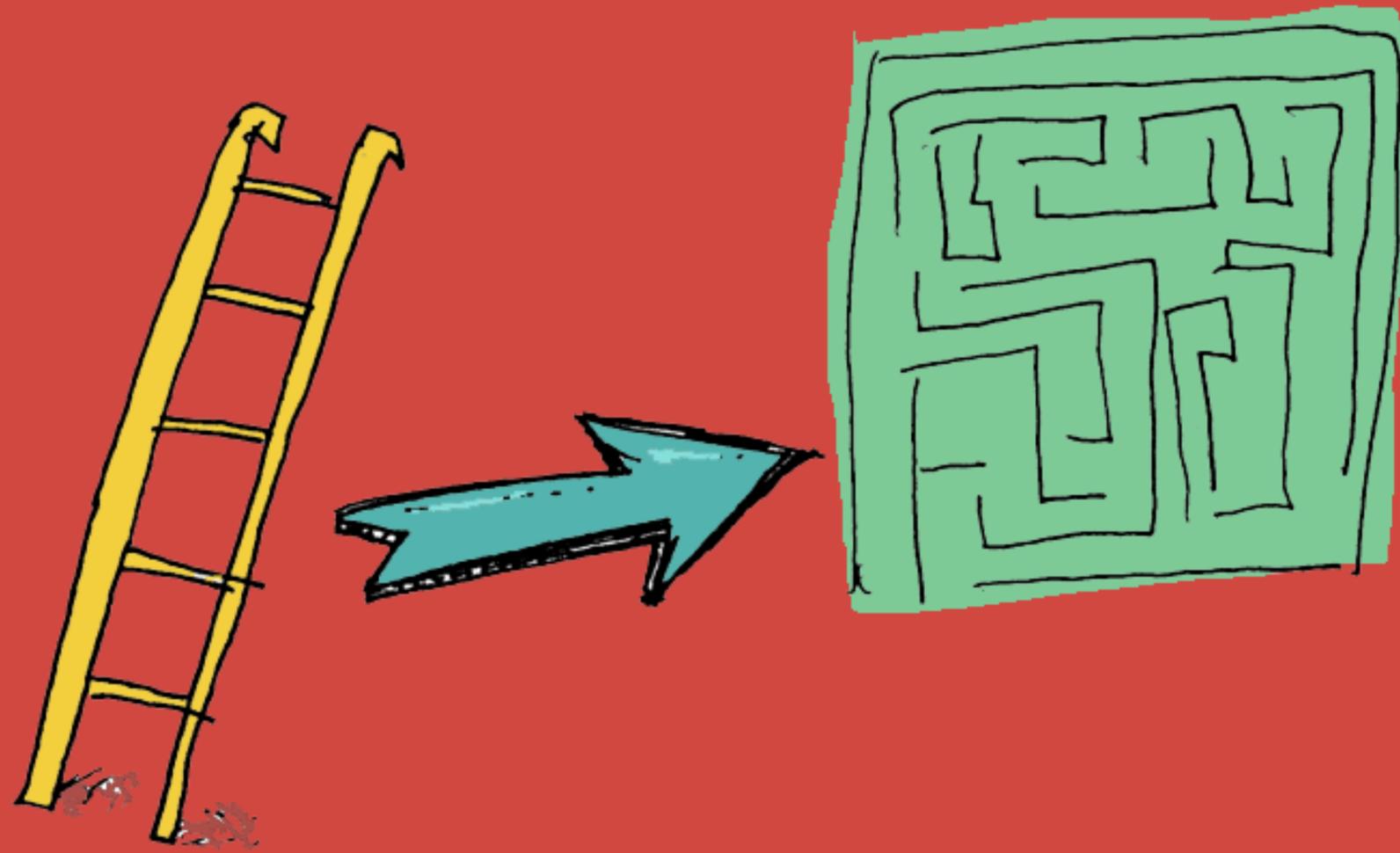
We live in an era where robotics and artificial intelligence will replace many of our current jobs. Global connectivity will continue to allow companies to outsource labor to other countries.



At one time, we could depend on a formula: do well in school, go to college, and climb the corporate ladder.

But things have changed.





THE LADDER IS NOW  
A MAZE



The ladder is gone and in its place is a maze. Our students will need to know how to problem-solve and navigate this maze. As automation and artificial intelligence continue, they will need to know how to work within the Creative Economy. They will need to think like engineers and entrepreneurs. Our current students will enter a workforce where instability is the new normal and where they will have to be self-directed, original, and creative in order to navigate this maze.

This might sound terrifying but there's also a hidden opportunity. Our students will have the opportunity to build the future.



OUR STUDENTS  
WILL REWRITE  
THE RULES



We often hear that our current students will work in jobs that don't exist right now. But here's another reality: our current students will be the ones who create those jobs.

Not every student will create the next Google or Pixar or Lyft. Some students will be engineers or artists or accountants. Some will work in technology, others in traditional corporate spaces and still others in social or civic spaces. But no matter how diverse their industries will be, our students will all someday face a common reality. Every single one of them will need to think like an entrepreneur in order to thrive in a changing world.





IN OTHER WORDS, OUR STUDENTS WILL  
NEED A MAKER MINDSET



OUR JOB IS NOT TO PREPARE  
STUDENTS FOR SOMETHING.  
OUR JOB IS TO HELP STUDENTS  
PREPARE THEMSELVES FOR ANYTHING.

-A.J. JULIANI-

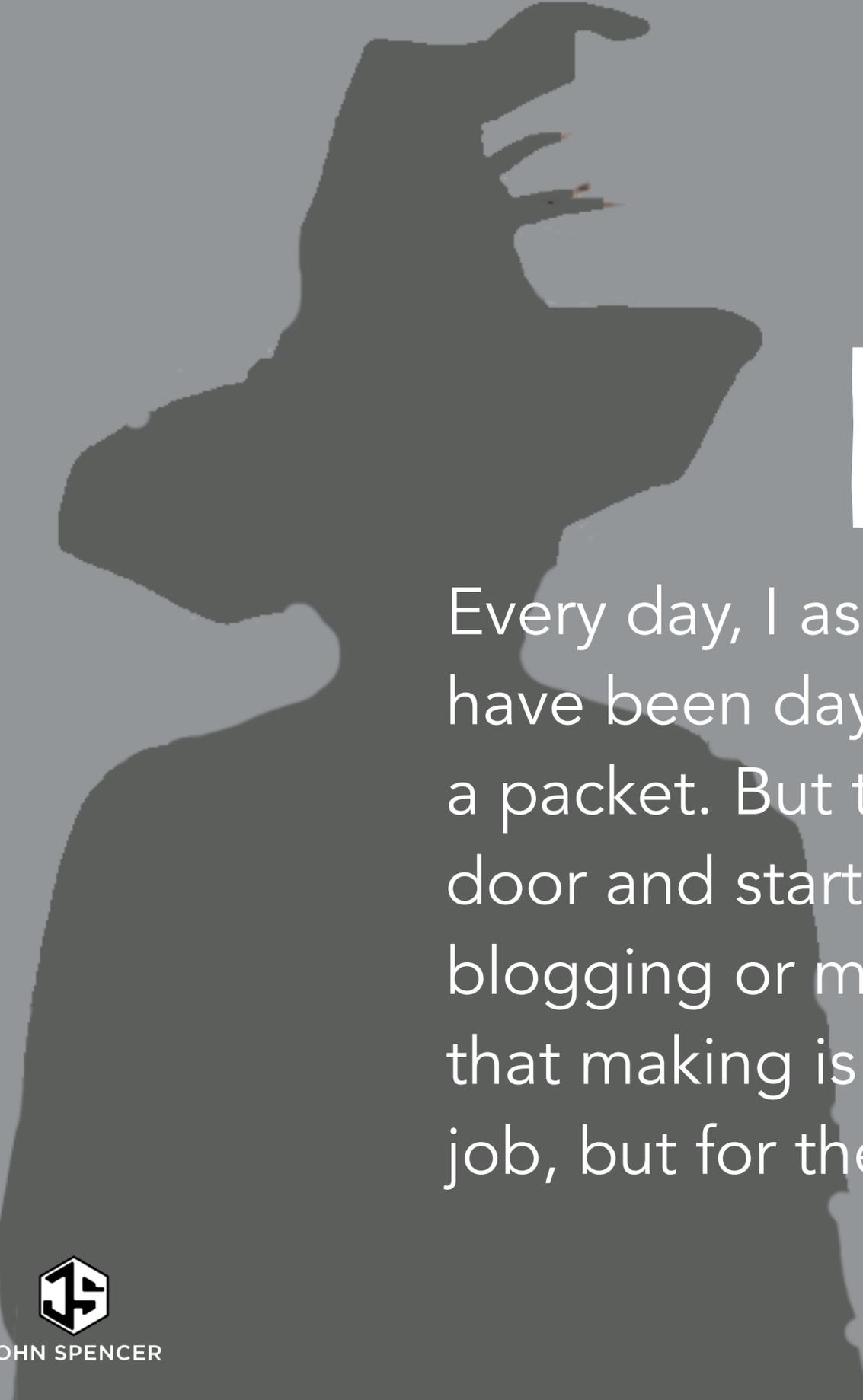


HOWEVER, IT ISN'T  
JUST ABOUT JOBS.



THE MAKER  
MINDSET IS VITAL  
TO LIFE.



A dark silhouette of a hand holding a pencil, positioned on the left side of the slide. The hand is raised, with the index finger pointing towards the top right, and the pencil is held between the thumb and index finger. The background is a solid light gray.

# MAKING IS MAGIC

Every day, I ask my kids, “What did you make today?” There have been days when they describe taking a test or filling out a packet. But then, there are days when they run through the door and start telling me about cardboard challenges or blogging or making a film and I’m reminded, in this moment, that making is magic — that it is valuable, not just for a future job, but for the deeply human drive to make stuff.

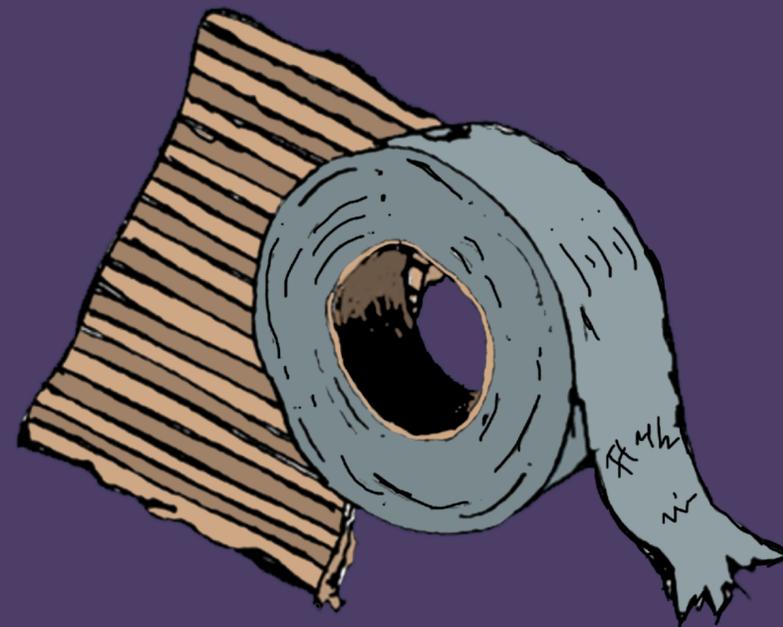


MAKING IS THE MINDSET.  
DESIGN THINKING IS THE  
PROCESS.



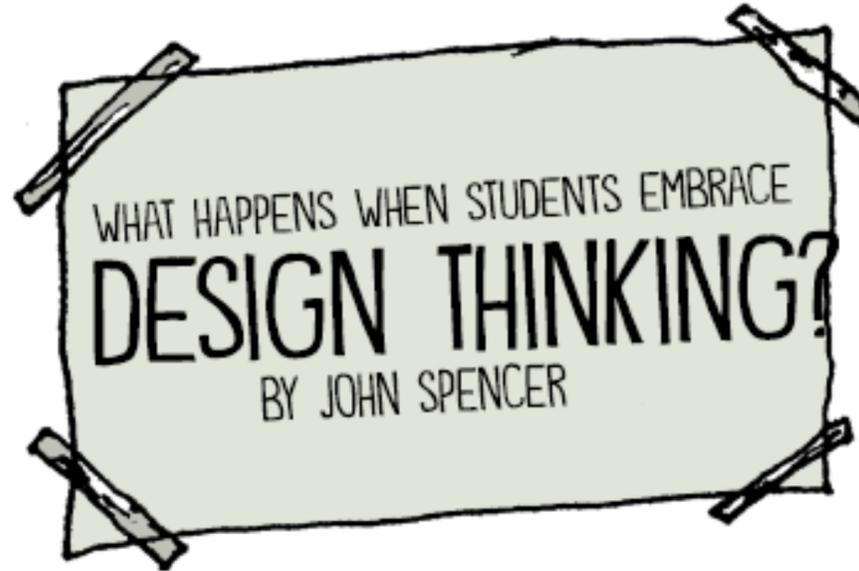
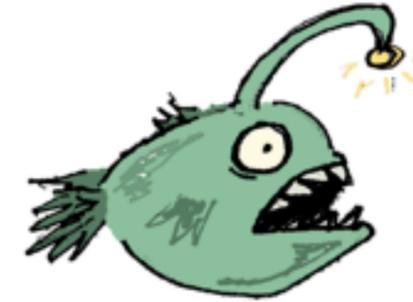
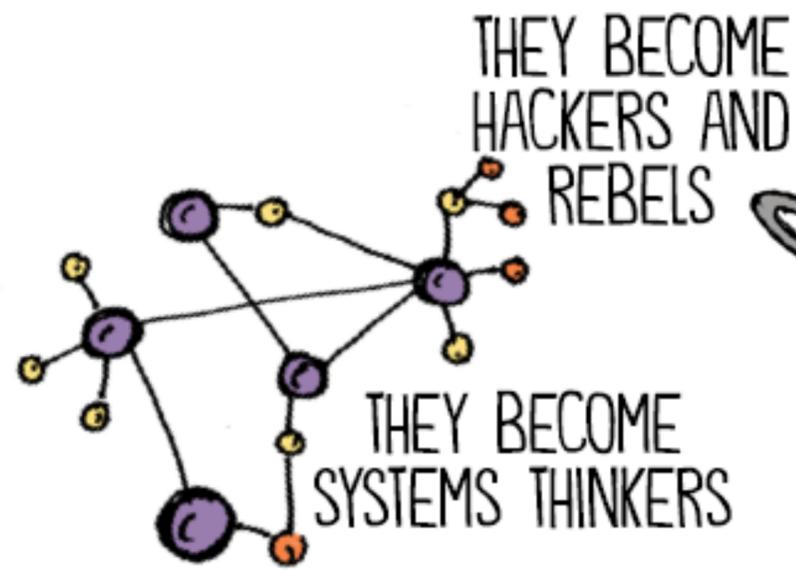
Design thinking isn't a subject or a topic or a class, so much as a process for designing solutions to complex problems. It's a flexible process used for getting the most out of the creative process.

Design thinking is used in the arts, in engineering, in the corporate world, and in social and civic spaces. You can use it in every subject with every age group. It works when creating digital content or when building things with duct tape and cardboard.



It's a bit of a debate where design thinking originated. Some claim that it started in the sixties with *The Sciences of the Artificial*. Others point to *Design Thinking*, which focused more on urban planning and architecture. Still others point to Robert McKim's work in *Experiences in Visual Thinking*. Still others place it back in the 1950's with Buckminster Fuller and others claim It started with the democratic design movement in Sweden and Finland. Like all great ideas, it has been an evolution, influenced by thousands of people. We know that our work around Design Thinking has been influenced by people like Tom and David Kelley, Tim Brown, John Maeda, Peter Rowe (as well as organizations like Stanford d.school and IDEO).





THEY THINK DIVERGENTLY  
(THINKING OUTSIDE THE BOX BY  
THINKING DIFFERENTLY ABOUT THE BOX)



THEY MAKE DEEP CONNECTIONS BETWEEN IDEAS

THEY ARE READY FOR THE CREATIVE ECONOMY

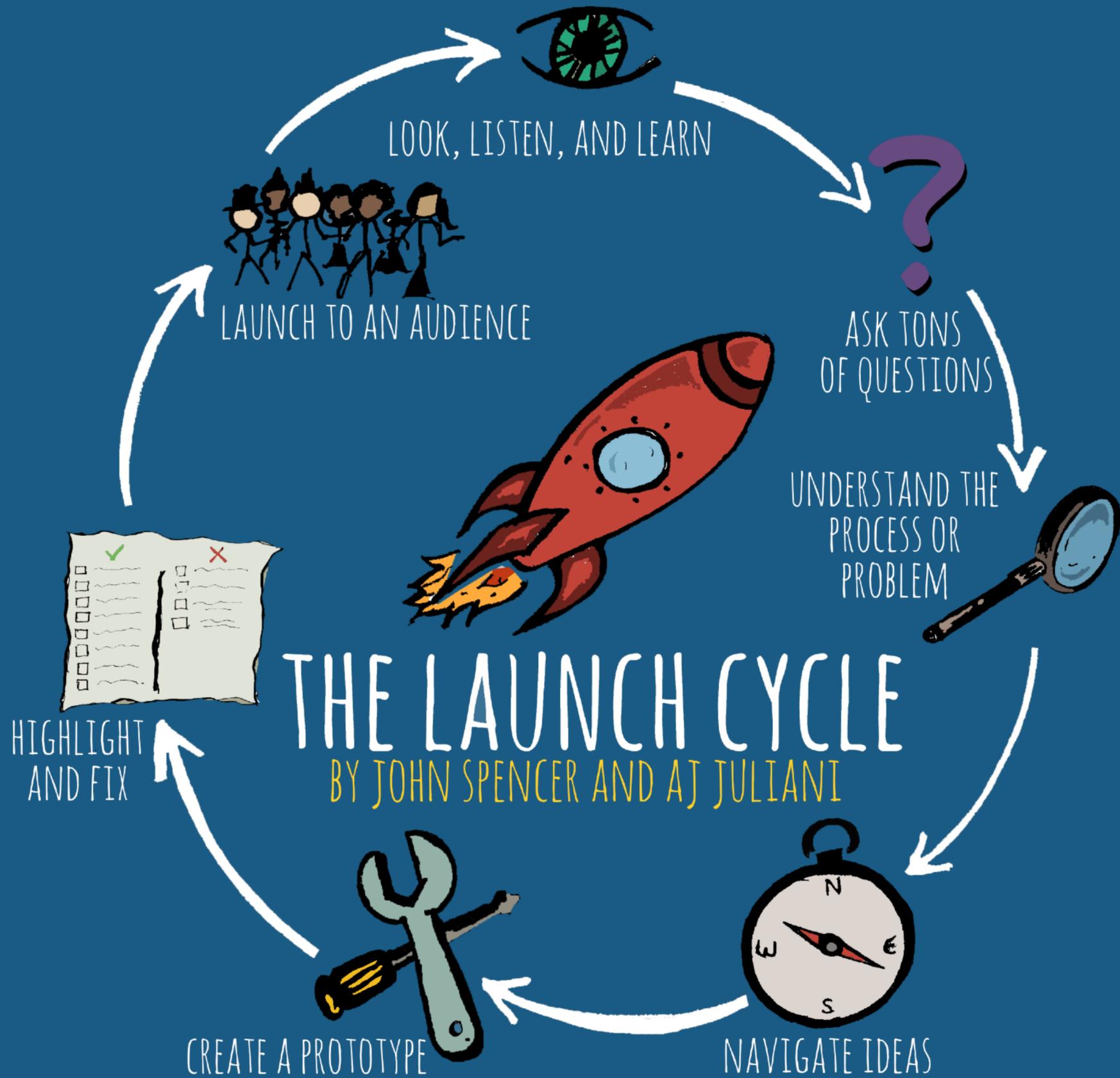


THEY LEARN TO TAKE CREATIVE RISKS

# THE LAUNCH CYCLE

Although there are many models for design thinking, A.J. Juliani and I have developed the student-friendly LAUNCH Cycle designed with the K-12 student in mind. We added an inquiry phase, a research component, and, most importantly, the idea of launching to an authentic audience.





It can help to think of it this way:

Making is the mindset

Design thinking is the process

LAUNCH is the framework



THE MAKER  
MINDSET



DESIGN THINKING



THE LAUNCH  
FRAMEWORK





# THE LAUNCH CYCLE

Let's take a deeper dive into the LAUNCH Cycle.



# PHASE ONE



L A U N C H



LOOK, LISTEN, AND LEARN



# L A U N C H

In the first phase, students **look, listen, and learn**. The goal here is awareness. It might be a sense of wonder at a process or an awareness of a problem or a sense of empathy toward an audience.

The following are some of the ways that you might start a design thinking project. Note that each of these approaches are designed to activate some sort of awareness or prior knowledge in students. The goal is to motivate them to want to design something.



## START WITH EMPATHY

Some of the best design thinking projects begin with empathy toward an audience. Here, students care deeply about a group of people and end up designing something that will solve a problem for that group. This was the case when my students noticed the issue of graffiti on campus and ended up painting murals as a way to prevent graffiti. The crazy thing? It worked.



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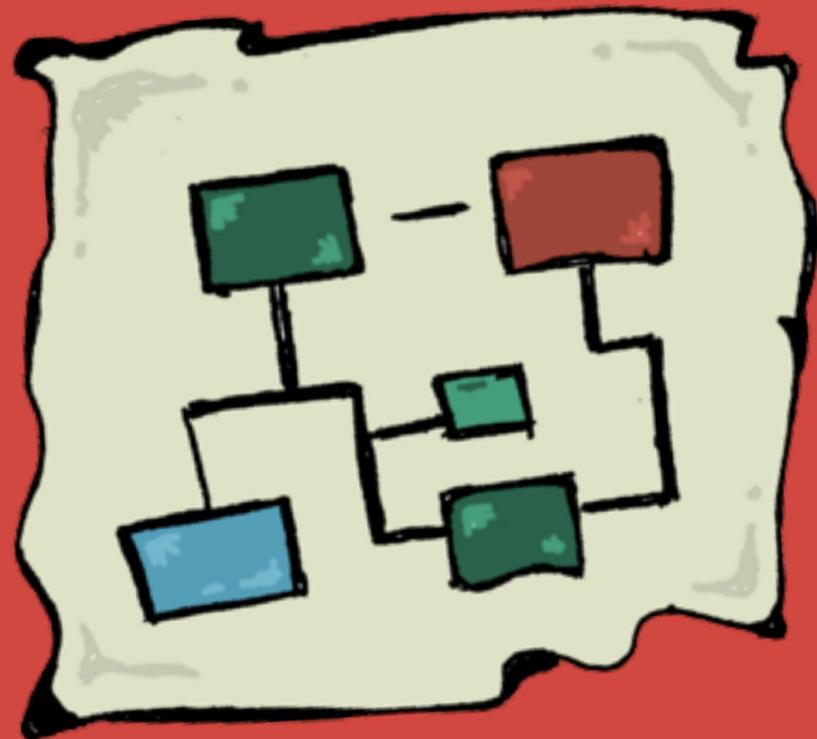
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## START WITH A PRODUCT IDEA

Sometimes it works the opposite way. Here, students might know ahead of time that they will be writing a novel in a month (NaNoWriMo) and they are still unclear about the audience. But there is an intrinsic desire to write the novel that they will someday launch to the world.



## OBSERVE A NATURAL PHENOMENON

Although it seems odd, Southwest Airlines figured out how to get people to board quickly onto airplanes by studying ants. NASA is learning how to create better adhesives by studying geckos. The idea is this: some of our best inventions begin by observing nature. So, from playing around with magnets, students end up on a roller coaster design project.





## FOCUS ON A PROBLEM TO SOLVE

Here, students don't necessarily know what they will design but they have a clear picture of a specific problem. This was the case with our Solar Kitchen projects, where students had to design kitchens that would be eco-friendly and lead to a carbon footprint that was as close as possible to zero.



## TAP INTO GEEKY INTERESTS

While it can be awesome to have students solving community problems, sometimes great design begins with small geeky interests. This is the case with Geek Out blog projects, where students go through the design process during Genius Hour and end up sharing their expertise on anything from food to bugs to fashion to skateboarding or video games.



# L A U N C H

## START WITH AWARENESS OF AN ISSUE IN YOUR WORLD

Here, students begin with the driving question, "What would you change in your community?" or even "How would you change the world?" Then, they work on designing solutions that involve design thinking and service learning.



# RESOURCES FOR THIS PHASE

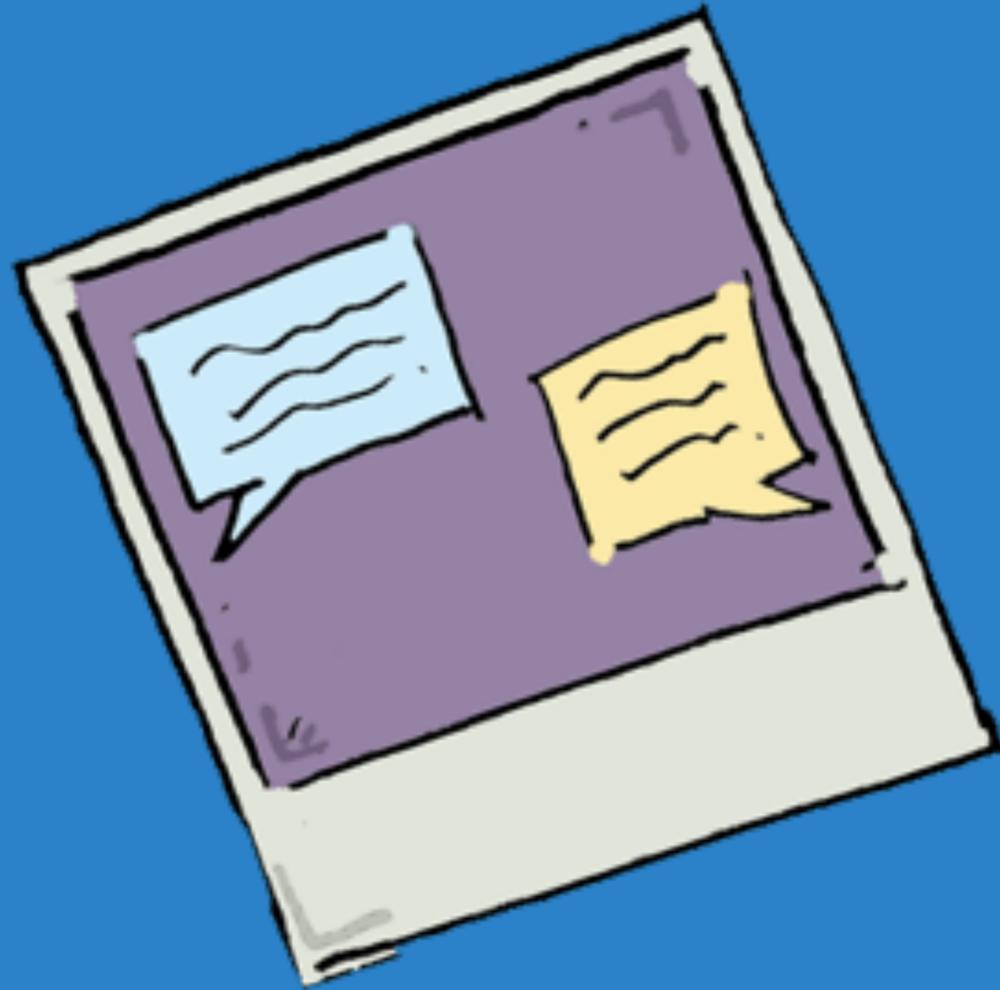
If you look in the Resources folder, you'll notice *What Design Thinking Looks Like in Each Subject*. This document has a great survey of starting places for the design thinking process. Also, check out the free *Create a Sport* design thinking project.



# PHASE TWO



L A U N C H



ASK TONS OF QUESTIONS



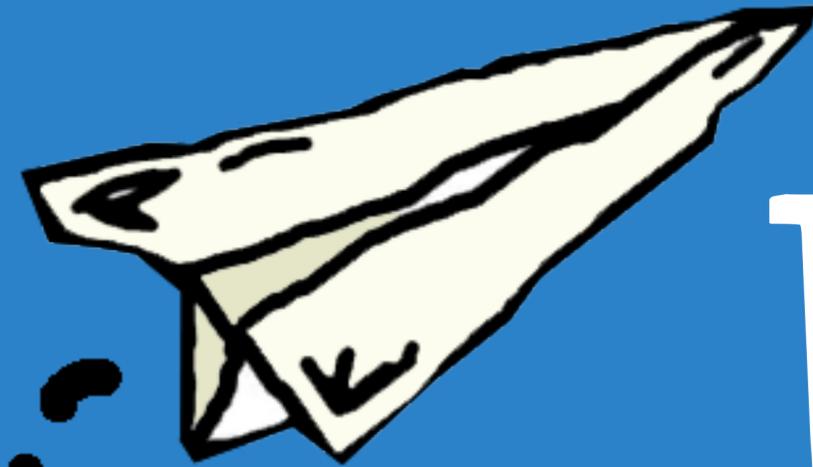
# L A U N C H

Sparked by curiosity in the Look, Listen, and Learn phase, students move to the second phase, where they **ask tons of questions.**

Note that these questions will be all over the place and that's okay. Some of the questions might be research questions (how does this work?), criteria questions (how will the thing I be creating work?), or market questions (what can you tell me about the audience?). **But that's okay.** They'll be answering these questions throughout the entire LAUNCH process.



L A U N C H



THE GOAL IS TO  
CHASE YOUR  
CURIOSITY.



# NOT ALL OF THE QUESTIONS WILL WORK

This phase allows students to initiate the inquiry process. Some of the questions will be off topic. Some will be abandoned along the way. But when they are able to ask their own questions, they grow more curious, more excited, and more empowered to own the creative process.



L A U N C H



WE HAVE TO REDUCE THE  
FEAR OF ASKING QUESTIONS.



# L A U N C H

Michelle Baldwin is an amazing teacher in Colorado. I once had the chance to observe her inquiry-based classroom and, honestly, it blew me away. When I asked her how she created that type of classroom culture, she said, "My students are not afraid to ask questions." Then she said something that stuck with me forever . . .



L A U N C H

"SOMETIMES THE BRAVEST THING  
YOU CAN DO IS ASK A  
QUESTION."

-MICHELLE BALDWIN



L A U N C H

# RESOURCES FOR THIS PHASE

Check out *Question Stems* in the Resource Folder. You can use these with students who need additional scaffolding for asking questions in the Ask Tons of Questions phase of the LAUNCH Cycle.



# PHASE THREE



L A U N C H



UNDERSTAND THE  
PROCESS OR PROBLEM



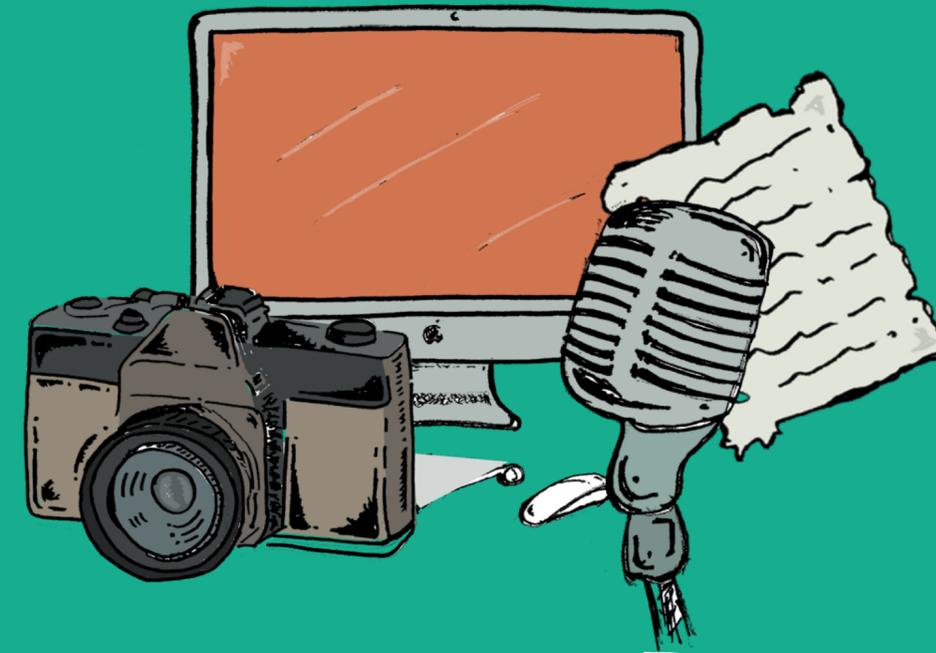
# L A U N C H

After asking questions, students will have a clear picture of what they need to figure out. This leads to **understanding the process or problem** through an authentic research experience. They might conduct interviews or needs assessments, research articles, watch videos, or analyze data. Think of this as the research part of research and development.



# L A U N C H

Research is more than just going online and reading text. It involves things like watching videos, listening to audio, or observing a phenomenon. Students might create community needs assessment surveys or they might do interviews with experts.



**WE NEED A BIGGER  
DEFINITION OF RESEARCH**



# RESOURCES FOR THIS PHASE

There is a video I created that goes through the research process for informational text online. You can find this sketch video in the Resource folder.



# PHASE FOUR



L A U N C H



# NAVIGATE IDEAS



# L A U N C H

Students apply that newly acquired knowledge to potential solutions. In this phase, they navigate ideas. Here they not only brainstorm, but they also analyze ideas, combine ideas, and generate a concept for what they will create. Next, they will create a plan for their initial prototype. This plan can be a detailed plan of action or simply an annotated sketch.

Here's where design thinking differs compared to other projects. Each group will be deciding on what they will design rather than following a project paper that the teacher designs. In other words, they are designing a prototype rather than following a recipe.



# A DIFFERENT APPROACH TO BRAINSTORMING

Here's a different approach to brainstorming. It's not perfect and it takes a little bit longer, but it's something that's worked well for me. Feel free to take it or leave it.

First, students brainstorm alone. Some choose a list while others choose a web. By allowing students to choose the format, I am able to respect student agency. Student hear the implicit message, "This is your mental space. Choose a style that works for you."

Next, they meet together as a group. We have one rule in this phase: No judgment. This means no criticism or commentary. Students are not analyzing the quality of ideas. The goal is to reduce fear and boost self-efficacy. It's a chance to take creative risks.



# L A U N C H

I don't set a timeframe on these first two stages. Sometimes we even brainstorm on multiple days and students borrow ideas from seemingly unrelated fields. By coming back to a brainstorm after a period away, students avoid some of the tunnel vision that can happen in the moment. Next, we have a member of another group join the brainstorm and add any fresh ideas they hadn't considered. This helps reduce the groupthink that can occur within a team. Sometimes we run this as a jigsaw.

The group then meets together again. They add ideas to the existing brainstorm and combine similar ideas. It's a final chance to engage in flexible, divergent thinking. Finally, they will analyze, evaluate, and narrow down ideas until they have a single, coherent concept. This phase can sometimes be tense and contentious, but it is also a vital moment for each group to engage in healthy conflict resolution.

This entire brainstorming process reduces groupthink and while ensuring that everyone's voice is heard.



L A U N C H

AFTER BRAINSTORMING,  
THEY FIND THE P.A.R.T.S.  
FOR WHAT THEY WILL  
CREATE.





# PRODUCT IDEA

After brainstorming, students should have a solid picture in their mind of what kind of product they will be creating. Note that “product,” can also be a digital product, a service, or an event.



# L A U N C H

If students began with empathy, then they will have a strong sense of who their audience is. But if they began with the product in mind, this is where they really hone in on who their audience is and how that will help drive their design.



## AUDIENCE



# L A U N C H



## ROLE

In some cases, the teacher might assign roles. In other cases, students will negotiate roles on their own.



# L A U N C H

This is a chance for students to create a list of tasks they need to accomplish as well as the deadlines they need to meet.



## TASKS



L A U N C H



SOLUTION

Every great product is a solution. Even something like a novel is solving a problem — to entertain you while also pushing you to think differently about life. Students should be able to define how their future prototype will solve a problem.



L A U N C H

AS STUDENTS NAVIGATE  
IDEAS, THEY ENGAGE IN  
PROJECT MANAGEMENT.

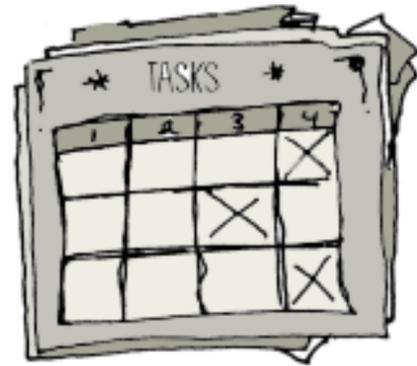


# THE FOUR COMPONENTS OF PROJECT MANAGEMENT



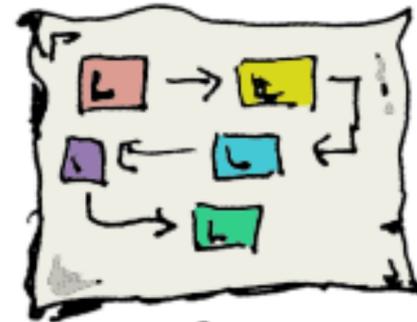
#1

SET GOALS AND  
CHART PROGRESS



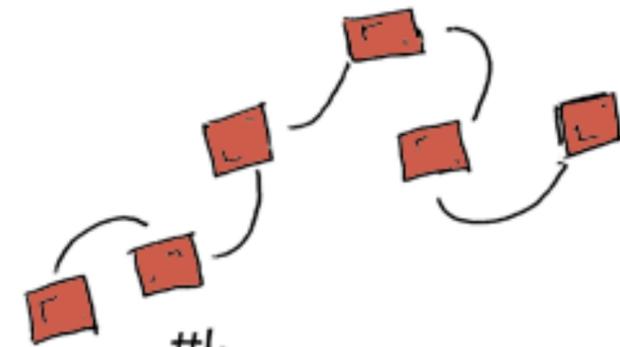
#2

BREAK DOWN TASKS  
AND SET DEADLINES



#3

CHOOSE AND IMPLEMENT  
SPECIFIC STRATEGIES



#4

MONITOR, ADJUST  
AND PROBLEM-SOLVE

NOTE THAT EACH OF THESE  
PHASES CAN OFTEN WORK  
IN TANDEM RATHER THAN SEQUENTIALLY.

A SKETCH-NOTE BY JOHN SPENCER



L A U N C H

# RESOURCES FOR THIS PHASE

I have included the brainstorming process video that you can use with your students. You can find this in the Resource folder in this toolkit.



# PHASE FIVE



L A U N C H



# CREATE A PROTOTYPE

# L A U N C H

In this next phase, they create a prototype. It might be a digital work or a tangible product, a work of art or something they engineer. It might even be an action or an event or a system. Note that this is the part that is most often seen as “real” creativity. However, the creative process began back when students were asking questions, engaged in research, and creating a concept of what they would create.





## SOMETIMES YOU MAKE PHYSICAL PRODUCTS

The prototype might be something physical. Here, hands-on is actually requiring students to use their hands. Students might design a roller coaster or engineer a bridge. But it can also be something that more closely resembles art rather than engineering.





## SOMETIMES YOU MAKE DIGITAL PRODUCTS

The prototype might be something digital. Students might work on creating blogs, podcasts, or documentaries. They might create their own Scratch video game projects.



# L A U N C H



SOMETIMES YOU  
MAKE A DIFFERENCE

In this case, the prototype is not something physical so much as an act of service or an event. It might even be a system. But the idea is that students are designing something that serves the community.



# PHASE SIX



L A U N C H



# HIGHLIGHT AND FIX



# L A U N C H

Next, they begin to highlight what's working and fix what's failing. The goal here is to view this revision process as an experiment full of iterations, where every mistake takes them closer to success. Revision shouldn't feel like a punishment so much as an opportunity to refine and improve on a product.



L A U N C H



EVERY MISTAKE IS ANOTHER  
ITERATION CLOSER TO SUCCESS



L A U N C H



EVERY ROADBLOCK IS SIMPLY A  
CHANCE TO SOLVE A PROBLEM



# RESOURCES FOR THIS PHASE

I have included an Assessment Toolbox with the 20-minute peer conference system, the SWOT grid, and the 5-minute student-teacher conferencing system. These are all designed to help improve the formative assessment process during a design thinking project.



# PHASE SEVEN



LAUNCH TO AN AUDIENCE!



IT'S READY TO LAUNCH!



## LAUNCH TO AN AUDIENCE!

When it's done, it's ready to launch. In the launch phase, they send it to an authentic audience. They might send it to a specific group in the community or they might publish their work online for the entire world. In some cases, they might even share their finished product with the school. But the key idea remains the same: it needs to be authentic for the students; which is why it's vital that students get the opportunity to determine who their audience will be.



LAUNCH TO AN AUDIENCE!

TOO OFTEN,  
STUDENT WORK ONLY  
ENDS UP ON THE  
REFRIGERATOR



## LAUNCH TO AN AUDIENCE!

Too often, students publish their work and the audience is their backpack. Maybe they take it home. Maybe it ends up on the refrigerator. However, when they are able to send it to an authentic audience, they grow more confident in their creativity. The stakes are higher and they are typically more motivated to do their best work.



LAUNCH TO AN AUDIENCE!



WHEN YOU LAUNCH, YOU ARE  
SAYING, "I'M NOT AFRAID  
TO BE KNOWN."



## LAUNCH TO AN AUDIENCE!



# SHARE YOUR JOURNEY

Students can also share their process along with their product. When this happens, they can learn from one another.

When I was a kid, I loved watching Bob Ross (you know, happy little trees). I know that there are more influential artists of that era but that didn't matter. When he shared his process, I wanted to paint.





"BECOME A DOCUMENTARIAN  
OF WHAT YOU DO."

– AUSTIN KLEON –



## LAUNCH TO AN AUDIENCE!

The same thing is true of students. When they share their journey, they inspire other students to be makers.

One of my favorite examples is the Global Day of Design that we created two years ago. It was so awesome to see students sharing their design journey online through social media!



LAUNCH TO AN AUDIENCE!



# GLOBAL DAY OF DESIGN



## LAUNCH TO AN AUDIENCE!

A few years back, we decided to launch a global collaboration project. Our goal was simple. Try out design thinking for one day. We chose a “throw away” day toward the end of the semester, once testing was over and teachers had the permission to experiment for just one day.

Just one day.

We knew that wasn't enough. We knew that a single day wasn't enough to transform classrooms into bastions of creativity and wonder.





 **Sandy Dempsey** @dempsey\_sandy 6 days ago

Rover #GDD16  
[pic.twitter.com/0w1Vgamu0u](https://pic.twitter.com/0w1Vgamu0u)



 **Sandy Dempsey** @dempsey\_sandy 6 days ago

Rocket #GDD16  
[pic.twitter.com/GoAZnXs00n](https://pic.twitter.com/GoAZnXs00n)



 **Sandy Dempsey** @dempsey\_sandy 6 days ago

Race tracks #GDD16  
[pic.twitter.com/U4dkizJ7yA](https://pic.twitter.com/U4dkizJ7yA)



 **Sandy Dempsey** @dempsey\_sandy 6 days ago

Global Day of Design #GDD16  
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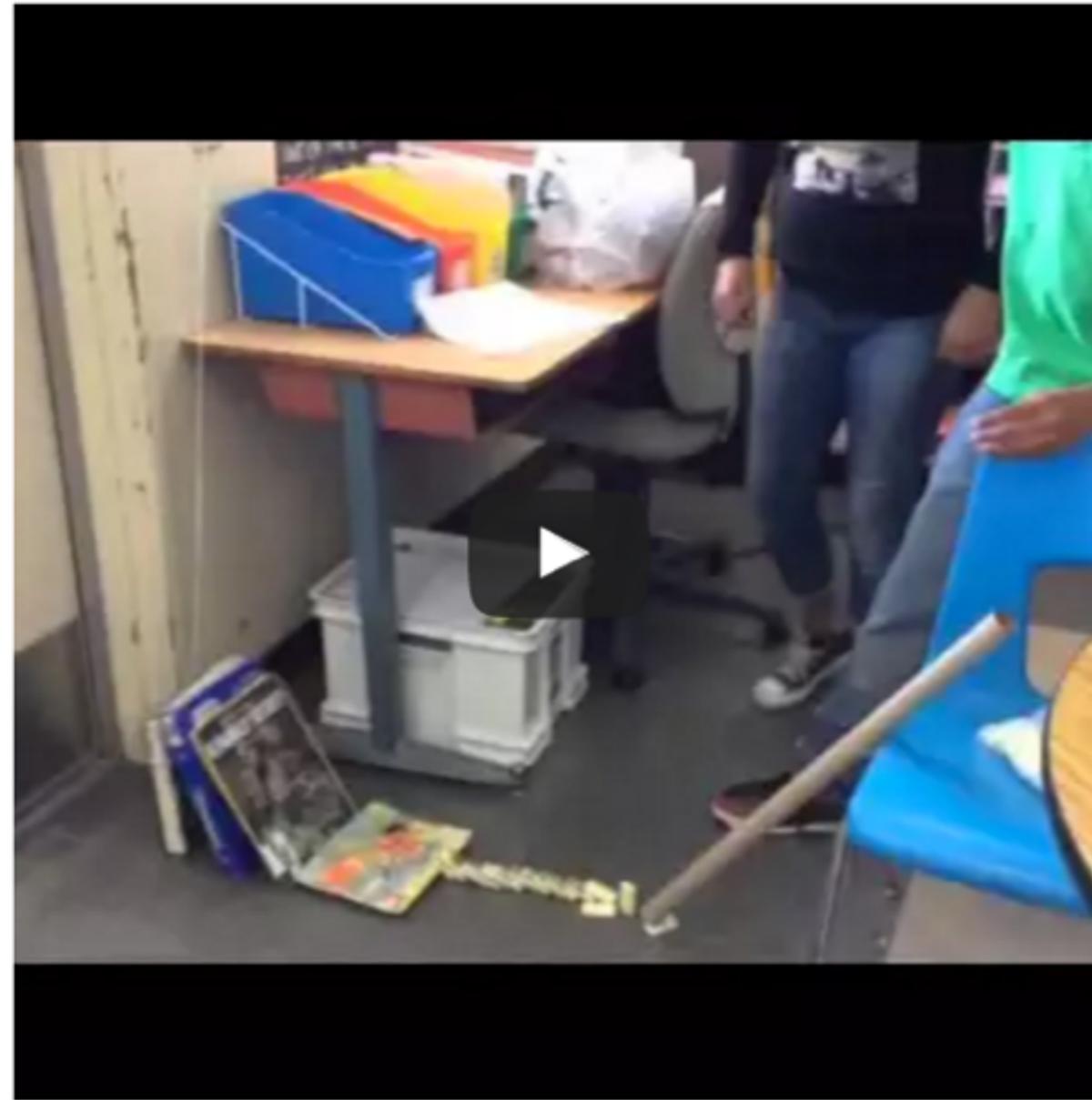


**Michelle Townsley** @MsTownsley



2 months ago

GDD16 Rube Goldberg RT LV Success  
[youtu.be/QDfmWSX46xQ](https://youtu.be/QDfmWSX46xQ) via @YouTube  
#GDD16



**Michelle Townsley** @MsTownsley



2 months ago

P6 GDD16 Lights Out  
[youtu.be/3wYmBhA1E9w](https://youtu.be/3wYmBhA1E9w) via @YouTube  
#GDD16



LAUNCH TO AN AUDIENCE!

# RESOURCES FOR THIS PHASE

If you're interested in learning more about the Global Day of Design, you can visit [globaldayofdesign.com](https://globaldayofdesign.com) to learn more.



OKAY, BUT LET'S  
BE REAL.



Design thinking sounds great but does it actually work in a classroom with tight schedules, curriculum maps, and the pressure to get kids to pass the standardized tests?

There is no easy answer here. There is no guarantee that it will always work. But let's take a look at these common questions.





WHAT ABOUT THE  
TIME CONSTRAINTS?

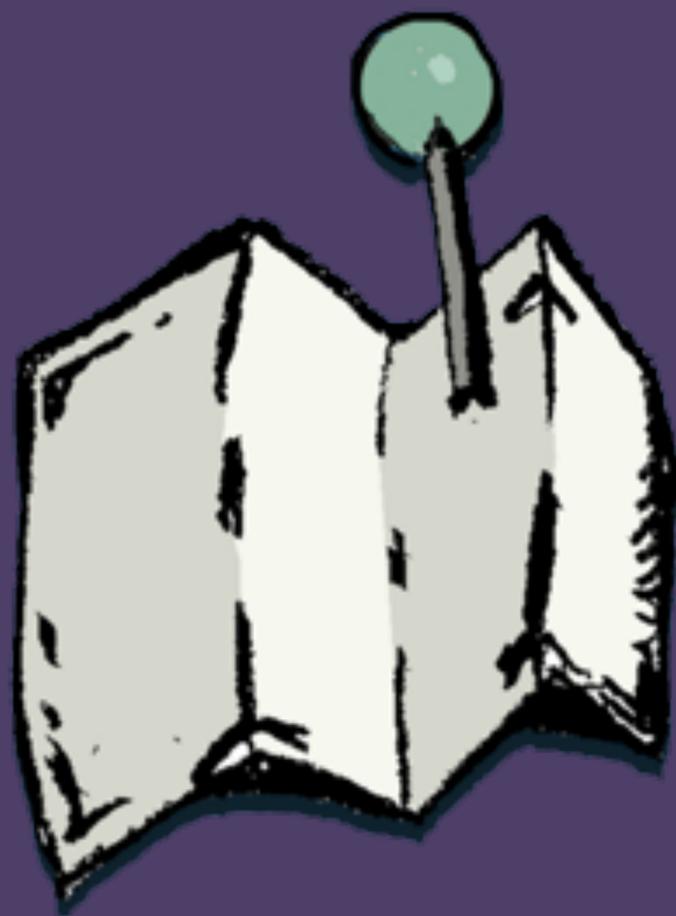


Design thinking takes time. There are no easy shortcuts. But one of the lessons I learned is that it's not about adding another thing to my plate. It's about rearranging the plate — or better yet, letting students be the chefs.

In my experience, I cut down on direct instruction, cut out the weekly quizzes, and allowed for more time for students to work collaboratively and independently on their design projects.

It actually felt less rushed or frantic.





# WHAT ABOUT THE CURRICULUM MAP?



Design thinking is essentially content neutral. You can use it in any subject. If you check out the sample design project, you'll see the alignment to the Common Core reading standards. In fact, I've included a document in the toolkit called *Standards Alignment and Design Thinking*. I hope this helps.



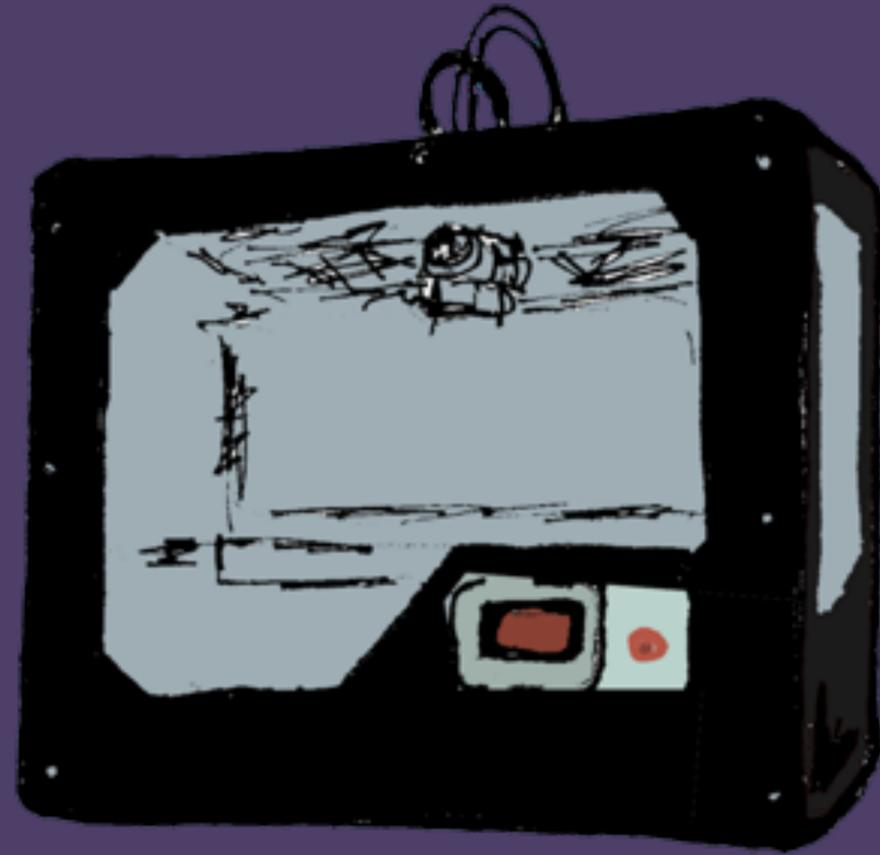


WHAT ABOUT THE TEST?



There is never any guarantee that students will have the highest test scores when they use design thinking. But design thinking does involve teaching **above** the test. It increases engagement by focusing on intrinsic motivation and student voice and choice. So, in my experience, students are more motivated, more focused, and achieve at higher levels. But . . . there is no guarantee and the research on this question is inconclusive.





WHAT IF I DON'T HAVE  
THE BEST TECHNOLOGY?

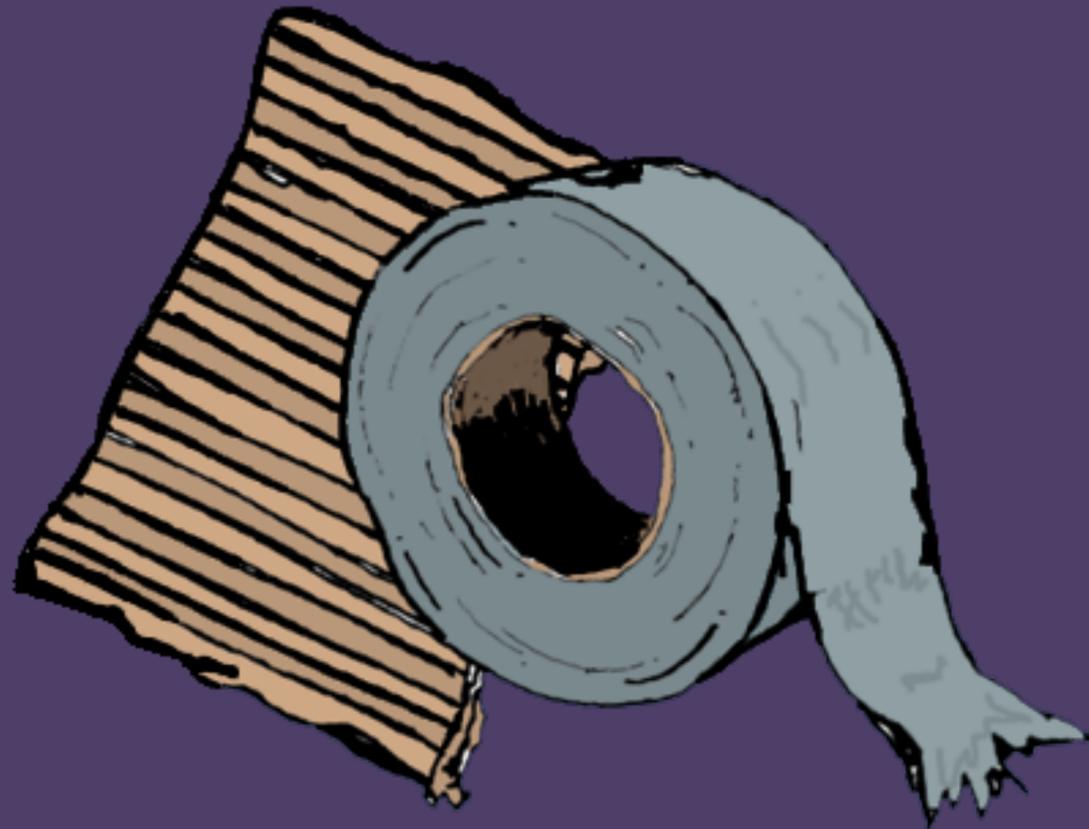


Design thinking isn't about technology. True, you can do documentaries, blogs, podcasts, and coding projects. You can prototype with a 3D printer. You can redesign your classroom to create a makerspace.

But . . .

The most powerful force behind design thinking is creativity. And that doesn't require technology. In fact, things like cardboard challenges encourage students to prototype with low-tech materials.





OFTEN THE BEST CHOICE IN  
TECHNOLOGY IS A  
ROLL OF DUCT TAPE





# TAKE THE LEAP!

EMPOWER YOUR STUDENTS WITH  
DESIGN THINKING!

EMPOWER

FOCUS ON ONE  
PROJECT AND SEE HOW  
IT GOES.





GO OUT AND MAKE SOMETHING  
**AWESOME**





## LOOKING FOR MORE?

Check out *Launch: Using Design Thinking to Boost Creativity and Bring Out the Maker in Every Student*.

