An Introduction to Design Thinking
PROCESS GUIDE

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Empathize

"To create meaningful innovations, you need to know your users and care about their lives."

WHAT is the Empathize mode

Empathy is the centerpiece of a human-centered design process. The Empathize mode is the work you do to understand people, within the context of your design challenge. It is your effort to understand the way they do things and why, their physical and emotional needs, how they think about world, and what is meaningful to them.

WHY empathize

As a design thinker, the problems you are trying to solve are rarely your own—they are those of a particular group of people; in order to design for them, you must gain empathy for who they are and what is important to them.

Observing what people do and how they interact with their environment gives you clues about what they think and feel. It also helps you learn about what they need. By watching people, you can capture physical manifestations of their experiences - what they do and say. This will allow you to infer the intangible meaning of those experiences in order to uncover insights. These insights give you direction to create innovative solutions. The best solutions come out of the best insights into human behavior. But learning to recognize those insights is harder than you might think. Why? Because our minds automatically filter out a lot of information without our even realizing it. We need to learn to see things "with a fresh set of eyes," and empathizing is what gives us those new eyes.

Engaging with people directly reveals a tremendous amount about the way they think and the values they hold. Sometimes these thoughts and values are not obvious to the people who hold them, and a good conversation can surprise both the designer and the subject by the unanticipated insights that are revealed. The stories that people tell and the things that people say they do—even if they are different from what they actually do—are strong indicators of their deeply held beliefs about the way the world is. Good designs are built on a solid understanding of these beliefs and values.

In empathy work, connect with people and seek stories

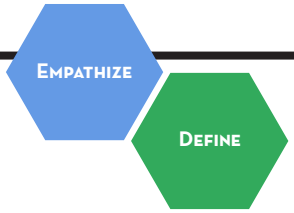
HOW to empathize

To empathize, you:

- Observe. View users and their behavior in the context of their lives. As much as possible do observations in relevant contexts in addition to interviews. Some of the most powerful realizations come from noticing a disconnect between what someone says and what he does. Others come from a work-around someone has created which may be very surprising to you as the designer, but she may not even think to mention in conversation.

- Engage. Sometimes we call this technique 'interviewing' but it should really feel more like a conversation. Prepare some questions you'd like to ask, but expect to let the conversation deviate from them. Keep the conversation only loosely bounded. Elicit stories from the people you talk to, and always ask "Why?" to uncover deeper meaning. Engagement can come through both short 'intercept' encounters and longer scheduled conversations.

- Watch and Listen. Certainly you can, and should, combine observation and engagement. Ask someone to show you how they complete a task. Have them physically go through the steps, and talk you through why they are doing what they do. Ask them to vocalize what's going through their mind as they perform a task or interact with an object. Have a conversation in the context of someone's home or workplace – so many stories are embodied in artifacts. Use the environment to prompt deeper questions.



Transition: Empathize >> Define

Unpack: When you move from empathy work to drawing conclusions from that work, you need to process all the things you heard and saw in order to understand the big picture and grasp the takeaways of it all. Unpacking is a chance to start that process – sharing what you found with fellow designers and capturing the important parts in a visual form. Get all the information out of your head and onto a wall where you can start to make connections—post pictures of your user, post-its with quotes, maps of journeys or experiences—anything that captures impressions and information about your user. This is the beginning of the synthesis process, which leads into a 'Define' mode.

Define

"Framing the right problem is the only way to create the right solution."

WHAT is the Define mode

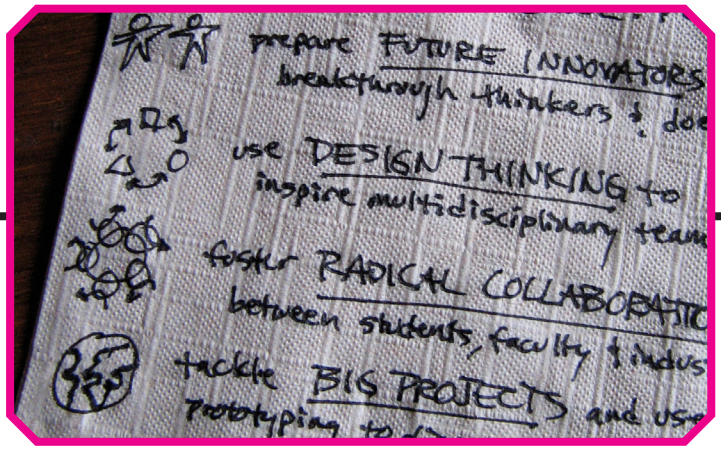
The Define mode of the design process is all about bringing clarity and focus to the design space. It is your chance, and responsibility, as a design thinker to define the challenge you are taking on, based on what you have learned about your user and about the context. After becoming an instant-expert on the subject and gaining invaluable empathy for the person you are designing for, this stage is about making sense of the widespread information you have gathered.

The goal of the Define mode is to craft a meaningful and actionable problem statement – this is what we call a point-of-view. This should be a guiding statement that focuses on insights and needs of a particular user, or composite character. Insights don't often just jump in your lap; rather they emerge from a process of synthesizing information to discover connections and patterns. In a word, the Define mode is sensemaking.

WHY define

The Define mode is critical to the design process because it results in your point-of-view (POV): the explicit expression of the problem you are striving to address. More importantly, your POV defines the RIGHT challenge to address, based on your new understanding of people and the problem space. It may seem counterintuitive but crafting a more narrowly focused problem statement tends to yield both greater quantity and higher quality solutions when you are generating ideas.

The Define mode is also an endeavor to synthesize your scattered findings into powerful insights. It is this synthesis of your empathy work that gives you the advantage that no one else has: discoveries that you can leverage to tackle the design challenge; that is, INSIGHT.

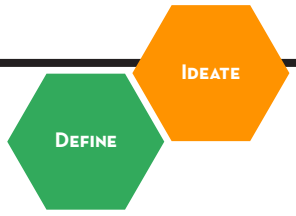


Articulate the meaningful challenge

HOW to define

Consider what stood out to you when talking and observing people. What patterns emerge when you look at the set? If you noticed something interesting ask yourself (and your team) why that might be. In asking why someone had a certain behavior or feeling you are making connections from that person to the larger context. Develop an understanding of the type of person you are designing for – your USER. Synthesize and select a limited set of NEEDS that you think are important to fulfill; you may in fact express a just one single salient need to address. Work to express INSIGHTS you developed through the synthesis of information your have gathered through empathy and research work. Then articulate a point-of-view by combining these three elements – user, need, and insight – as an actionable problem statement that will drive the rest of your design work.

A good point-of-view is one that:
- Provides focus and frames the problem
- Inspires your team
- Informs criteria for evaluating competing ideas
- Empowers your team to make decisions independently in parallel
- Captures the hearts and minds of people you meet
- Saves you from the impossible task of developing concepts that are all things to all people (i.e. your problem statement should be discrete, not broad.)



Transition: Define >> Ideate

In the Define mode you determine the specific meaningful challenge to take on, and in the Ideate mode you focus on generating solutions to address that challenge. A well-scoped and -articulated point-of-view will lead you into ideation in a very natural way. In fact, it is a great litmus test of your point-of-view to see if brainstorming topics fall out your POV.

A great transition step to take is to create a list of "How-Might-We . . .?" brainstorming topics that flow from your problem statement. These brainstorming topics typically are subsets of the entire problem, focusing on different aspects of the challenge. Then when you move into ideation you can select different topics, and try out a few to find the sweet spot of where the group can really churn out a large quantity of compelling ideas.

Ideate

"It's not about coming up with the 'right' idea, it's about generating the broadest range of possibilities."

WHAT is the Ideate mode

Ideate is the mode of the design process in which you concentrate on idea generation. Mentally it represents a process of "going wide" in terms of concepts and outcomes. Ideation provides both the fuel and also the source material for building prototypes and getting innovative solutions into the hands of your users.

WHY ideate

You ideate in order to transition from identifying problems to creating solutions for your users. Ideation is your chance to combine the understanding you have of the problem space and people you are designing for with your imagination to generate solution concepts. Particularly early in a design project, ideation is about pushing for a widest possible range of ideas from which you can select, not simply finding a single, best solution. The determination of the best solution will be discovered later, through user testing and feedback.

Various forms of ideation are leveraged to:
- Step beyond obvious solutions and thus increase the innovation potential of your solution set
- Harness the collective perspectives and strengths of your teams
- Uncover unexpected areas of exploration
- Create fluency (volume) and flexibility (variety) in your innovation options
- Get obvious solutions out of your heads, and drive your team beyond them

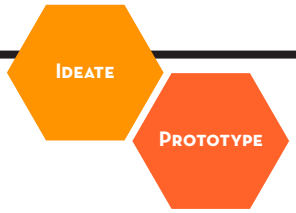
Maximize your innovation potential

HOW to ideate

You ideate by combining your conscious and unconscious mind, and rational thoughts with imagination. For example, in a brainstorm you leverage the synergy of the group to reach new ideas by building on others' ideas. Adding constraints, surrounding yourself with inspiring related materials, and embracing misunderstanding all allow you to reach further than you could by simply thinking about a problem.

Another ideation technique is building – that is, prototyping itself can be an ideation technique. In physically making something you come to points where decisions need to be made; this encourages new ideas to come forward.

There are other ideation techniques such as bodystorming, mindmapping, and sketching. But one theme throughout all of them is deferring judgment – that is, separating the generation of ideas from the evaluation of ideas. In doing so, you give your imagination and creativity a voice, while placating your rational side in knowing that your will get to the examination of merits later.



Transition: Ideate >> Prototype

In order to avoid losing all of the innovation potential you have just generated through ideation, we recommend a process of considered selection, by which you bring multiple ideas forward into prototyping, thus maintaining your innovation potential. As a team, designate three voting criteria (we might suggest "the most likely to delight," "the rational choice," "the most unexpected" as potential criteria, but they're really up to you) to use to vote on three different ideas that your team generated during brainstorming. Carry the two or three ideas that receive the most votes forward into prototyping. In this way, you preserve innovation potential by carrying multiple ideas forward—a radically different approach than settling on the single idea that at least the majority of the team can agree upon.

Prototype

"Build to think and test to learn."

WHAT is the Prototype mode

The Prototype mode is the iterative generation of artifacts intended to answer questions that get you closer to your final solution. In the early stages of a project that question may be broad – such as "do my users enjoy cooking in a competitive manner?" In these early stages, you should create low-resolution prototypes that are quick and cheap to make (think minutes and cents) but can elicit useful feedback from users and colleagues. In later stages both your prototype and question may get a little more refined. For example, you may create a later stage prototype for the cooking project that aims to find out: "do my users enjoy cooking with voice commands or visual commands".

A prototype can be anything that a user can interact with – be it a wall of post-it notes, a gadget you put together, a role-playing activity, or even a storyboard. Ideally you bias toward something a user can experience. Walking someone through a scenario with a storyboard is good, but having them role-play through a physical environment that you have created will likely bring out more emotions and responses from that person.

WHY prototype

To ideate and problem-solve. Build to think.

To communicate. If a picture is worth a thousand words, a prototype is worth a thousand pictures.

To start a conversation. Your interactions with users are often richer when centered around a conversation piece. A prototype is an opportunity to have another, directed conversation with a user.

To fail quickly and cheaply. Committing as few resources as possible to each idea means less time and money invested up front.

To test possibilities. Staying low-res allows you to pursue many different ideas without committing to a direction too early on.

To manage the solution-building process. Identifying a variable also encourages you to break a large problem down into smaller, testable chunks.

You can learn a lot from a very simple prototype

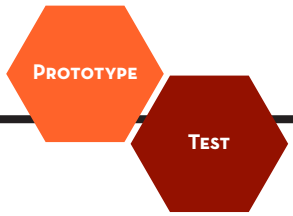
HOW to prototype

Start building. Even if you aren't sure what you're doing, the act of picking up some materials (post-its, tape, and found objects are a good way to start!) will be enough to get you going.

Don't spend too long on one prototype. Let go before you find yourself getting too emotionally attached to any one prototype.

ID a variable. Identify what's being tested with each prototype. A prototype should answer a particular question when tested. That said, don't be blind to the other tangential understanding you can gain as someone responds to a prototype.

Build with the user in mind. What do you hope to test with the user? What sorts of behavior do you expect? Answering these questions will help focus your prototyping and help you receive meaningful feedback in the testing phase.



Transition: Prototype >> Test

Prototype and Test are modes that you consider in tandem more than you transition between. What you are trying to test and how you are going to test that aspect are critically important to consider before you create a prototype.

Examining these two modes in conjunction brings up the layers of testing a prototype. Though prototyping and testing are sometimes entirely intertwined, it is often the case that planning and executing a successful testing scenario is a considerable additional step after creating a prototype. Don't assume you can simply put a prototype in front of a user to test it; often the most informative results will be a product of careful thinking about *how* to test in a way that will let users give you the most natural and honest feedback.

Test

"Testing is an opportunity to learn about your solution and your user."

WHAT is the Test mode

The Test mode is when you solicit feedback, about the prototypes you have created, from your users and have another opportunity to gain empathy for the people you are designing for. Testing is another opportunity to understand your user, but unlike your initial empathy mode, you have now likely done more framing of the problem and created prototypes to test. Both these things tend to focus the interaction with users, but don't reduce your "testing" work to asking whether or not people like your solution. Instead, continue to ask "Why?", and focus on what you can learn about the person and the problem as well as your potential solutions.

Ideally you can test within a real context of the user's life. For a physical object, ask people to take it with them and use it within their normal routines. For an experience, try to create a scenario in a location that would capture the real situation. If testing a prototype in situ is not possible, frame a more realistic situation by having users take on a role or task when approaching your prototype. A rule of thumb: always prototype as if you know you're right, but test as if you know you're wrong—testing is the chance to refine your solutions and make them better.

WHY test

To refine prototypes and solutions. Testing informs the next iterations of prototypes. Sometimes this means going back to the drawing board.

To learn more about your user. Testing is another opportunity to build empathy through observation and engagement—it often yields unexpected insights.

To refine your POV. Sometimes testing reveals that not only did you not get the solution right, but also that you failed to frame the problem correctly.

The key to user testing is listening.

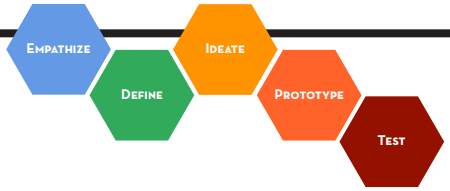
HOW to test

Show don't tell. Put your prototype in the user's hands – or your user within an experience. And don't explain everything (yet). Let your tester interpret the prototype. Watch how they use (and misuse!) what you have given them, and how they handle and interact with it; then listen to what they say about it, and the questions they have.

Create Experiences. Create your prototypes and test them in a way that feels like an experience that your user is reacting to, rather than an explanation that your user is evaluating.

Ask users to compare. Bringing multiple prototypes to the field to test gives users a basis for comparison, and comparisons often reveal latent needs.

Iteration and making the process your own



Iteration is a fundamental of good design. Iterate both by cycling through the process multiple times, and also by iterating within a step—for example by creating multiple prototypes or trying variations of a brainstorming topics with multiple groups. Generally as you take multiple cycles through the design process your scope narrows and you move from working on the broad concept to the nuanced details, but the process still supports this development.

For simplicity, the process is articulated here as a linear progression, but design challenges can be taken on by using the design modes in various orders; furthermore there are an unlimited number of design frameworks with which to work. The process presented here is one suggestion of a framework; ultimately you will make the process your own and adapt it to your style and your work. Hone your own process that works for you. Most importantly, as you continue to practice innovation you take on a designerly mindset that permeates the way you work, regardless of what process you use.

Community Business Leader

Facts:

- Diana Chavez, lawyer
- Age 40
- Born to non-college educated, working-class parents
- Second in her family to attend college (first was an older sibling)

Diana's Evolution:
Diana Chavez has worked in the corporate sector for 15 years. Diana has been a director for two years and loves her marketing job. Sitting in countless meetings, producing reports, and managing budgets are just a few of Diana's responsibilities. These responsibilities are not the reason that Diana is a well-respected leader in her field, however. Diana is a fearless free thinker and has learned to be intentional about fostering elements of that same thinking in others.

Working alongside worldly, highly educated, brilliant minds, Diana is ever the sponge for the brilliance around her. While her company culture is a positive one, Diana reached a point where she believed she could further leverage the talent within her staff by extracting the knowledge, skills, and talents that first attracted her company to them. Diana remains committed to absorbing the gems of her peers' knowledge and believes that in order to have positive working relationships and create a productive, happy working culture, she needs to understand her coworkers a little better.

Journal Excerpt #1:
"How might I bottle up the essence of the folks I work with? I need to spend some one on one time with my peers. They might actually enjoy it."

- How often?
    - Every 6 months
- Who?
    - Boss
    - Other directors in the company
- What do I want to know?
    - What factors contribute to your motivation or lack thereof?
    - Our positions do not typically intersect—how might we change that?
    - What would you do here at work if fear were not a factor?
    - What would your adult self say to your kid self?
    - Is it important to like something about the people you work with?
    - Do you like the way you handle conflict?

Diana quickly became fascinated at the conversations that took place as a result. The back-and-forth dialogue created a forum for safe sharing. The employees began to wonder what sort of gems they could extract from others if they dared to ask questions of their peers.

Journal Excerpt #2:
"How can I apply this same type of thinking (asking more questions, extending my boundaries, finding my 'creative') to work? How can I help manifest this in others?"

Impacting the Next Generation of Professionals:

- Encourage quarterly “bring your child to work day.”
- Allow children to witness creative thinking happening in the workplace.
- Allow children to contribute creative solutions to actual workplace scenarios.
- Volunteer in classrooms.
- Show students what their creative thinking can look like in the workplace.

Empower Others to:

- Ask any question.
- Embrace failures.
- Be fearless.
- Be staunch advocates for change.
- Cross the line.

Challenge Others to:

- Have walking meetings.
- Spend time doodling.
- Act out ideas rather than writing them down.
- Write with their non-dominant hand on occasion.
- Take a different route home from work.

Parent

Facts:

- Paul Hernandez, IT Manager
- Age 38
- First-generation Ecuadorian American; only child
- First in his family to attend college

As a parent of two children—a daughter in 6th grade and a son in 2nd—my main concerns are that they are safe, they enjoy learning, and they are prepared for success in college and career.

When I was in school it felt like everything we learned had a right or wrong answer, and I was on my own to complete most assignments. I learned how to 'play' school, but I didn't like it very much. Having English as my second language didn't help either. I felt like I spent the first six years of school just trying to catch up.

When I look at my friends and colleagues who are successful and enjoy their careers, they excel at working with other people and finding solutions to complex problems. I want school to prepare my kids for that type of life. One in which they wake up most days eager to tackle challenges in a career they find meaningful and rewarding—regardless of how much money they make. That being said, I'm worried my children aren't consistently being prepared for this type of future.

When we talk every afternoon about what they did at school that day, things don't sound much different than when I was a kid. Both my son and daughter get decent grades, A's and B's, mostly. They do homework every night. There's so much homework! It's a struggle to finish all of it in addition to everything else they're involved in. And I just don't see the value in most of it.

Sure, practicing math problems and studying vocab words is useful, but I don't see how it's helping them become better learners. If anything, the homework is discouraging them from enjoying school and learning about themselves.

I would love to see my kids have a voice in what they're learning and how they learn it. I would love to hear about how they struggled with a project at school and worked with their group members to find a solution. Especially if the solution didn't work! Imagine the conversation we could have around the dinner table about how well their group worked together, why they thought things didn't work as planned, and what they might do differently next time. Not only would school be more engaging for my children, but I would feel more engaged as a parent.

Education Professional

Facts:

- Arthur Costa, Professor Emeritus, University of California, Sacramento
- Age: Somewhere around there…
- Co-founder of the Institute for Habits of Mind

I believe that all students should be taught Habits of Mind, namely the attributes that human beings display when they behave intelligently. These include, among other traits, such behaviors as persistence, managing impulsivity, metacognition, and applying past knowledge to new situations.

The specific habits of mind of creativity and innovation are inside of all of our students, and this potential must be developed through careful inquiry from teachers. By minimizing a focus on standardized test-prep, and maximizing a focus on thinking skills, teachers can intentionally develop the flexible thinking that is truly required in the post-classroom world.

That said, the art of skilled inquiry modeled by teachers does not happen by accident. Rather, this integral skill set must be intentionally taught to teachers, monitored, and refined as teachers hone their craft.

The role of site-based administrators should be to resource and support teachers in integrating Habits of Mind into their teaching, no matter the content area.

And lastly, curriculum developers can further support teachers in developing Habits of Mind in their classroom by intentionally integrating these skills into curriculum. Specific call-outs in curriculum about opportunities to tease out higher-level thinking, targeted questions that could elicit this thinking, and flexible question stems are all ways that curriculum could and should support deep thinking and the development of these dispositions that students will need to persist and succeed in all subject areas.

(Inspired by “5 Strategies for questioning with intention” by Costa and Kallick in Ed Leadership, Sept. 2015)

High School Student

Facts:

- Benjamin Tyson, aspiring research scientist
- Age 16
- Third of four siblings
- Varsity soccer
- Favorite subjects: Chemistry and Physics

I'm a good student. I do all my assignments, make good grades, don't cause trouble, and basically enjoy my classes (most of them!). But school feels disconnected to the "outside world."

I know it's hard on my dad being a single parent. But my sisters and I feel like our family can accomplish anything if we put our energy into it. We all love soccer and spend most of our time competing against each other to kick goals in the backyard. This keeps us from trying to kill each other over who gets the comfy spot near the electrical outlet on the couch, because you know, surfing the web is more fun when you can channel surf, too!

Don't get me wrong! I don't spend all my time on my computer. It's just that I learn more on my own with my computer than I do in the classroom. I enjoy learning, but not in the way we usually do it at school—hearing lectures, working pages of problems, or writing five-paragraph essays. I understand that there are established standards that we have to meet. Couldn't we still meet them in more creative, tech-friendly, student-friendly ways? Maybe more collaborative group work during the learning process? We can learn a lot when we teach and support each other. Maybe more "flipped classrooms" where we do initial online investigations into the topics and concepts before the class discussion. And, for sure, more use of the information available to us by phone, iPad, or computer.

We know that we have to have guidance in these processes. However, if you ask us, we can make some really good suggestions for innovation in our classroom structures to make learning more accessible and engaging to all students (and maybe easier for you, too). After all, thinking and learning is the goal—right?!

Superintendent

Facts:

- Evelyn Wooley, former elementary teacher
- Age 45
- Only child of two college-educated parents
- Has two children

"Think left and think right and think low and think high. Oh, the thinks you can think up if only you try!" – Dr. Seuss

I believe all students have the potential to thrive and grow academically, socially, and emotionally in our educational system as long as they have clarity of expectations, directions, and outcomes. Educators have a large role in providing the tools, time, and opportunities for all students to succeed.

In my experience, most of the challenges for our students begin with the challenges of our educators. One of my favorite books to read to my students was *Amelia Bedelia*; circa 1960s, this wacky housemaid approaches life with a very literal lens, which results in countless hilarious, and sometimes frightening, outcomes. What this book emphasizes is the importance of ensuring that communication is understood in both directions, not jumping to assumptions, and most importantly, the prominence of systems thinking. Therefore, I believe in building communities of practice within my district, sites, and classrooms. Through collaborative, creative, and constructive learning opportunities all educators thrive, and therefore students thrive. In this way both the novice and the experienced practitioner enhance their practice and continue to improve their abilities and individual learning.

I believe the ideal classroom design includes a culture of collaboration, creativity, and personalized learning. For example, in elementary, students engage in project-based learning in which their interests in science are the catalyst for their projects to design and develop in the "Thinker Lab" in the library. In middle school, students connect with local leaders to design a "teen space" at the local park to provide a teenager friendly component within the larger community areas. In high school, students interact and intern at local businesses to gain insights on prospective careers and to inform their college selection. These are just some of the examples of how our educators are empowering and engaging students in learning and critical-thinking in real-world systems.

My own kids have fond memories of purposeful projects as they moved through the grade levels, and their experiences are often coveted by their college friends who were not afforded the same opportunities.

Our mission is to inform, inspire, and ignite innovation for all learners, through listening, speaking, reading, and writing across all domains. Our students move from being neophytes to influencers and ultimately leaders.

Middle School Teacher

Facts:

- Peter Ibarra, math teacher
- Age 51
- Second child of college-educated, middle-class parents
- Enjoys marathons and Minecraft

At the core of the math teacher's beliefs is the idea that there are many problems facing our society, and applying a mathematical lens to these problems can find multiple ways to improve our lives and the lives around us.

The beautiful thing about math is that everything is a problem, from figuring out how long it will take us to get our coffee in the morning, to determining the population sizes of endangered animals, to creating a really fun rollercoaster.

When we apply mathematical concepts and processes in a creative manner, we can come up with innovative solutions. In the classroom everything can be turned into an intriguing problem to engage students in the learning process and foster creative thinking. Some of my favorite math thinkers include Enrico Fermi and his ability to estimate anything based on logical assumptions (number of piano tuners in Chicago, how many Rubik's cubes fit in the room). Then, there is Euclid and the belief that there are logical truths at the heart of all mathematics, and we can apply these truths in a myriad of ways. Another favorite—Richard Feynman's belief that life is full of interesting problems that require a lot of imagination to understand.

I work everyday to share these concepts with my students so they can begin to make connections with the math knowledge to subjects well beyond the classroom. The popularity of *The Big Bang Theory* with my students has helped create a cultural phenomenon in the classroom where experimentation and scientific risk-taking is cool. It also never hurts when I geek out with my kids over the latest Minecraft sim.

Middle School Student

Facts:

- Madison Smith, future world-renowned pastry chef
- Age 12
- Oldest of two from an upper middle-class family
- Favorite subjects: Family Consumer Economics and French

I really want to be a pastry chef like the great Pierre Hermé. Sometimes I struggle in math and science and lack motivation to do my schoolwork. Then, I remember my dream of becoming a world famous pastry chef. I will need to have excellent math and science skills—this makes me work just a little harder. I always look for ways I can take what I'm learning and connect it to the kitchen. For example: History—What were the most popular dishes during that period of time? How has that dish evolved over time?

When I'm not at school I love to be in my kitchen. I think it is fun to take a recipe and add my own little twist and then see what my family thinks of my creation. My neighbor is one of my biggest fans. Mrs. Castilho always looks forward to sampling my new creations.

Part of being a great pastry chef is presentation. My room is covered with pictures of my creations and pastry experiments. And of course some of my favorite Pierre Hermé creations. On my desk, I have my doodle pad. I like to doodle when I'm trying to think of what my next creation might be. When I discover a new way to use a particular ingredient, I start to post pictures of that ingredient. It's a constant reminder of what might be the next great Madison original creation.

Don't think I only get to express my creativity at home. At school, I LOVE consumer economics. The teacher gives us the recipe we will be making in class about a week ahead of time. If we successfully make it at home and bring him a sample before we are scheduled to make it in class, he'll test it and make suggestions to encourage us to experiment and put in our own twist. I've had a lot of not-so-great experiments, but every now and then I create something pretty amazing. At the end of each grading period, he will give us a mystery ingredient and challenge us to create something new.

My dream school would be in the heart of Paris, learning from the best of the best and perfecting my passion of someday becoming a world famous pastry chef.