

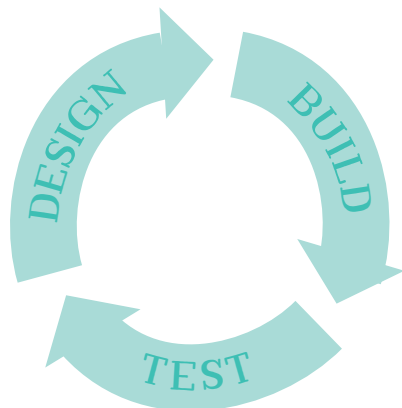
The best way to start any big job is to break it down into smaller, more doable tasks. This gives you a clear path to follow and helps you keep from feeling totally overwhelmed.

So let's look at a few ways to do this with a coding project.

THE DESIGN-BUILD-TEST CYCLE

In coding, and in a lot of product development, designers and programmers work through something called the “design-build-test cycle.” It looks like this.

You start by designing your product, then you build it, then you test it to make sure it's doing what you want it to. Often, testing will lead you back to designing as





you identify problem areas that aren't working or places that could be improved.

**BUT WHAT IF YOU DON'T
KNOW WHAT TO DESIGN?**

There's a process for that, too. It's usually the very first step in coding, and for a lot of people, it's the most fun part!

CLOUDY WITH A CHANCE OF BRAINSTORMS

Before you ever write a single line of code, you have to figure out what problem you are trying to solve and what product will help you do that. Maybe there's an idea you've been kicking around for a while, a product you wish you had. Maybe it's something you already use and wish worked better. Maybe you don't have any ideas for projects at all, but you have a feeling about a style or look for something. Maybe you're interested in a play, a poem, a piece of music, a social cause, a sport, or even a favorite shade of blue. These are all great places to start your **BRAINSTORMING**—the process of using free, no-rules thinking to come up with ideas that you can build upon.

I KNOW WHAT BRAINSTORMING IS, BUT HOW DO YOU GET STARTED?
**WHAT DO YOU
BRAINSTORM ABOUT?**



One way is to start by thinking about topics that interest you. Propose a variety of scenarios, like: “When I’m timing my sprints on the track field, I wish I had a _____.” or “When I’m researching endangered animals, I really want to know about _____.” How about “When I’m looking for cake decoration ideas online, wouldn’t it be great if I could _____?” Or “If I could have any app in the world, it would do _____.” Or “I use this device every day, but I could improve it by _____.” The purpose of brainstorming is to kick-start your imagination to generate ideas. So browse the Internet, go to the library, visit museums, flip through magazines, look at advertisements, take a walk outside and look, listen, taste, feel, and smell the world around you. Dive into new or exciting topics that can hold your attention and see what you learn.

**IT SOUNDS LIKE THE
COLLAGES I LIKE TO MAKE.**



Exactly. Inspiration can be anywhere and it helps to browse deep and wide to find it. Your brain sees patterns and connects dots in ways that may not seem obvious at first, so it's okay to daydream a little. For the puppies out there, now's a good time to chase a few butterflies and see where they take you. If you're more of a kitten, brainstorming can be a fun, low-stress way to get your paws on that new toy.



MAKE IT PRETTY!

Whiteboards, corkboards, colorful note cards, thumbtacks, Post-its, and stickers. Highlighters, markers, crayons, and colored pencils. Notebooks, binders, legal pads, construction paper. Magazine pages, postcards, photos, design patterns, color swatches, movie posters, cover art. Quotes, song lyrics, sayings, symbols. These are all excellent tools to have on hand for a brainstorming session. Put up an inspiration board, write out your ideas

on note cards and pin them up, think of a clever title or name for your product, and write it on your wall (check with an adult before writing *on* the wall, though!). Draw the main character in a new game or an idea for a logo. Write out your leading questions and

hang them high on your board. Write down all the answers that come up and highlight them in different colors. Visual aids are great tools for getting your creative thinking flowing.

HAVE A LITTLE HELP

But do you want to know what the most important, extra-special secret weapon of brainstorming is?

YOUR FRIENDS! **COLLABORATION**, or working together, is key to brainstorming. Tossing around ideas in a group setting lets people build on what's being said. Not only is it fun, but different people bring different viewpoints that can take an idea in a direction you may not have considered. Collaborating helps ideas grow by putting many minds on a problem. And don't forget that part of brainstorming is getting out as many ideas as possible. It's not a time to be self-conscious or worry about whether or not your idea is good. Likewise, you shouldn't feel like you have to stop and evaluate anyone else's suggestions. The point is to get thoughts to flow freely, then make decisions about them later. So treating everyone's ideas with kindness and creating a safe non-judgmental place to express your ideas are a super important part of the process.

