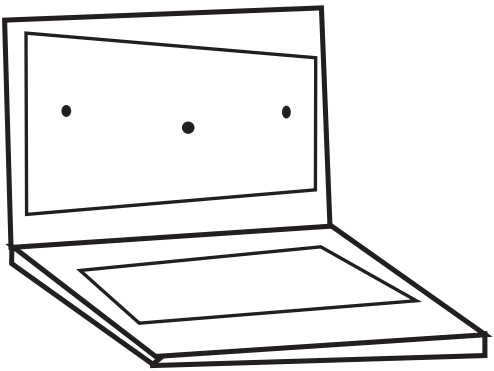
CODE

creating with computers



a guide for parents

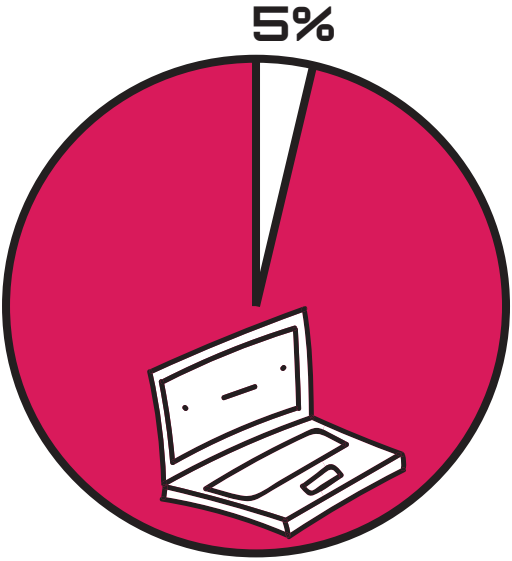
Code. What is it?

Code, coding, programming- all describe the language used to communicate with computers.

But coding is so much more. When you learn how to code, you also gain an understanding of concepts beyond the language. This kind of thinking will lead you to a smarter relationship with technology and other people.

Coding is a tool that will help you do the things you've always wanted to do, because every field needs innovators, thinkers, and leaders.

Why is learning to code important?



Despite the fact that Latino/as are a growing portion of the US workforce, they are highly underrepresented in the growing STEM (Science, Technology, Engineering, and Math) economy.

Latino/as make up only 5% of the US tech industry workforce.

STEM jobs are the fastest growing segment in the U.S.

71% of these jobs involve computers.

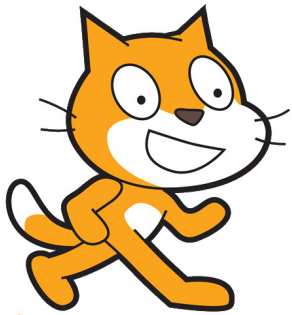
More than 1.7 million programmer-specific job opportunities will be available in 2022, with average salaries over $83,000.

Where to start?

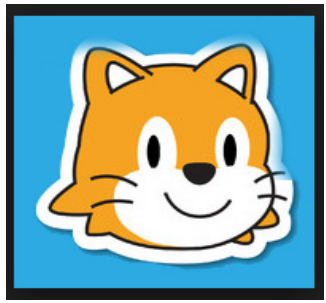
If you want your kid to be a doctor, you don't give them a knife and say "go for it!" Similarly, many of the languages used in professional settings are too complex for kids. Luckily, there are a ton of resources for kids to get into programming.

These get their young minds ready and interested so when the time comes, it'll be second nature.

Scratch (www.scratch.mit.edu) is a programming language for kids (ages 8 and up) that lets you create games, music, and animations. It's free and available in Spanish.



Scratch Jr (www.scratchjr.org) is an app available for free on Ipad that teaches younger children (ages 5-7) basic coding concepts.



Touch Develop (www.touch-develop.com) is a free coding platform created by Microsoft that shows you how to build an app step by step.

Code.org (www.code.org) is a website dedicated to teaching kids the basics of code. Their vision is that every student in every school should have the opportunity to learn computer science. Code.org is free and available in Spanish.

Next steps:

Code Academy (http://www.codecademy.com) is a website that has lessons on coding languages: HTML, CSS, Javascript, Python, Ruby, PHP, and JQuery. It is free to sign up. All you need is an e-mail address.

Treehouse (http://teamtreehouse.com) is a website similar to Code Academy but available for free through Los Angeles Public Library. All you need is your library card.

Coder Values

"You have brains in your head.
You have feet in your shoes.
You can steer yourself any direction you choose.
You're on your own.
And you know what you know.
And YOU are the one
who'll decide where to go!"

-Oh! The Places You'll Go! by Dr. Seuss

There's a story
behind and
created by
coding,
and that story
is yours to tell.

All you have to do is:

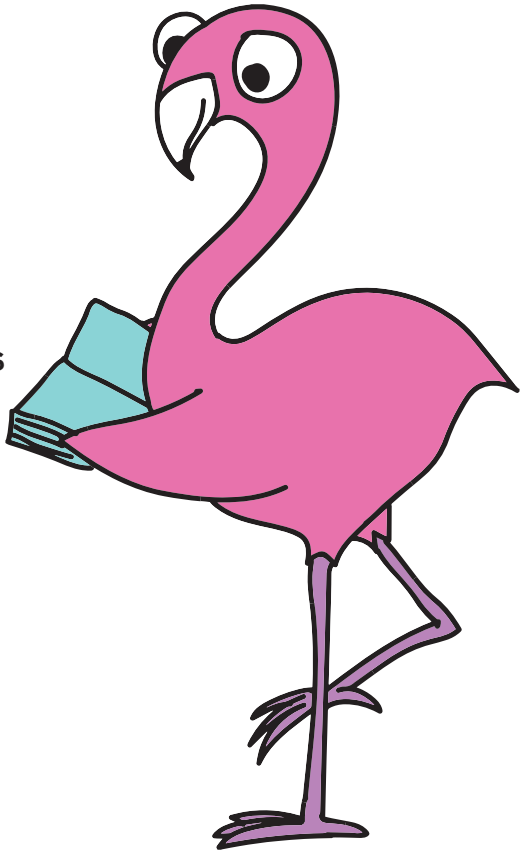
be hungry

IF YOU KEEP TRYING NEW THINGS,
YOU'LL NEVER BE BORED.
DON'T STOP WITH WHAT'S EASY.

read

"The more that you read, the more things you will know. The more you learn, the more places you'll go."

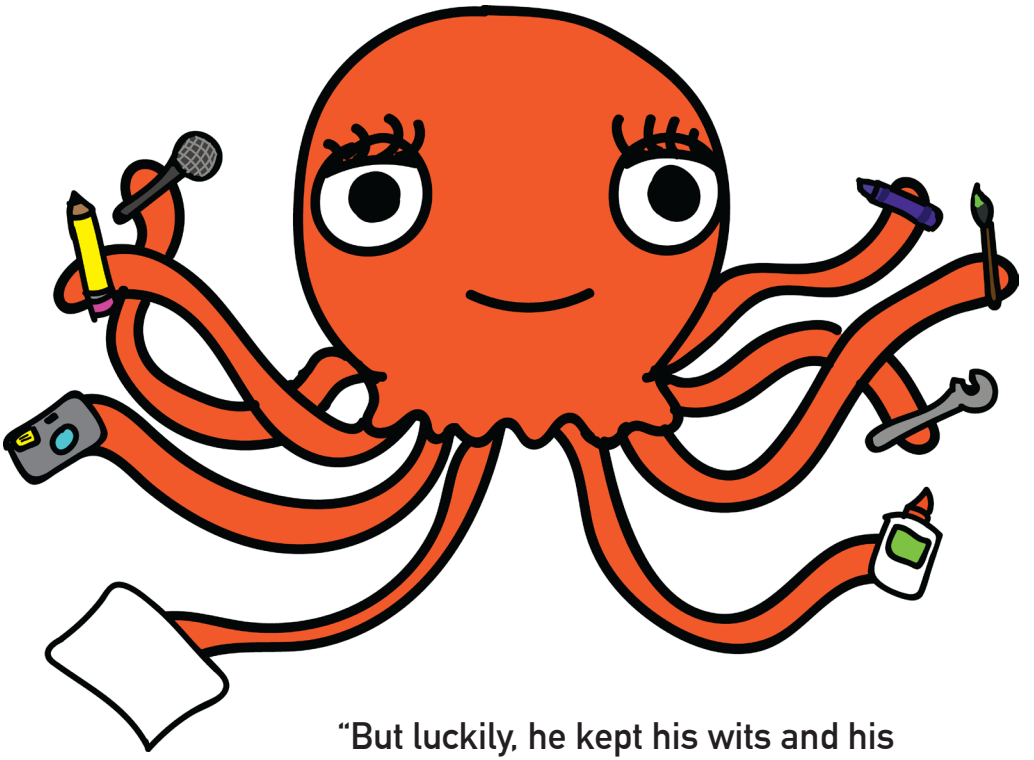
- Dr. Seuss



THE BEST THING YOU CAN DO TO LEARN IS READ.

READ EVERYTHING!

make



"But luckily, he kept his wits and his purple crayon. He made a balloon and he grabbed on to it."

-Harold and the Purple Crayon

USE YOUR HANDS!

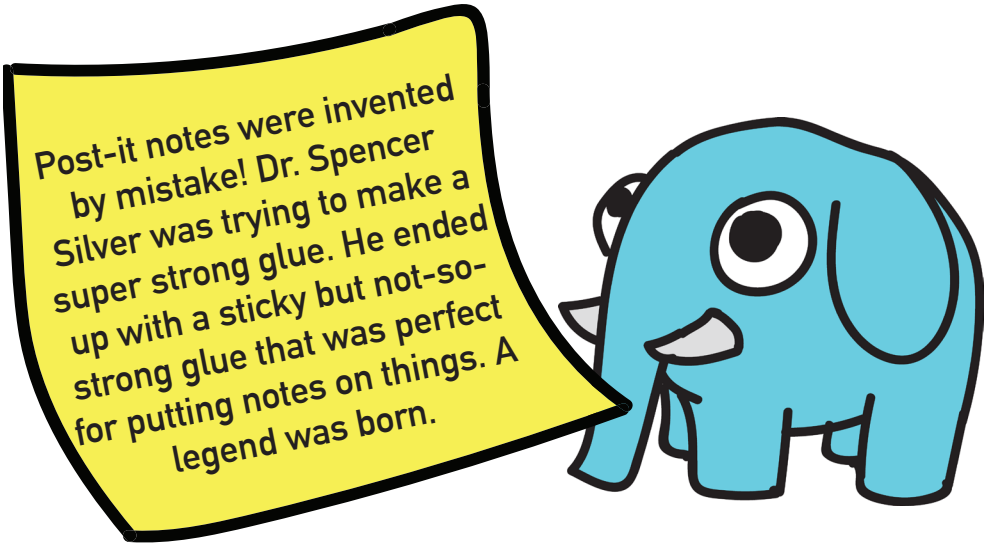
be creative

"When the light turns green, you go. When the light turns red, you stop. But what do you do when the light turns blue with orange and lavender spots?"

-A light in the Attic by Shel Silverstein

What do you imagine?
Complete the drawing.

make mistakes

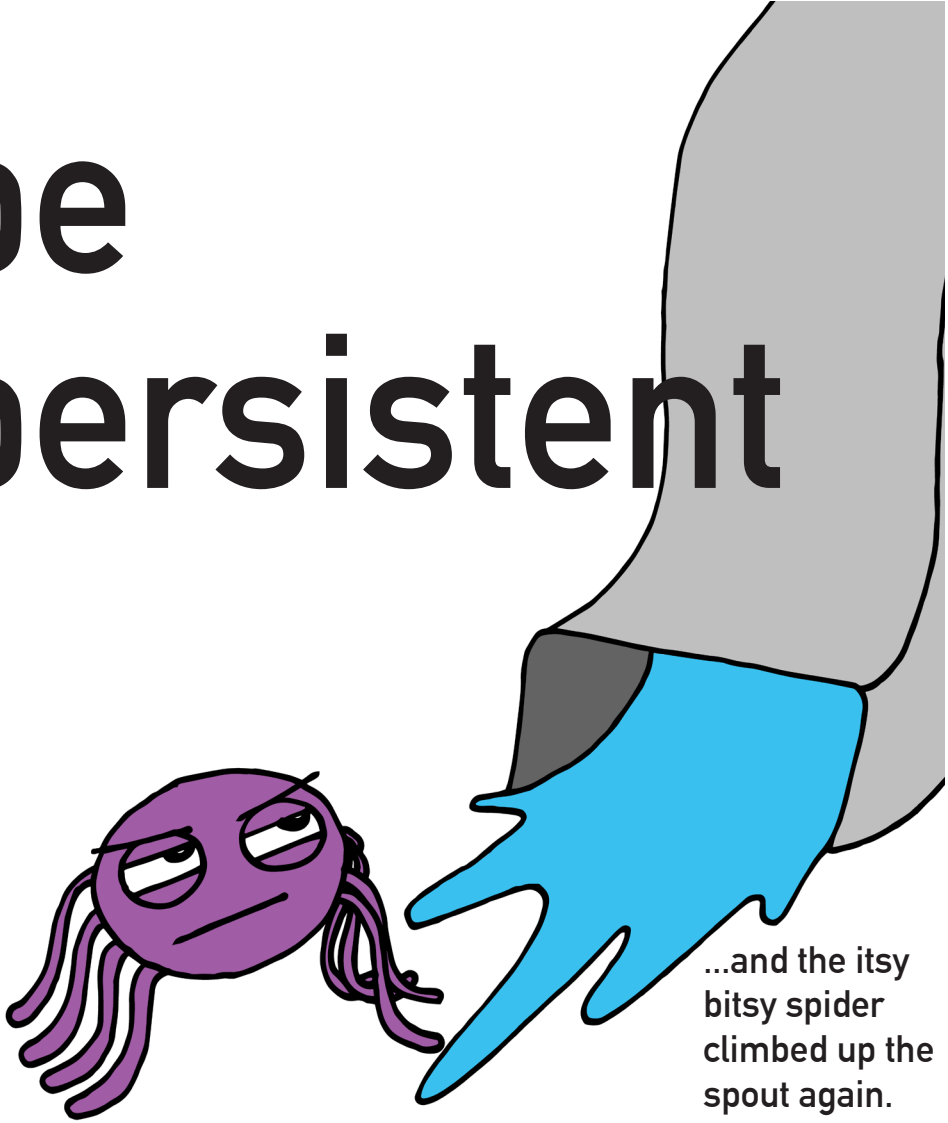


"Failure tells you what you don't know, frustration is making sense of that failure in the moment, and taking action leads to a new way of knowing...."

- The Art of Tinkering
TInkering Tenets

MAKE WITH YOUR MISTAKES.

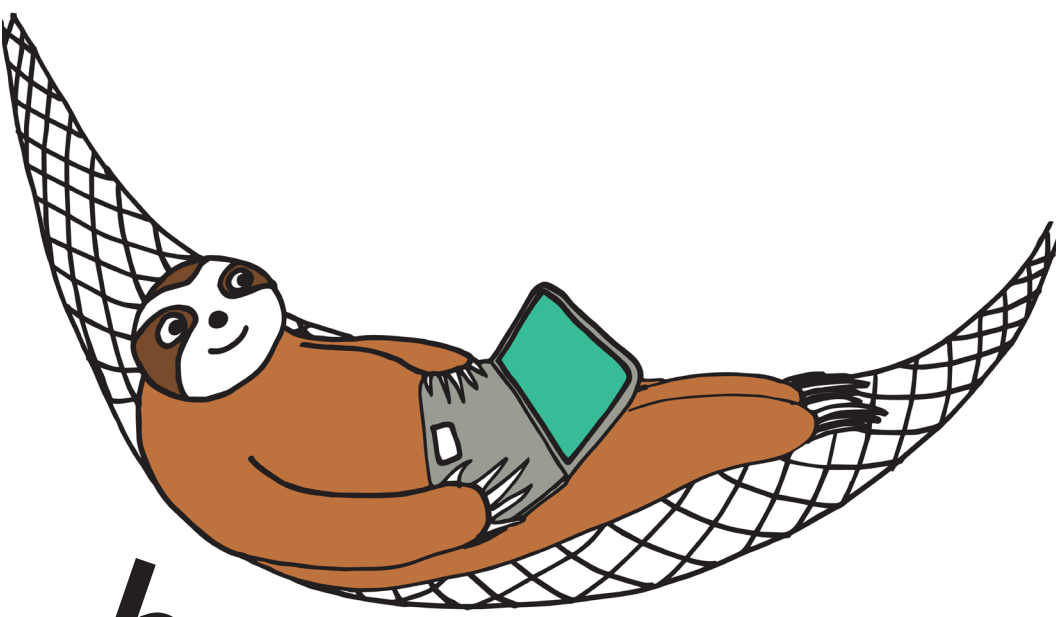
be persistent



...and the itsy bitsy spider climbed up the spout again.

"THINK LEFT, THINK RIGHT, THINK LOW AND THINK HIGH. OH, THE THINKS YOU CAN THINK UP IF ONLY YOU TRY!"

-OH! THE THINGS YOU CAN THINK! BY DR. SEUSS



be lazy

Not that kind of lazy!

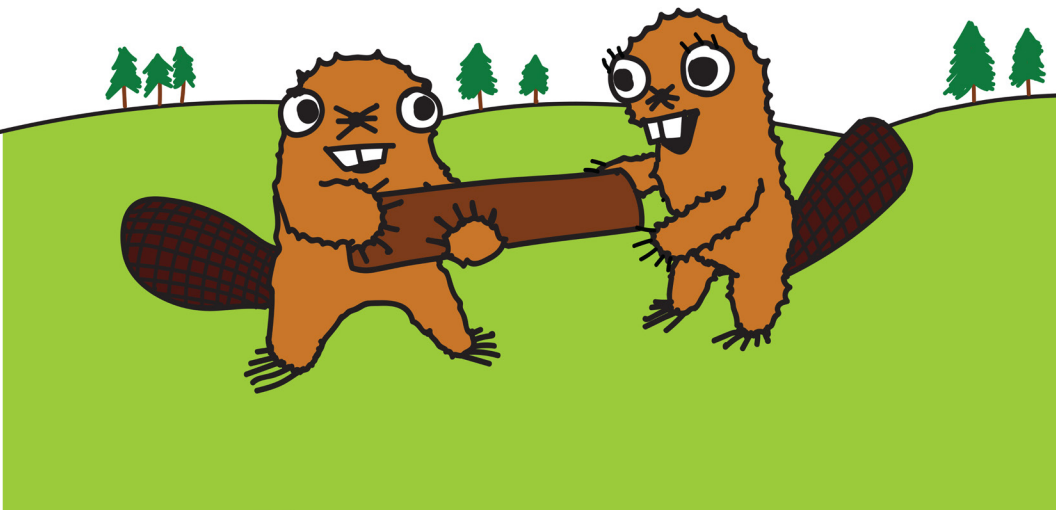
Let the computer do most of the work. Find ways to save time. There's always a better and faster solution.

believe code is magic

Code is the closet thing we have to magical powers.

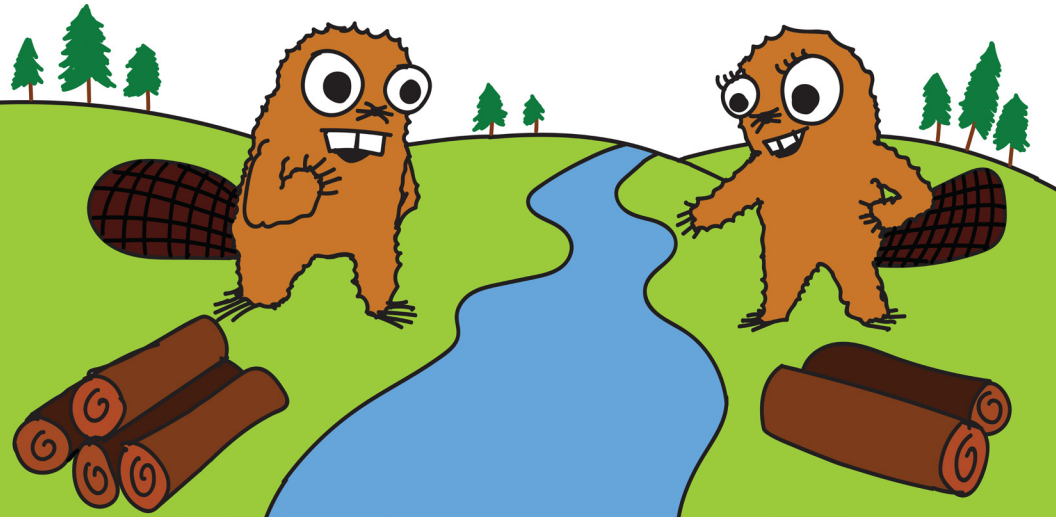
You can make anything out of almost nothing!

share



"We share what we make, and

collaborate

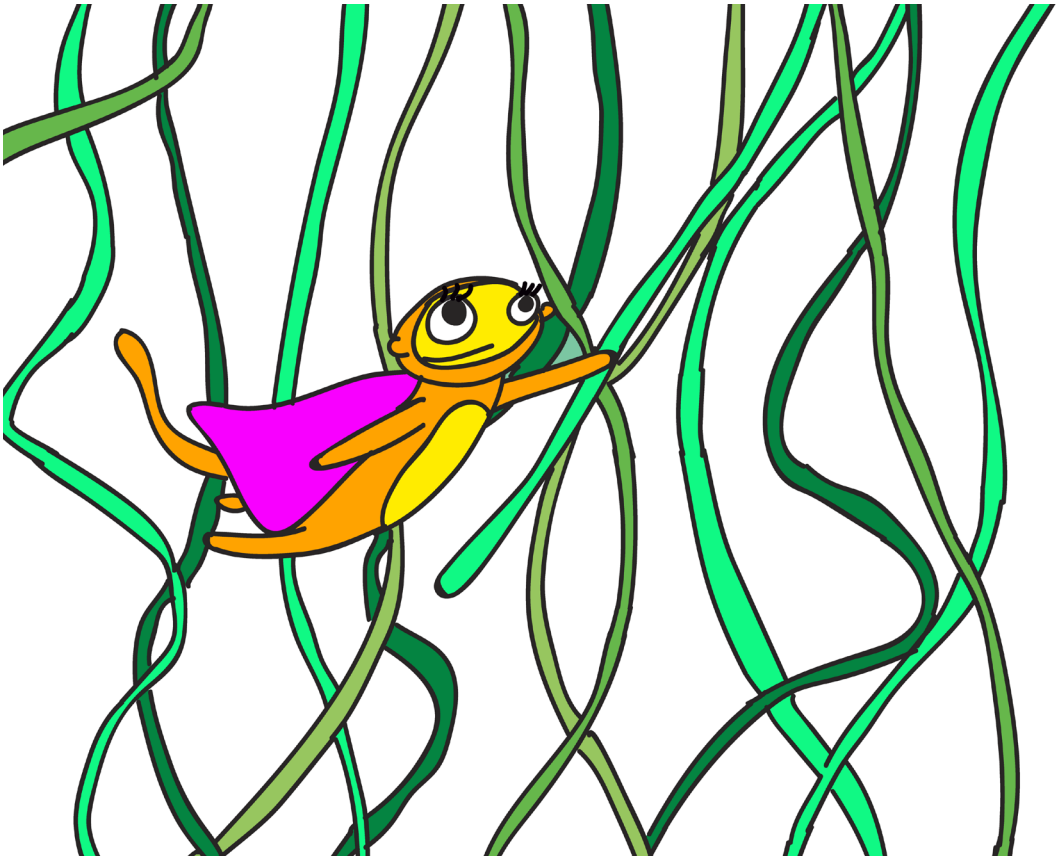


HELP EACH OTHER MAKE WHAT WE SHARE."

- MAKE MAGAZINE

be brave

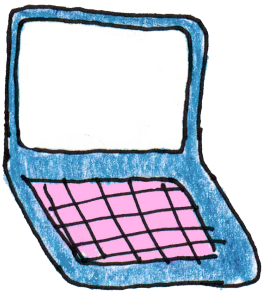
"You're braver than you believe, stronger than you seem, and smarter than you think."
-Winnie the Pooh by A.A Milne



"I AM NOT AFRAID OF STORMS FOR I AM LEARNING HOW TO SAIL MY SHIP."

-LITTLE WOMEN BY LOUISA MAY ALCOTT

How can I support my child?



Talking about code with your child

Empower your kids to experiment.
If a he or she is frustrated and struggling, avoid doing things for them, Instead, ask them:

What do you think you should do?
Why do you think it's not working?
What is your program doing?
What do you want it to do?

Praise their problem solving process, not just the outcome of it.

When possible, have your child explain their code to you or a family member. Explaining something to others makes kids feel valued. Promote leadership in the space whenever possible.

Be open and honest. If you don't know the answer to a question, admit it and figure it out together.

Be enthusiastic! Honest enthusiasm is critical to a child's confidence. Coding can be frustrating for beginners (and professionals). A little cheerleading can make a student feel good about their progress and encouraged to continue.

Remember, everyone has bad days. Be persistent.

"It has been a terrible, horrible, no good, very bad day. My mom says some days are like that."

-Alexander and the Terrible, Horrible, No Good, Very Bad Day by Judith Vorst

Plussing Sessions (adapted from YoungMakers.org)

Plussing sessions provide an opportunity for people to pause and share their ideas, progress, challenges, and next steps with someone else. Plussing is a termed used at Pixar to mean “finding what’s good about an idea and making it even better”.

Here are questions you can ask your child:

- What is your project vision?
- What inspired you to pick this project?
- Do you know of other people who have done projects similar, or is this one-of-a-kind?
- What do you think the hard parts are going to be? What are the easier parts?

Why have plussing sessions?

- They give kids a chance to talk about their failures in a positive and constructive way.

It might take some time for students to come up with a project idea. Ask questions like, “What do you like to do?” to create an encouraging environment.

Resources

Use your library!

"I'm wondering what to read next." - Matilda by Roald Dahl

Visit your local library for free resources to help your child learn about computers. Sign up for a free library card at your local library branch.

Books !

Books to inspire your kid for free at your local library!

Picture Books

Journey by Aaron Becker
Harold and the Purple Crayon by Crockett Johnson
Hello Ruby by Linda Luikas
Dot. by Randi Zuckerberg
A is for Array by Brandon J. Hanson
Rosie Revere, Engineer by Andrea Beaty
Beautiful Oops! by Barney Saltzberg
Violent the Pilot by Steve Breen
Papa's Mechanical Fish by Candace Fleming
Awesome Dawson by Chris Gall
If I Built a House by Chris Van Dusen
Anything is Possible by Giulia Belloni
How to Bicycle to the Moon to Plant Sunflowers by Mordicai Gerstein
Galimoto by Karen Lynn Williams
Monkey with a Tool Belt by Chris Monroe
Coppernickel, the Invention by Wouter van Reek
Iggy Peck, Architect by Andrea Beaty
Marvelous Mattie by Emily Arnold McCully
What Floats in a Moat? by Lynne Berry
The Most Magnificent Thing by Ashley Spires
The Boy who Harnessed the Wind by William Kamkwamba
Extra Yarn by Mac Barnett
That's How! by Christoph Niemann
Building Our House by Jonathon Bean
The Dot by Peter H. Reynolds
Leo the Maker Prince by Carla Diana

Inventions and more!

The Book of Think by Marilyn Burns
Turn on the Lights- From Bed!: Electronic Inventions by Robert Carrow
The Kids' Invention Book by Arlene Erlbach
Mistakes That Worked by Charlotte Foltz Jones
What a Great Idea! Inventions That Changed the World by Stephen Tomecek
The new way things work by David Macaulay

Get informed:

Mapping 21st Century skills to core science standards:
http://bit.ly/1Ah3cqc
http://bit.ly/1uDzrym

Early Foundation Framework:
http://bit.ly/1lGosVc

Plussing:
http://bit.ly/1lnNPWE
http://bit.ly/1pzl5u5

Scratch Workshop design:
http://bit.ly/1upeV5n

Scratch Creative Computing Guide
http://bit.ly/1wAOQBL

Create with Computers:
http://www.createwithcomputers.weebly.org

Learn:

Scratch Learner guide:
http://bit.ly/1qD57TD

Computational Thinking Illustrated
http://bit.ly/XwHeD1

Get Inspired!

Made with Code
https://www.madewithcode.com/

References

CODE2040 (www.code2040.org)
Scratch (www.scratch.mit.edu)
Touch Develop (www.touchdevelop.com)
Code.org (www.code.org)
Scratch Jr (www.scratchjr.org)
Young Makers (www.youngmakers.org)

Made by Sylvia Aguiñaga
Coder Values illustrated by Scott Fish

“Anything can happen child. Anything can be.”
-Where the Sidewalk Ends by Shel Silverstein