



It's a Thinkin' Thing

Exercise your students' brains with
Computational Thinking

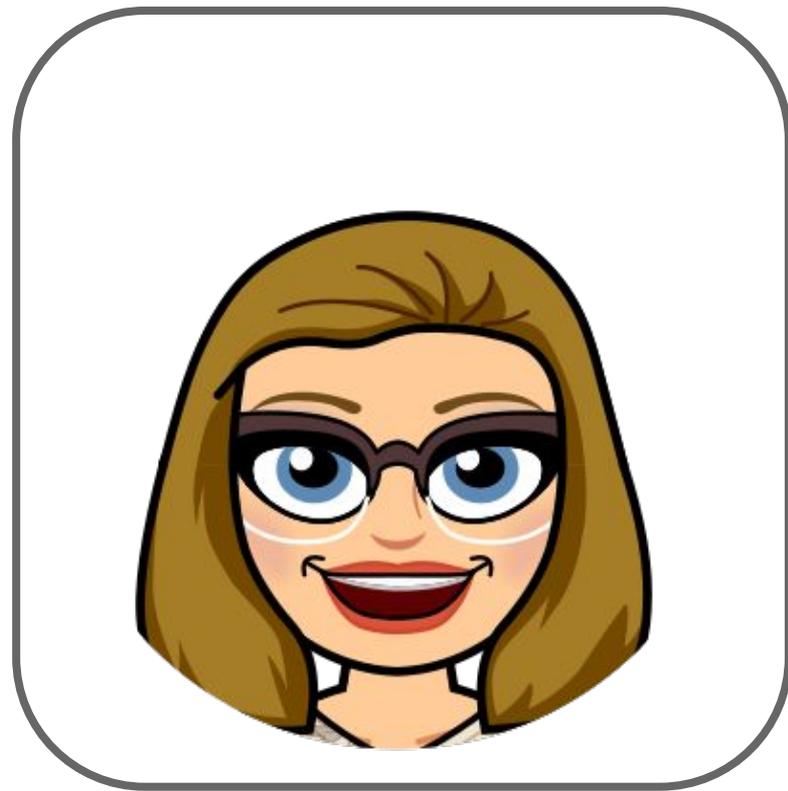
Elementary Parent U
February 4, 2020

Hello!

I am Amy Houser

Spring Branch ISD

Educational Technology Department







**Critical Thinkers
Problem Solvers
Communicators**

Hardest to Hire/Most Essential

Source: Committee for Economic Development

Hardest to Hire

Most Essential



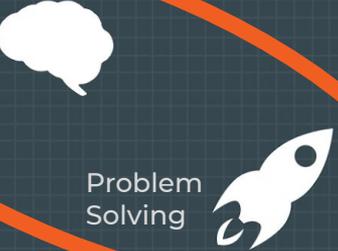
STEM Skills



Quantitative Ability
Creativity



Writing



Critical Thinking
Problem Solving



Tech Skills



Media Literacy



Proficiency w/
New Tech



Oral Communication



Organized



Ability to work w/
others of diverse
backgrounds



Teamwork

“Computer science really, really matters, and **it matters to non-CS majors**. The world needs better medicine, better materials, better art, better science, better movies, more efficient buildings, and **all of these things require computing.**”

*David Kosbie
Carnegie Mellon University, SCS*



Programming experience promotes higher STEM motivation among first-grade girls



Allison Master^{a,*}, Sapna Cheryan^a, Adriana Moscatelli^b, Andrew N. Meltzoff^a

^aUniversity of Washington, Seattle, WA 98195, USA

^bPlay Works Studio, Seattle, WA 98166, USA

ARTICLE INFO

ABSTRACT

“Positive experiences with programming can lead to higher motivation in robotics and programming for girls.”

Social cognition
Education

primary school. In the current study ($N = 96$), we tested children's stereotypes about STEM fields and their intention to develop girls' STEM motivation despite these stereotypes. First-grade children held stereotypes that boys were better than girls at robotics and programming but did not hold

“Research indicates that providing girls with experiences at an early age is an important consideration”

group that was given experience in programming a robot using a smartphone or to control groups (no activity or other activity). Girls given programming experience reported higher technology interest and self-efficacy compared with girls without this experience and did not exhibit a significant gender gap relative to boys' interest and self-efficacy. These findings show that children's views mirror current American cultural messages about who excels at

Computer Science

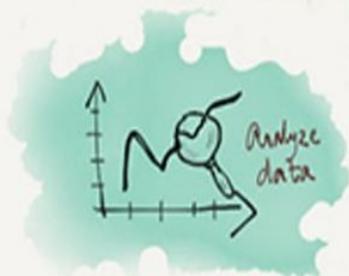
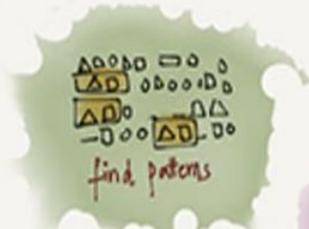
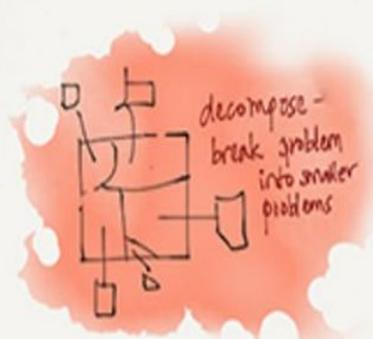
*a field in which
people use the
power of
computers to solve
big problems*



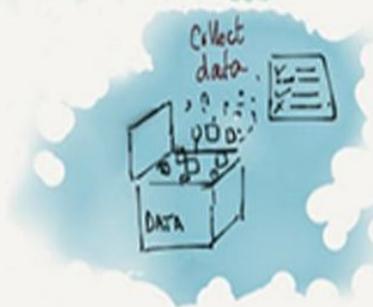
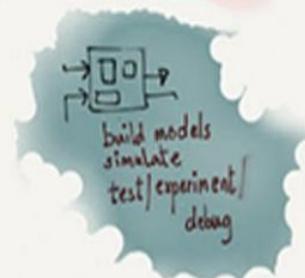
Computational Thinking

a way of thinking critically about open-ended problems, and coming up with solutions that both humans and computers can understand.





How can I formulate
this problem so it can be
solved using computers?



Computational
Thinker

@sheena1010
computersforcreativity.com

What happens when kids learn to code?

by Brian Aspinall @mrspinall

I am a risk taker.



I am not afraid to fail.



I am a critical thinker.

I am a problem solver.



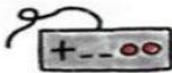
I am a computational thinker.



I am confident.



I am a content creator.

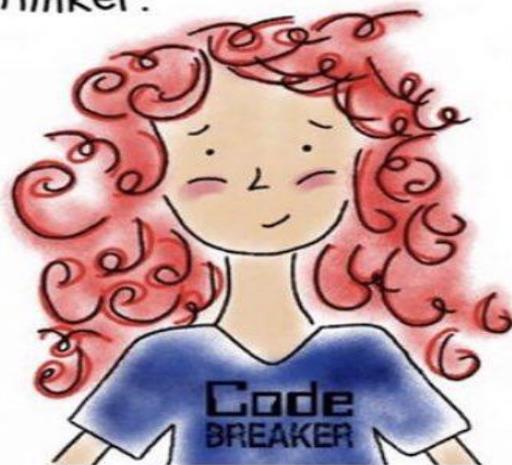


I am an innovator.

I am a collaborator.



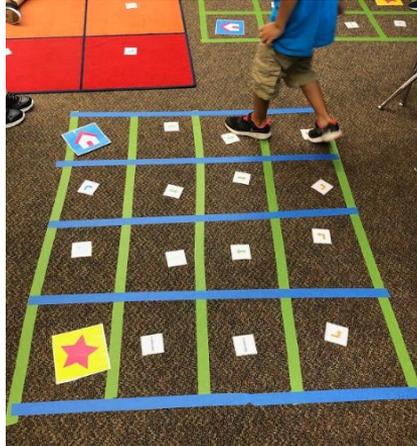
I am future ready.



Types of Computational Thinking Activities

Unplugged Activities

Done without a computer



Plugged Activities

Done with a computer device



Let's Try

an unplugged activity



Draw a circle for the body

Add 2 eyes

Add a crown

Add four legs

Reflect

Is yours the same as your partner?

How could we make our drawings turn out more similar?

What does this teach us about algorithms?



Algorithm

a list of ordered steps

Sequence

a particular order of steps or events

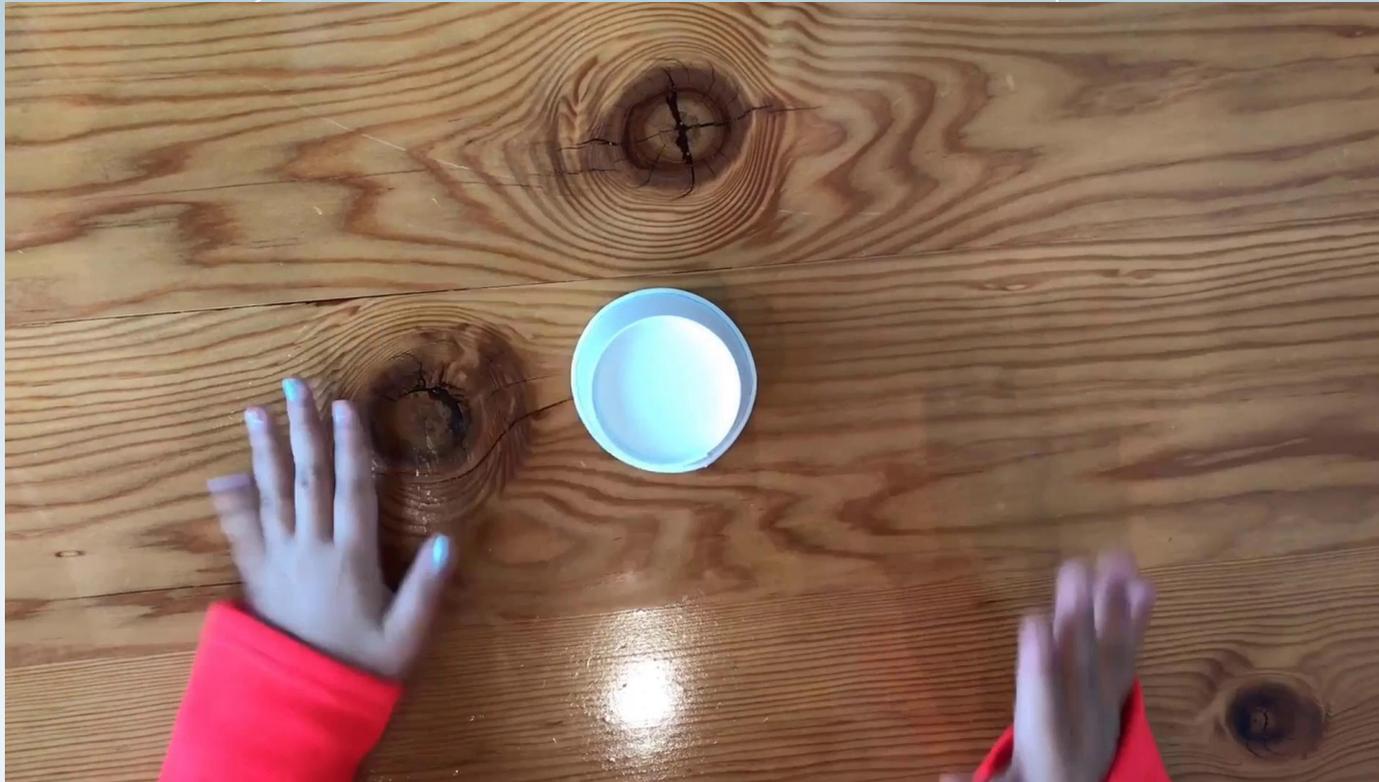
Debug

find and fix errors (bugs) in programs

Terms that are good to know



Cup Song





Issue: Issuing Commands

Goal: Use Swift commands to tell Byte to move and collect a gem.

Your character, Byte, loves to collect gems but can't do it alone. In this first puzzle, you'll need to write Swift *commands* to move Byte across the puzzle world to collect a gem.

- 1 Look for the gem in the puzzle world.
- 2 Enter the correct combination of the `moveForward()` and `collectGem()` commands.
- 3 Tap Run My Code.

```

moveForward()
moveForward()
moveForward()
collectGem()
  
```

Congratulations!

You've written your first lines of Swift code.

Byte performed the commands you wrote and did exactly what you asked, in exactly the order that you specified.

Next Page

collectGem() moveForward()

Apps



Computer/ Robots

[Tips For Raising Successful Technologists:
Practice Thinking and Creativity Skills](#)

[Teach Your Kids to Code: 6 Beginner's Resources
for Parents](#)

[What is digital literacy? A parent's guide](#)

[14 Benefits of Coding for Kids and Students](#)

[5 Books to Teach Curious Kids About Coding](#)

[Kids Who Code: Terrific Books That Introduce
Programming to Children](#)

[25 Games, Apps, and Tools for Kids and Parents to
Learn Programming](#)

Resources for Parents

THANKS!

Any questions?

You can find me at:

amy.houser@springbranchisd.com

<https://bit.ly/2vzDszw>





Quotations are commonly printed as a means of inspiration and to invoke philosophical thoughts from the reader.



A picture is worth a thousand words

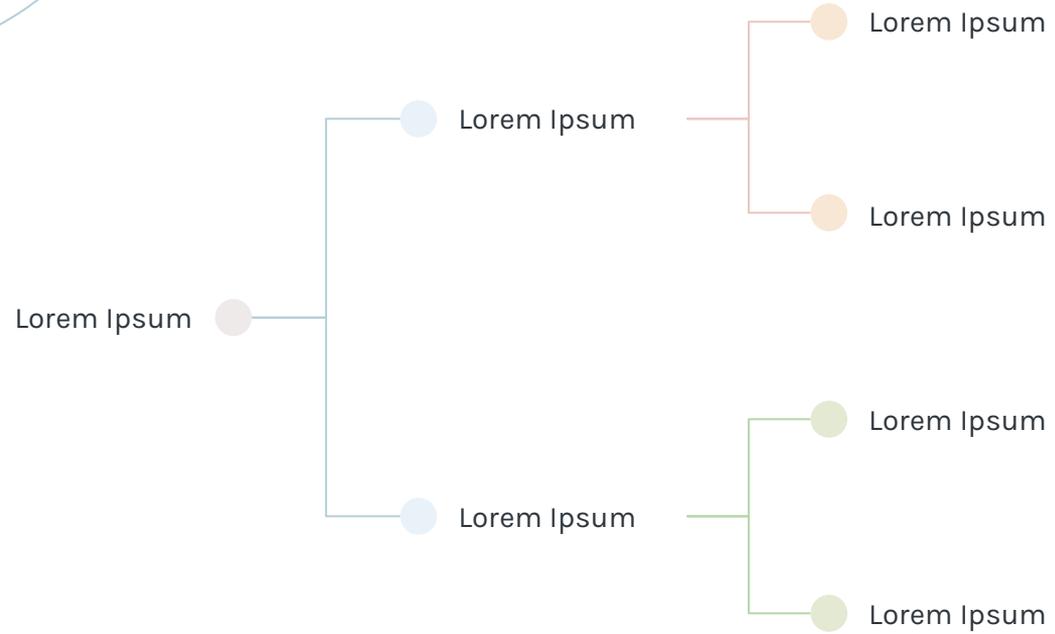
A complex idea can be conveyed with just a single still image, namely making it possible to absorb large amounts of data quickly.





Want big impact? **Use big image.**

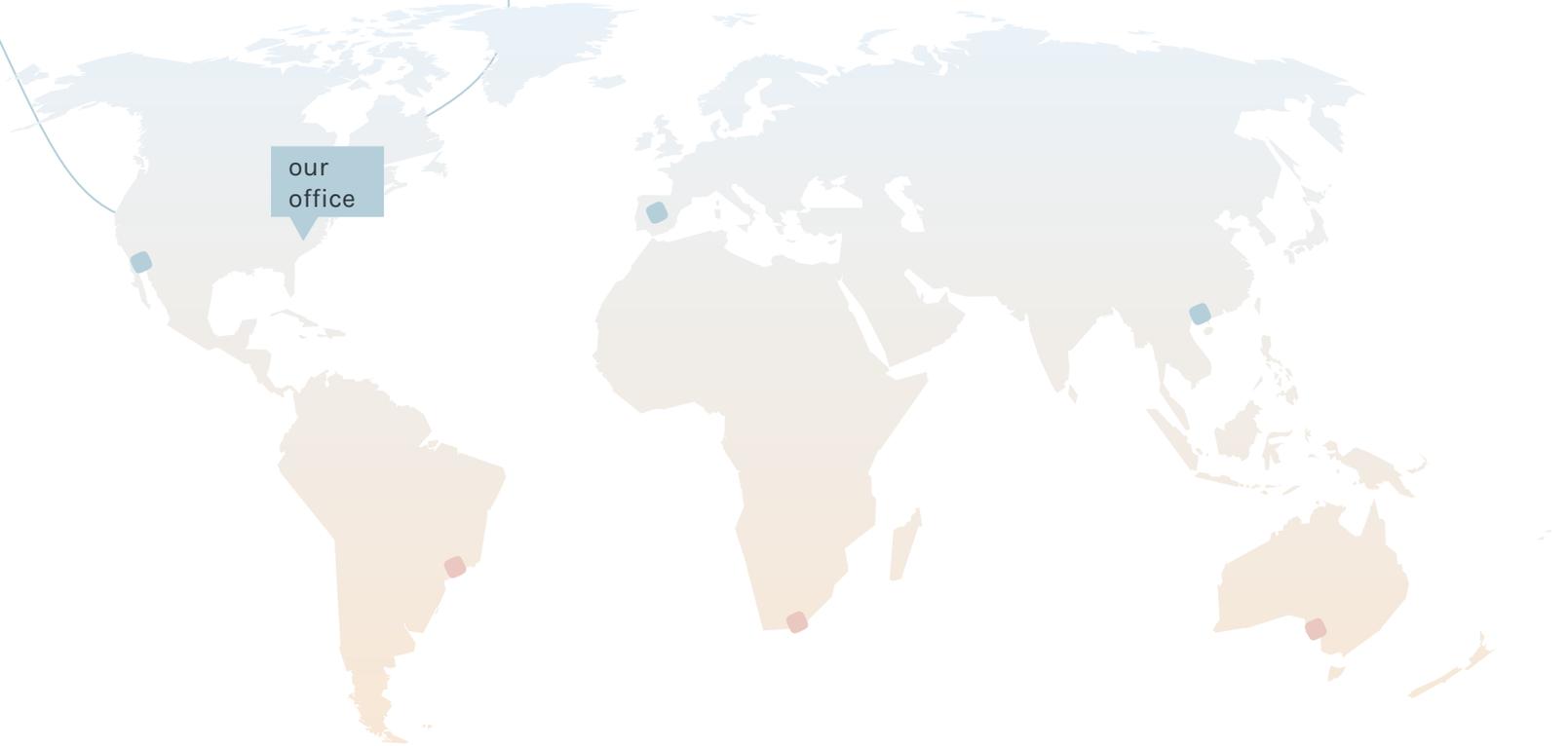
Use diagrams to explain your ideas



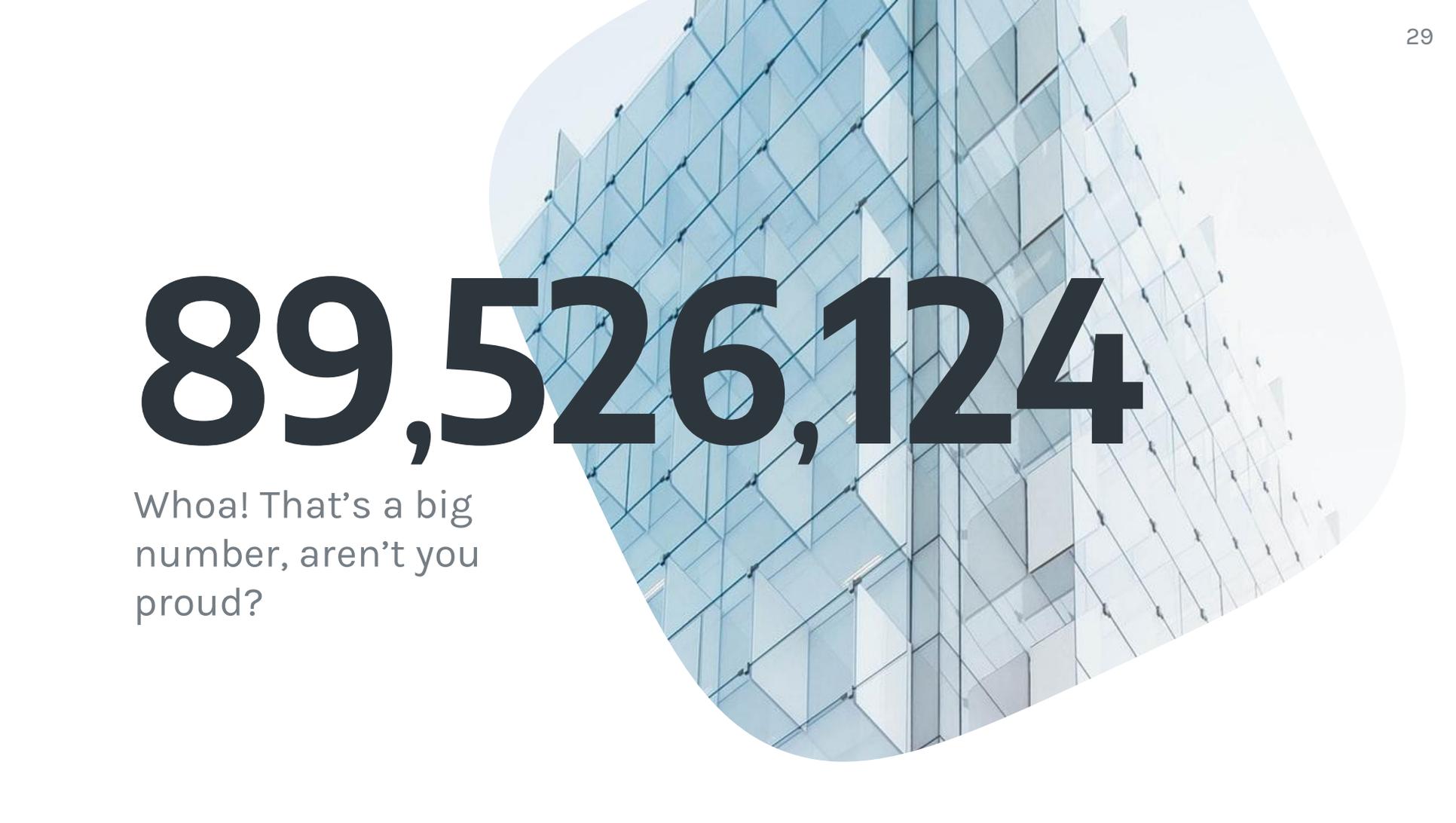
And tables to compare data

	A	B	C
Yellow	10	20	7
Blue	30	15	10
Orange	5	24	16

Maps



Find more maps at [slidescarnival.com/extra-free-resources-icons-and-maps](https://www.slidescarnival.com/extra-free-resources-icons-and-maps)



89,526,124

Whoa! That's a big
number, aren't you
proud?



89,526,124\$

That's a lot of money

185,244 users

And a lot of users

100%

Total success!

Our process is easy

Vestibulum congue tempus

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor. Donec facilisis lacus eget mauris.



Vestibulum congue tempus

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor. Donec facilisis lacus eget mauris.

Vestibulum congue tempus

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor. Donec facilisis lacus eget mauris.

Vestibulum congue tempus

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor. Donec facilisis lacus eget mauris.



Let's review some concepts

Yellow

Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

Yellow

Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

Blue

Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

Blue

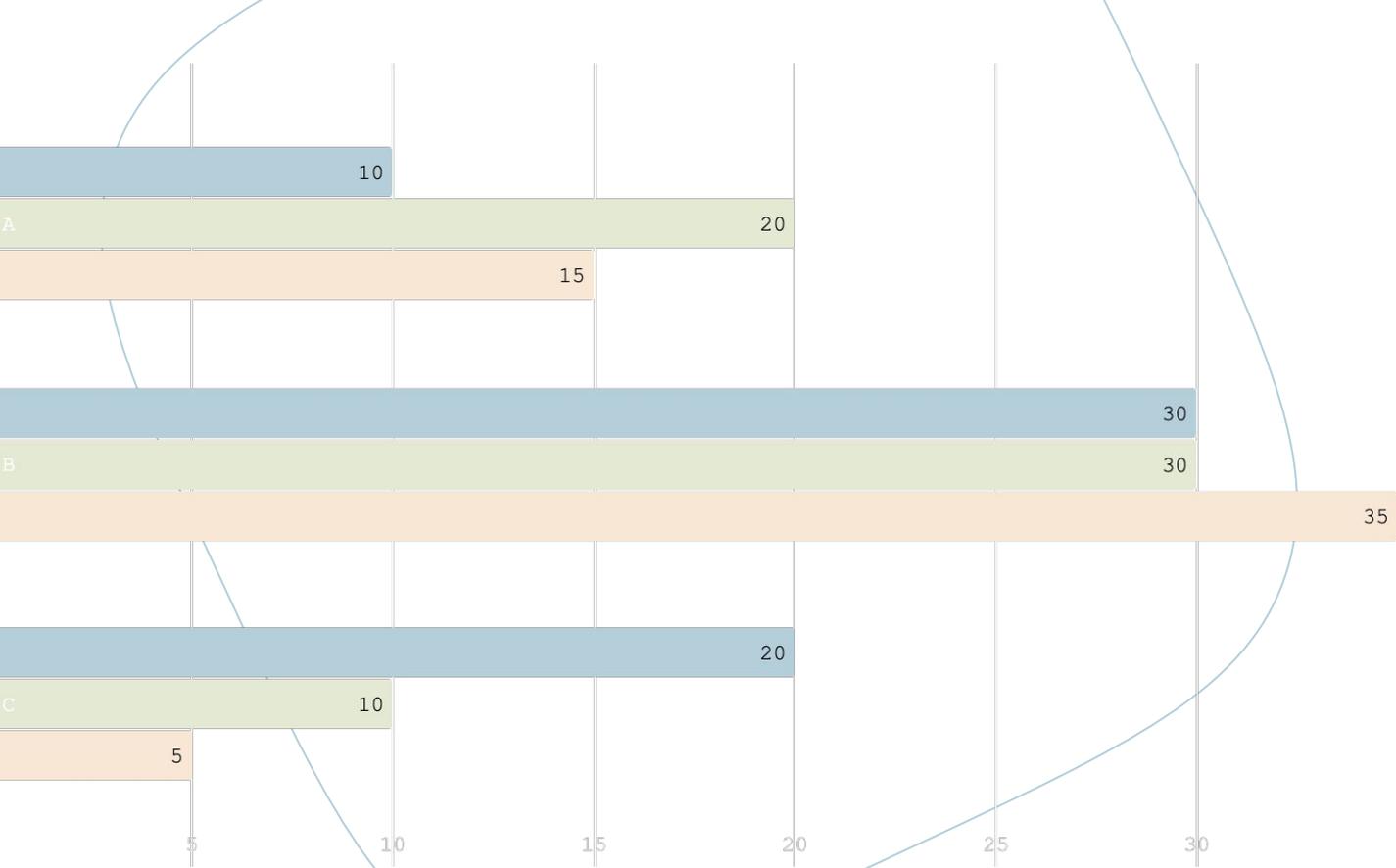
Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

Red

Is the color of blood, and because of this it has historically been associated with sacrifice, danger and courage.

Red

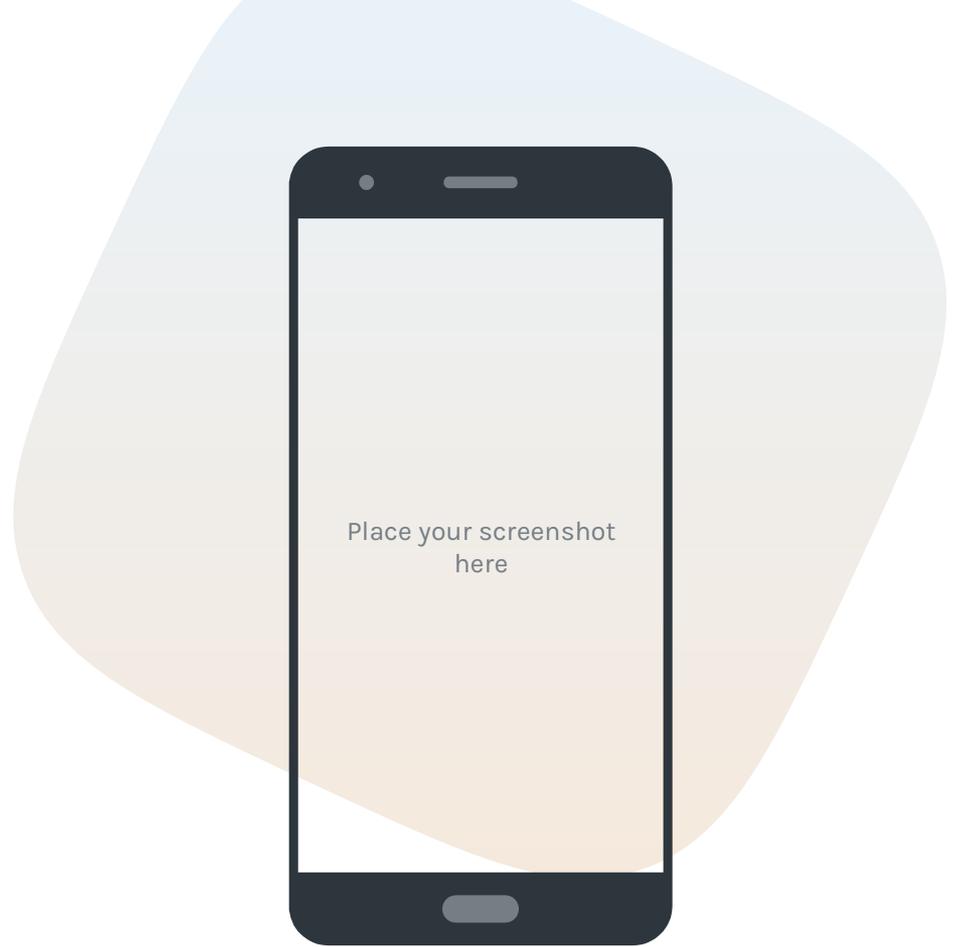
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You can insert graphs from Excel or Google Sheets

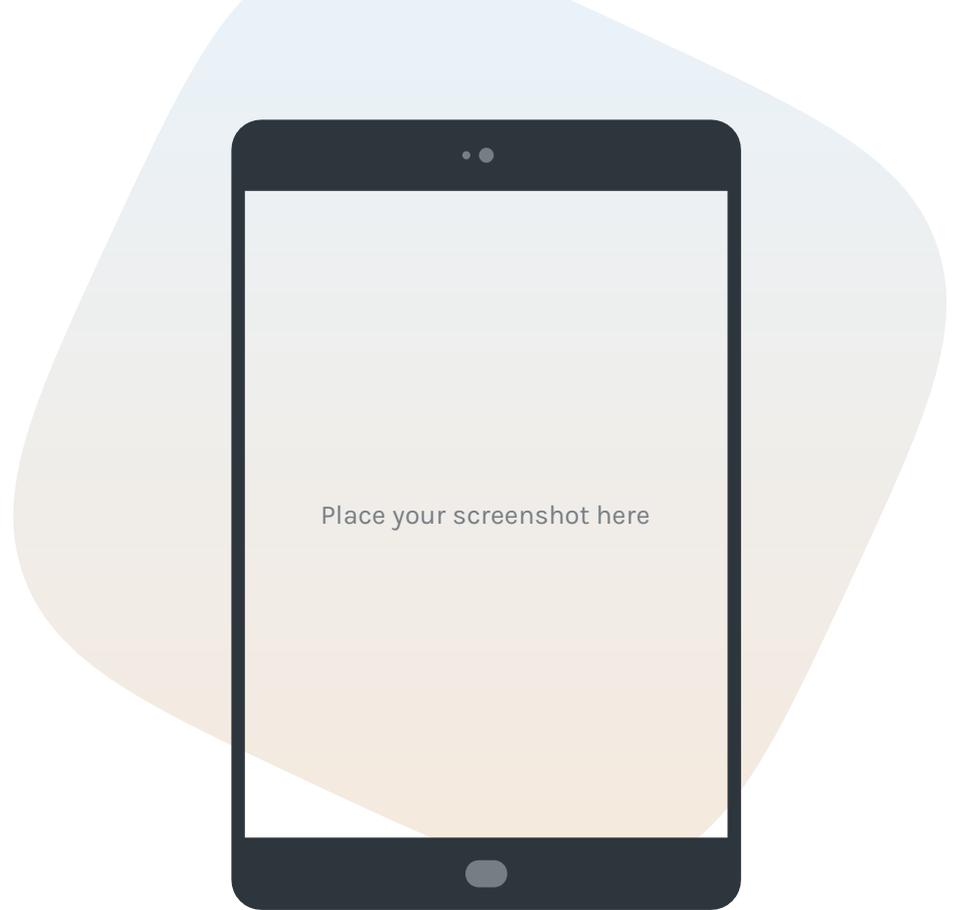
Mobile project

Show and explain your web, app or software projects using these gadget templates.



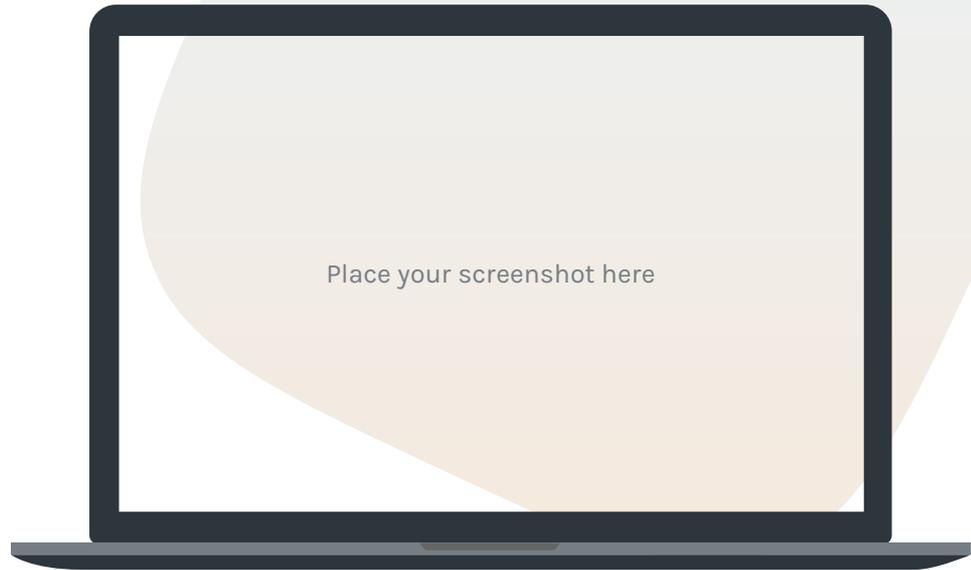
Tablet project

Show and explain your web, app or software projects using these gadget templates.



Desktop project

Show and explain your web, app or software projects using these gadget templates.



Thanks!

Any questions?

You can find me at [@username](#) & user@mail.me

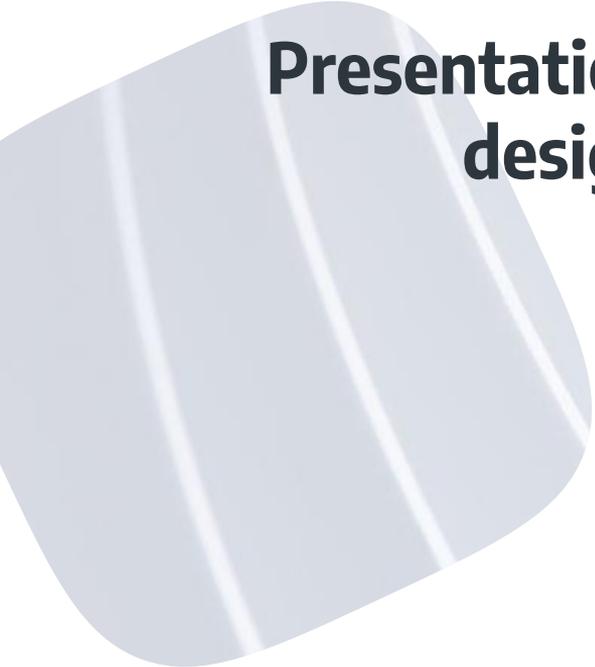




Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](#)
- Photographs by [Unsplash](#)



Presentation design

This presentation uses the following typographies:

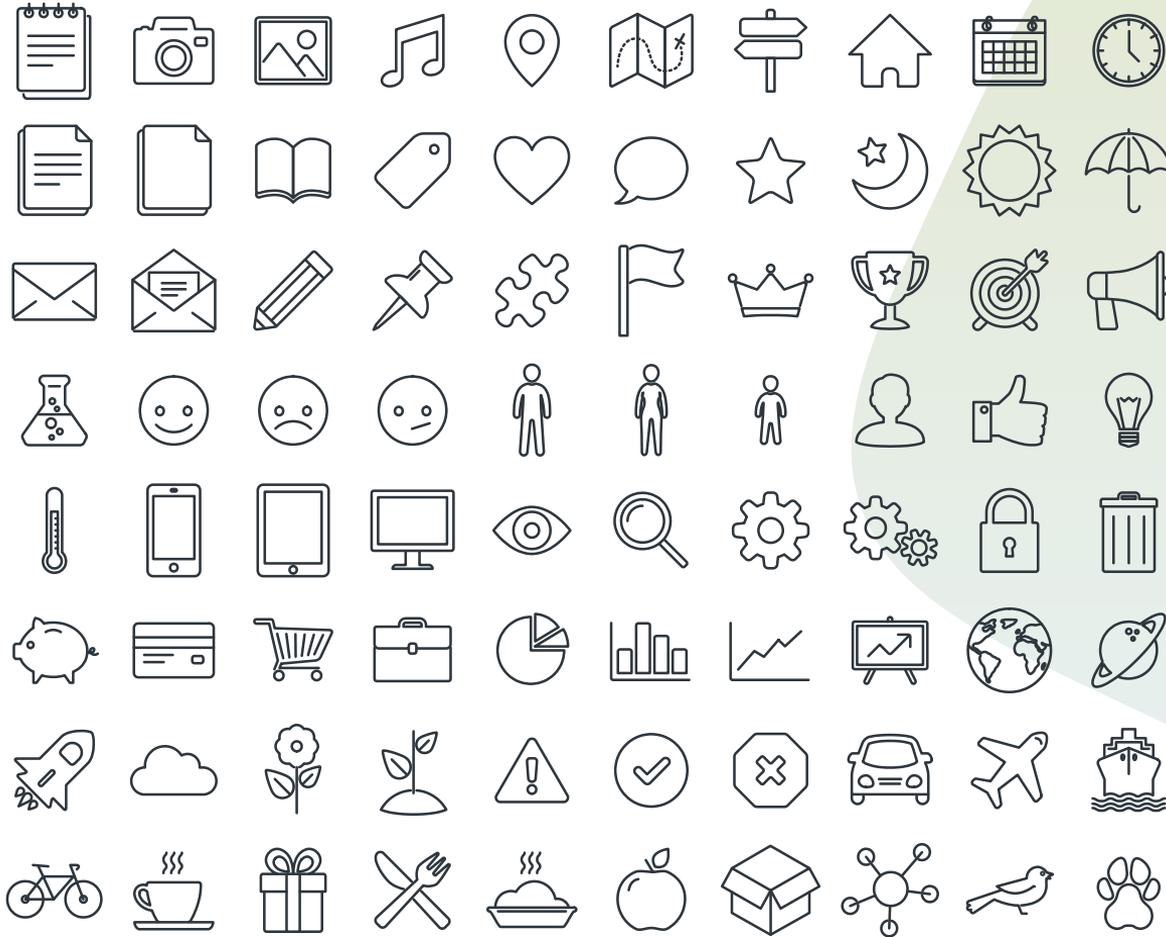
- Titles: Encode Sans SemiCondensed
- Body copy: Karla

Download for free at:

<https://www.fontsquirrel.com/fonts/encode-sans>

<https://www.fontsquirrel.com/fonts/karla>

You don't need to keep this slide in your presentation. It's only here to serve you as a design guide if you need to create new slides or download the fonts to edit the presentation in PowerPoint®



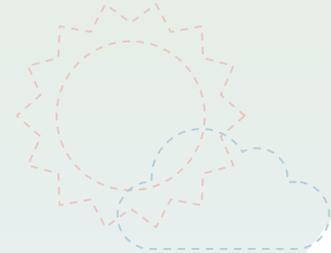
SlidesCarnival icons are editable shapes.

This means that you can:

- Resize them without losing quality.
- Change fill color and opacity.
- Change line color, width and style.

Isn't that nice? :)

Examples:



Find more icons at
slidescarnival.com/extra-free-resources-icons-and-maps



You can also use any emoji as an icon!
And of course it resizes without losing quality.

How? Follow Google instructions

<https://twitter.com/googledocs/status/730087240156643328>



and many more...