Building Children's Mathematical Knowledge Via Play Based Learning

Elizabeth Gamino

@missmath229

@gaminogirl1

Today I hope you leave with

Ways to embrace and incorporate mathematical play in your daily instructional practices.

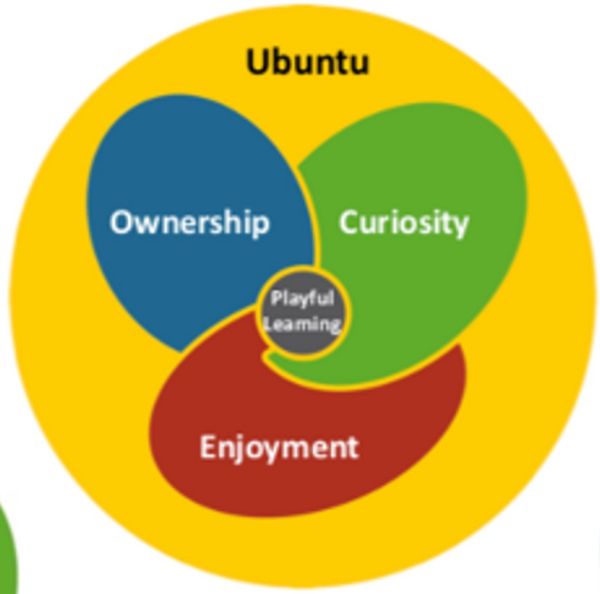
An understanding of how math can be learned through play.

Strategies for mathematizing play.

Activities to use in your learning environments

An understanding of how having a broad pedagogical approach supports early mathematics.

Indicators of Playful Learning



3 South African Schools

International School of Billund, Denmark

6 United States schools

pedagogy of play

Pedagogy of Play

In breakout rooms, you will brainstorm what playful learning involves.

- What does it look like?
- What does it feel like?

Think about your experiences - cultural, within your community and or educational setting when defining what it feels like and what it looks like.

What does playful learning look and sound like?

Play and Cognitive Development

Play promotes the development of a multitude of cognitive skills. When children participate in play and have opportunities to become fully involved in what they are doing, they develop more sophisticated and complex ways of thinking.

Children learn to problem solve as they discover the answers to their own questions such as: “ What happens when I do this?”

Providing children with at least 30 minutes of uninterrupted time to engage in play that is meaningful and relevant to their lives both attention span and memory skills are enhanced.

Center for Inclusive Child Care – inclusivechildcare.org

The Power of Play

Research shows play can improve children's ability to plan, organize, get along with others, and regulate emotions. In addition, it helps with math, language and social skills, and even helps children cope with stress.

The Importance of Play in Early Childhood Education

Thirteen Bears (Breakout Rooms)

Place 13 bears in a row .

On your turn you may decide to take 1 or 2 bears

Goal is to not have to take the last bear.

Toy Theater Virtual Manipulatives

Reflect

What did you notice?
What do you wonder?

What “math” did you engage in?

:

Roll & Stack ~ Build a Tower 20 Bricks High

2 - 4 player game - 3 points

- When it is your turn, roll the die. Dice
- Begin building your tower. If you roll a 3, you build a tower that is 3 blocks high, the first person who builds a tower 20 blocks high gets a point Unifix Cubes
- Play 3 rounds.
- What did you notice? What do you wonder?
- What math did you engage in?

Reflect

What did you notice?
What do you wonder?

What “math” did you engage in?

:

Snakes and Ladders (Chutes & Ladders)

3 minutes free play.

Play against the bot.

What is the “math” you engaged with?

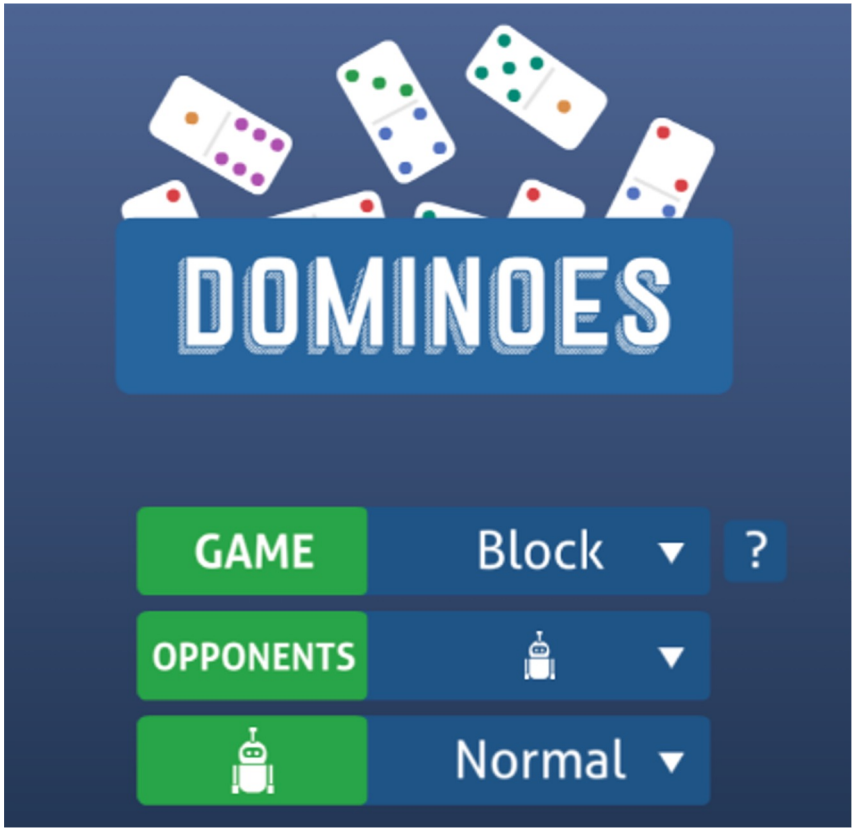
Dominoes

Explore the game Block

What is the “math” you engaged in?

How might you use this game with yie littles?

How might you modify?



Domino Worms

Make a worm with 35 pips.

Make the shortest worm possible with 15 pips.

Make the longest worm possible with 23 pips.

Make a worm with 9 dominoes that has the greatest number of pips?

Make a worm with 11 dominoes that has the least number of pips?

Challenge: Randomly pick 13 dominos and arrange them from smallest to largest

Math & Dance

Have students brainstorm different kinds of movement. Record their responses.

In small groups have students create a sequence of movements by putting a combination of two or three movements together. They can record their sequence on an index card or post-it.

Once students have created a private sequence of up to three movements, they select one person to perform the sequence. Marking their ending point with painter's tape.

Once all groups have completed their movements, discuss who traveled the furthest and challenge students to revise and carry out their sequence to see if they traveled farther the second time.

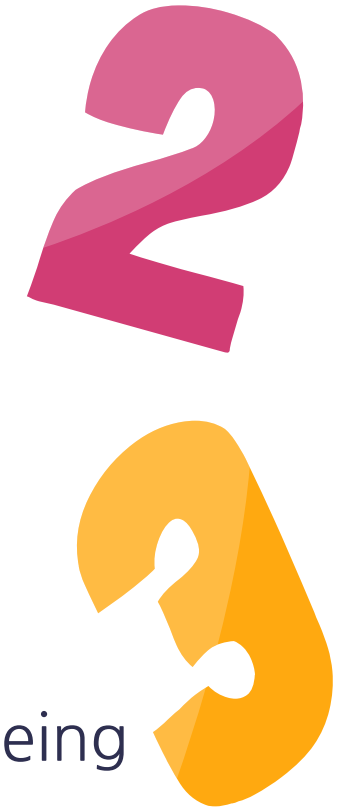
Mathematical Play

- Exploratory play
- Guided
- Teacher Directed

Exploratory Play

If children are not, freely choosing what to do or how to do it then they are not really playing at all.

- Allows for creativity
- Provides choice and control
- Explore with senses
- No pressure to achieve
- Promotes curiosity and inquiry



Children are immersed in complex experiences while being aware of their emotions and thoughts.

Guided Play

Adults design the setting to highlight a learning goals while ensuring that children have autonomy to explore within that setting. Adults watch child-directed activities and make comments, encourage children to question or extend children's interests.

Children are in charge, take the lead, and follow their interests.

- Ask questions and add information
- Make discoveries
- It's play - healthy, fun, and very different than formal instruction.

Guided play is great for incorporating academic skills that are important for school into playtime and maximizing children's learning.

Teacher Directed Play

Adult initiated and directed.

There is a predetermined goal set, that students are expected to meet.

Explicit instruction, children are provided with directions or rules.

Positive effects of play

Development of healthy brain function.

Language and math skills.

Executive function

- Self control
- Ability to focus attention
- Plan and set goals

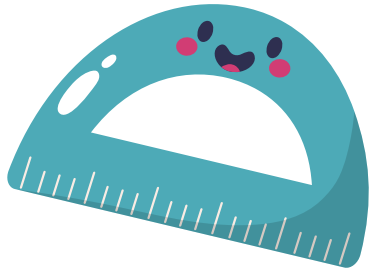
Cha-Cha Slide

RESOURCES

Exploring Mathematics Through Play In The Early Childhood Classroom by Amy Noelle Parks

Pedagogy of Play

DREME



thank you

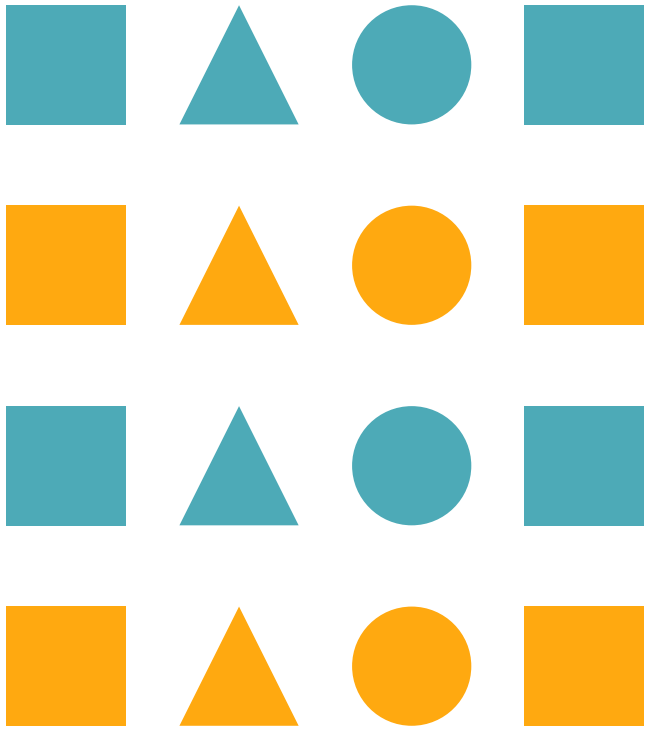
Elizabeth Gamino
elizabeth.gamino@fresno,edu

@gaminogirl1

@missmath

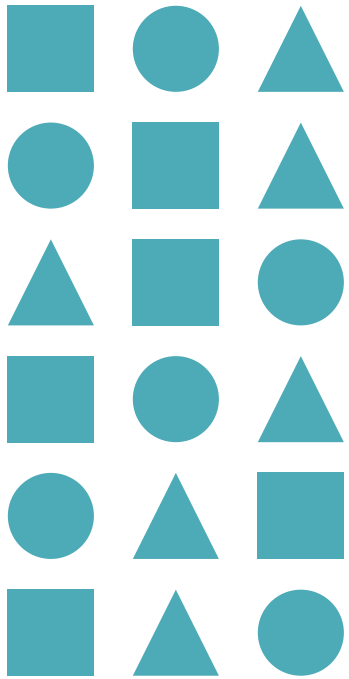
Shapes: activity #19

Draw all the shapes on the square **except for the circles**



Shapes: activity #20

Draw all the same number of shapes on each rectangle **except for the squares**



Shapes: activity #21

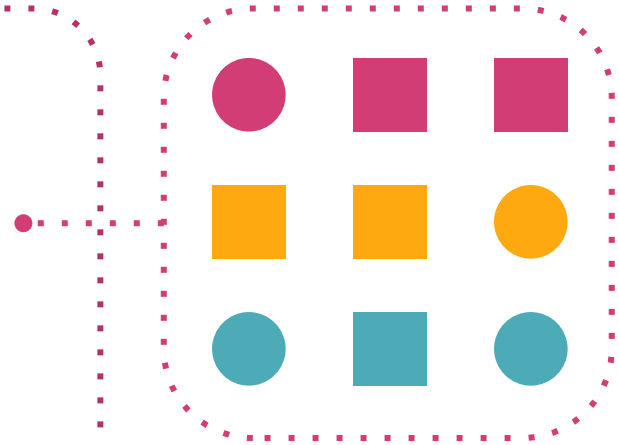
Draw all **pink circles** on the left rectangle and all **yellow circles** on the right one

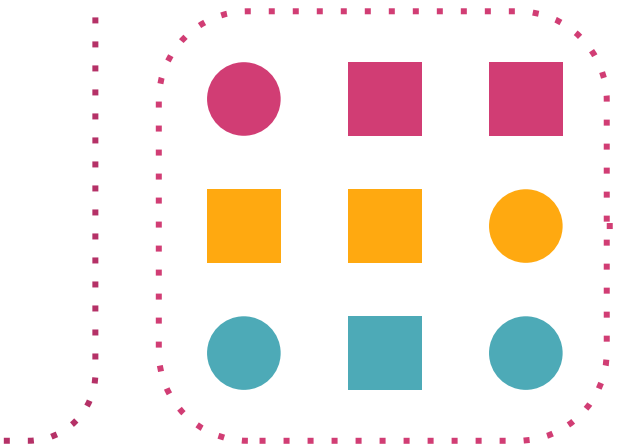
Shapes: activity #22

Draw the **yellow and blue circles** in the square

Shapes: activity #23

Draw all the **pink circles on the left square** and all the **yellow squares on the right square**





"This template has been created by Slidesgo"

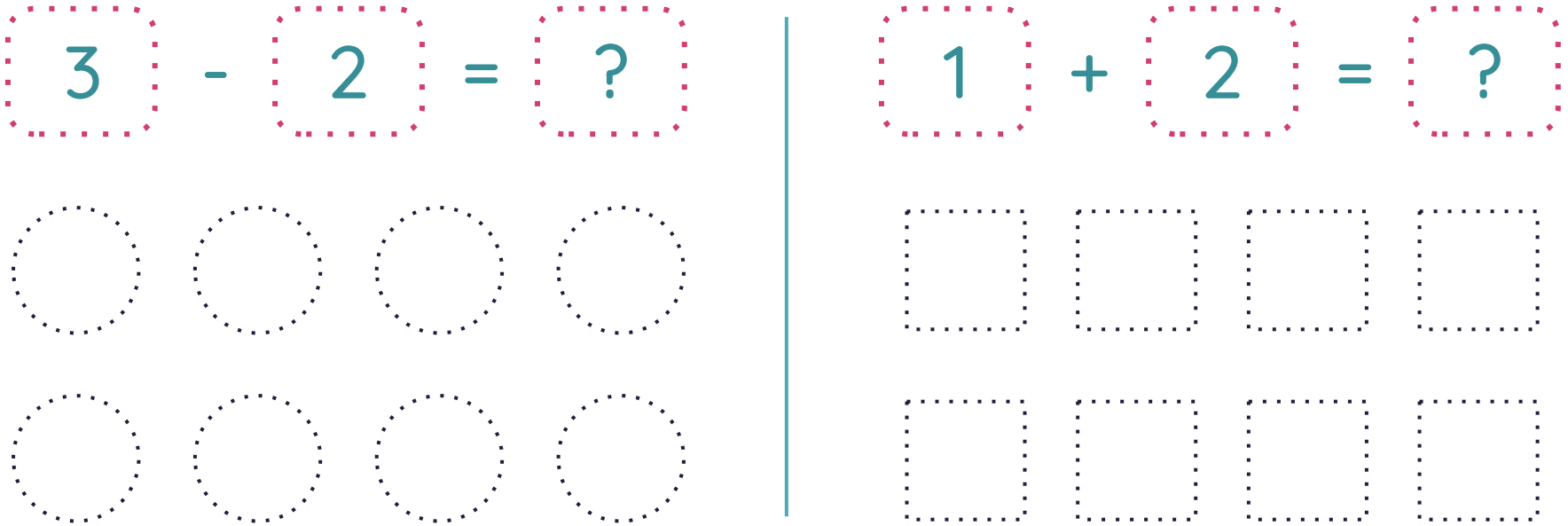
Shapes: activity #24

Draw any shape in the quantity specified

1	5	2

Shapes: activity #25

Color the number of **blue squares resulting from the addition,**
and **pink circles resulting from the subtraction**



Shapes: activity #26

Draw the **specified number of triangles on each square**

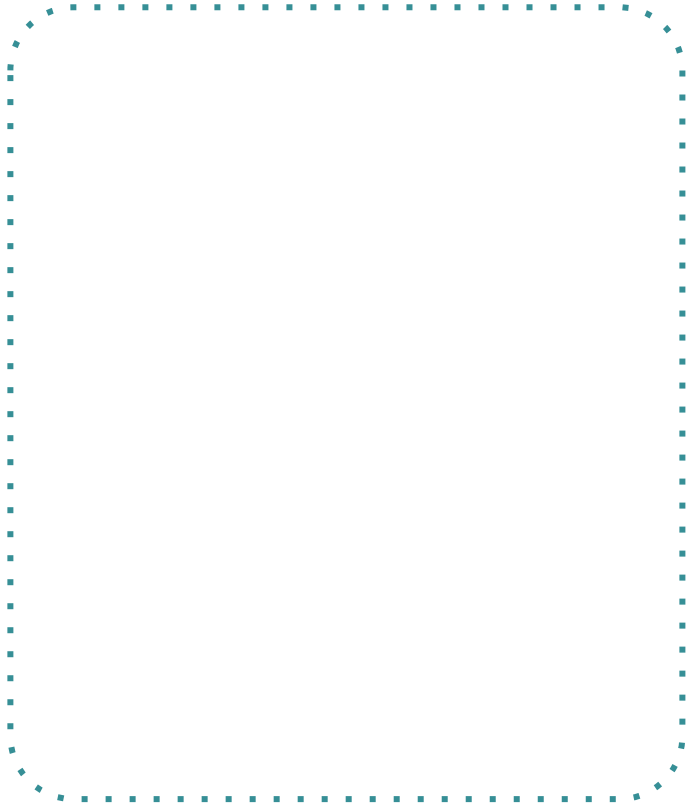
3

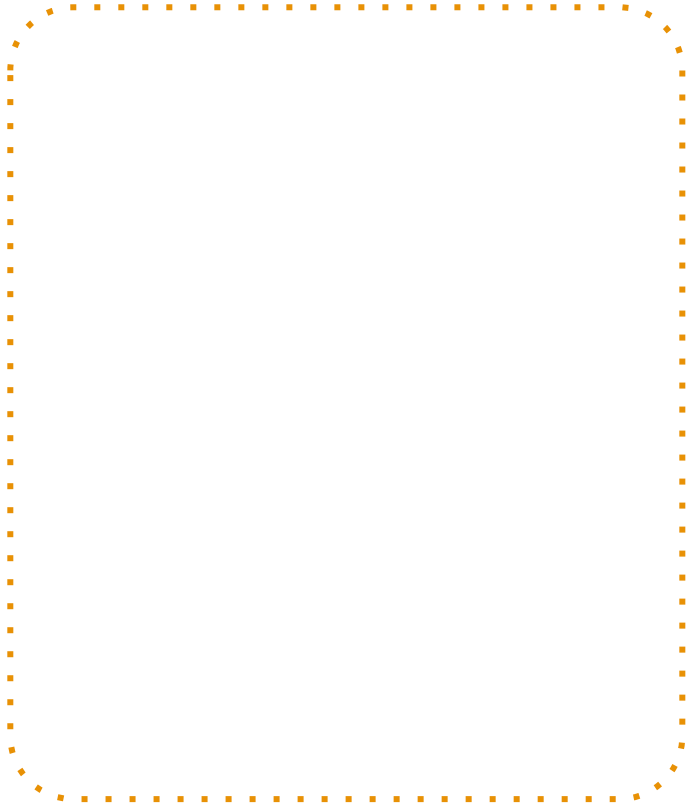
2

5

Shapes: activity #27

Draw **7 circles** on **the left square** and **3 circles** on the **right square**





Thanks!

Do you have any questions?
youremail@freepik.com | +91 620 421 838
yourwebsite.com

Alternative resources

Here’s an assortment of alternative resources whose style fits that of this template:

Vectors:

- Vector flat back to school instagram stories collection






Resources

Did you like the resources on this template? Get them for free at our other websites:

Vectors:

- Flat back to school instagram stories collection

Instructions for use

If you have a free account, in order to use this template, you must credit **Slidesgo** by keeping the **Thanks** slide. Please refer to the next slide to read the instructions for premium users.

As a free user, you are allowed to:

- Modify this template.
- Use it for both personal and commercial projects.

You are not allowed to:

- Sublicense, sell or rent any of Slidesgo Content (or a modified version of Slidesgo Content).
- Distribute Slidesgo Content unless it has been expressly authorized by Slidesgo.
- Include Slidesgo Content in an online or offline database or file.
- Offer Slidesgo templates (or modified versions of Slidesgo templates) for download.
- Acquire the copyright of Slidesgo Content.

For more information about editing slides, please read our FAQs or visit our blog:
https://slidesgo.com/faqs and https://slidesgo.com/slidesgo-school

Instructions for use (premium users)

As a Premium user, you can use this template without attributing **Slidesgo** or keeping the **Thanks** slide.

You are allowed to:

- Modify this template.
- Use it for both personal and commercial purposes.
- Hide or delete the “Thanks” slide and the mention to Slidesgo in the credits.
- Share this template in an editable format with people who are not part of your team.

You are not allowed to:

- Sublicense, sell or rent this Slidesgo Template (or a modified version of this Slidesgo Template).
- Distribute this Slidesgo Template (or a modified version of this Slidesgo Template) or include it in a database or in any other product or service that offers downloadable images, icons or presentations that may be subject to distribution or resale.
- Use any of the elements that are part of this Slidesgo Template in an isolated and separated way from this Template.
- Register any of the elements that are part of this template as a trademark or logo, or register it as a work in an intellectual property registry or similar.

For more information about editing slides, please read our FAQs or visit Slidesgo School:
https://slidesgo.com/faqs and https://slidesgo.com/slidesgo-school

Fonts & colors used

This presentation has been made using the following fonts:

Quicksand
(https://fonts.google.com/specimen/Quicksand)

Nanum Gothic
(https://fonts.google.com/specimen/Nanum+Gothic)

Storyset

Create your Story with our illustrated concepts. Choose the style you like the most, edit its colors, pick the background and layers you want to show and bring them to life with the animator panel! It will boost your presentation. Check out how it works.

Pana

Amico

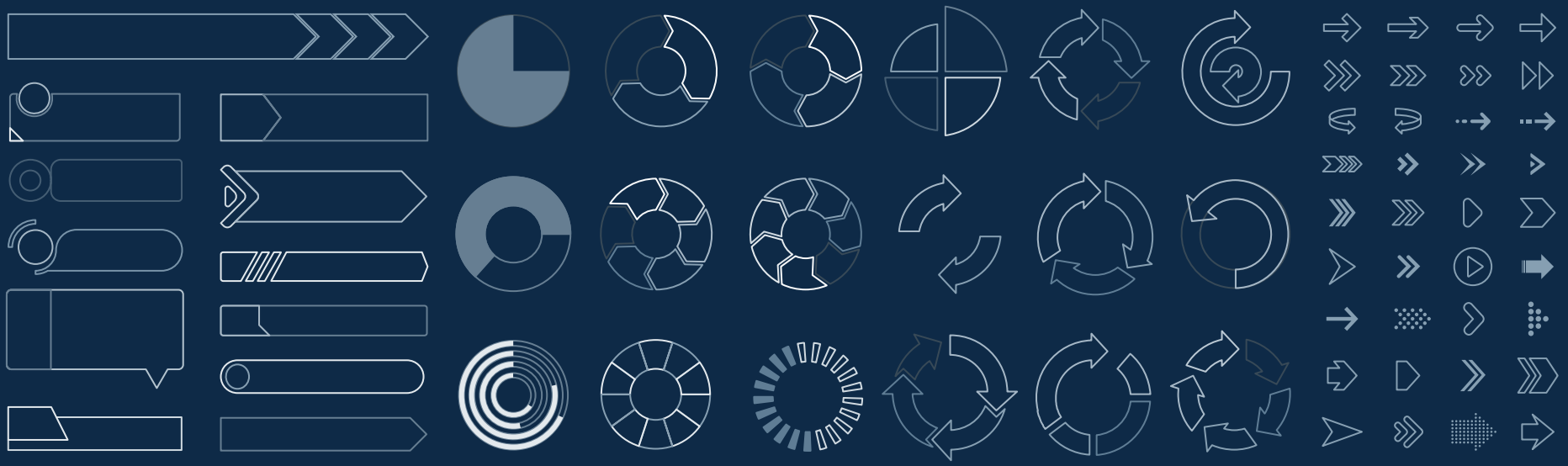
Bro

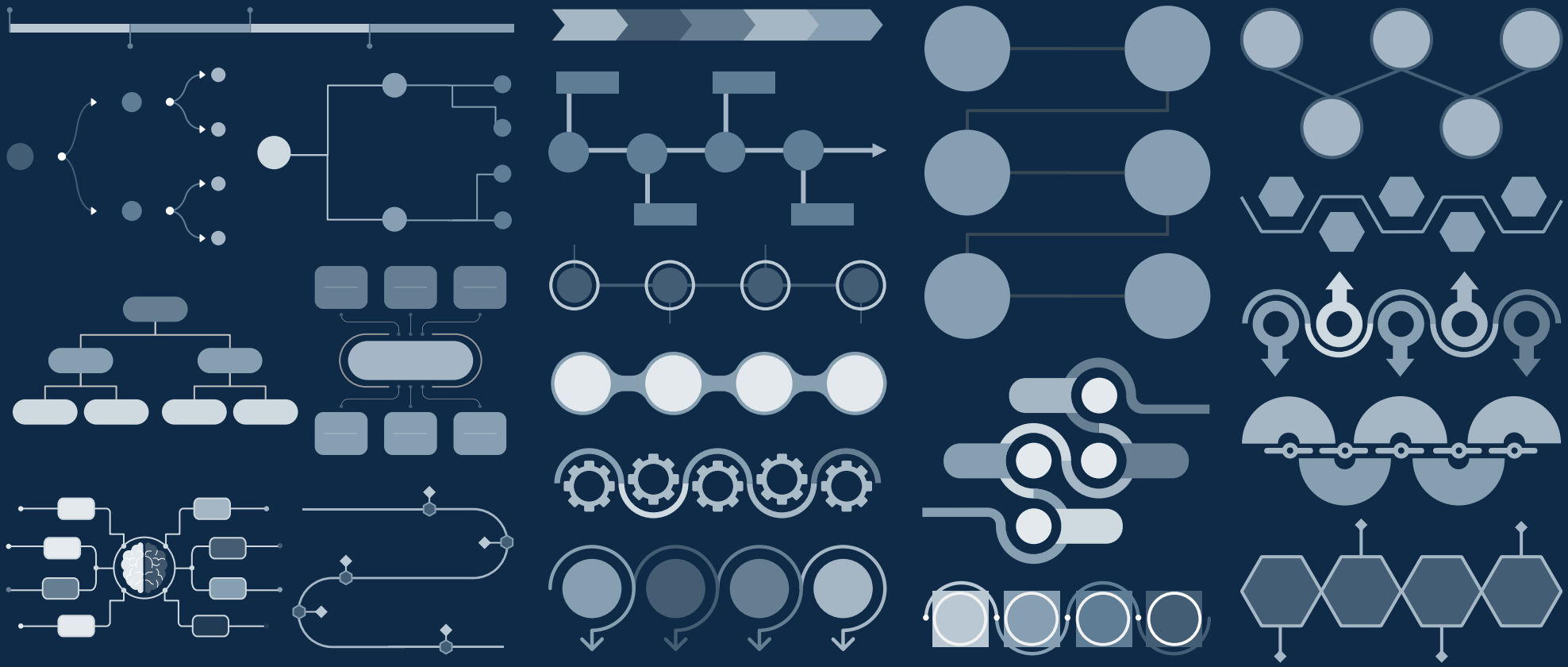
Rafiki

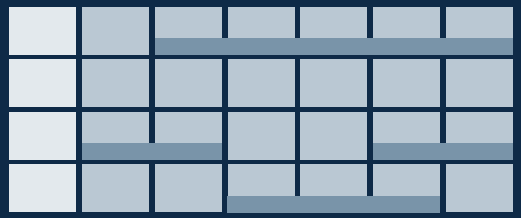
Cuate

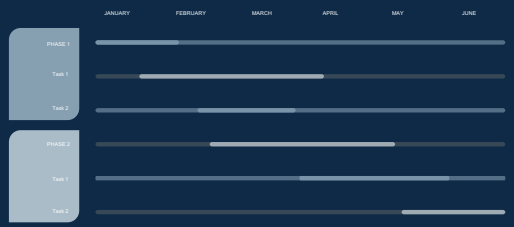
Use our editable graphic resources...

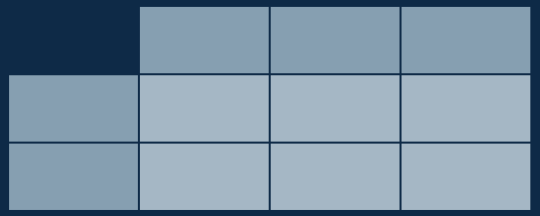
You can easily resize these resources without losing quality. To change the color, just ungroup the resource and click on the object you want to change. Then, click on the paint bucket and select the color you want. Group the resource again when you're done. You can also look for more infographics on Slidesgo.

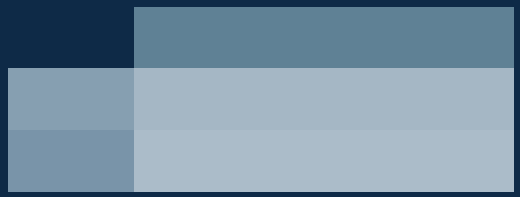


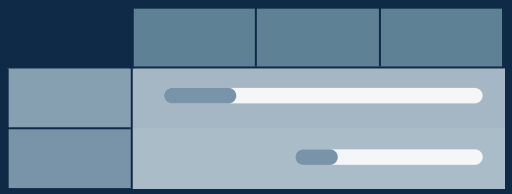


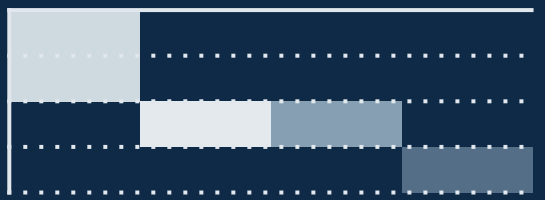


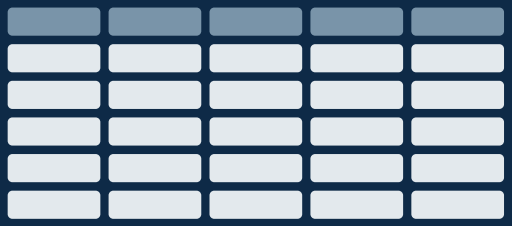

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
PHASE 1
Task 1
Task 2
PHASE 2
Task 1
Task 2

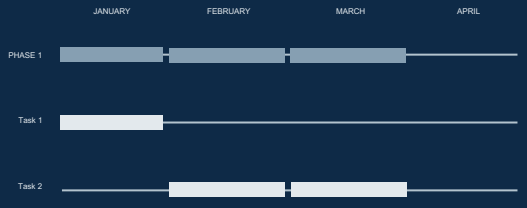


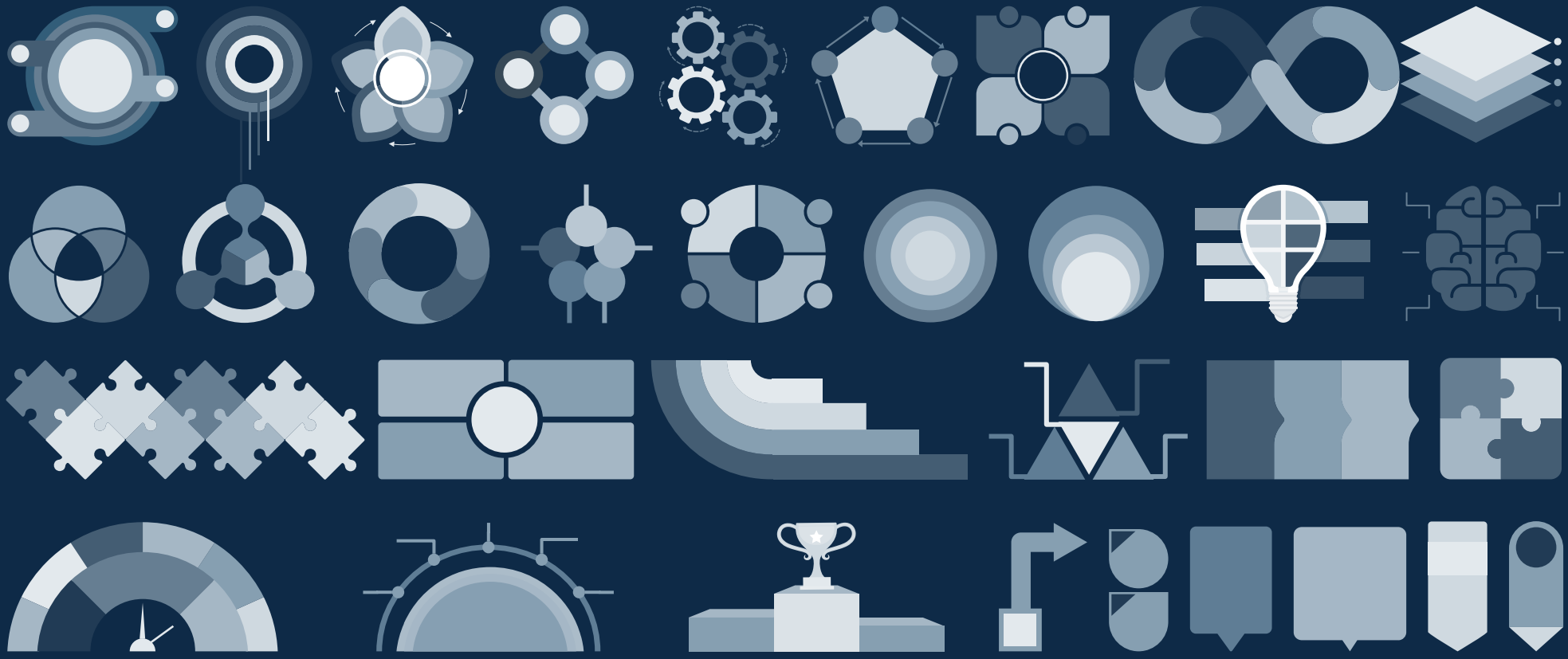









JANUARY
FEBRUARY
MARCH
APRIL
PHASE 1
Task 1
Task 2



...and our sets of editable icons

You can resize these icons without losing quality.
You can change the stroke and fill color; just select the icon and click on the paint bucket/pen.
In Google Slides, you can also use Flaticon's extension, allowing you to customize and add even more icons.

Educational Icons

Medical Icons

Business Icons

Teamwork Icons

Help & Support Icons

Avatar Icons

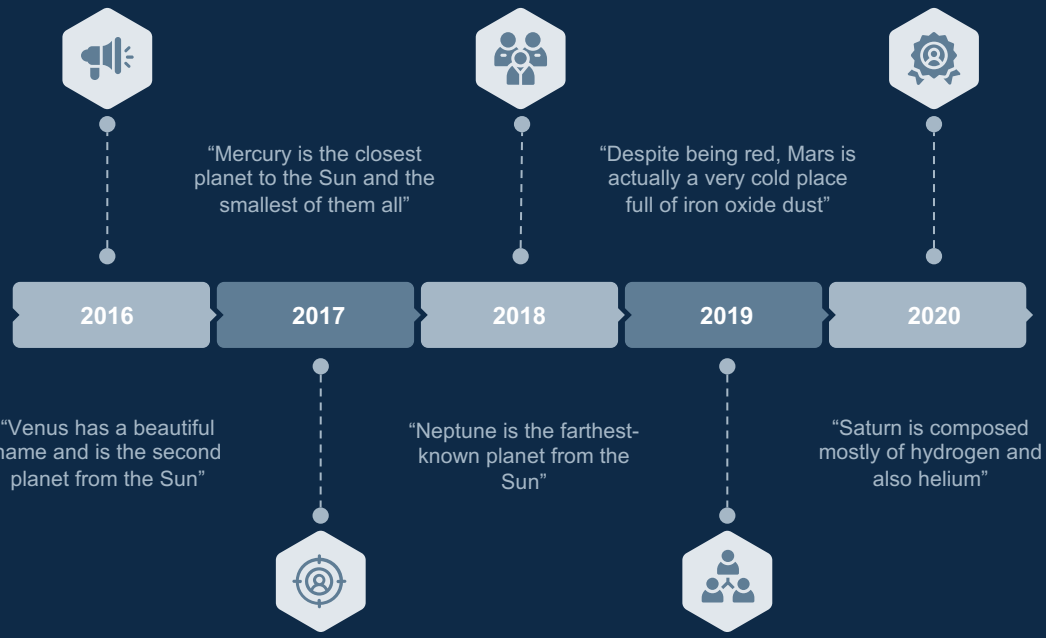
Creative Process Icons

Performing Arts Icons

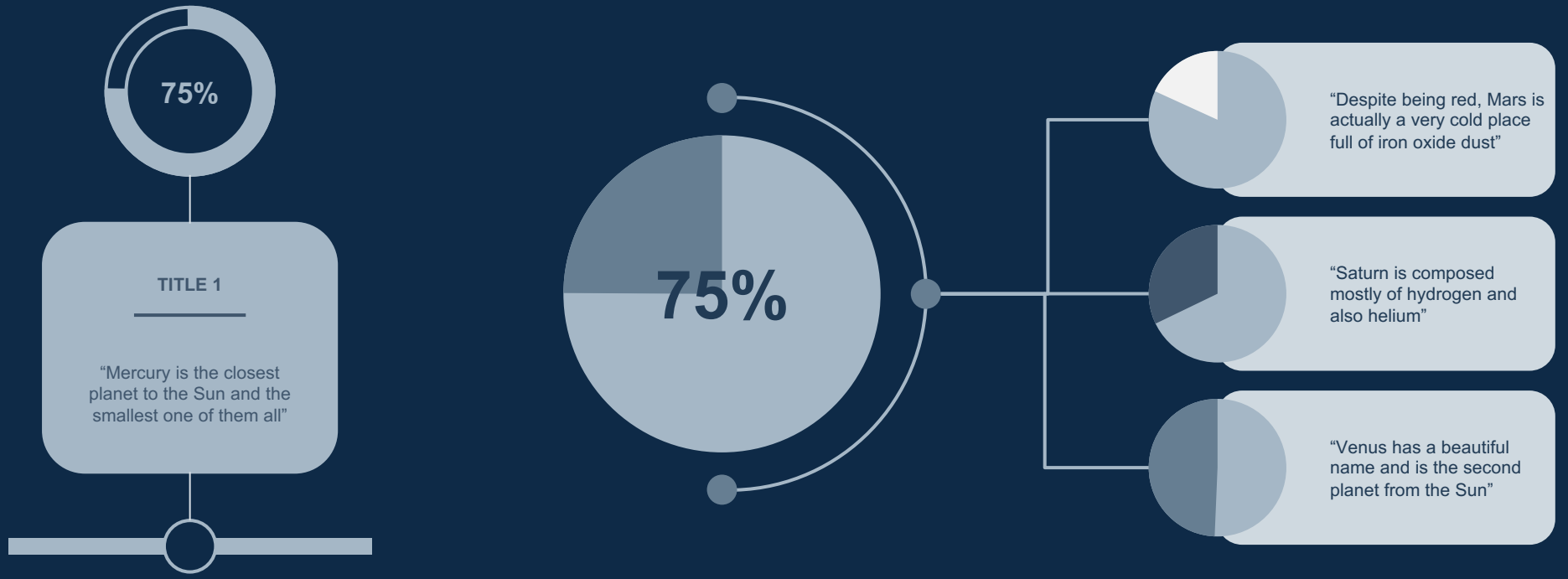
Nature Icons

SEO & Marketing Icons

Premium infographics



Premium infographics



Premium Icons

Digital Marketing

Premium Icons

Online Learning

Premium Icons

Laboratory

Premium Icons

Goals & Results

Premium Icons

Infographic Elements


slidesgo