



SCIENCE SUBJECT FOR HIGH SCHOOL

Molecular Genetics



9th
grade



CONTENTS OF THIS TEMPLATE

Here's what you'll find in this **Slidesgo** template:

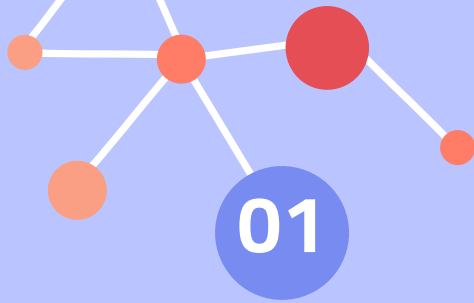
1. A slide structure based on a education presentation, which you can easily adapt to your needs. For more info on how to edit the template, please visit **Slidesgo School** or read our **FAQs**.
2. To view this template in PowerPoint with the correct fonts, download and install on your computer the **fonts that we have used**. You can learn how to download and install fonts **here**.
3. An assortment of graphic resources that are suitable for use in the presentation can be found in the **alternative resources slide**.
4. A **thanks slide**, which you must keep so that proper credits for our design are given.
5. A **resources slide**, where you'll find links to all the elements used in the template.
6. **Instructions for use**.
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 - A selection of **illustrations**. You can also customize and animate them as you wish with the online editor. Visit **Storyset** to find more.
 - More **infographic resources**, whose size and color can be edited.
 - Sets of **customizable icons** of the following themes: general, business, avatar, creative process, education, help & support, medical, nature, performing arts, SEO & marketing, and teamwork.

You can delete this slide when you're done editing the presentation.

WHOA!

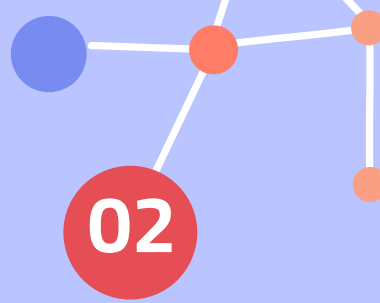
This can be the part of the presentation where you introduce yourself, write your email...





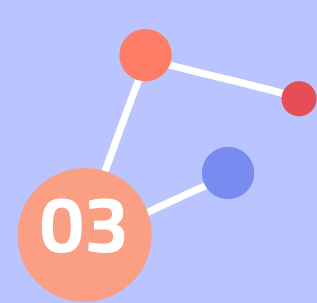
GENETIC CODE

You can describe the topic of the section here



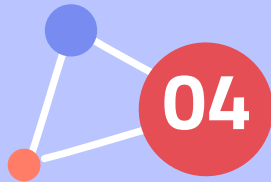
DNA STRUCTURE

You can describe the topic of the section here



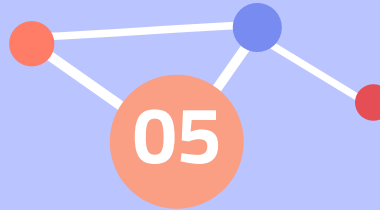
PROTEIN SYNTHESIS

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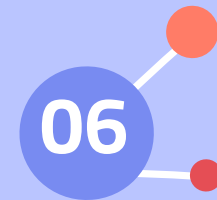
DNA MUTATIONS

You can describe the topic of the section here



CHROMOSOMES

You can describe the topic of the section here



CUMULATIVE EXAM

You can describe the topic of the section here

WHAT IS MOLECULAR GENETICS?

Do you know what helps you make your point clear? Lists like this one:

- They're simple
- You can organize your ideas clearly
- You'll never forget to buy milk!

And the most important thing: the audience won't miss the point of your presentation

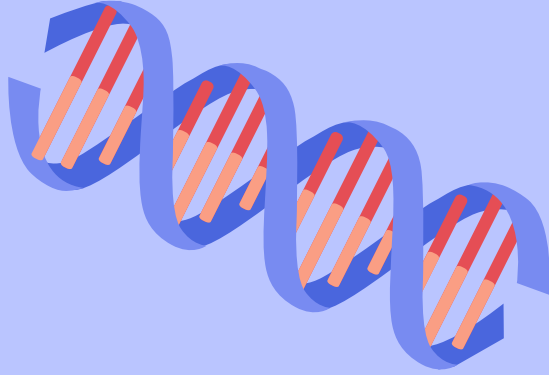




02

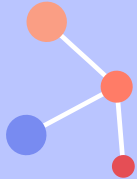
DNA STRUCTURE

You can enter a subtitle
here if you need it



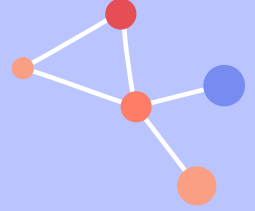
DNA

Venus has a beautiful name and is the second planet from the Sun. It's hot and has a very poisonous atmosphere



RNA

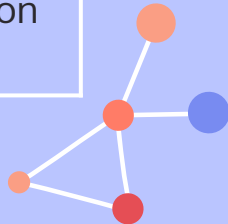
Mercury is the closest planet to the Sun and the smallest one in the Solar System—it's a bit larger than the Moon

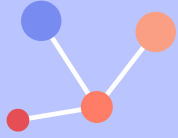




COMPARISON **DNA** AND **RNA**

FEATURES	DNA	RNA
FUNCTION	Long term storage of genetic information	Used to transfer genetic information in organisms
STRUCTURAL	E-form double helix	A-form helix
COMPOSITION	Adenine, guanine, cytosine, thymine bases	Adenine, guanine, cytosine, uracil bases
PROPAGATION	DNA is self-replicating	It is synthesized from DNA on an as-needed basis





3 PARTS OF A NUCLEOTIDE

PHOSPHATE GROUP

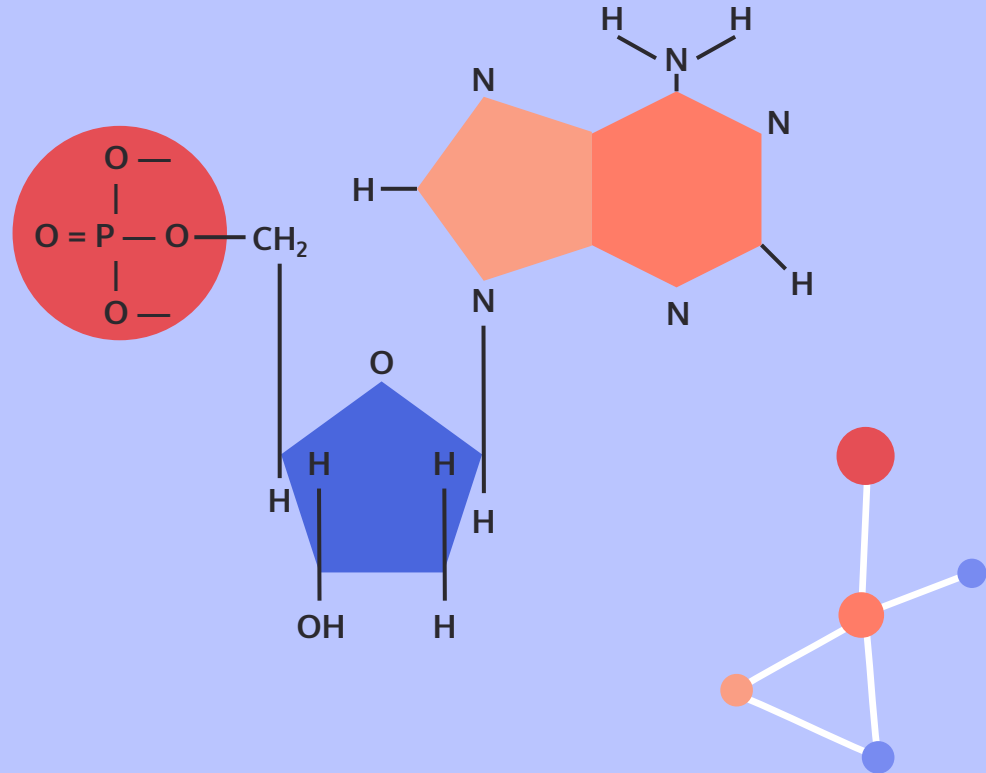
Mercury is the closest planet to the Sun and the smallest one in our System

PENTOSE SUGAR

Venus has a beautiful name and is the second planet from the Sun

NITROGENOUS BASE

Despite being red, Mars is actually a cold place. It's full of iron oxide dust

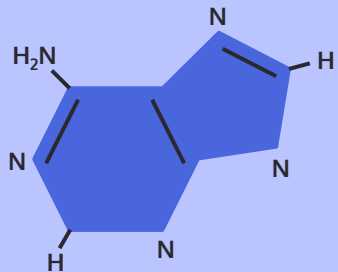




**A PICTURE IS
WORTH A
THOUSAND
WORDS**

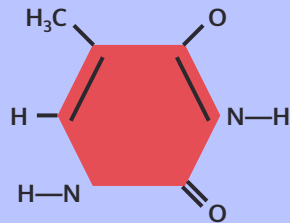


NITROGENOUS BASES



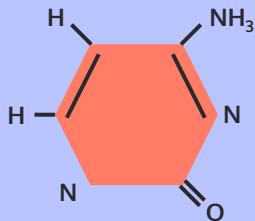
ADENINE

Venus is the second planet from the Sun and it's very hot



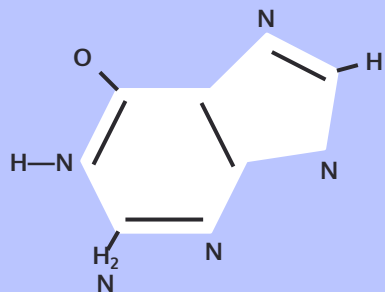
THYMINE

Jupiter is the biggest planet in the entire Solar System



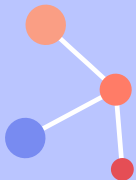
CYTOSINE

Despite being red, Mars is actually a very cold place



GUANINE

Saturn is a gas giant and has several rings around it



PERCENTAGES OF DNA STRAND

A strand of DNA was measured to contain **40% adenine**.
What is the DNA's composition of the other bases?

CYTOSINE

Jupiter is the biggest planet in our System

10%

60%

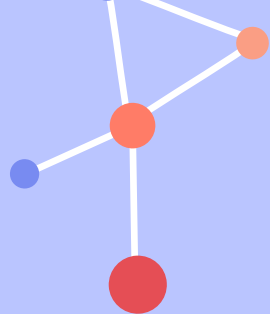
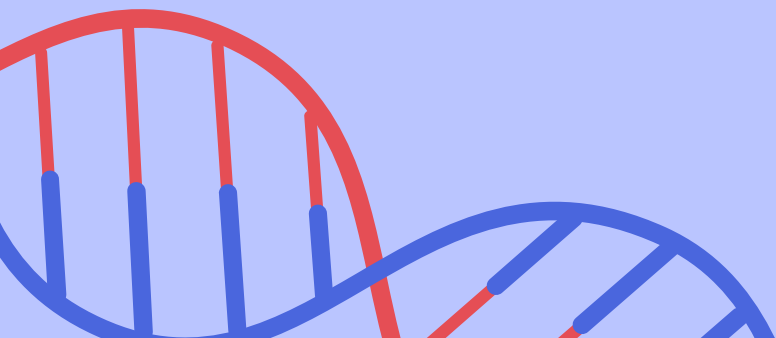
THYMINE

Venus is the second planet from the Sun

10%

GUANINE

Despite being red, Mars is a cold place

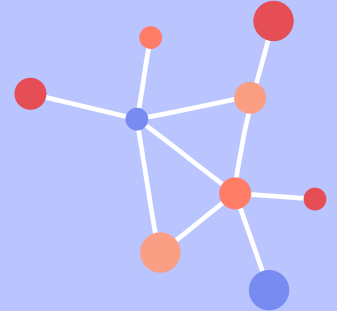
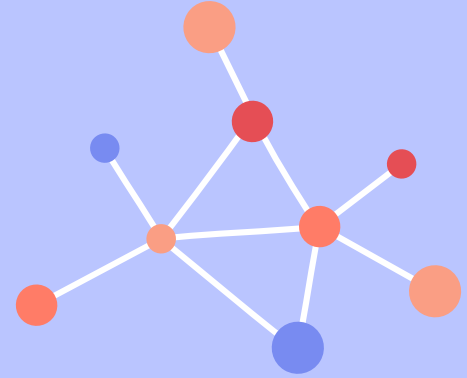


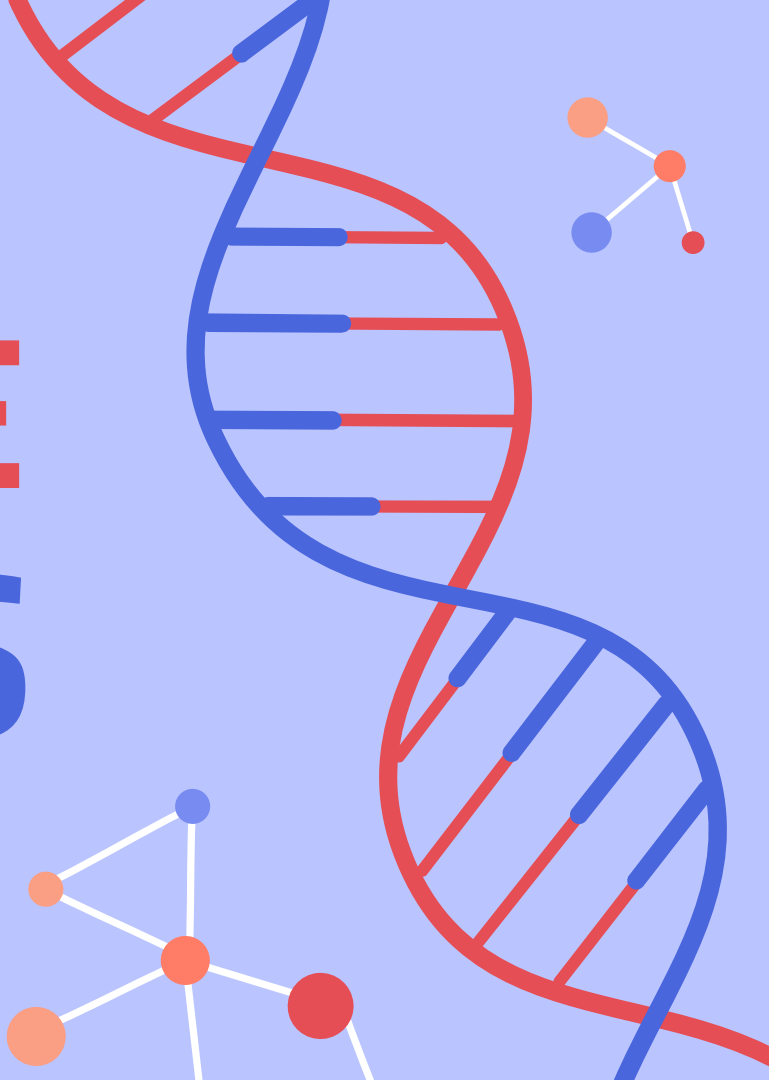


05

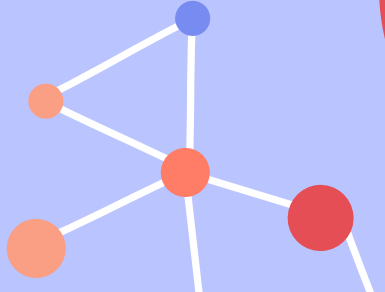
CHROMOSOMES DEFINITION

You can enter a subtitle here if you need it





AWESOME GENETICS





AREAS WHERE IT CAN BE **APPLIED**



EVOLUTION

It's the closest planet to the Sun



ANTHROPOLOGY

Venus is the second planet from the Sun



MEDICINE

Mars is actually a very cold place



AGRICULTURE

Jupiter is the biggest planet of them all



CATTLE RAISING

Saturn is a gas giant and has several rings



ENGINEERING

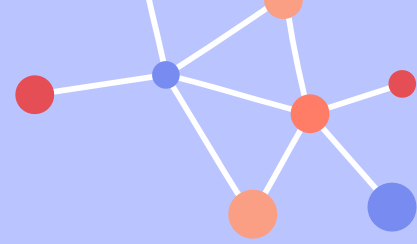
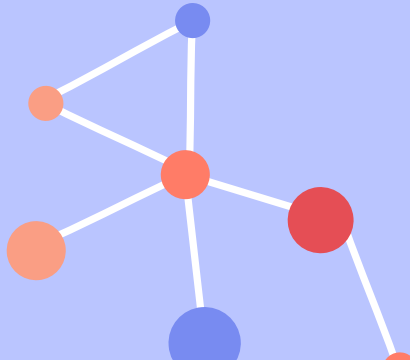
Neptune is far away from Earth

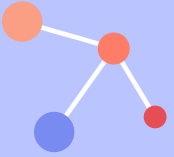




"Our own genomes carry the story of evolution, written in DNA, the language of molecular genetics and the narrative is unmistakable."

—KENNETH R. MILLER





HISTORY OF DNA DISCOVERY

1860

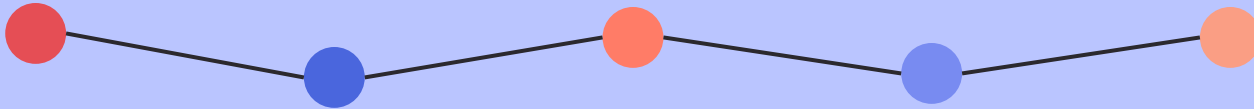
Despite being red,
Mars is a cold place

1900

Saturn is a gas
giant and has rings

1910

Earth is the planet
where we all live on

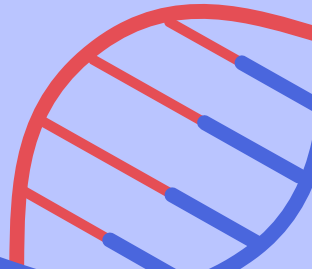
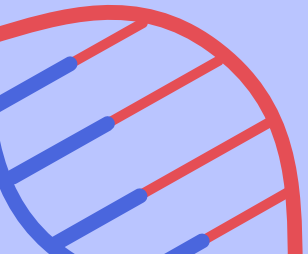


1881

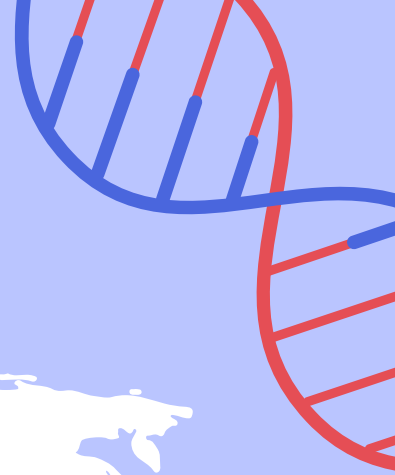
Neptune is far away
from Earth

1902

Venus has a
beautiful name



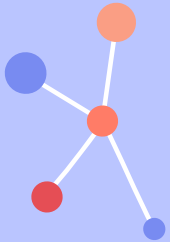
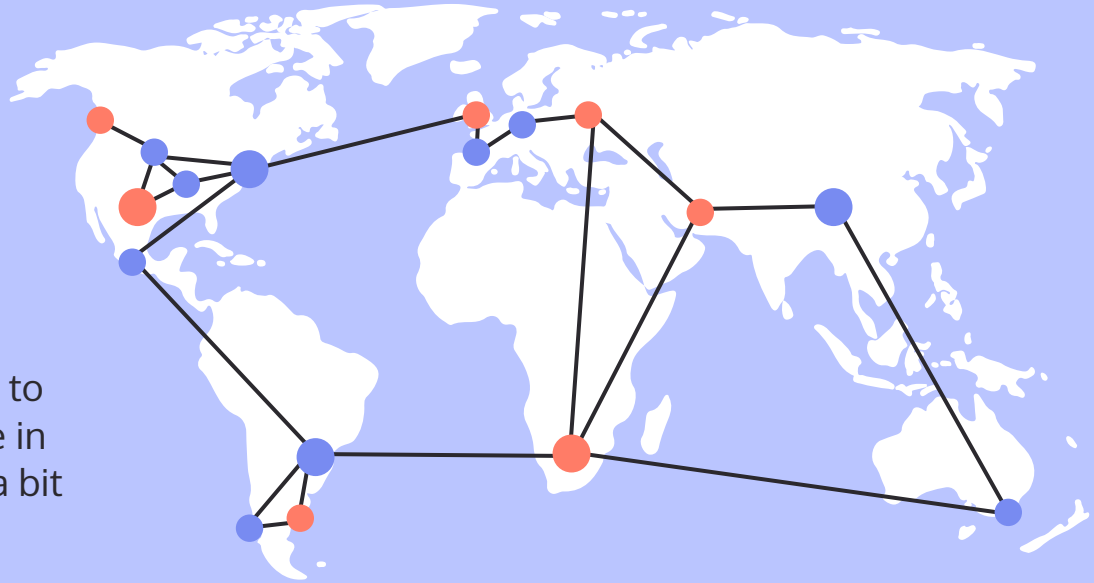
MOLECULAR GENETICS STUDIES



● MARS

● SATURN

Mercury is the closest planet to the Sun and the smallest one in the Solar System—it's only a bit larger than the Moon



DO YOU NEED A GRAPH?

SATURN

Saturn is a gas giant
and has several rings

85%

JUPITER

It's the biggest planet
in the Solar System

60%

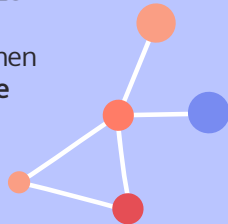
NEPTUNE

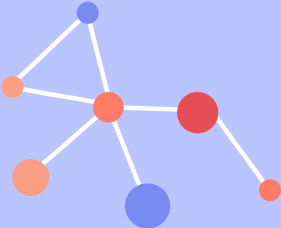
Neptune is the farthest
planet from the Sun

35%



Follow the link in the graph to modify its data and then
paste the new one here. **For more info, click here**





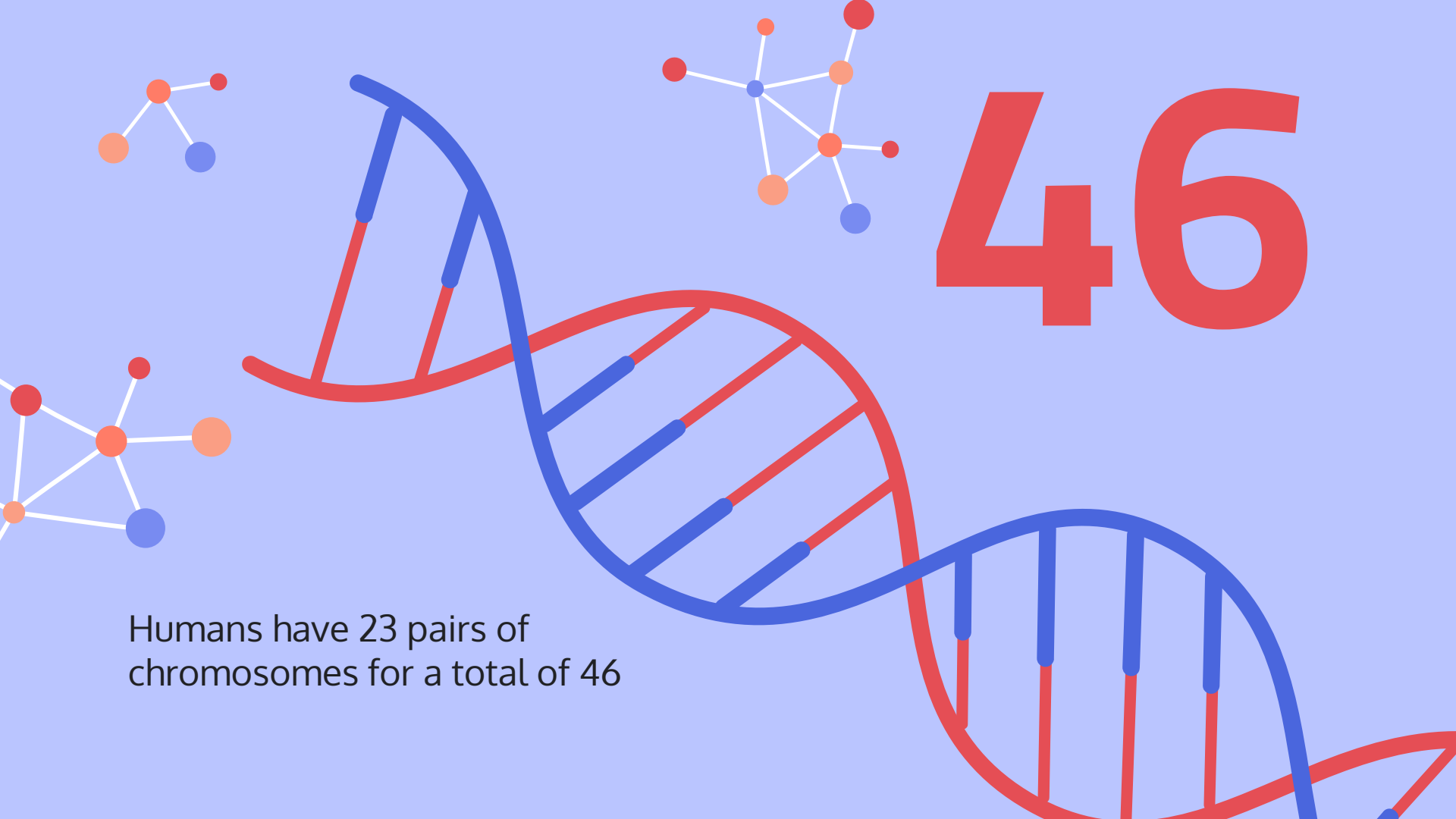
A PICTURE ALWAYS REINFORCES THE CONCEPT

Images reveal large amounts of data, so remember: use an image instead of a long text. Your audience will appreciate it





46



Humans have 23 pairs of
chromosomes for a total of 46

DNA MUTATIONS

MARS

Despite being red,
Mars is very cold



VENUS

Venus has a nice
name, but it's hot

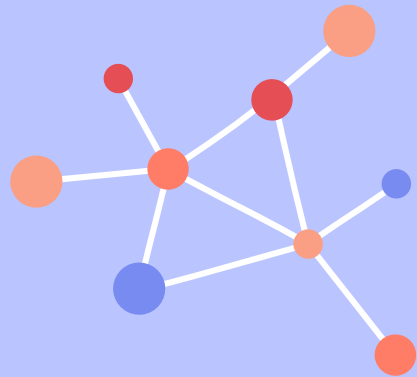


MERCURY

Mercury is a really
small planet

PLUTO

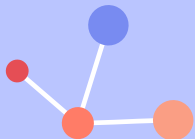
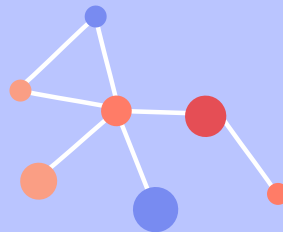
Pluto is considered a
dwarf planet



03

CUMULATIVE EXAM

You can enter a subtitle
here if you need it





9h 55m 23s

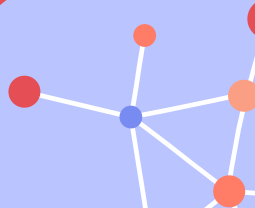
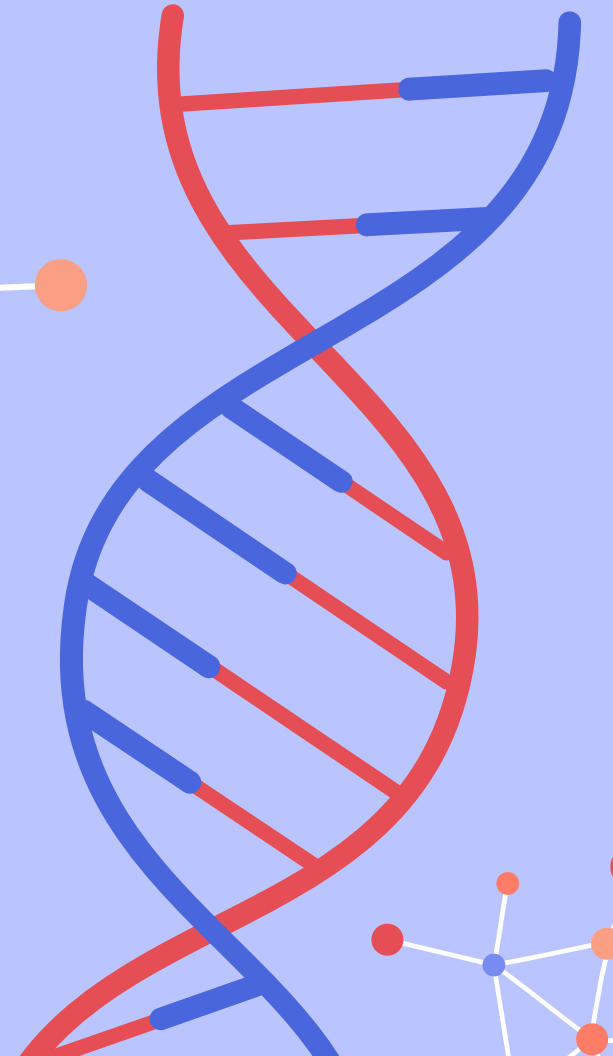
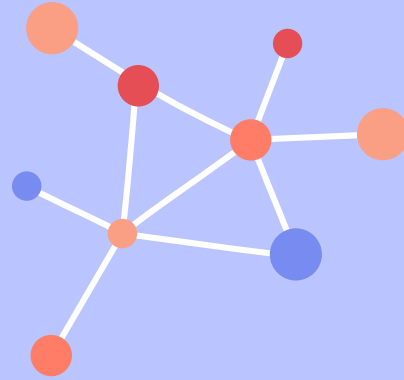
Is Jupiter's rotation period

333,000.000

Earth's mass is the Sun's mass

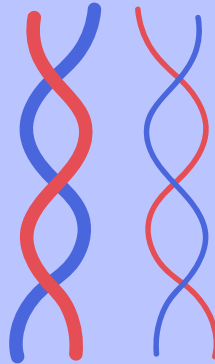
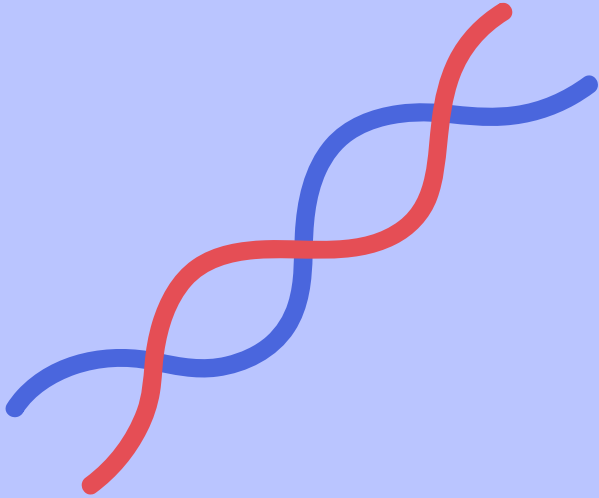
386,000 km

Is the distance between Earth and the Moon



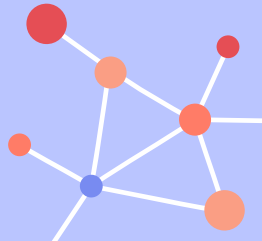
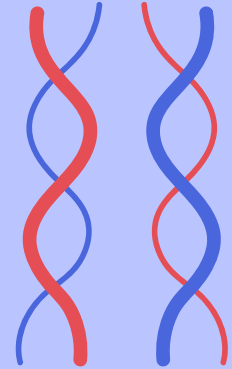
DNA STRUCTURE AND REPLICATION

The image below shows a DNA helix to undergo replication to produce two new molecules. Which image best represents the **two new DNA molecules**?



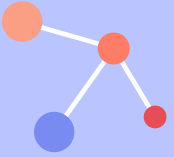
A

B

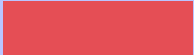





















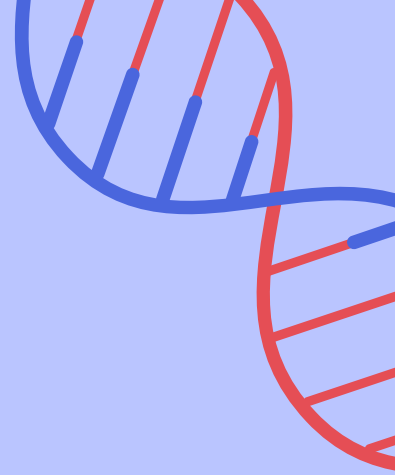
DNA UNIT TEST - 1 EXERCISE



DNA samples from four different organisms were analyzed using a procedure that separates the DNA in each samples by size

	A	B	C	D
Wells				
				
				
				
				
Band X				

DNA UNIT TEST - 1 EXERCISE



What does band X represent?

Choose 1 answer

A

The smallest fragment of DNA that traveled the slowest

B

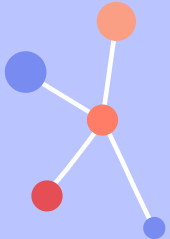
The smallest fragment of DNA that traveled fastest

C

The largest fragment of DNA that traveled slowest

D

The largest fragment of DNA that traveled the fastest

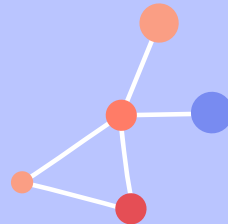
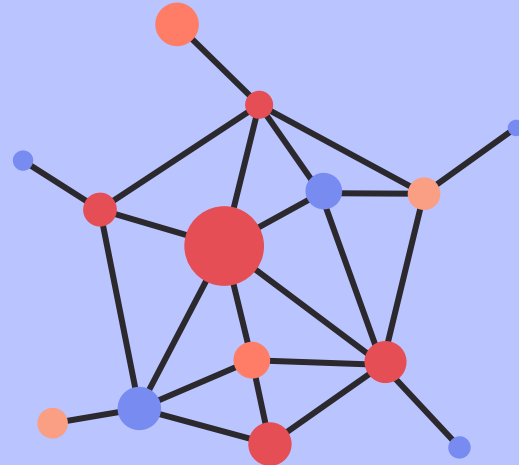




DNA UNIT TEST - 2 EXERCISE

A template strand of DNA is **3' TACCGATTGCA 5'**. What is the complementary DNA strand that is created from this template during replication

- A** 5' TAGGCATTGCA 3'
- B** 5' AUGGCAAGAAAA 3'
- C** 5' ATGCTTGACTG 3'
- D** 5' ATGCTTGACTG 3'



DNA UNIT TEST - 3 EXERCISE

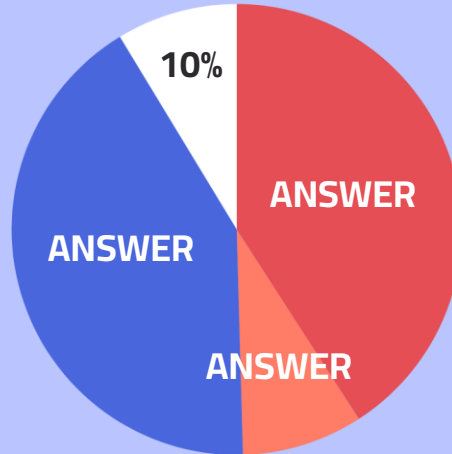
In a sample of double-stranded DNA, **10% of the nitrogenous bases are guanine**. What percentage of the nitrogenous bases in the sample are adenine, cytosine and thymine. Name the other nucleobases and write the correct percentage next to them

GUANINE

Venus has a beautiful name, but it's hot

NUCLEOBASE?

Mercury is the closest planet to the Sun



NUCLEOBASE?

Jupiter is the biggest planet of them all

NUCLEOBASE?

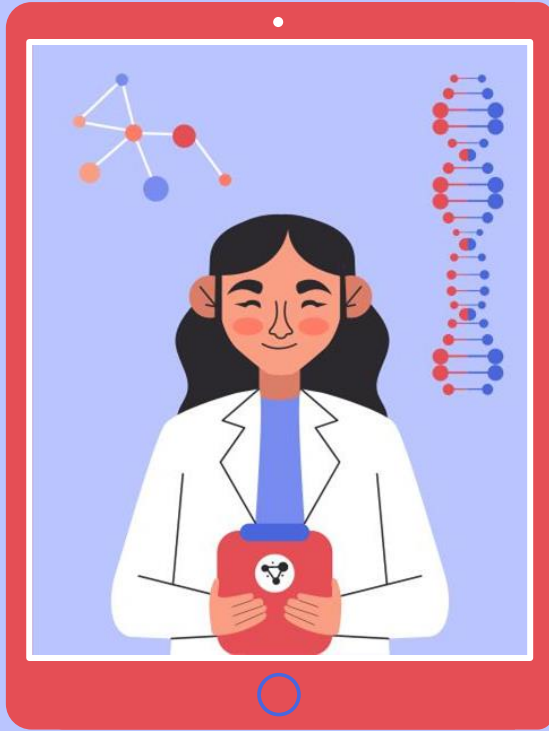
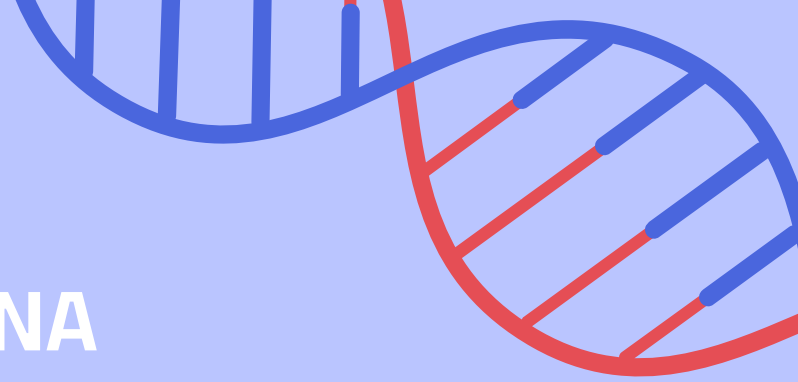
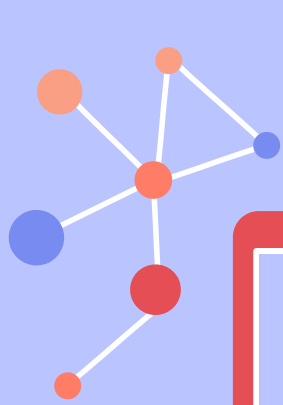
Despite being red, Mars is actually a cold place

Follow the link in the graph to modify its data and then paste the new one here. **For more info, click here**

THE DNA LADDER INTERACTIVE

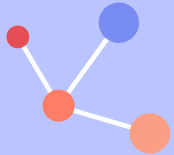
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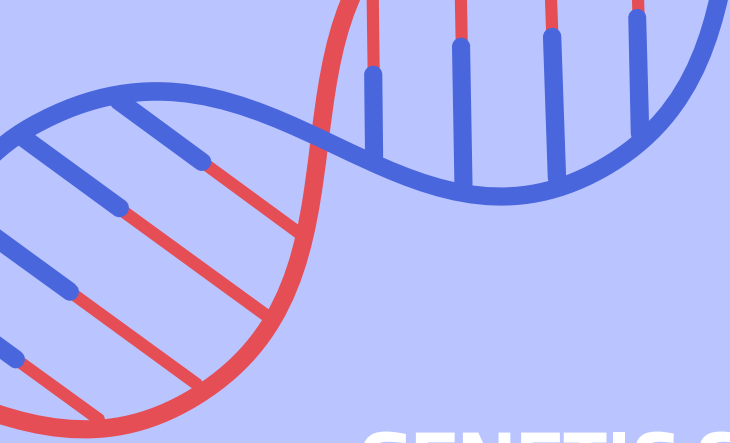




DNA MUTATIONS GAME

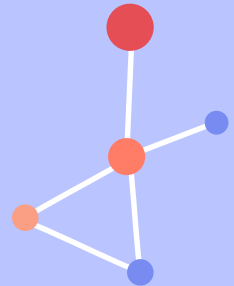
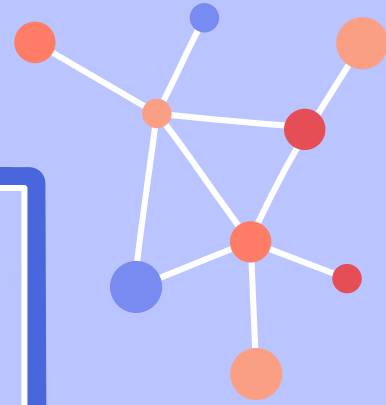
You can replace the image on the screen with your own work. Just right-click on it and select "Replace image"





GENETIC CODE SIMULATION APP

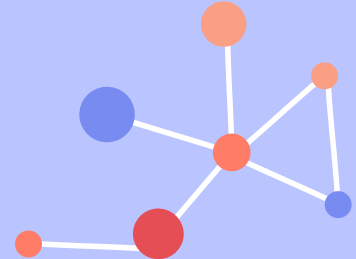
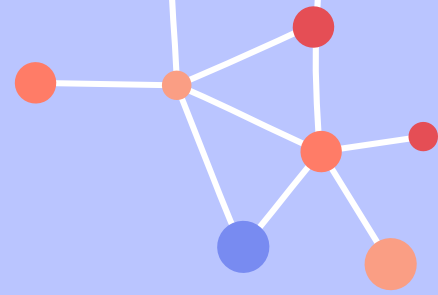
You can replace the image on the screen with your own work. Just right-click on it and select "Replace image"





CONCLUSIONS

You can give a brief description of the topic you want to talk about here. For example, if you want to talk about Mercury, you can say that it's the smallest planet in the entire Solar System



OUR TEAM OF SCIENTISTS



MARCY

You can speak a bit
about this person here



SIMON

You can speak a bit
about this person here



CARLY

You can speak a bit
about this person here





THANKS!

Do you have any questions?
youremail@freepik.com
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ALTERNATIVE RESOURCES

Here's an assortment of alternative resources whose style fits the one of this template:

- Scientist holding dna molecules
- Vaccine in a big syringe development



RESOURCES OF THIS TEMPLATE

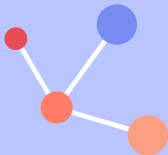
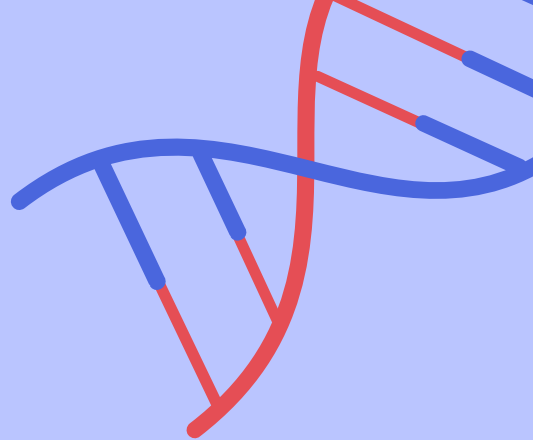
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VECTORS

- People holding dna molecules in a lab
- Scientists holding dna molecules
- Scientist holding dna molecules
- Flat design scientist holding dna molecules illustration
- Dna concept illustration
- Characters holding dna molecules
- Scientists holding dna molecules

PHOTOS

- Researchers in the biotechnology laboratory with tablet and microscope
- Scientists working in lab
- Medium shot woman with microscope
- Scientist working with microscope close up
- Smiley woman with microscope



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#bac5ff

#788bf1

#4a66dd

#fa9e84

#ff7c67

#e54e55

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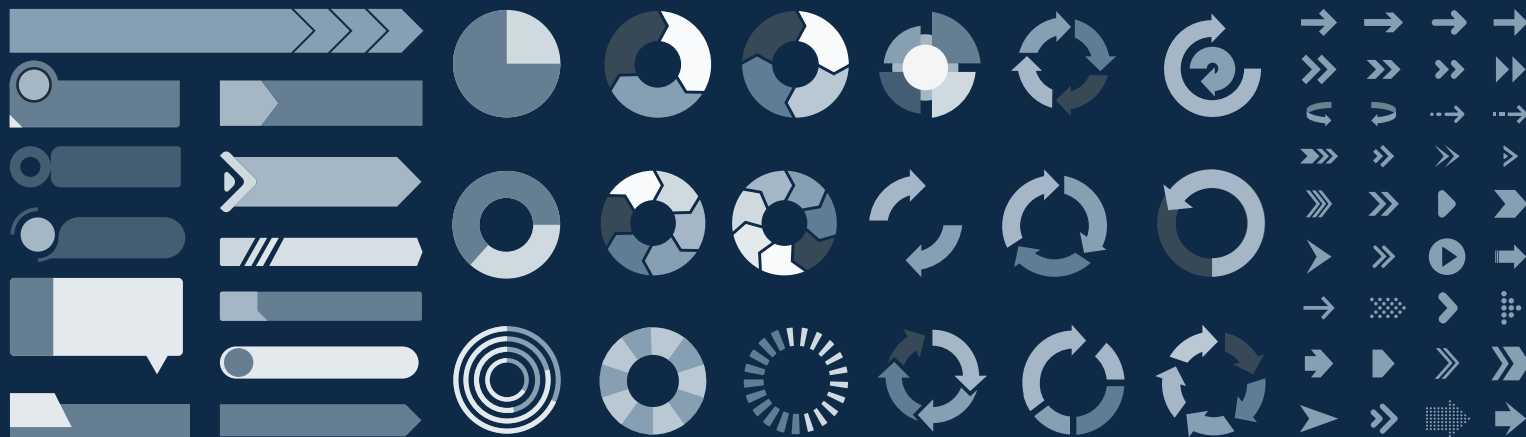
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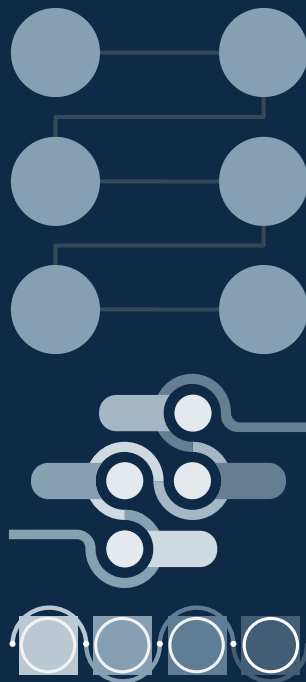
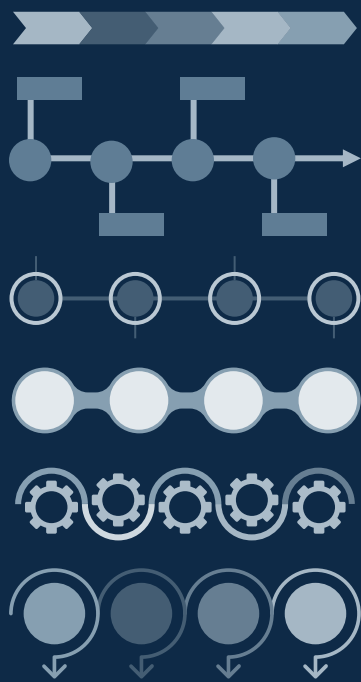
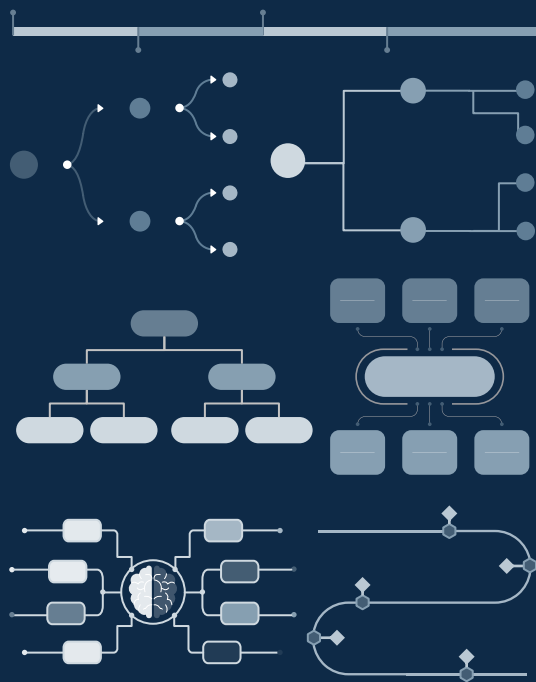
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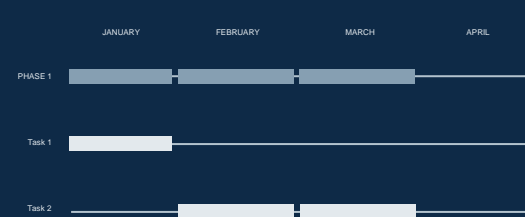
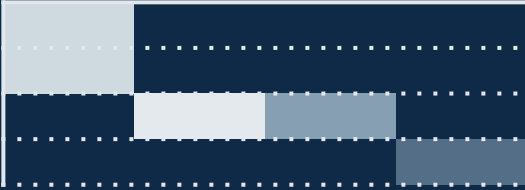
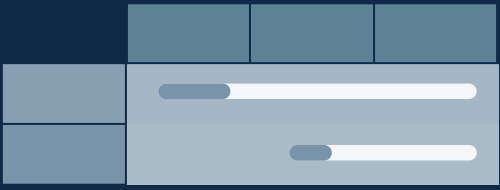
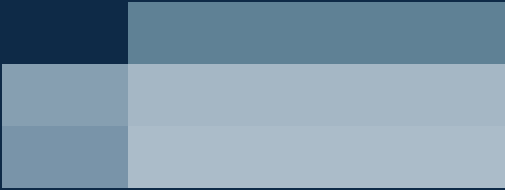
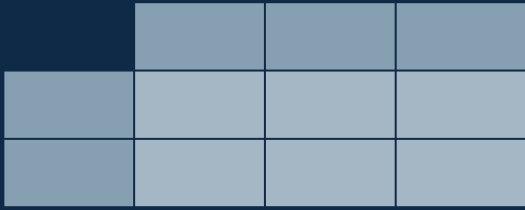
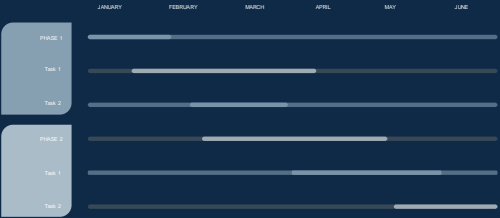
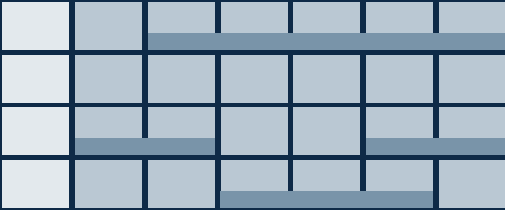
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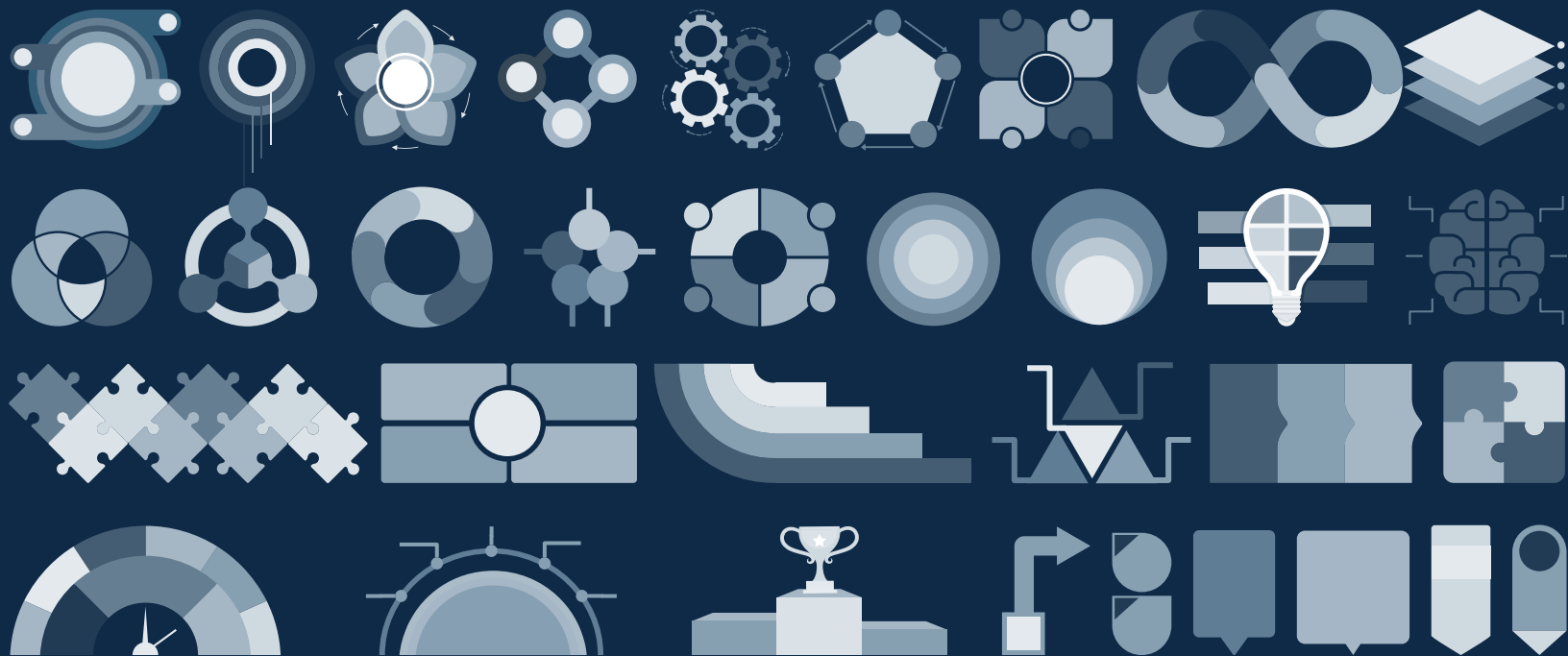
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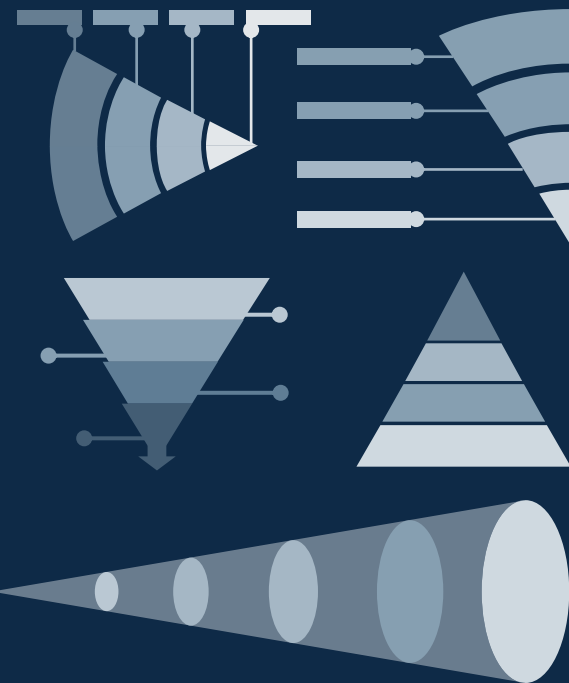
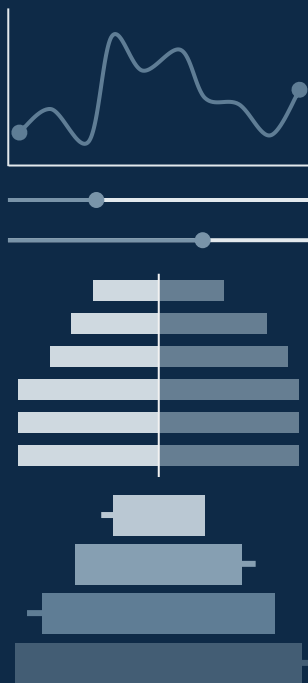
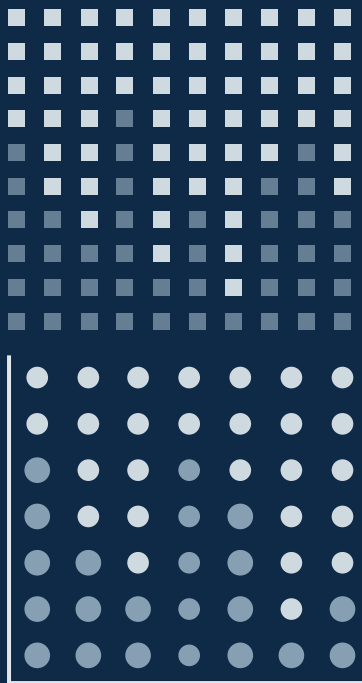












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Medical Icons



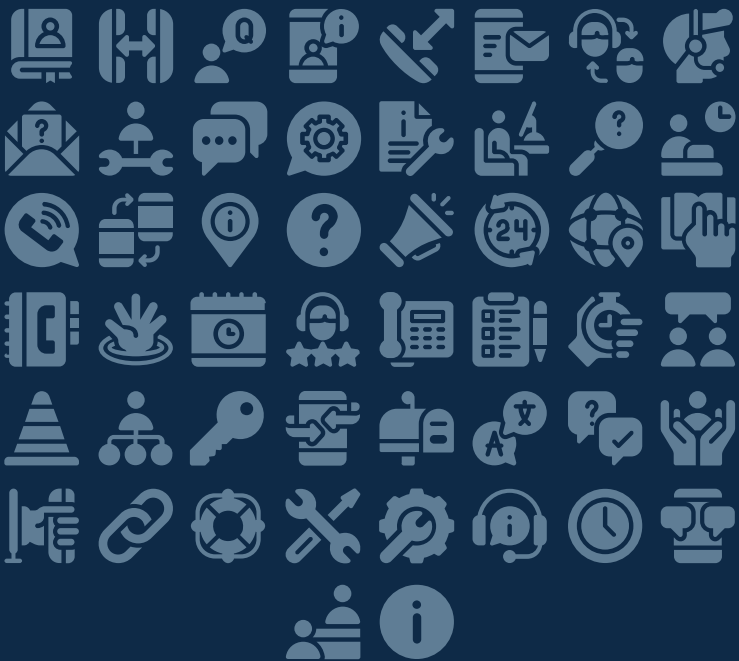
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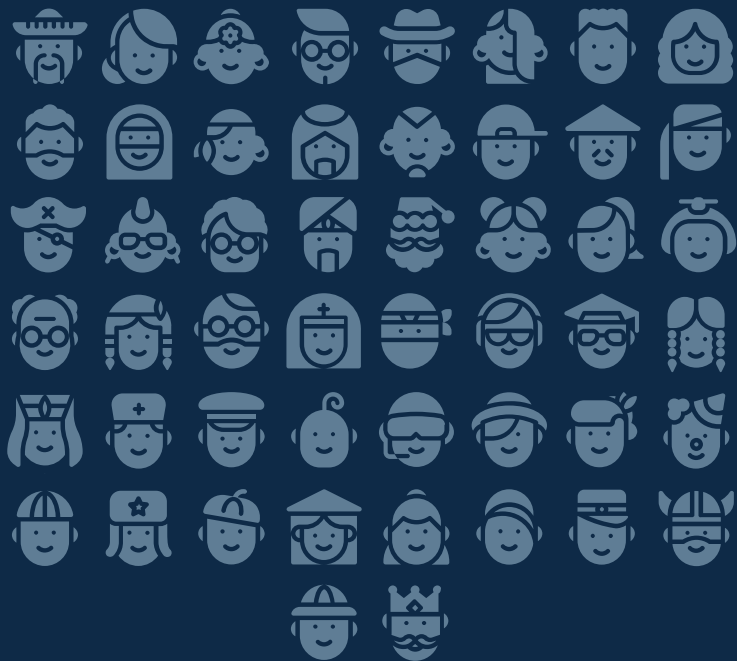
Teamwork Icons



Help & Support Icons



Avatar Icons



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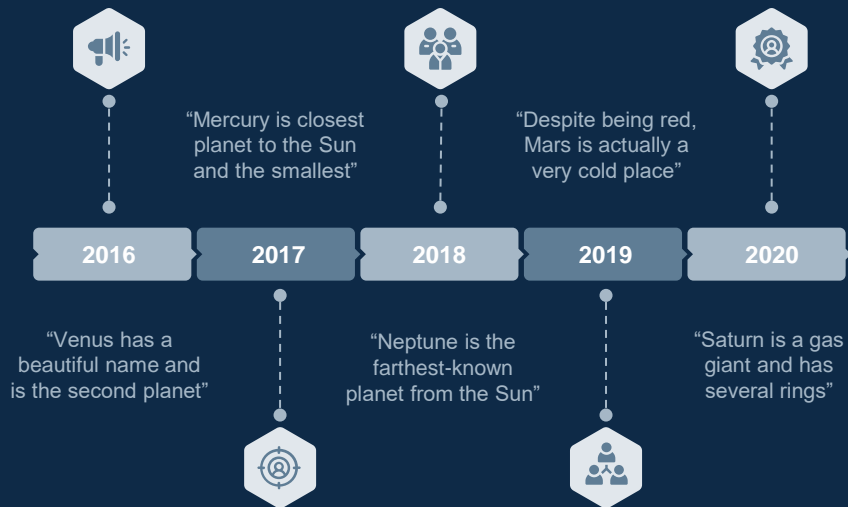
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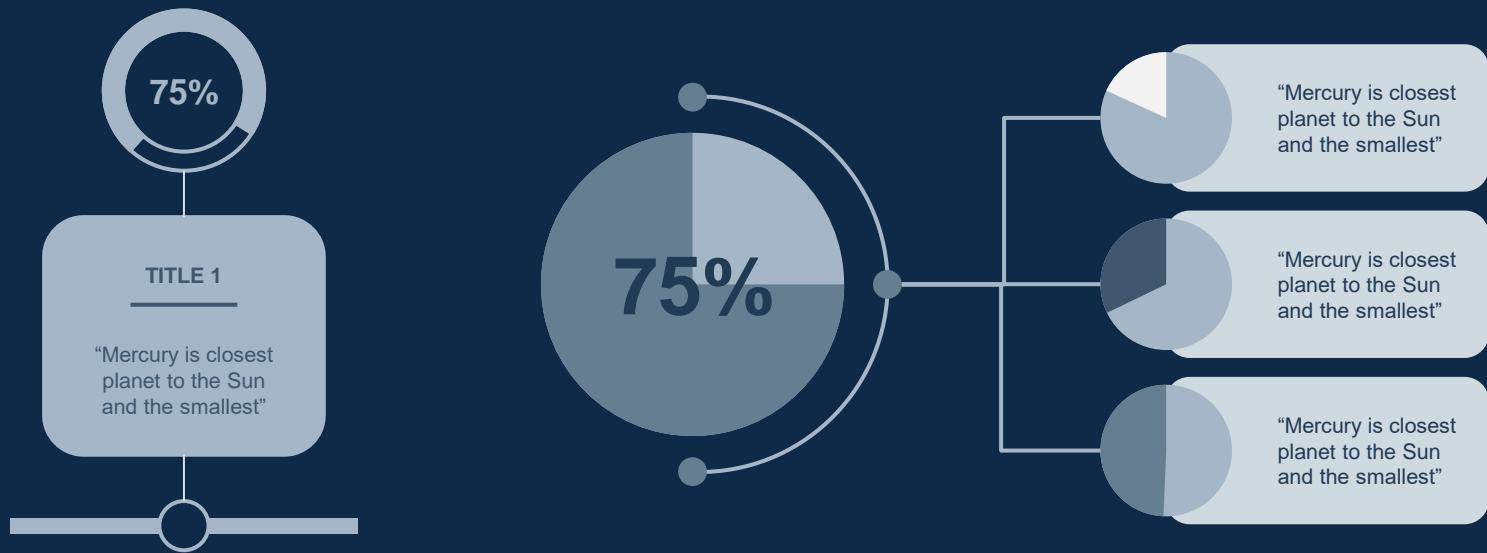
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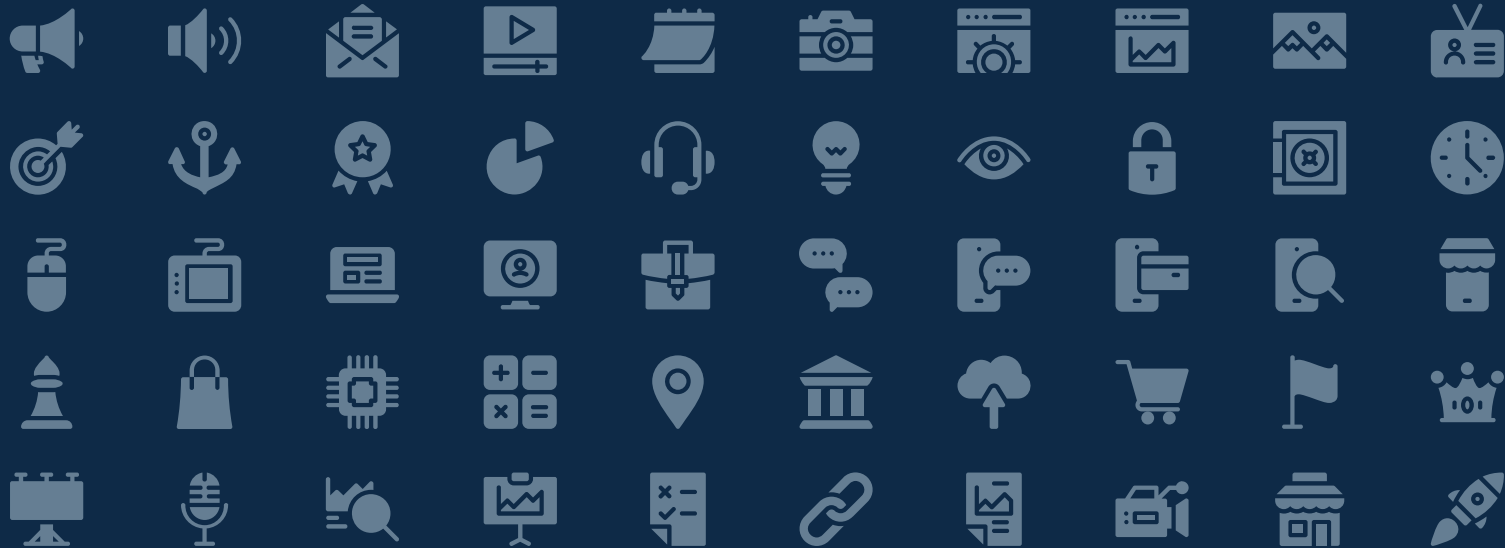


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