

Google App Engine



Deploy, Relax, Repeat: How GAE Babysits Your App

Start!



Abinaya B - 22Z202

Gayathri K S - 22Z218

Iniyaa N - 22Z226

M S Padmavathi - 22Z234

Snesha B - 22Z260

Dharshini V - 23Z438



Who is this guy?

Meet Google App Engine – the guy who takes your code, deploys it to the cloud, scales it to handle millions of users, and never asks for a coffee break.



Who is this guy?

- ❑ **Google App Engine (GAE) is a Platform as a Service (PaaS) offered by Google Cloud that enables developers to build, deploy, and scale web applications and services.**
- ❑ **It provides a fully managed environment that automatically handles infrastructure concerns such as server provisioning, load balancing, scaling, and application monitoring, allowing developers to focus solely on writing code.**

Why was it created



1

2

3

4

- To make deploying applications more simple and efficient
- To solve the pain of managing servers, so apps can easily grow from zero users to millions without you lifting a finger.

🔍 Why is it a PaaS?



1

2

3

4

- Platform as a Service (PaaS)** is a cloud computing model that provides a complete environment for building, running, and managing applications.

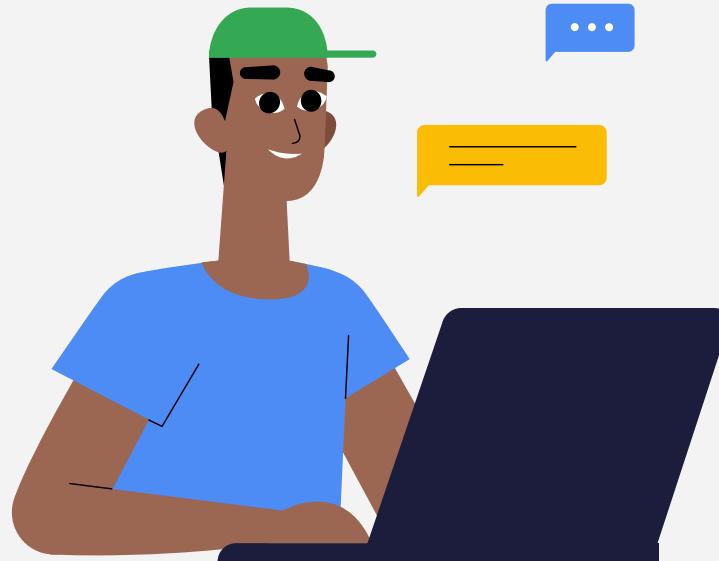




Languages Supported



1



- Python
- Java
- Go
- Node.js
- PHP
- Ruby
- .NET

2

3

4



Contact



1



Jenna Doe

Venus has a beautiful name, but it's terribly hot, even hotter than Mercury, which is the closest planet to the Sun



658-956-87



youremail@freepik.com

2

3

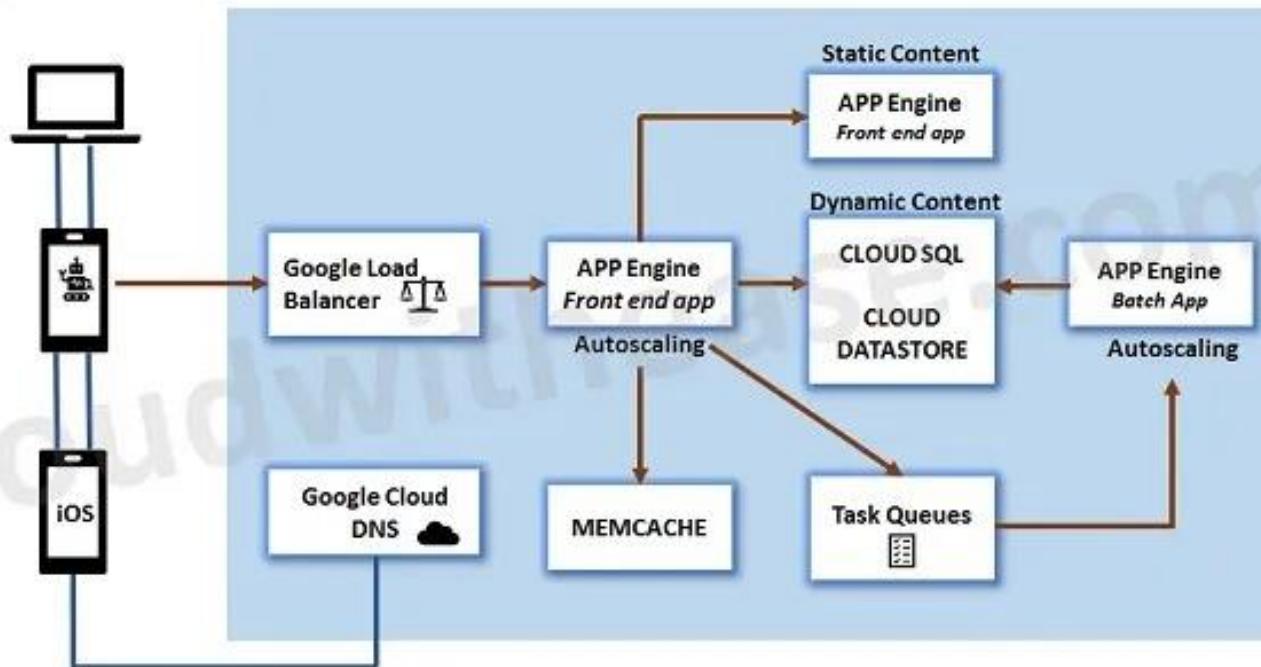
4



ARCHITECTURE AND WORKING OF GAE



Google App Engine Architecture





User Devices (Clients)

- **Function:** Users interact with the application using devices like **mobile phones, tablets, or desktops**.
- **Purpose:**
 - Allows users to send requests to the application via the internet.
 - Devices communicate with the backend using **HTTP(S) requests**.
- **Working:**
 - A user opens the app or website from a browser or mobile device.
 - The request is sent to the **Load Balancer** for processing.

Types of Clients:

- Mobile devices (Android, iOS apps).
- Web browsers (Google Chrome, Firefox, Edge).
- API calls from third-party services.



Google Load Balancer

- **Function:** Distributes traffic across multiple instances.
- **Purpose:**
 - Ensures high availability & fault tolerance.
 - Prevents server overload.
 - Balances workload dynamically based on requests.
- **How it works:**
 - Users send requests → Load balancer checks the best server → Routes request to an available instance.
 - Uses **health checks** to remove unhealthy instances.



Google Cloud DNS

- **Function:** Converts domain names into **IP addresses**.
- **Purpose:**
 - Allows users to access the application using a **readable domain name** instead of IPs.
 - Improves **DNS resolution speed and reliability**.
- **Working:**
 - A user enters www.myapp.com in the browser.
 - **Google Cloud DNS** resolves it to the Load Balancer's IP.
 - The request is forwarded to the application.



App Engine (Front-end Application)

Function: Handles **static content and user requests**.

Purpose:

- Processes **dynamic content requests**.
- Communicates with databases (**Cloud SQL / Cloud Datastore**).

Working:

- User request arrives via Load Balancer.
- Front-end app processes **static** (CSS, JS) & **dynamic content** (user data).
- Retrieves data from **Cloud SQL / Datastore** if required.



Cloud SQL (Relational Database)

- **Function:** Stores structured, relational data.
- **Purpose:**
 - Used for **transactions, user data, authentication, analytics**.
 - Ensures **data integrity** with SQL queries.
- **Working:**
 - App Engine Front-end App queries Cloud SQL.
 - Cloud SQL returns the structured data.
 - Data is displayed on the user interface.



Cloud Datastore (NoSQL Database)

Function: Stores **unstructured & semi-structured** data.

○ **Purpose:**

- Scalable storage for **big data** applications.
- Uses **key-value storage** instead of tables.

○ **Working:**

- Stores JSON-like objects (documents).
- Ideal for social media apps (storing user posts/comments).



Memcache

Function: Speeds up data retrieval by caching frequently used data.

Purpose:

- **Reduces database load**, improving performance.
- Prevents repetitive database queries.

Working:

- When a request is made, it first checks **Memcache**.
- If found, data is quickly retrieved.
- If not found, a database query is made, and the result is stored in cache.



Task Queues

- **Function:** Manages background tasks asynchronously.
- **Purpose:**
 - Offloads **long-running** operations.
 - Improves app performance by handling **delayed execution**.
- **Working:**
 - Tasks (email notifications, report generation) are added to a queue.
 - The **Batch App** processes tasks **without blocking user experience**.



App Engine (Batch Processing)

- **Function:** Executes scheduled or long-running processes.
- **Purpose:**
 - Handles **batch jobs** such as **data analysis, bulk operations**.
 - Works asynchronously with Task Queues.
- **Working:**
 - Fetches tasks from **Task Queues**.
 - Runs them in the background.
 - Stores results in **Cloud SQL or Cloud Datastore**.



Autoscaling in Google App Engine

- **Function:** Adjusts the number of running instances dynamically.
- **Purpose:**
 - Ensures **scalability and cost-efficiency**.
 - Automatically adds or removes instances based on traffic.
- **Working:**
 - High traffic → New instances created.
 - Low traffic → Unused instances shut down.



How does GAE handle a request?

M

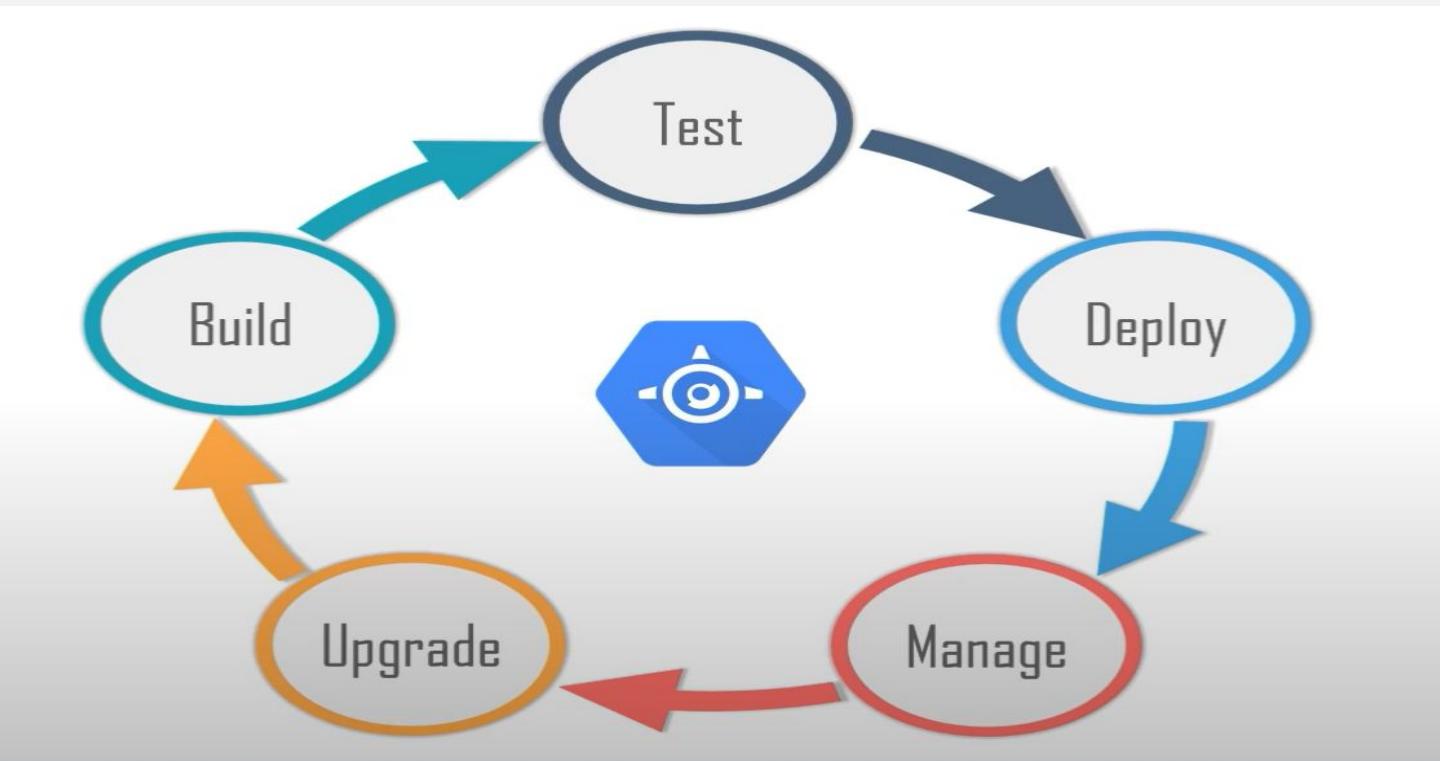
- **Load Balancer:** The request is first received by the load balancer, which distributes the incoming traffic across multiple instances of the application.
- **Routing:** The load balancer routes the request to the appropriate service and version based on the URL and routing rules defined in the application's configuration.
- **Instance Selection:** The load balancer selects an available instance to handle the request. If no instance is available, GAE automatically spins up new instances to handle the increased load.
- **Instance Execution:** The selected instance executes the code of the requested version, which generates a response based on the logic defined in the application.



M

- **Data Access:** If the application needs to access data from the Datastore or Memcache, the instance communicates with the respective services to retrieve or store the data.
- **Response Generation:** The instance generates a response based on the request and sends it back to the load balancer.
- **Load Balancer Response:** The load balancer receives the response from the instance and forwards it back to the client.

GAE Development Cycle





Build

- In this stage, developers write the application code using supported languages (like Python, Java, Go, etc.). They also define the application configuration in a file (app.yaml) that specifies settings like runtime, handlers, and environment variables.

Test

- Developers test the application locally using the Google Cloud SDK. This allows them to simulate the App Engine environment and ensure that the application behaves as expected before deployment.



Deployment

- Once testing is complete, the application is deployed to Google App Engine using the command **gcloud app deploy**. This uploads the code and configuration to the cloud, making the application accessible via a public URL.

Management

- After deployment, GAE automatically manages scaling based on traffic. Developers can monitor performance and logs through the Google Cloud Console. They can also update the application by redeploying new versions.



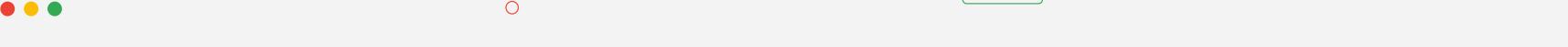
Upgrade

Based on user feedback and performance metrics, developers release updates that may include bug fixes, new features, security patches, or optimizations, with version control enabling rollback or gradual rollout of new updates.



🔍 CORE FEATURES OF GAE

- **Google App Engine** is a serverless, PaaS (Platform as a Service) that allows developers to focus on code while it automatically handles infrastructure.
- Let's dive into the core features that make Google App Engine such a powerful platform.



Serverless Deployment

- **No server management** – Google handles all backend infrastructure.
- **Auto-scaling** – Instances scale based on traffic demand.
- **Pay-per-use** – Costs are based on actual usage, reducing waste.
- **Faster deployment** – Focus on coding without worrying about server provisioning.

Example: A task management app that dynamically scales as more users join.



Flexible Environments

- **Standard Environment:**

- Supports pre-configured runtimes (Python, Java, Go, Node.js).
- Ideal for lightweight applications with high scalability.

- **Flexible Environment:**

- Uses **Docker containers**, allowing custom runtimes.
- Suitable for applications with complex dependencies.

Example: A media streaming app requiring specific libraries

benefits from the **Flexible Environment**.



Built-in Monitoring & Logging

- **Stackdriver Monitoring** tracks CPU usage, latency, and request volumes.
- **Stackdriver Logging** captures system logs for debugging.
- **Error detection** helps in real-time issue resolution.

Example: An e-commerce app using monitoring tools to ensure smooth checkout processes.

Load Balancing

- Distributes incoming traffic across multiple instances.
- Ensures **high availability** by routing users to the nearest, most efficient server.
- Handles **global traffic spikes** seamlessly.

Example: A news website dynamically balancing traffic during breaking news events.



Global Scale & Performance

- Runs on **Google's worldwide infrastructure**, ensuring minimal latency.
- Optimized for **high-speed content delivery**.
- Auto-scales from a few users to millions without manual intervention.

Example: A fitness app adjusting to peak traffic during global challenges.



Security Features

- **Data Encryption:** Secures data at rest and in transit.
- **IAM (Identity and Access Management):** Provides role-based access control.
- **Compliance Standards:** Supports HIPAA, GDPR, and PCI DSS regulations.

Example: A banking app ensuring secure transactions through encryption and access control.



Enterprise-Grade Security

- **Identity & Access Management (IAM)** enforces role-based permissions.
- Data is **encrypted at rest and in transit** for enhanced security.
- Compliant with **HIPAA, GDPR, and PCI DSS** regulations.
- Protects against threats with **Google's built-in security policies**.

Example: A healthcare app securely managing patient records.



Microservices & API Support

- Supports **Microservices Architecture** for modular app development.
- **REST & GraphQL APIs** enable seamless communication between services.
- Integrates with **Google Cloud Functions** for event-driven execution.
- Enhances **scalability and maintainability** of applications.

Example: A ride-sharing app using separate services for driver management, route calculation, and user profiles.

🔍 Automatic Scaling

- Dynamically adjusts compute resources based on traffic demand.
- **Instance auto-scaling** adjusts resources automatically without manual effort.
- Reduces **latency** and optimizes **cost efficiency**.

Example: An online store scaling automatically during flash sales.

Version Control & Deployment

- Supports **Blue-Green Deployment** for seamless version transitions.
- Enables **automatic rollbacks** in case of failures.
- Traffic can be **split between different app versions** for A/B testing.
- Facilitates **zero-downtime deployment** for continuous updates.

Example: A social media platform rolling out new features without disrupting user experience



Data Store Integration

- **Cloud Datastore (NoSQL)** provides scalable, high-performance storage.
- Supports **automatic data replication** across regions for reliability.
- Enables **transactions and indexing** for fast data retrieval.
- Ensures seamless integration with **Google BigQuery & Firestore**.

Example: A task management app storing and retrieving user tasks efficiently.



Cost Management & Billing

- **Pay-per-use pricing** ensures cost-effective resource usage.
- **Detailed billing insights** help track and optimize cloud expenses.
- **Auto-scaling reduces costs** by shutting down unused instances.
- Provides cost forecasting through **Google Cloud Cost Management**.

Example: A startup app managing expenses efficiently as user base grows.

APPLICATIONS

Websites & Content:

- GAE is perfect for websites, blogs, and content management systems (CMS), handling sudden traffic surges smoothly.

Business Tools:

- Companies use GAE for internal apps, dashboards, and management systems, thanks to its reliability and scalability.

Mobile App Support:

- GAE powers mobile apps (iOS & Android) by managing data, processing, and API requests, simplifying development.

APPLICATIONS

AI-Powered Apps:

- GAE works with Google's AI tools (TensorFlow, Vertex AI, BigQuery) for machine learning, predictions, and natural language processing.

Online Stores:

- GAE's scalability and reliability support online stores, handling high sales volumes.

Game Backends:

- GAE manages multiplayer games, handling real-time data and leaderboards with low latency.



CHALLENGES

Managing Costs:

- GAE's pricing depends on usage. Use monitoring tools and set budget alerts to avoid unexpected charges.

Reducing Vendor Lock-in:

- Use container technologies like Docker and Kubernetes to package your apps, making them portable.
- Design your apps with clear separation of components and use abstract layers to minimize reliance on Google-specific services.



CHALLENGES

Dealing with Cold Starts:

- Use warm-up requests or keep instances always running, but be mindful of the added costs.

Migrating Older Apps:

- Carefully evaluate the compatibility of your legacy applications and be prepared to refactor code to adapt to GAE.



Well,



Thank you for surviving the presentation!

CREDITS: This presentation template was created by [Slidesgo](#), including icons by [Flaticon](#), and infographics & images by [Freepik](#).





Let's Read This Music Score!



M

T

W

T

F





Q Tuesday



M



Math

T

W

T

F

🔍 Tuesday: Math



M

T

W

T

F



Lesson 1

Neptune is the fourth-largest planet in the Solar System



Lesson 2

Saturn is composed mostly of hydrogen and helium



Lesson 3

Venus has a beautiful name, but also high temperatures

Tuesday: Math



M

Lesson 1



Neptune is the fourth-largest planet in the Solar System

Lesson 2



Saturn is composed mostly of hydrogen and helium inside

Lesson 3



Venus has a beautiful name, but also high temperatures

T

W

T

F



Lesson 1



M

T

W

T

F

$$A = w \times h$$

w : width
 h : height

Lesson 1



M

T

W

T

F

Solve the following
multiplication:

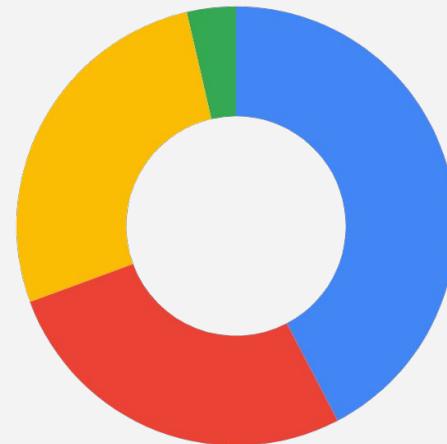
$$7 \times 8$$



🔍 Lesson 2



- Venus has a beautiful name
- Mars is a cold place
- Jupiter is a gas giant
- Mercury is the smallest one



To modify this graph, click on it, follow the link, change the data and paste the resulting graph here

M

T

W

T

F

Lesson 2



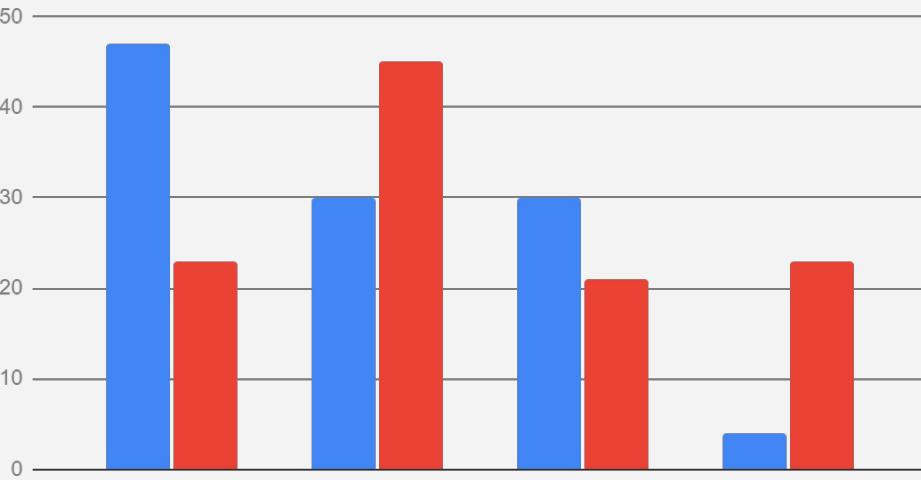
M

T

W

T

F



Saturn

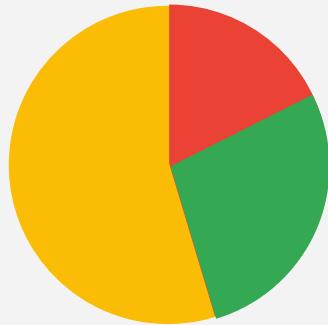
Saturn is composed of hydrogen and helium

Venus

Venus has a beautiful name, but is terribly hot

To modify this graph, click on it, follow the link, change the data and paste the resulting graph here

Lesson 3



18%

Venus is the second planet from the Sun



55%

Despite being red, Mars is a cold place



Lesson 3



M

T

W

T

F

Saturn

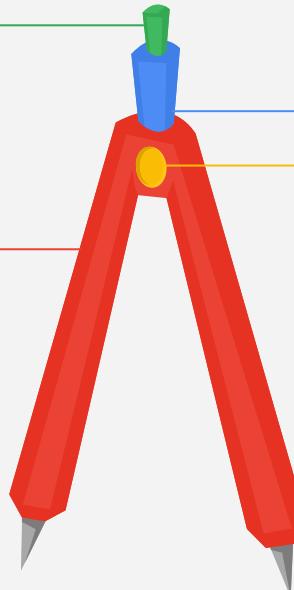


It's composed of hydrogen and helium

Venus



Venus has a beautiful name, but is terribly hot



Neptune

Neptune is the fourth-largest in the Solar System

Jupiter

Jupiter named after the Roman god of the skies

● ● ●

Q Wednesday



M



Culture

T

W

T

F



Wednesday: Culture



M



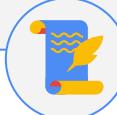
Lesson 1

Saturn is composed of hydrogen and helium



Lesson 2

Despite being red, Mars is a cold place



Lesson 3

Venus is the second planet from the Sun



Lesson 4

Neptune is the farthest planet from the Sun

T

W

T

F



Wednesday: Culture



M

T

W

T

F

Lesson 1



Saturn is composed of hydrogen and helium

Lesson 2



Despite being red, Mars is a cold place

Lesson 3



Venus is the second planet from the Sun

Lesson 4



Neptune is the farthest planet from the Sun

Lesson 1



M

Photo 01

Jupiter is a gas giant and the biggest planet in the Solar System



Photo 02

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



T

W

T

F

Lesson 1



M

Venus has a beautiful name
and is the second planet



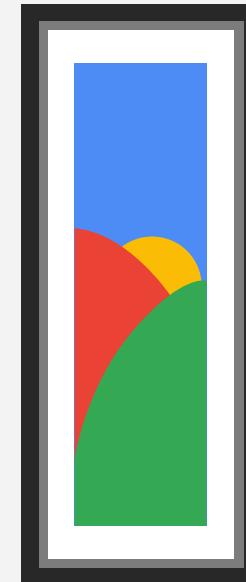
Neptune is the fourth
largest in the Solar System



Despite being red, Mars
actually is a very cold place



Jupiter is a gas giant and
the biggest planet



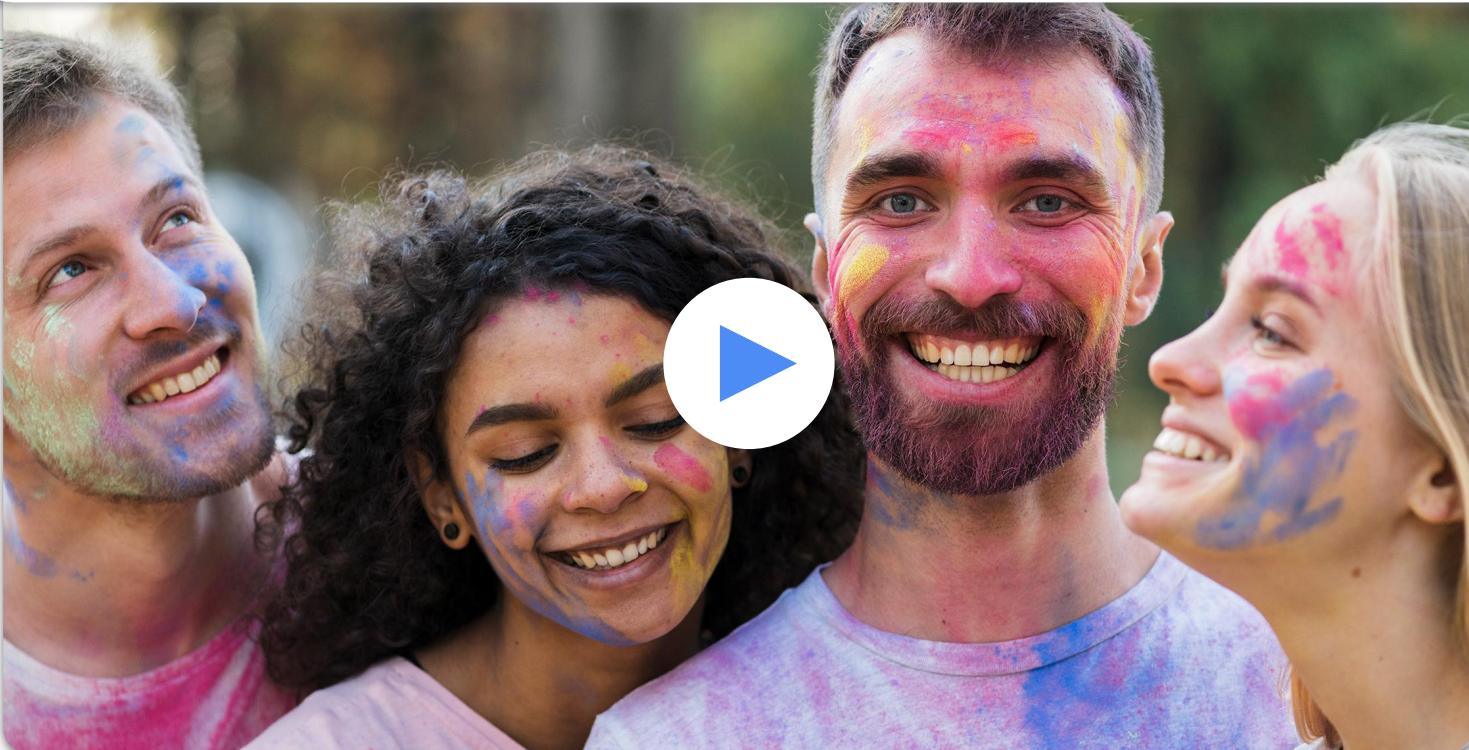
T

W

T

F

Lesson 2



M

T

W

T

F



Lesson 3



Venus is the second planet from the Sun



Despite being yellow, Mars is a cold place



Mercury was named after a Roman god



Jupiter is a gas giant and the smallest planet

Lesson 3



M

T

W

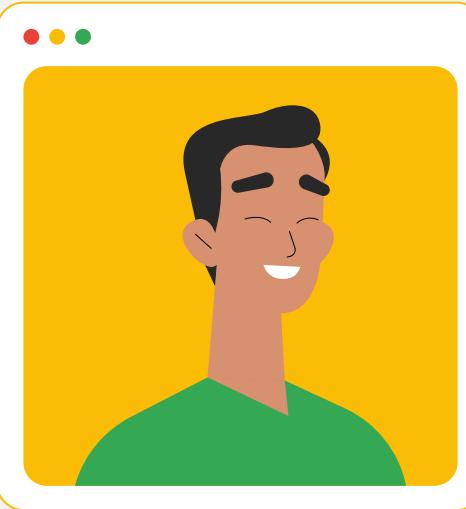
T

F



Venus

Venus has a beautiful name and is the second planet



Jupiter

Jupiter is a gas giant and the smallest planet to the Sun

Lesson 4



M

T

W

T

F

Egg

Pepper

Tomato

Cheese





Lesson 4



M

T

W

T

F

Venus is the second planet from the Sun

25%

Despite being red, Mars is a cold place

55%

Jupiter is a gas giant and the smallest

20%





Thursday



M

T

W

T

F



Geography



Thursday: Geography



M

T

W

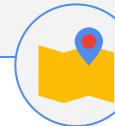
T

F



Lesson 1

Neptune is the fourth-largest planet in the Solar System



Lesson 2

Mercury is the closest planet to the Sun and was named after a god



Thursday: Geography



M

T

W

T

F



Lesson 1

Venus has a beautiful name and is the second planet



Lesson 2

Jupiter is a gas giant and the smallest to the Sun



Lesson 1



M



Saturn Street



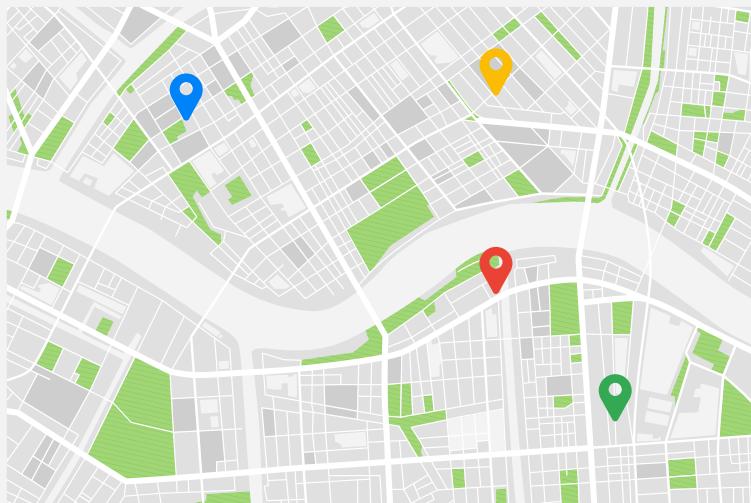
Neptune Street



Venus Street



Mars Street



W

T

F



Lesson 1



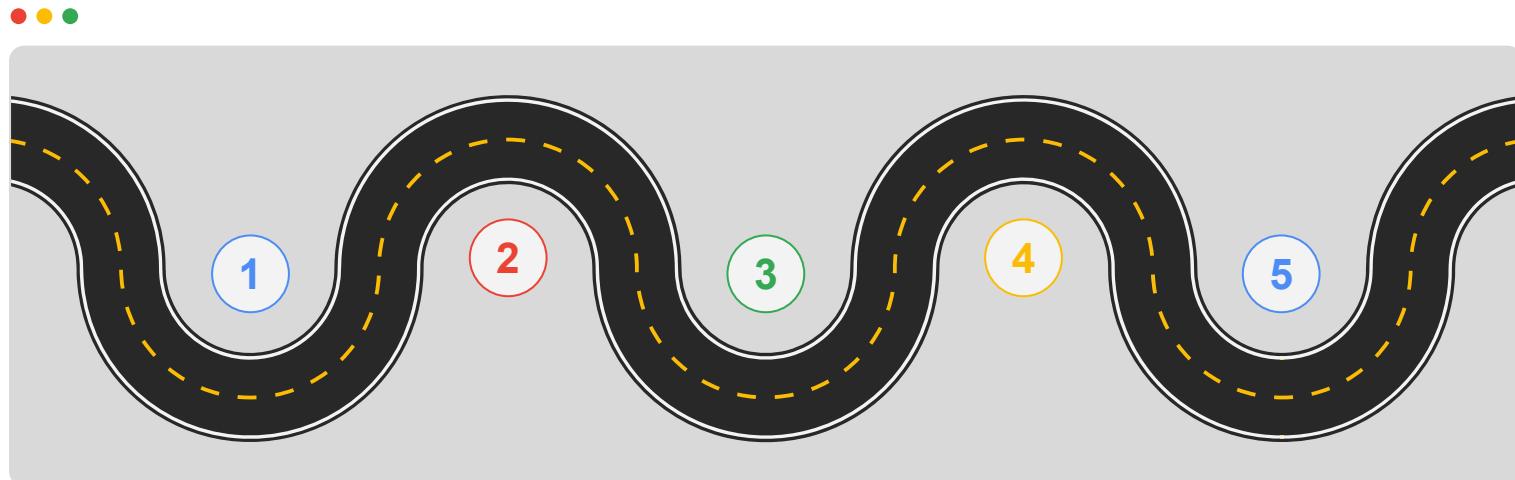
M

T

W

T

F



Neptune (1), Jupiter (2), Mercury (3), Venus (4) and Mars (5)
are some of the planets that are part of the Solar System

Lesson 2



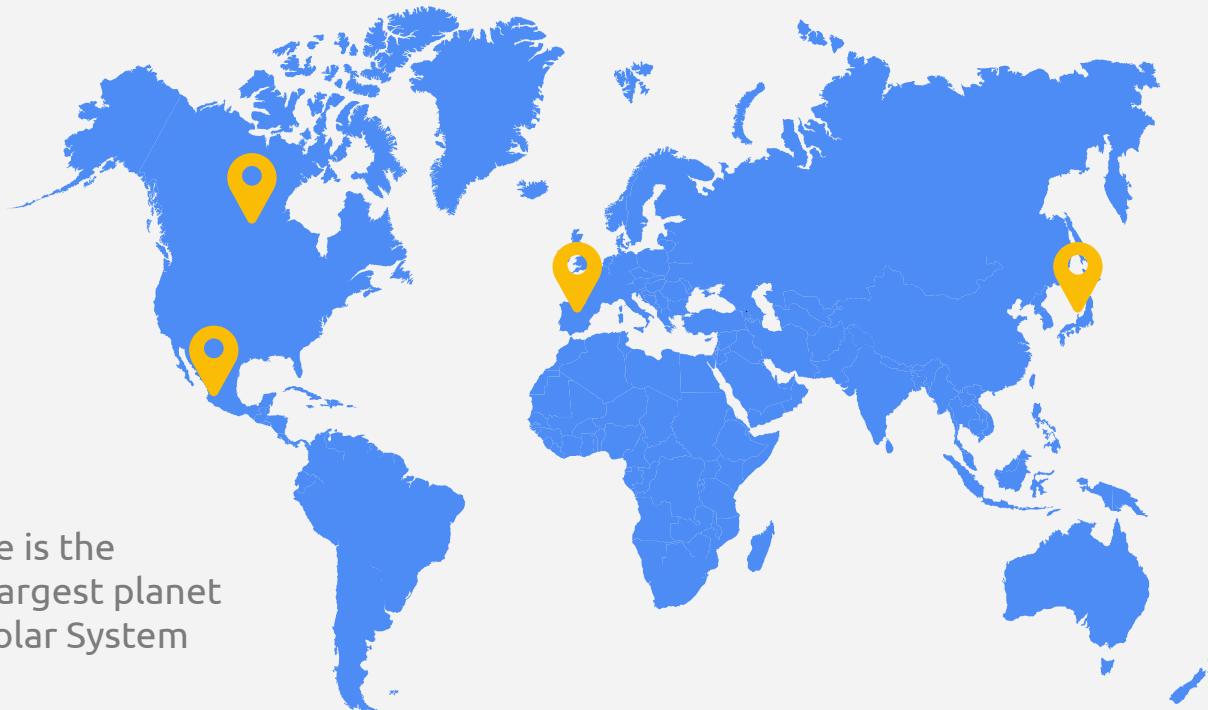
M

T

W

T

F



Neptune is the
fourth-largest planet
in the Solar System



Lesson 2



M



South Korea

● Saturn

It's composed of hydrogen and helium, mostly

● Neptune

Neptune is the fourth-largest in the Solar System

● Venus

Venus has a beautiful name, but is terribly hot

● Jupiter

Jupiter named after the Roman god of the skies

T

W

T

F



Friday



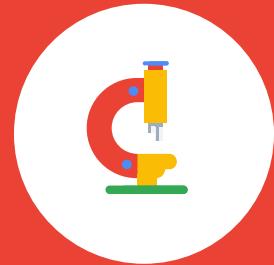
M

T

W

T

F



Science

🔍 Friday: Science



M

T

W

T

F



Lesson 1

Neptune is the fourth-largest planet in the Solar System



Lesson 2

Despite being red, Mars is a cold place full of iron oxide dust



Lesson 3

Saturn is composed mostly of hydrogen and helium



Friday: Science



M

T

W

T

F



Lesson 1

Despite being red, Mars is a cold place

Lesson 2

Neptune is the fourth-largest planet

Lesson 3

Saturn is a gas giant and has rings



Lesson 1



M

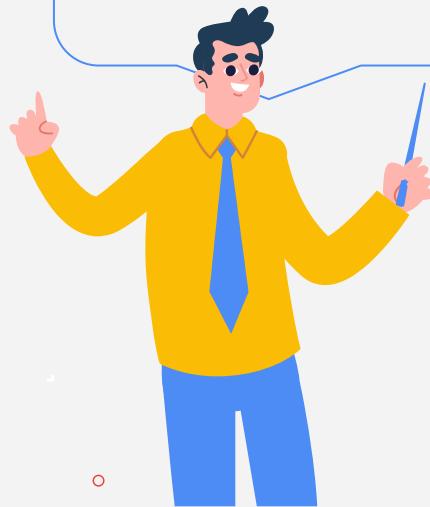
T

W

T

F

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



Jupiter is the biggest planet in the Solar System





Lesson 1



M

T

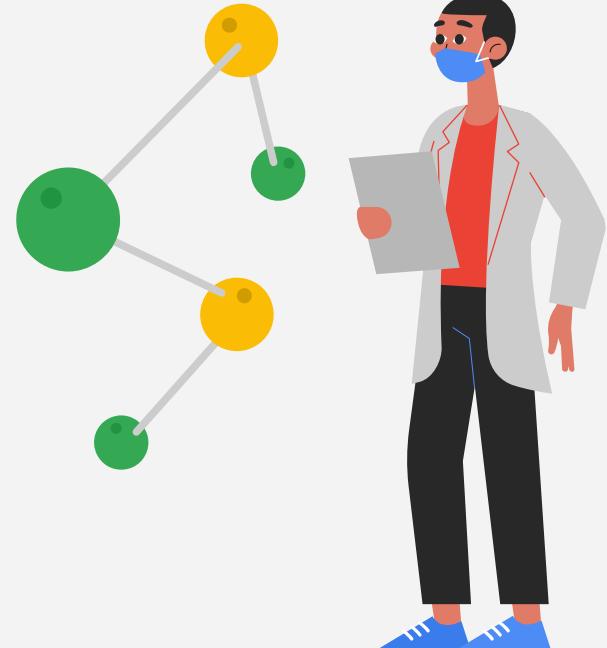
W

T

F

About the lesson

Venus has a beautiful name and is the second planet from the Sun. It's terribly hot—even hotter than Mercury





Lesson 2



M

T

W

T

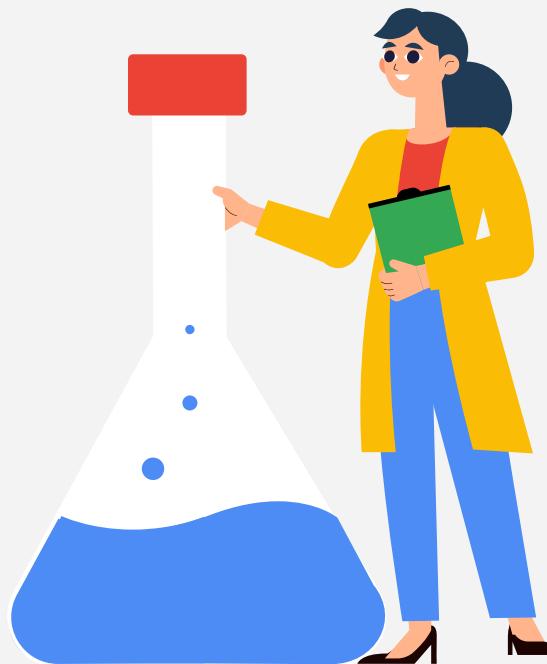
F

 Marie Curie

 Isaac Newton

 Albert Einstein

 Rosalind Franklin





Lesson 2



M

T

W

T

F

**35%**

Venus is the second planet from the Sun

45%

Despite being red, Mars is a cold place

60%

Jupiter is a gas giant and the smallest



Lesson 3



M



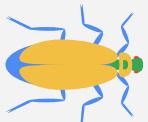
Despite being red, Mars is actually a cold place



Mercury is the smallest planet of them all



Saturn is composed of hydrogen and helium



Venus is the second planet from the Sun



Neptune is the farthest planet from the Sun



Pluto is now considered a dwarf planet

T

W

T

F



Lesson 3



M

T

W

T

F

Mars is actually a cold place

Mars

Mercury is the smallest planet

Mercury

It's a gas giant and has rings

Saturn



Neptune

Neptune is the fourth-largest

Venus

Venus is the second planet

Jupiter

It has the name Roman god

Q 03. Homework



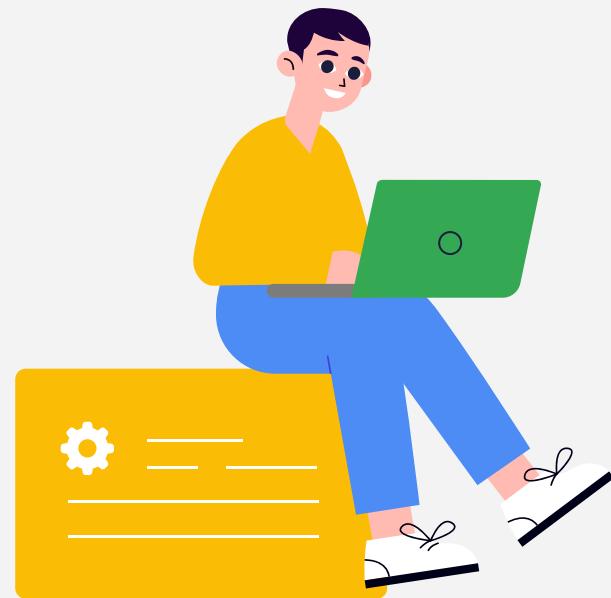
1

You can enter a subtitle here if you need it

2

- A
- B
- C
- D
- E
- F

3



4

Q Subject A



1

- A meter is longer than a yard
- The Statue of Liberty was a gift
- The currency of France is the franc
- Tchaikovsky wrote *Moonlight Sonata*
- Warsaw is the capital of Bulgaria

2

3

4



Subject A



About the task

- Venus has a beautiful name
- It's the second planet from the Sun
- It's terribly hot, even hotter than Mercury



Subject B



1

25,120,356 cm²

Convert it into feet

2

62,152 ft

Convert it into meters

3

21,200 gal

Convert it into liters

4



Subject B



M

T

W

T

F

10 cm

It's composed of hydrogen and helium, mostly

16 cm

Venus has a beautiful name, but is terribly hot

12,5 cm

Neptune is the fourth-largest in the Solar System

19 cm

Jupiter named after the Roman god of the skies





Q Subject C



1

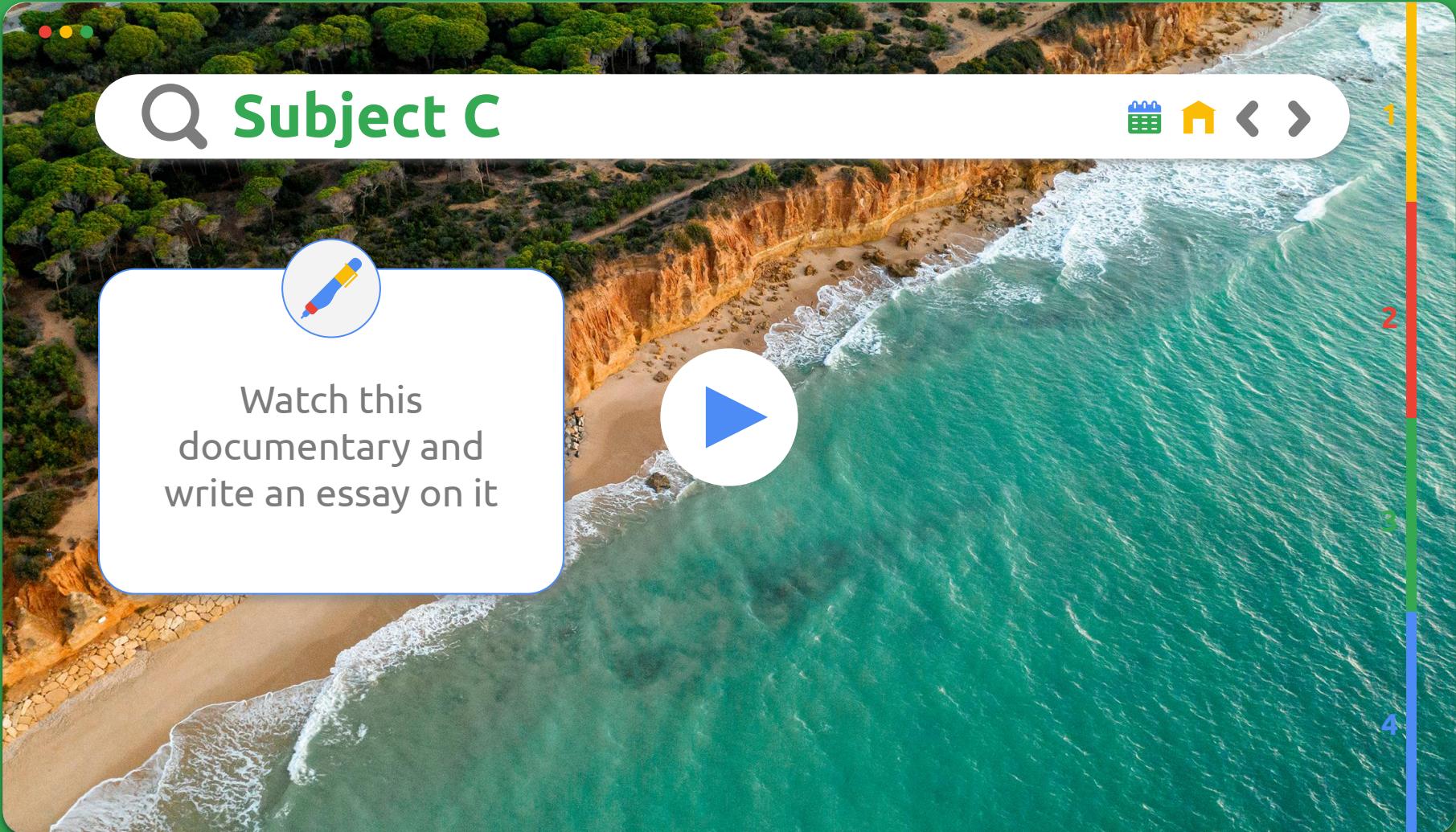
2

3

4



Watch this
documentary and
write an essay on it



Q Subject C



1

2

3

4



🔍 Subject D



1

What language do they speak?

Spanish

English

Japanese



2

3

4

Subject D



1



Language

Description

Level

1

Spanish

Upper Intermediate

B2

2

English

Lower Intermediate

B1

3

Japanese

Elementary

A2

2

3

4



Q Subject E



1

€333,000

How many dollars would that be?

2

¥24,372

How many dollars would that be?

3

£4,000,000

How many dollars would that be?

4



🔍 Subject E



1

€333,000

How many dollars
would that be?

??

¥24,372

How many dollars
would that be?

??

£4,000,000

How many dollars
would that be?

??

2

3

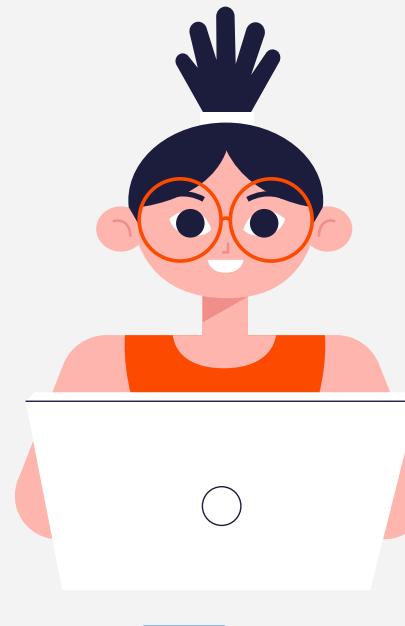
4



1

"This is a quote, words full of wisdom that someone important said and can make the reader get inspired."

—Someone Famous •



2

3

4

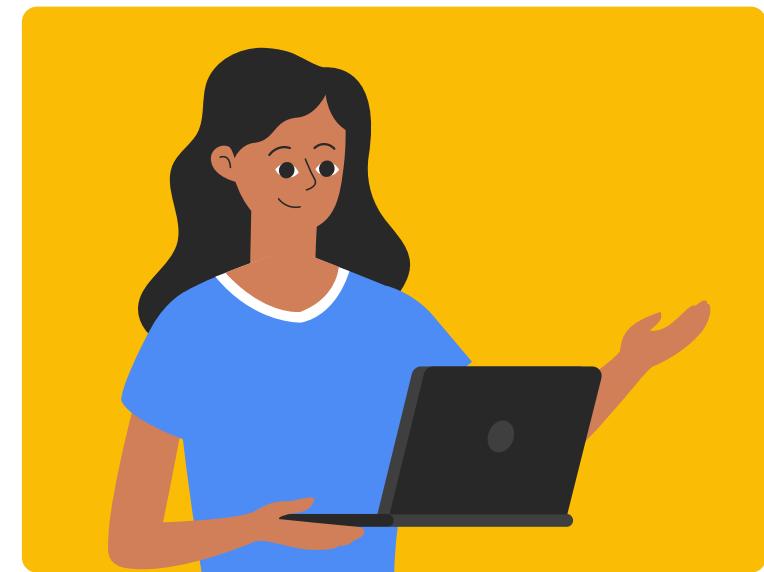


1

2

3

4



"This is a quote, words full of wisdom that someone important said and can make the reader get inspired."

—Someone Famous

04. Upload



1

You can enter a subtitle here if you need it

How to

Devices



2

3

4

Q 04. Upload



1

You can enter a subtitle here if you need it

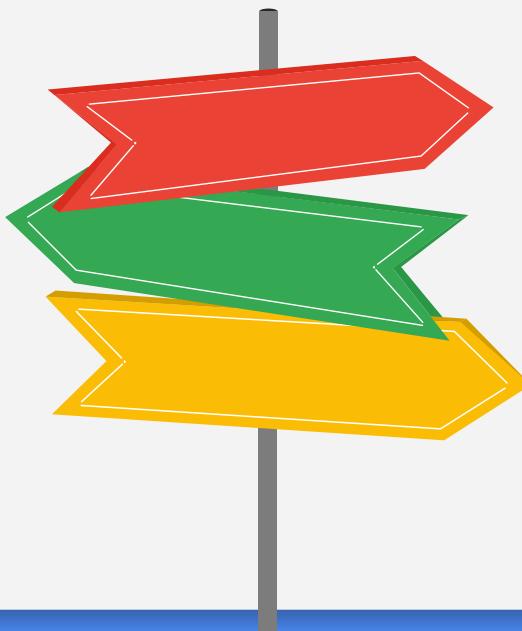
2

How to

Devices

3

4





How to Upload



1

2

3

4

1 Jupiter is the biggest planet of them all

3 Mercury was named after a Roman god

2 Venus has a really beautiful name

4 Despite being red, Mars is actually a cold place

How to Upload



1

Mars is actually a cold place



Neptune is the fourth-largest

Mercury is the smallest planet



Venus is the second planet

2

3

4



Desktop Software

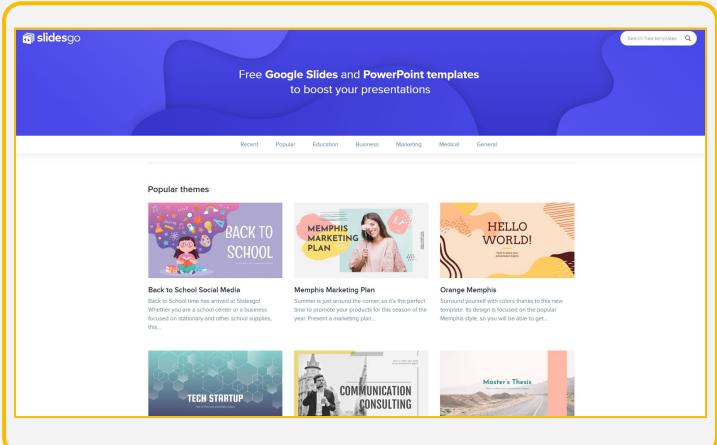


1

2

3

4



You can change the image on the screen with your own work. Just delete this one, add yours and center it properly

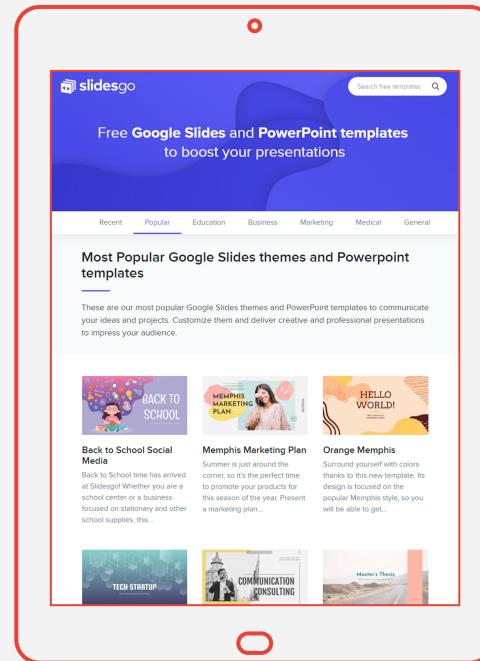


Tablet App

You can change the image on the screen with your own work. Just delete this one, add yours and center it properly



1



2

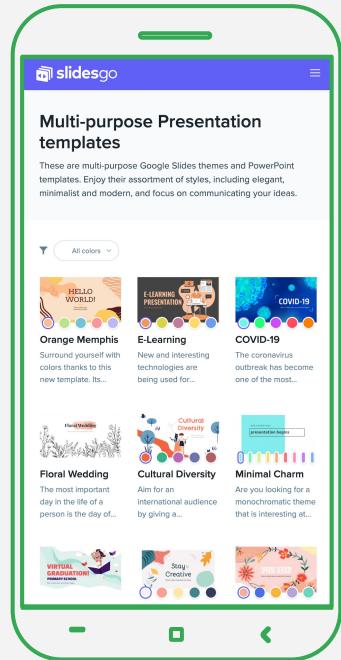
3

4

Mobile App



1



2

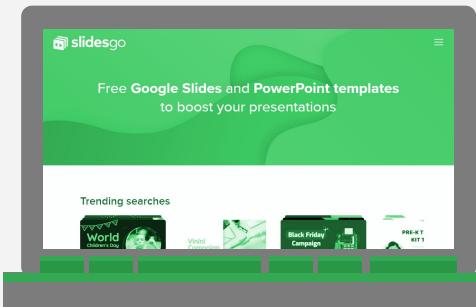
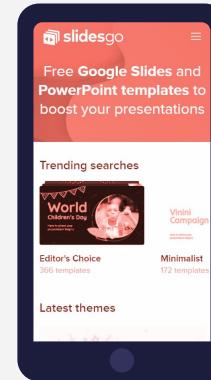
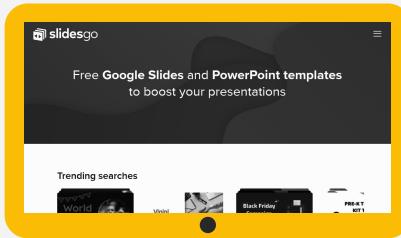
You can change the image on the screen with your own work. Just delete this one, add yours and center it properly

3

4

All Devices

You can change the images on the screens with your own work. Just delete these, add yours and center them properly



1

2

3

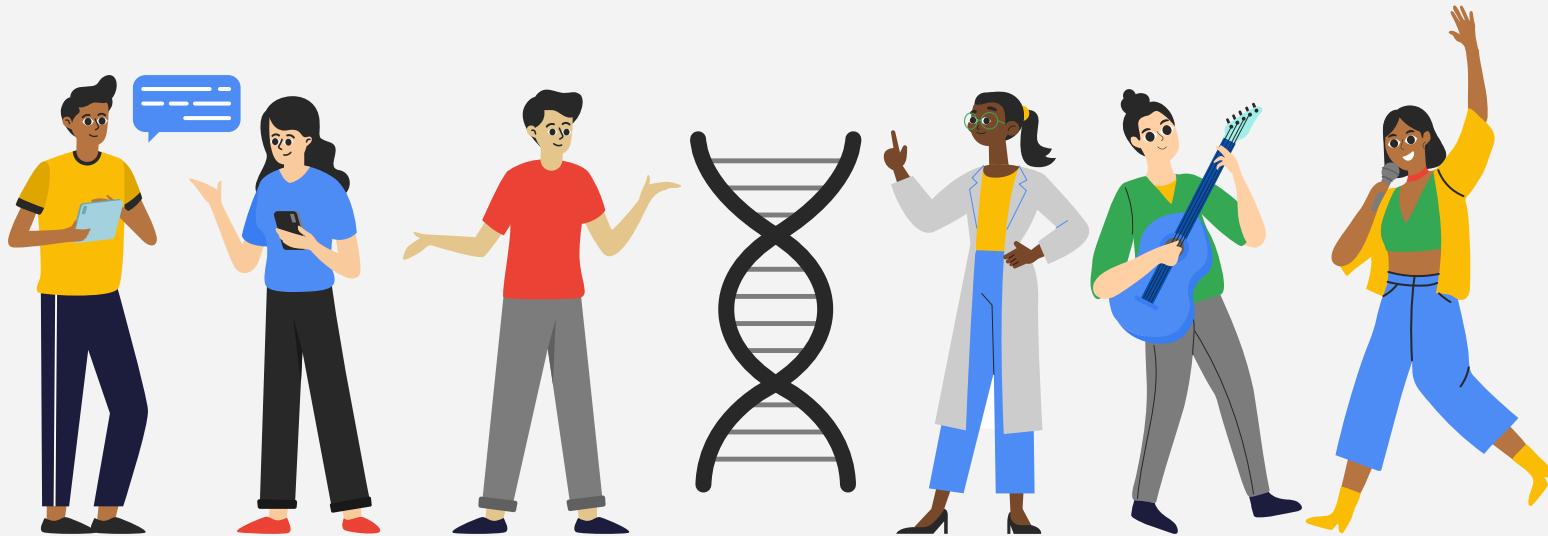
4

🔍 Alternative Resources

- Town map concept with streets route
- National oriental salad and pasties
- Top view of ramen bowls
- Colorful web design concept with flat design
- Social media marketing concept
- Pack of people enjoying their hobbies
- People enjoying their hobbies collection

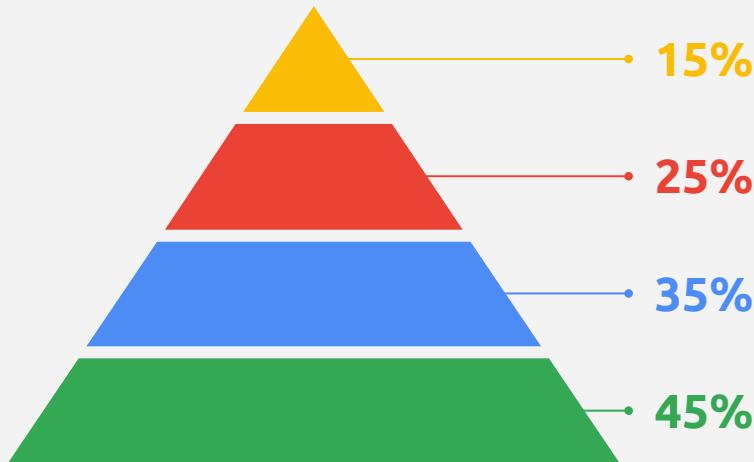
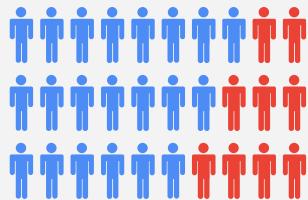
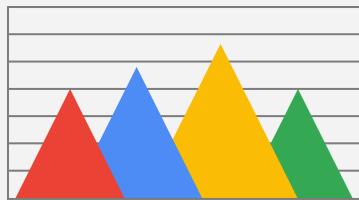
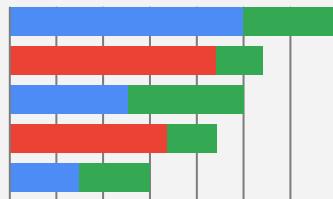
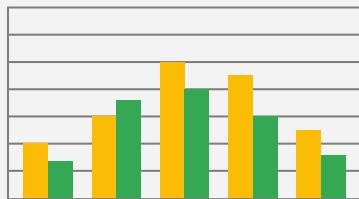
🔍 Alternative Resources

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



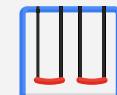
🔍 Alternative Resources

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



🔍 Back to School Icon Pack

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



🔍 Back to School Icon Pack

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



Resources

- Scientists working concept
- Online tutorials concept
- People enjoying their free time
- New message concept for landing page
- Fruit and salad bowl collection
- Flat insect pack
- Colored city map digital concept
- Brainstorming concept for landing page
- Design process concept for landing page
- House searching concept for landing page
- Concept for co-workers landing page
- Image upload landing page concept
- Beautiful tropical beach and sea
- Friends smiling and posing covered in powdered paint
- Sushi mat surrounded by ingredients
- Pilaf with carrots and saffron
- Books edges in colored covers arranged in row
- Teenage student in headphones sitting at table and typing on notebook
- Telecommuting concept
- Being active tips instagram concept
- Connecting teams concept for landing page
- House searching concept for landing page
- Website setup concept for landing page

Resources

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

Vectors

- Telecommuting concept
- Online courses illustration
- Open air music festival poster
- Musical notes with staves
- Math background
- Telecommuting concept
- Flat road location template
- South Korean map
- Scientists working illustration

- Indicator signs
- Friends video calling
- Online tutorials illustration
- Colorful infographic collection
- Back to School Icon Pack

Photos

- Scientist with microscope
- Man's hand playing piano

Instructions for use

In order to use this template, you must credit **Slidesgo** by keeping the **Thanks** slide.

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 Slidesgo School:

<https://slidesgo.com/faqs> and <https://slidesgo.com/slidesgo-school>

Instructions for use

In order to use this template, you must credit **Slidesgo** by keeping the **Thanks** slide.

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 Slidesgo School:

<https://slidesgo.com/faqs> and <https://slidesgo.com/slidesgo-school>

Fonts & colors used

This presentation has been made using the following fonts:

Ubuntu

(<https://fonts.google.com/specimen/Ubuntu>)

#1c1c3d

#7c7c7c

#ffffff

#f3f3f3

#4d8cf5

#34a853

#fbcc05

#ea4335

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.





