Optimizing Customer Experience in Food Delivery Apps

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01 | Our Research Question

- Convenience is a major contributor to customer satisfaction with food delivery apps
- Customer satisfaction is the most influential factor on the demand curve of services or products

Hypothesis: if we **artificially increase the expected waiting time** shown on DoorDash, then **customer satisfaction** will exhibit a **significant change.**

Song, Y.-E., Jeon, S.-H., & Jeon, M.-S. (2017). The effect of mobile food delivery application usage factors on customer satisfaction and intention to reuse. *Culinary Science & Hospitality Research*, *23*(1), 37–47. https://doi.org/10.20878/cshr.2017.23.1.005

02 | Experimental Protocol

Timeline

We ran the experiment over the course of a month (four weeks).

Treatment

We artificially adjusted the expected wait time on participants' DoorDash interfaces by adding 5%, 10%, and 15% increases relative to the original estimated delivery time.

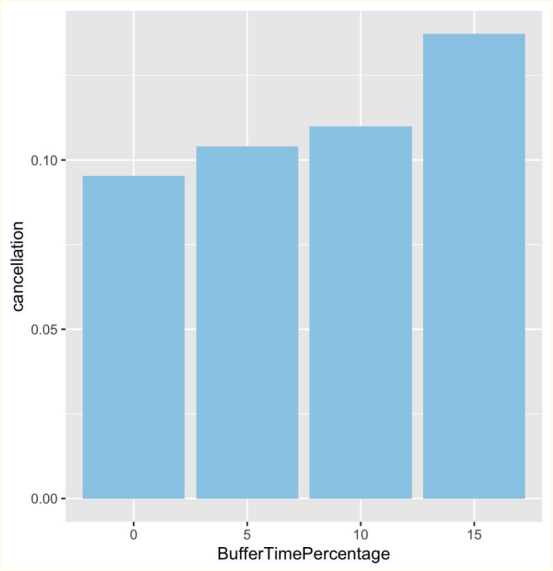
Sampling

We recruited from the existing app user pool, if users:
- lived in the LA area
- regularly used the app
- consented to a change to the app terms regarding the exp.

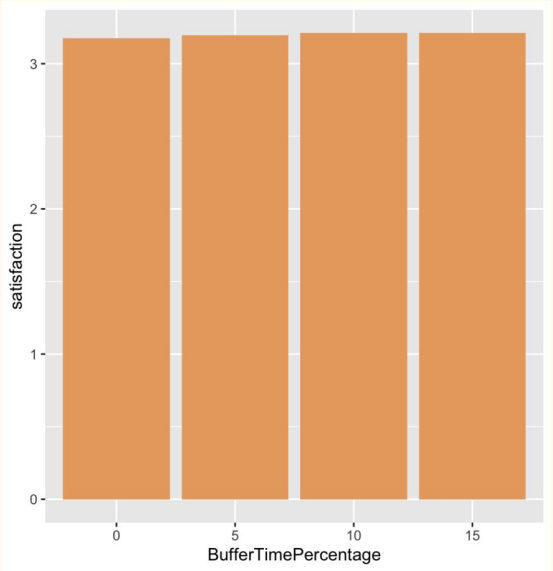
Randomization & Data

We randomized assignment to groups at the order level, and collected the relevant data from DoorDash's existing data logs.

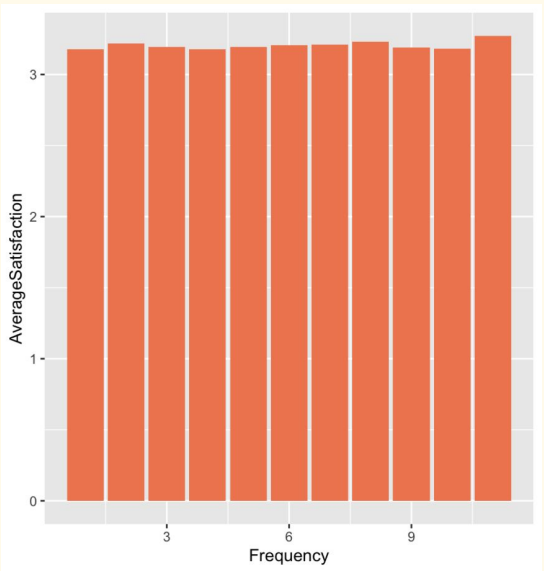
03 | Results: EDA



Very clear increase in average cancellation rate as buffer time increases



Very little visible difference in average satisfaction rating across treatment groups



Little visible difference in avg. satisfaction rating across frequency of customer orders

03 | Results: Tukey Honestly Significant Difference

- Treatment 2 (10%) & Treatment 3 (15%) had a statistically significant effect on customer satisfaction
- Satisfaction level doesn't significantly differ between treatment groups
- Wider confidence intervals → uncertainty in mean differences

03 | Results: Regression

	estimate	std.Error	t_value	p_value	sig_lvl
(Intercept)	4.0401260494	0.027597145	146.3965227	0.000000e+00	$p < 0.05$
AvgWaitTime	-0.0009370888	0.000905274	-1.0351438	3.006222e-01	$0.1 \leq p < 0.5$
BufferTimePercentage	-0.0029543029	0.002634472	-1.1214025	2.621386e-01	$0.1 \leq p < 0.5$
actualDeliveryTime	-0.0386530082	0.007729499	-5.0007133	5.790872e-07	$p < 0.05$
expectedDeliveryTime	0.0150375470	0.007167013	2.0981609	3.591135e-02	$p < 0.05$
cancellation	0.0048527375	0.014347380	0.3382316	7.351944e-01	$p \geq 0.5$

- Longer actual delivery times have a negative impact on customer satisfaction
  - $\beta = -0.0387$
- Expected deliver has a positive impact
  - $\beta = 0.0150$
- Other variables doesn't show significant association with satisfaction

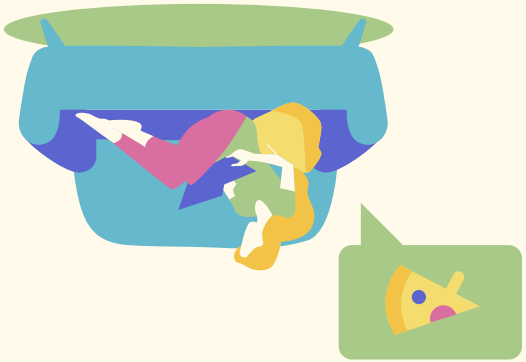
04 | Limitations & Next Steps

Limitations:

- Selection Bias
  - Geographic limitation to Los Angeles
- Sample pool
  - Samples are drawn only from frequent users of doordash
- Short Term vs Long Term Effects
  - Ignores long-term user retention impact。

Next Steps:

- Broader Geographic Sampling
  - Test in various regions
- Longitudinal Study
  - Track long-term effects on behavior, satisfaction, and loyalty.



Thank You!

Do you have any questions?

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Product Overview

Mars

Despite being red, Mars is a cold place

Neptune

Neptune is the closest planet to the Sun

Our Plans

Basic

- Feature 1
- Feature 2
- Feature 3

$10

Pro

- Feature 1
- Feature 2
- Feature 3

$15

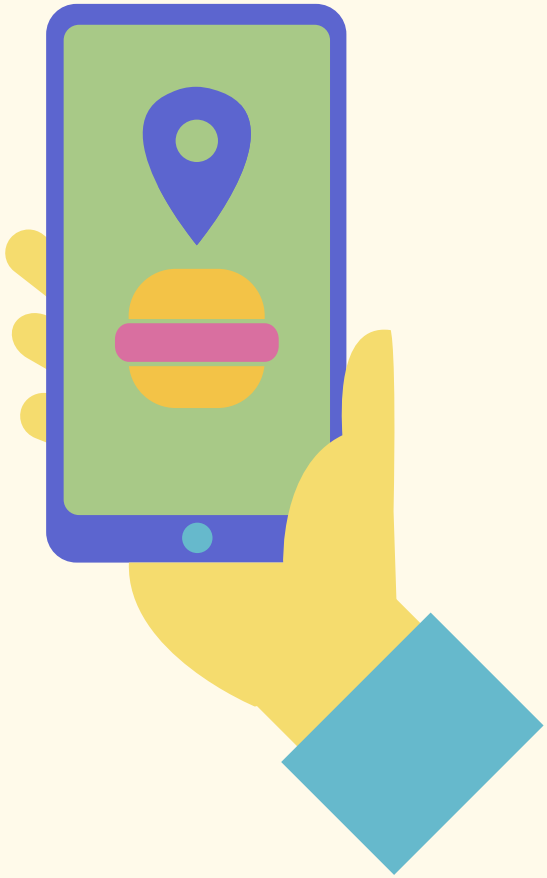
Premium

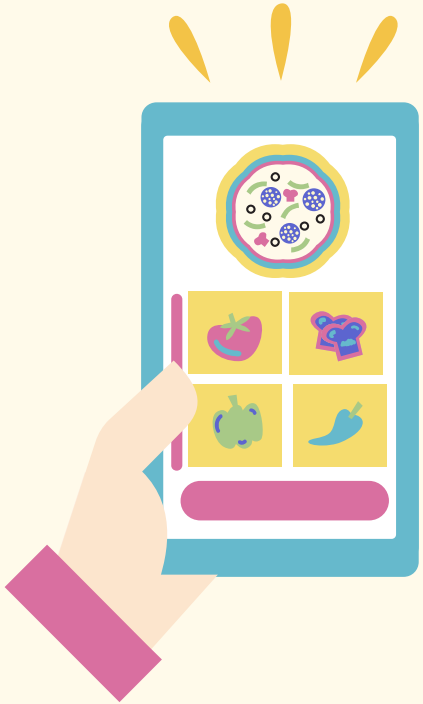
- Feature 1
- Feature 2
- Feature 3

$20

300,000

Big numbers catch your audience’s attention





147,000

Big numbers catch your audience’s attention

333,000.00

earths is the Sun’s mass

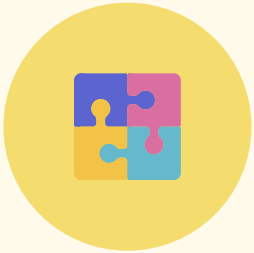
9h 55m 23s

is Jupiter’s rotation period

386,000 km

is the distance between Earth and the Moon

Case Study



Challenge

Despite being red, Mars is actually a cold place

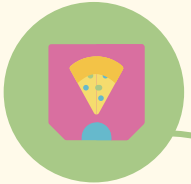
Results

Jupiter is the biggest planet in the Solar System

Solution

Saturn is composed mostly of hydrogen and helium

Case Study



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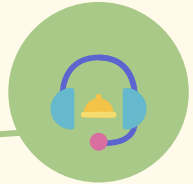

Solution

Saturn is composed mostly of hydrogen and helium

Reviews

"Mercury is the closest planet to the Sun"

"Venus is the second planet from the Sun"

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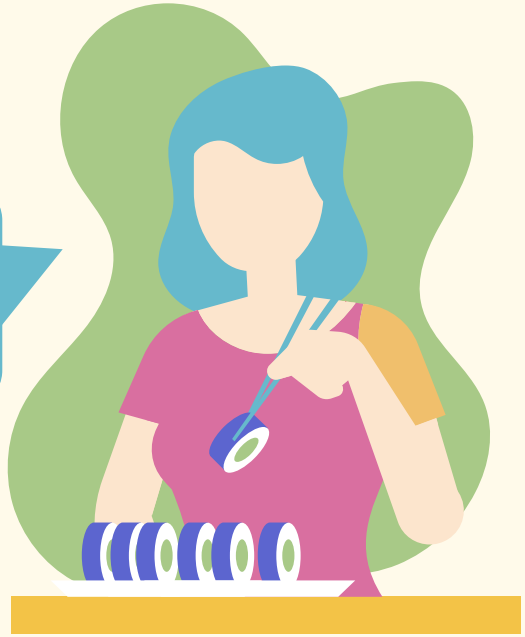
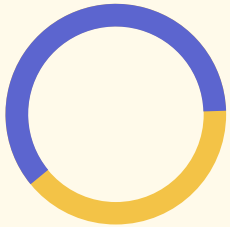
"Venus is the second planet from the Sun"



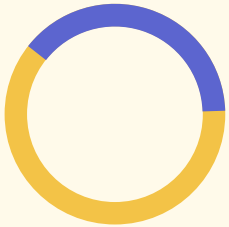
Percentages

55%



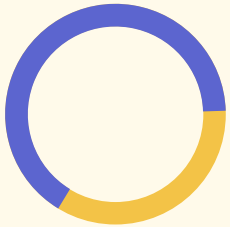
It’s the closest planet to the Sun

76%



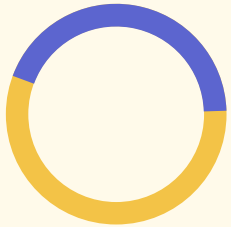
Venus has a beautiful name

85%



Despite being red, Mars is cold

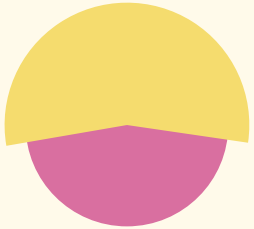
40%



Saturn is the ringed one

Percentages

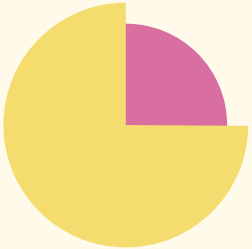
56%



Venus

Venus has a beautiful name

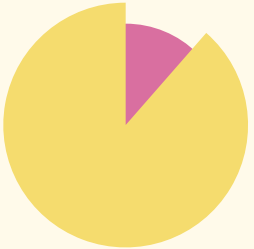
75%



Mars

Despite being red, Mars is cold

90%



Saturn

Saturn is the ringed one

Awards

Mercury

It’s the closest planet to the Sun

Venus

Venus has a beautiful name

Mars

Despite being red, Mars is cold

Jupiter

It’s the biggest planet of them all

Saturn

Saturn is the ringed one

Neptune

It’s the farthest one from the Sun

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It’s the farthest one from the Sun

Market Size

Mars

Despite being red, Mars is actually a cold place

Saturn

Saturn is a gas giant and has several rings

Jupiter

It’s the biggest planet in the Solar System

Venus

Venus is the second planet from the Sun

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

Infographics

Neptune

Neptune is the closest planet to the Sun

Mercury

Mercury is the closest planet to the Sun

Mars

Despite being red, Mars is a cold place

Venus

Venus has a beautiful name, it’s terribly hot

Infographics

Venus

Venus is the second planet from the Sun

Mercury

Mercury is the closest planet to the Sun

Jupiter

It’s the biggest planet in the Solar System

Infographics

01

Venus

Venus is the second planet from the Sun

02

Mercury

Mercury is the closest planet to the Sun

03

Jupiter

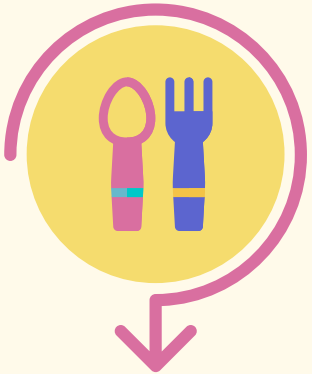
It’s the biggest planet in the Solar System

04

Neptune

Neptune is far away from Earth

Infographics



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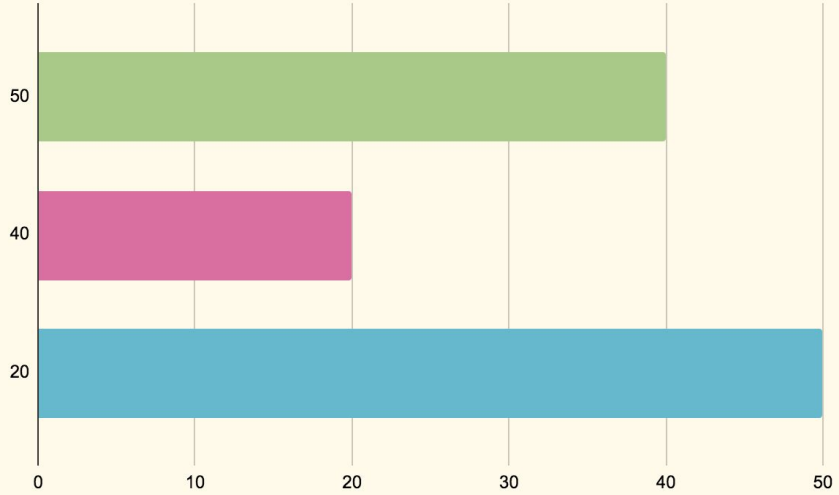
Market Size



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Mars

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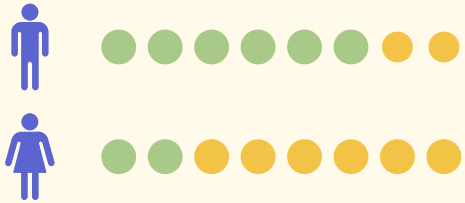
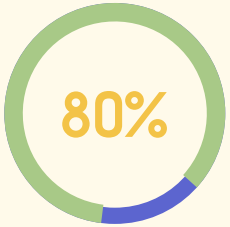
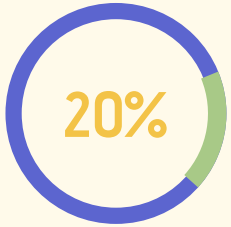
Target



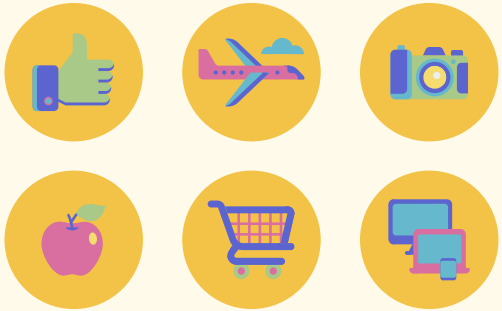
$50.00



18-30



31-50



Competitors

	Company 1	Company 2	Company 3
Factor 1	Mercury is the smallest of them all	Venus has a beautiful name	Mars is actually a cold place
Factor 2	Jupiter is the biggest of them all	Saturn is the ringed one	Neptune is the farthest planet
Factor 3	Earth is the planet where we live on	Pluto is now a dwarf planet	Ceres is in the asteroid belt

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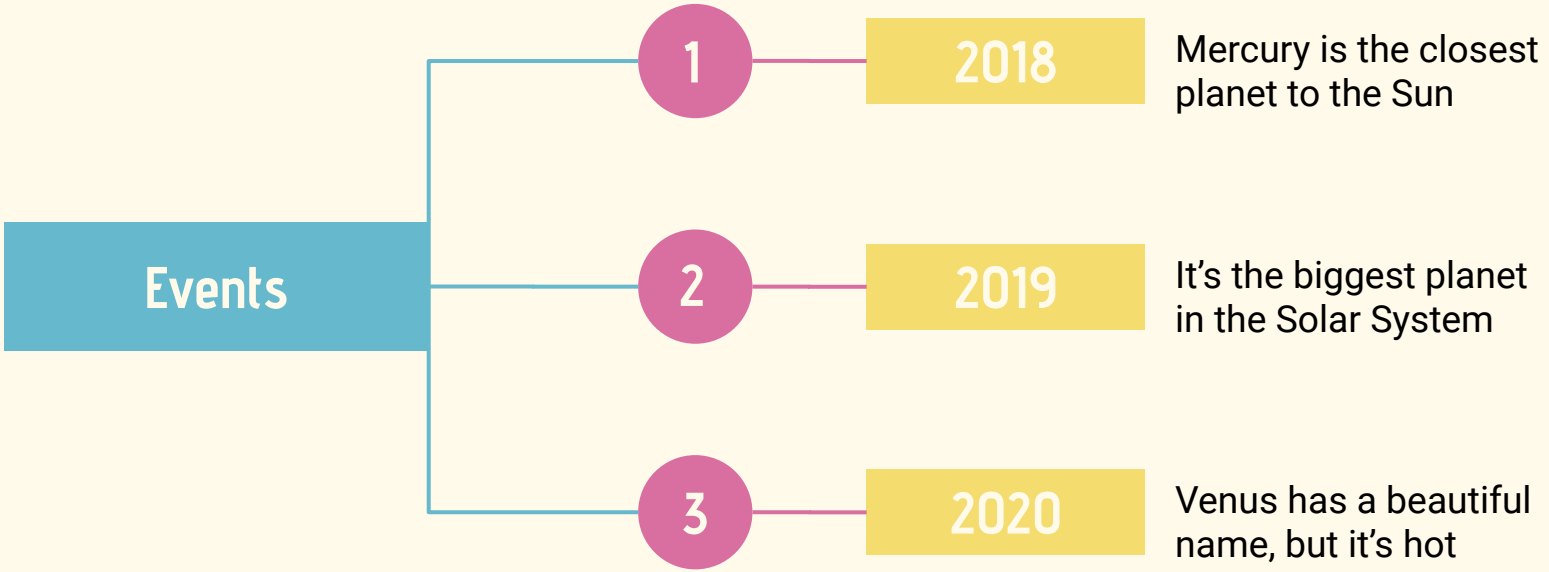
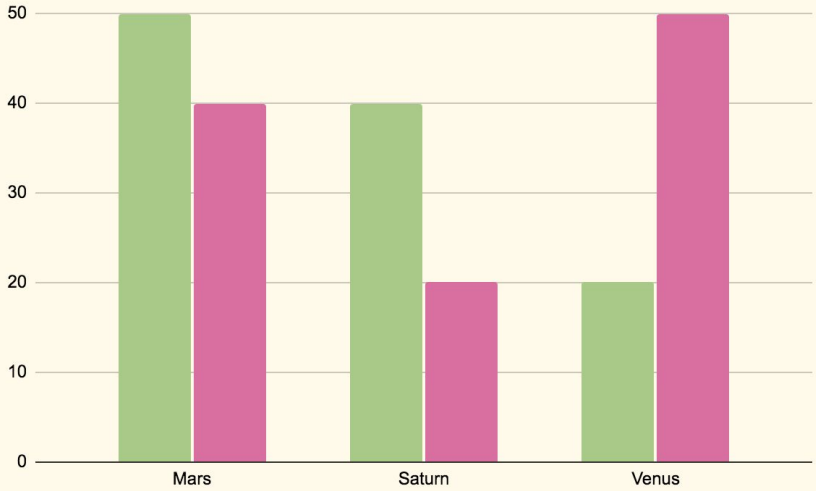
Diagram


Events
1
2018
Mercury is the closest planet to the Sun
2
2019
It’s the biggest planet in the Solar System
3
2020
Venus has a beautiful name, but it’s hot

Investment



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

Mars

58.8 %

Venus

$5M

Business Model

Mars

Mars is actually a cold place

Venus

Venus has a beautiful name

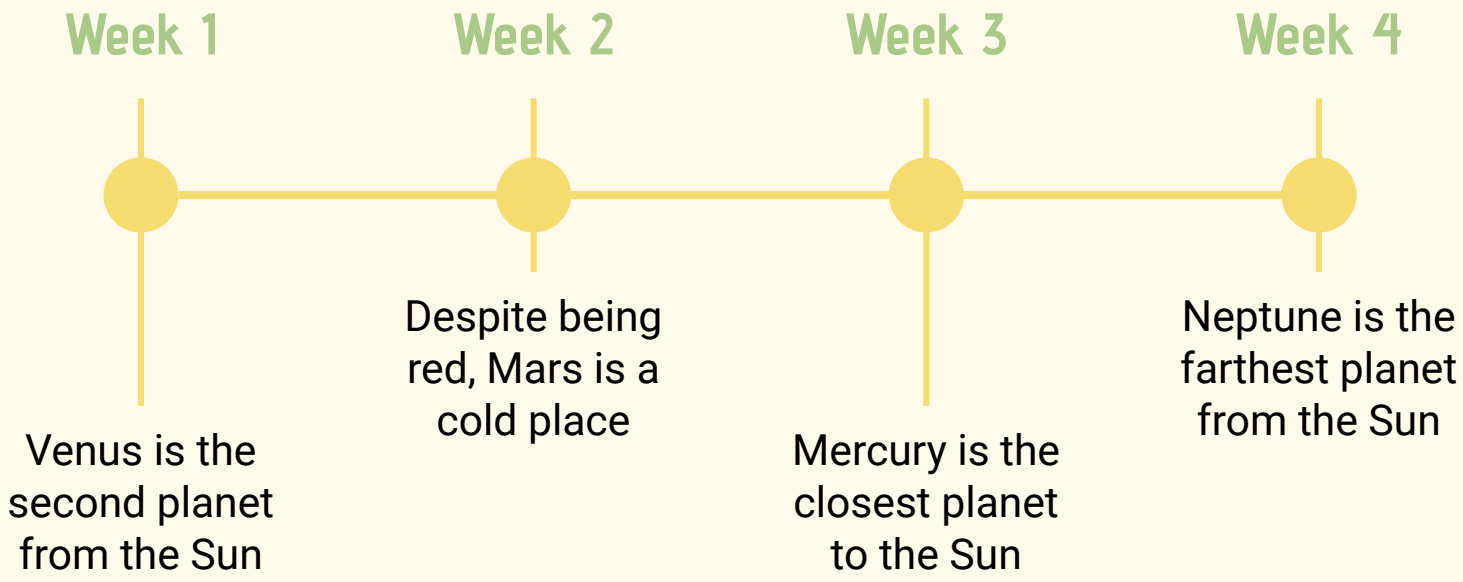
Jupiter

It’s the biggest of them all

Saturn

Saturn is the ringed one

Timing


Week 1
Week 2
Week 3
Week 4
Venus is the second planet from the Sun
Despite being red, Mars is a cold place
Mercury is the closest planet to the Sun
Neptune is the farthest planet from the Sun

Timeline

Venus is the second planet from the Sun

Despite being red, Mars is a cold place

Mercury is the closest planet to the Sun

Timeline

Week 1

Venus

Venus is the second planet from the Sun

Week 2

Mars

Despite being red, Mars is a very cold place

Week 3

Mercury

Mercury is the closest planet to the Sun

Week 4

Neptune

Neptune is the farthest planet from the Sun

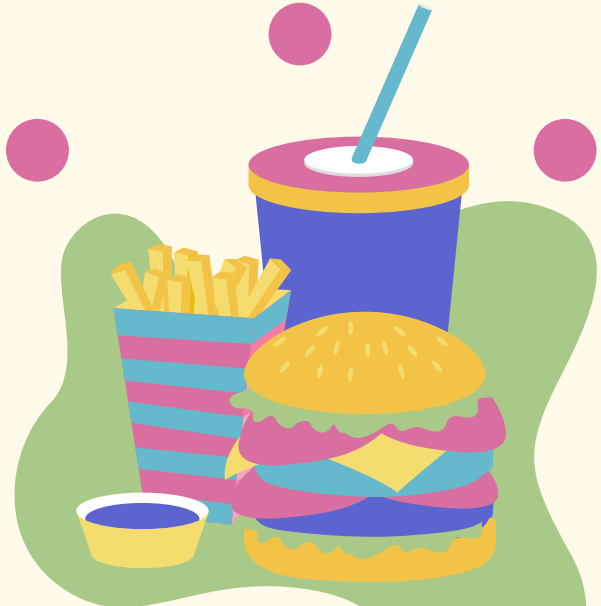
Timeline

Phase 2

Despite being red, Mars is a cold place

Phase 1

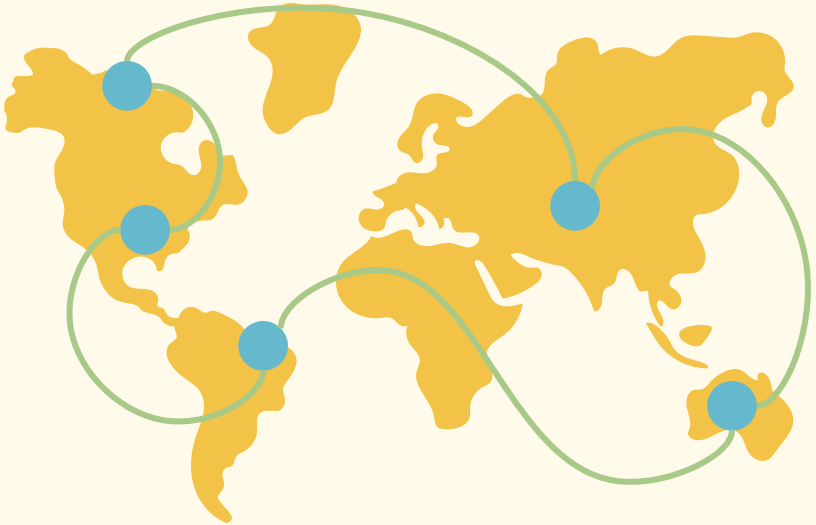
Venus has a beautiful name, but it’s hot



Phase 3

Jupiter is a gas giant and the biggest planet

Predicted Growth



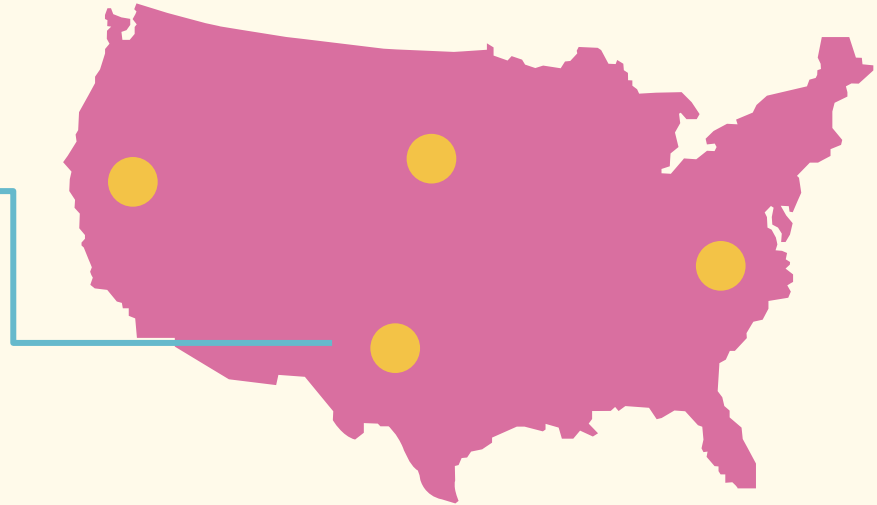
New Users

Venus has a beautiful name and is the second planet from the Sun. It’s terribly hot—even hotter than Mercury—and its atmosphere is extremely poisonous

Predicted Growth

New Users

Venus has a beautiful name and is the second planet from the Sun. It’s terribly hot



Investment

58.8 %

$5M

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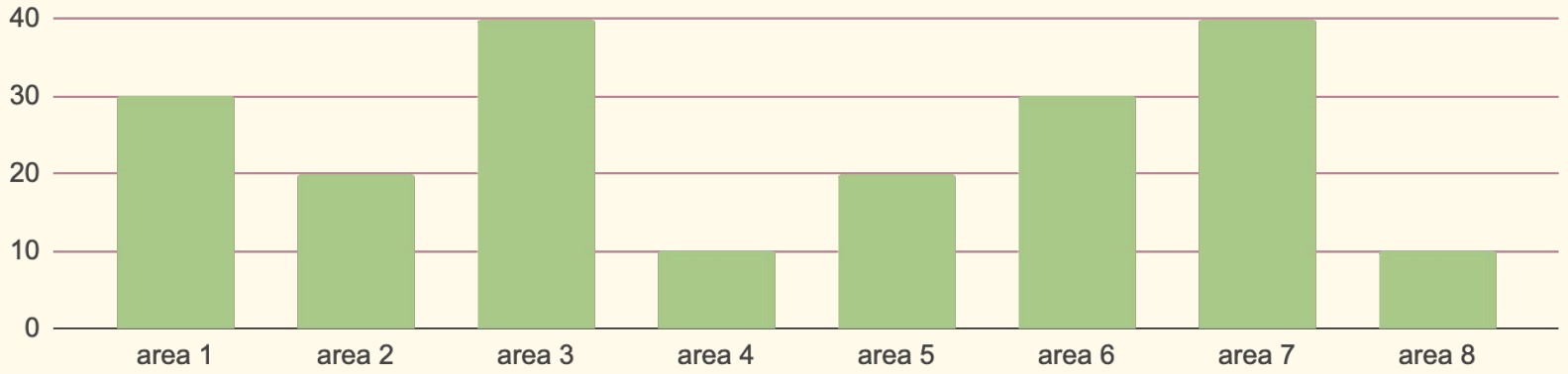

Sneak Peek

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