



## Math Project:

Projects use real-world, personally meaningful activities to challenge thinking and inspire action.

What you get from it:	When you do it:
Use the power of numbers to tell stories and influence thinking, decision-making, and behavior.	1 month



# What is *Learn*?

**Learn** is a monthly project modeled on a research-based approach to learning called Project-Based Learning (PBL). PBL offers real-world, personally meaningful activities to challenge our thinking and inspire action. We believe that when kids pursue their passions, practice the Habits of Success, and develop strong cognitive skills they will be successful and fulfilled.

Each month, **Learn** offers a new project that marries kids' desire to change the world with the best research-based practices and the most important Habits of Success.

The **Appendix** provides additional guidance about how the project relates to skills and additional learning resources.

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**Better yet, we believe kids  
want to have a positive  
impact in the world and  
that these learning  
experiences can help make  
our world a better place.**

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# How does it work?

Each month, we provide about 20–25 days of learning activities to help kids develop an **Impact Project**. Through the project, they'll strengthen their college-ready skills and deepen their knowledge across subjects.

Projects are broken up into “*challenges*” to help kids think, read, write, do experiments, and even build solutions to real problems.

- To start, there is one **essential question** for kids to explore. (Don't worry, we'll explain that term in a moment.)
- Next, we ask kids to “**find their why**”—this allows kids to make projects more personal and meaningful.
- And then kids dive into the **project** where they research, experiment, solve problems, and ultimately produce a final project they can proudly share.

You are not alone!

**Unboxed Learning Support Tools, and Coaching Moments throughout this tool provide additional support along the way.**

Make sure you check out the **Learning Support Tool**, which has extra resources for kids and parents. We all learn differently!





This month's project is...

# Think Globally, Act Locally

# Project Overview

This is the question we'll think about this month:

**How do people use the power of numbers to tell stories and influence thinking, decision-making, and behavior?**

Essential questions are questions with no one, right answer. These are questions that never get old. And the answers you find will evolve over your lifetime. Each month we'll share an essential question that ties the skills you are learning to the impact you are making in the world. This will help you reflect in meaningful ways on your academic work, but also on your strengths and capabilities as a global citizen.

[Explore  
the Essential  
Question](#)



# Quick Links



CHALLENGE

1

Identify Your  
Project Focus

CHALLENGE

2

Research  
Your Product

CHALLENGE

3

Research  
Your Market

CHALLENGE

4

Create a  
Business Model

CHALLENGE

5

Pitch  
Your Idea



# Consider the Essential Question...

You will **dream up a product or service** that can benefit your local community and beyond. Then you will create an **entrepreneur's pitch deck** to engage customers and helpers to make it happen!

As you build your pitch, you will also learn how data and statistics (a collection of facts that gives us information) can be used to identify problems, tell stories, make predictions, and influence decision-making.

## What's the goal this month?

To harness the power of numbers to influence people in your community

## What Cognitive Skills will you focus on this month?

- Interpreting Data/Info
- Making connections and interferences
- Justifying/constructing an explanation

## What Habits of Success will be reinforced this month?

Executive Function  
Self-Efficacy  
Agency  
Curiosity

# Your project culminates in a final product you create and share.

In this project you will create an entrepreneur's pitch deck. This is a slide presentation entrepreneurs use to tell customers or investors about their idea.

## You'll complete 5 challenges.

- 1 Identify a product or service that benefits others.
- 2 Understand how the product or service might be used in your customers' lives to solve problems or bring joy.
- 3 Understand how many people might use it and their current behaviors.
- 4 Understand the costs of the project.
- 5 Create and share your pitch!

## Your pitch deck will include these components:

- Problem You're Solving
- Your Product/Service/Solution
- How It Works
- Target Market
- Price of Product/Service
- Your Costs (Time + Money!)
- Plan for Selling
- Plan for What You'll Do with the Proceeds
- Summary and Founder Information

*Don't worry, we will teach you how to do this!*



# If math seems scary, don't worry! We'll help you become fearless. Really.

If you worry that math is an obstacle to making a pitch, here's a plan to overcome it:

1

**Instruction is provided.**

We'll teach you everything you need to know.

2

Many challenges also have **practice opportunities** for your level of readiness using sample data from another business idea. This is a great way to review and stretch your data muscles for math and science.

3

You'll also have a chance to **work with your own data**, which you will collect and analyze. Don't worry, we'll walk you through the steps!

**No matter what, you will be a pro at data when you are done.**



# This project is broken into 5 challenges to complete over the month.



# This calendar shows you how the steps fit into a month of learning and exploration.

<p><b>DAY 1</b></p> <p>Explore the Essential Question &amp; Project Overview</p>	<p><b>DAY 2</b></p> <p><b>Challenge 1</b> Step a: Brainstorm your business ideas</p>	<p><b>DAY 3</b></p> <p><b>Challenge 1</b> Step b: Pick your favorite idea</p>	<p><b>DAY 4</b></p> <p><b>Challenge 1</b> Step c: Role play to understand more</p>	<p><b>DAY 5</b></p> <p><b>Challenge 1</b> Step d: Make a list of potential customers</p>
<p><b>DAY 6</b></p> <p><b>Challenge 2</b> Step a: Create and send your survey</p>	<p><b>DAY 7</b></p> <p><b>Challenge 2</b> Step b: Learn about data analysis tools</p>	<p><b>DAY 8</b></p> <p><b>Challenge 2</b> Step c: Analyze your data</p>	<p><b>DAY 9</b></p> <p><b>Challenge 3</b> Step a: Understand why percentages rock</p>	<p><b>DAY 10</b></p> <p><b>Challenge 3</b> Step b: Send a follow-up survey and do your research</p>
<p><b>DAY 11</b></p> <p><b>Challenge 3</b> Step c: Analyze your data and identify key statistics</p>	<p><b>DAY 12</b></p> <p><b>Challenge 4</b> Step a: Calculate your costs</p>	<p><b>DAY 13</b></p> <p><b>Challenge 4</b> Step b: Learn about mean, median, and mode</p>	<p><b>DAY 14</b></p> <p><b>Challenge 4</b> Step c: Complete your price analysis</p>	<p><b>DAY 15</b></p> <p><b>Challenge 4</b> Step d: Name your selling points</p>
<p><b>DAY 16</b></p> <p><b>Challenge 5</b> Step a: Draft your pitch deck</p>	<p><b>DAY 17</b></p> <p><b>Challenge 5</b> Step b: Find a trusted partner to review</p>	<p><b>DAY 18</b></p> <p><b>Challenge 5</b> Step c: Pitch your idea!</p>	<p><b>DAY 19</b></p>	<p><b>DAY 20</b></p>

[Plan Your Project Milestones](#)





INSPIRATION

# Entrepreneurship in the real world!



Let's see how someone else used entrepreneurship to help solve an important problem:

## **Mikaila's Story**

*Bee Fearless* is the memoir of Mikaila Ulmer who learned honey bees were being threatened with extinction. So, as a child, she refashioned her grandmother's flax lemonade recipe and built a whole business using her love of honey to help save the bees. Her story is an example of a great entrepreneur both sharing her joy locally (now nationally) and raising awareness about a global problem.

[Watch this video](#) about Mikaila Ulmer, founder and CEO of Me & The Bees lemonade.



1

## CHALLENGE 1

# Identify Your Project Focus



# Challenge 1: Identify Your Project Focus

1

- 4 hours -

The first challenge is to **identify a product or service that will make other people's lives better**. Whether your product or service solves a problem or just brings joy to people, or both, there may be an opportunity for entrepreneurship.

In this challenge, you'll dream up a product or service to build a business around.

## KEY TERM

An **entrepreneur** is a person who takes the risk of starting a new business.

# How do these steps help you?

**Objectives:** To determine a product or service worth building a business around. To create a list of people who might be good first customers, so you can do effective research.

## a Brainstorm your business ideas

You'll think about your joys and challenges and how they might inspire a product or service.

### What will you have at the end of this step?

A list of product or service ideas.

- 30-60 minutes -

## b Pick your favorite idea

You'll use a handy tool called a *decision quadrant* to choose a product or service to focus on.

**What will you have at the end of this step?** A winning idea for your business.

- 20-40 minutes -

## c Role-play to understand more

You'll use your imagination to envision how your product or service will work.

**What will you have at the end of this step?** A clearer vision for your product or service.

- 60 minutes -

## d Make a list of potential customers

You'll think about who might benefit from your product or service and gather their contact information.

**What will you have at the end of this step?** A list of potential customers.

- 20-40 minutes -

1

a

BRAINSTORM YOUR BUSINESS IDEAS

# Businesses often come from an entrepreneur's personal joys or challenges.

Mikaila Ulmer found joy in her grandmother's flax lemonade, so she decided to share that joy.

Mikaila also knew her lemonade business could help solve a problem—saving honey bees—by calling attention to the plight of disappearing bees.

## Here's another example:

Imagine **Sam**, an 8th grader who lives in Springfield, Ohio.

We'll follow Sam through the entire project, as he learns the tools of entrepreneurship and builds his pitch deck.

Look for Sam's examples every step of the way!



LEARNING  
SUPPORT  
*tools*

**Finding  
Your  
Inspiration**

1

a

BRAINSTORM YOUR BUSINESS IDEAS

# Let's Brainstorm Your Business Ideas

List 3-5 of your everyday joys and challenges. Recreate this table or use the one provided in the Learning Support Tool to evaluate each idea.

Who has this joy or challenge?	What is it?	Why is this a joy or a challenge?	Could other people benefit from this joy or a solution to this challenge?	What product or service can you create to share this?

[Brainstorming Joys and Challenges](#)



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BRAINSTORM YOUR BUSINESS IDEAS

# Here is Sam's brainstorm.

Sam thought about what he'd like to share and brainstormed other businesses he could look to as examples.



Who has this joy or challenge?	What is it?	Why is this a joy or a challenge?	Could other people benefit from this joy or a solution to this challenge?	What product or service can you create to share this?
My whole family	Joy: Abuelita's cookies	Our family recipe is better than every other cookie, ever. That's a fact.	No one else has this recipe, only us, so we could sell them.	We could sell Abuelita's cookies, like Mikaila Ulmer sold lemonade!
Me	Challenge: My dog tracks mud in the house	I have to clean up multiple times daily.	Anyone with a four-legged pet probably has this problem, so people would probably want to solve it.	We could make a paw scrubber to keep paws clean, just like the tools for cleaning we see on TV.
Us and our neighbors	Challenge: Raccoons	Raccoons and other animals keep throwing garbage everywhere.	This is causing a huge mess, so a way to stop it would be valuable.	We could make an alarm for garbage cans so squirrels and raccoons would stay away like a house alarm.

1

b

PICK YOUR FAVORITE IDEA

# Narrowing down your ideas

Brainstorming can produce a lot of ideas, but not all of them will work. To help one idea rise to the top, we need to think critically about a couple of questions so you can choose your best idea from the bunch.

Thinking about the products or services you brainstormed, ask yourself:

## Is there a market for this?

Does the product or service have a market—potential customers—who will be willing to spend their money on it?

At first, you'll just have to **guess**. That's called an **"assumption,"** and it's a good place to start. Your data will prove or disprove assumptions.

&amp;

## Do I have a passion for it?

Being passionate is important in entrepreneurship because you will spend a lot of time with your business.

You'll want to use your passion as you pitch to customers and anyone else who can help you!

1

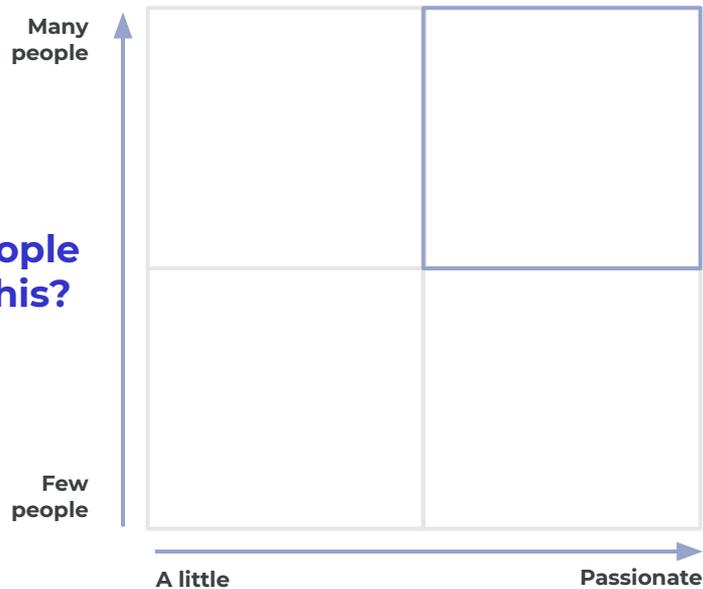
b

PICK YOUR FAVORITE IDEA

# Let's pick your favorite idea!

- **Write each idea** in one square of the box. Place it low if few people want it and high if you can assume many people want it; place it to the left if *you're* not that passionate, and to the right if you are passionate about the idea.
- **What product or service** might make a good business?

Will people want this?



How passionate am I?

The idea closest to the top right corner could be the winner because you are passionate about it and people want it!



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tools

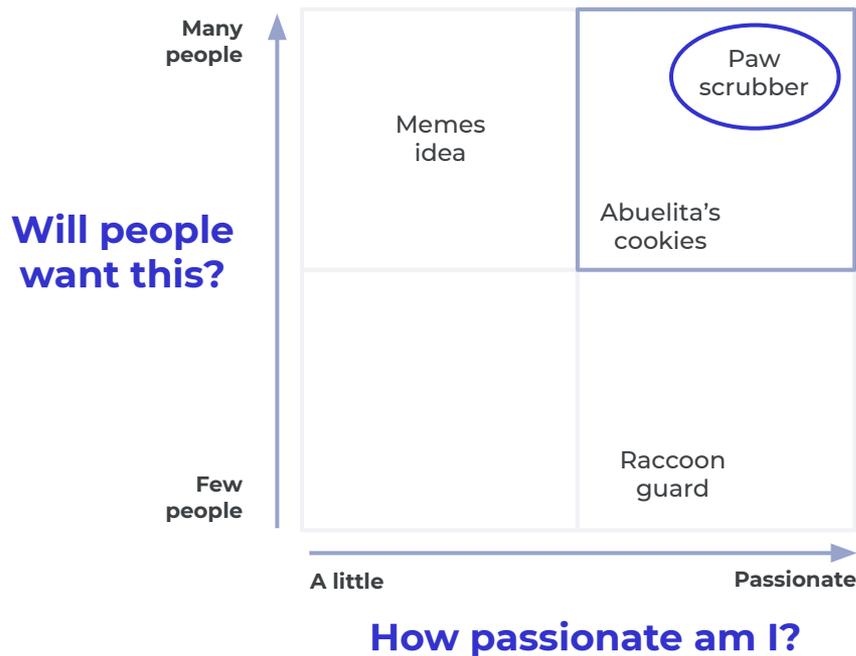
Use a  
**Decision  
Quadrant**

1

b

PICK YOUR FAVORITE IDEA

# Sam narrowed down his ideas.



## And the winner is... **Sam's Dog Product!**

Sam figures his idea will appeal to many others because so many people have dogs and cats.

And he's very passionate about it, because he loves his dog, Pumpkin, but *can't stand* cleaning up Pumpkin's mess.

1

c

ROLE PLAY TO UNDERSTAND MORE

# Let's role play to understand more.

**In the next hour, try to test your idea by imagining someone using your product or service.**

Think about (or go to!) the place where your customer will use your product or service. Imagine the motions your customer will have to go through to use your product or service.

- How does it work?
- What are the obstacles?
- How does using the product make them feel?

**What have you learned about your customer and product through role playing?**



**What sam learned from role play:**

- Sam went to his back door, **where Pumpkin enters the house.**
- He **imagined the product:** a container filled with warm soapy sponges he could use to dip Pumpkin's paws in when she comes in.
- **To make the experience real,** he found an empty plastic container close to the right size for paw washing. He put it near the back door where she came in and out. **He didn't have all the details yet, but he was confident he would find them with more role play.**
- He **discovered an obstacle.** Pumpkin's paws would still be wet after washing. So, he imagined a small, fast-drying towel he could store with the paw scrubber and hang to dry between cleanings.

Sam just has to **work out the details** of how to make a sample paw scrubber so he can try it out with customers!

[Role Play  
Your Product  
or Service](#)



1

d

MAKE A LIST OF POTENTIAL CUSTOMERS

# Let's make a list of potential customers.

Build a table like the one below to create a list of potential customers.

Who can benefit from your product or service?	Total # of people in this group	Number likely to benefit from your product or service	Make a list of these people. (These are potential customers, and you'll need to survey them.)
Family			
Friends			
Immediate neighbors			
School community			
Community or religious organization			
Local business			


  
TIPS

As you make a list of people, add their contact information so you can reach them later.

[Make a List of Potential Customers](#)


  
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1

**You just finished  
your first challenge!**

*Nicely done!*



You may be wondering,  
**“When do I  
start building  
my pitch deck?”**

### You can start now!

Challenge 5 will focus on drafting the deck, but you'll be ready to start putting pieces together after each challenge.

Start keeping notes to remember ideas for your deck, using what you've learned in this challenge:

- A possible name of your company, product, or solution
- The challenge you're solving or joy you're sharing
- Your product idea—what you know so far

If you can't do that last one yet, don't worry. We are only getting started!



**2**

## CHALLENGE 2

# Research Your Product





# Challenge 2: Research Your Product

2

- 5 hours -

As you complete this challenge, you will be **Researching Your Product**. That means you will learn more about why your customers might value your product or service to make sure your product or service works well for your customers.

## KEY TERM

**Data** is a collection of facts that gives us information.



# How do these steps help you?

**Objectives:** To better understand your customer and their needs by analyzing data effectively. To learn how data analysis helps you meet their needs.

**a**

## Create and send your survey

You'll learn why entrepreneurs use data. Then you'll learn how to create survey questions to collect data from your first potential customers by asking great questions.

**What will you have at the end of this step?** A survey

- 30-60 minutes -

**b**

## Learn about data analysis tools

While you wait for your data to come back, you'll learn about data analysis tools and practice these tools using sample data.

**What will you have at the end of this step?** Four new ways to analyze your survey data

- 20-40 minutes -

**c**

## Analyze your data

You'll use the answers you receive from surveys to understand your customer and their needs.

**What will you have at the end of this step?** Information for building your product or service offering

- 60 minutes -

# Why do entrepreneurs need data?

Data is a collection of facts—numbers, measurements, or descriptive words—that give us information.

Surveys and research will give you data on important questions:

- **Who** might use the product or service and **how many** people are in that group?
- **How** can you make the product or service **most appealing** to them?
- Can this product or service be the **basis of a business**?
- How much would it **cost to make** the product or service?
- **How much should you charge** for the product or service?



## TIPS

**Convincing others using data is an important skill in many areas of life today.**

It is especially important in entrepreneurship. You want customers to trust you. The power of numbers can help make that happen. But to use numbers, you need to collect data! That's why surveying customers is important.

# How do surveys help us gather data?

By asking careful questions!

Data is just a collection of facts! The questions you ask will be used to make a better product or service for the people you serve.

There are two main types of questions you can ask:

- 1 **NUMERICAL** — a question where the response will be numbers (25, 32, 10, etc.)
- 2 **CATEGORICAL** — a question where the response fits into a category but isn't a number (yes, no, long, short, etc.)

How do these questions differ?

NUMERICAL	CATEGORICAL
<ul style="list-style-type: none"> <li>• How many ...?</li> <li>• How many times per month do you...?</li> <li>• How often...?</li> <li>• How much...?</li> <li>• How many ... per day do you...?</li> <li>• How many minutes does it take you to...?</li> <li>• How much would you pay for...?</li> </ul>	<ul style="list-style-type: none"> <li>• Who do you...?</li> <li>• Where do you...?</li> <li>• How do you...?</li> <li>• Why do you...?</li> <li>• Which of these...?</li> <li>• Do you prefer...?</li> </ul>



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Create and  
Send Your  
Survey



# Let's create and send your survey.

You have already imagined **who** can benefit from your product or service. **Write 3–5 questions** to help you better understand **what** their wants and needs might be. Craft questions to help you answer:

- Do they have the problem you solve or would they appreciate the joyful experience you want to share?
- Do they have a favorite product or service that does the same thing?
- What do they like about that product or service?
- What do they dislike about that product or service?
- What details would help you understand what they need from your product or service? Is there a specific feature of your product or aspect of service you are curious about?

**Write a brief note, explaining your project and ask politely for your customers to share their advice and ideas through your survey.**

# Why might you use digital survey tools?

While there are many ways to conduct surveys, there are a few benefits to using digital surveys.

- A digital survey tool, such as Google Forms, can be sent via email or text.
- You receive your survey answers in the form of a Google spreadsheet, which makes it easy to organize the responses.
- Spreadsheets allow you to create all sorts of charts automatically.

## What did Sam ask in his survey to all the dog owners he knew?

For each dog in your household:

- “ What's your dog's name?
- “ About how much does the dog weigh? (numerical)
- “ Is your dog a short-haired dog or a long-haired dog? (categorical)

**We'll look at Sam's results soon!**



You might be wondering...

**“OK, I’ve sent out  
my survey questions.  
What now?”**

**You’ll have to give people a few days to respond. In the meantime, we’re going to think about displaying data!**

Different ways of displaying data help us see information more clearly. Understanding tables, dot plots, bar graphs, and histograms can help you analyze the data you’re collecting in this challenge.

Each of these ways of looking at data provides interesting insights. Next, we’ll look at some examples.

# What do entrepreneurs do with the data they collect?

Entrepreneurs analyze data in many different ways to understand their customers.

We will help you learn how to analyze data by making it visual.

- We'll introduce **4 types of data visualizations**, some of which you may already know.
- For each type of visualization, **we'll show you why it's useful**.
- We'll show you **how to create these visualizations** using sample data.
- We'll give you a chance to **practice using sample data**.



TIPS

**Learning data analysis tools might seem scary**, but remember with practice, **these are skills you can build!** In fact, that's one of the most important goals of this project—helping you grow the power of numbers!

Remember Google Sheets and other tools like [Math is Fun](#) can help you too!

# Let's learn about data analysis tools.

A table organizes data in rows and columns. It allows you to sort and analyze information effectively.

## What did Sam's table look like?

- Sam organized the answers from his survey into a table so he could see the names, weights, and fur type for each dog.
- But how might this help Sam design his product?
- Sam wants to better understand the size and type of dogs his friends and family have. He needs to look at this data another way.



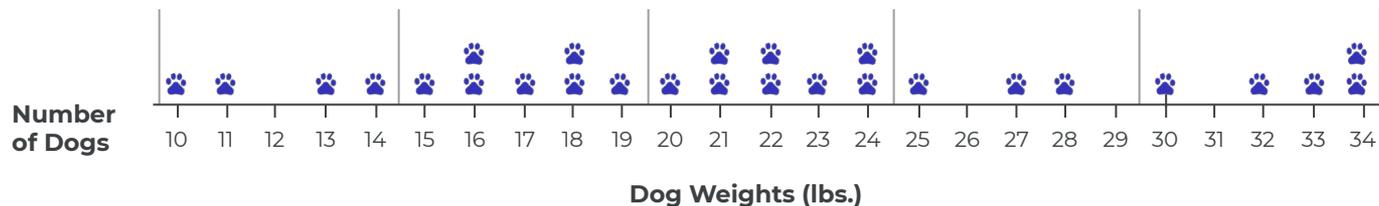
Dog Name	Weight (lbs)	Long Hair or Short Hair?
Duke	33	Long
Coco	20	Short
Pierre	24	Long
Ginger	21	Long
Lucky	28	Long
Daisy	15	Long
Buster	34	Short
Pepper	24	Short
Rocky	16	Short
Lady	23	Long
Yaya	17	Long
Spot	14	Long
Charlie	22	Short
Bella	27	Long
Ruby	11	Short
Ollie	21	Short
Archie	14	Short
Milo	18	Short
Luna	30	Long
Oscar	22	Long
Scout	13	Long
Moose	32	Long
Koda	24	Long
Pinguino	10	Short
Nala	19	Long
Jax	25	Short
Bandit	16	Long
Copper	22	Long
Oreo	18	Long
Simba	34	Long

# Tool 1: Dot Plots

A **dot plot** shows items represented as dots above a number line, allowing you to **easily see where there are more or fewer items** along the line.

Sam made a dot plot to look at the data about the size of dogs. Each dot represents one dog, and the numbers along the line show all of the different weights of dogs in the data.

- Is there anything that stands out to you seeing the data represented this way?
- In what range are there the most dogs?
- Can that help Sam decide something about his paw scrubber?



## WHAT IS A DOT PLOT USED FOR?

A dot plot helps us see groupings or gaps in the data along the number line.

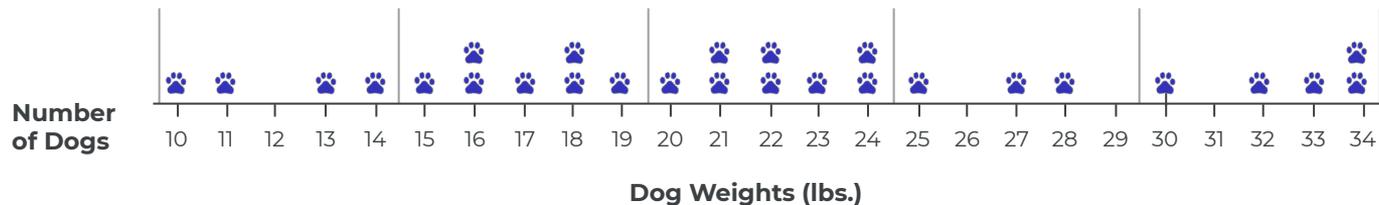


## Tool 2: Frequency Tables

A **frequency table** (right) shows us how often an item appears within a range of numbers.

Using Sam's data, the frequency table tells us how many dogs fit into each weight grouping. Notice that this time, the weights are in **bins**, or **ranges**, rather than exact numbers.

This frequency table can help Sam figure out which **bin** of weight is the **most common**, so he can start serving customers with dogs that size.




Weights (lbs)	Frequency
10 to less than 15	4
15 to less than 20	7
20 to less than 25	10
25 to less than 30	3
30 to less than 35	5

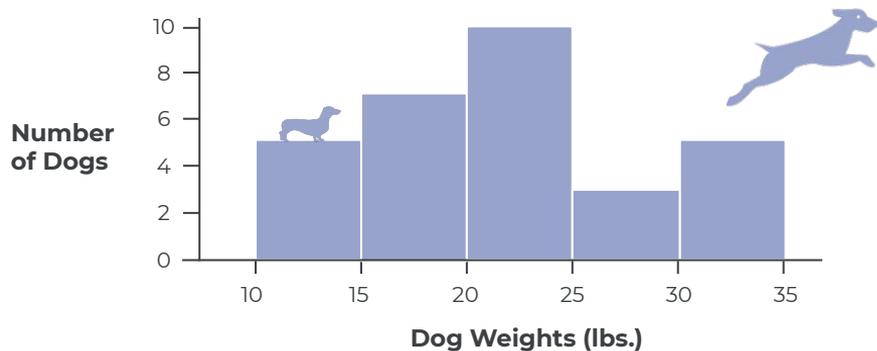
Notice that this dot plot is broken into the same **bins** as the frequency table

## Tool 3: Histograms

The **histogram** gives us another way to easily see how values are spread out. A histogram allows us to see a frequency table represented with bars, so we can see how many items are in a range.

Sam's histogram here shows us how many dogs are in each bin of weight.

It seems that dogs in the range of 20–25 pounds are most common in this group. That can help Sam make design decisions about his first product.



TIPS

A histogram is different than a bar graph. A histogram shows us how many are in a range or bin. A bar chart shows how many are in a category.

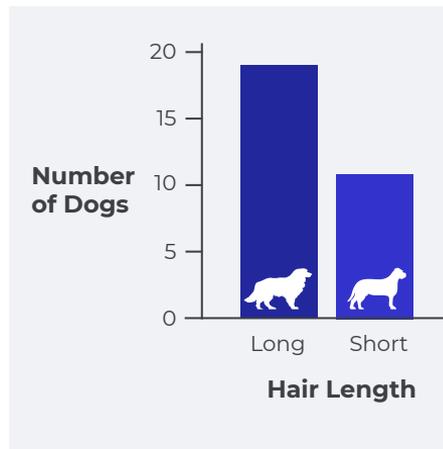


# Tool 4: Bar Graph

A **bar graph** is used to **compare** quantities across **different categories**. Seeing data represented in a bar graph makes drawing new conclusions easier than it would be just looking at the table.

For example, **Sam had a theory** that long-haired dogs are messier pets. He'd collected that data, so he created a bar graph to compare the dogs by hair type.

The bar graph shows not only are **there are more dogs with long hair**; we can see that there are **significantly more**.




Dog Name	Weight (lbs)	Long Hair or Short Hair?
Duke	33	Long
Coco	20	Short
Pierre	24	Long
Ginger	21	Long
Lucky	28	Long
Daisy	15	Long
Buster	34	Short
Pepper	24	Short
Rocky	16	Short
Lady	23	Long
Yaya	17	Long
Spot	14	Long
Charlie	22	Short
Bella	27	Long
Ruby	11	Short
Ollie	21	Short
Archie	14	Short
Milo	18	Short
Luna	30	Long
Oscar	22	Long
Scout	13	Long
Moose	32	Long
Koda	24	Long
Pinguino	10	Short
Nala	19	Long
Jax	25	Short
Bandit	16	Long
Copper	22	Long
Oreo	18	Long
Simba	34	Long

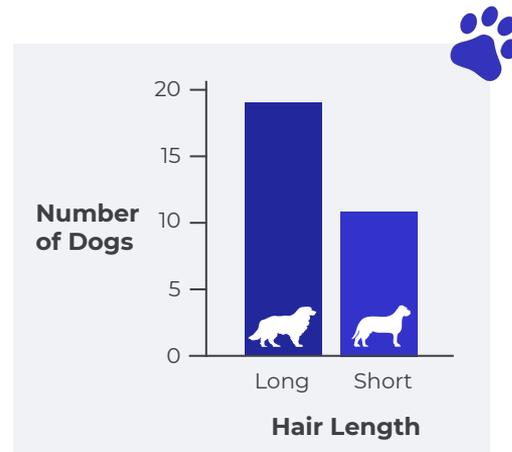
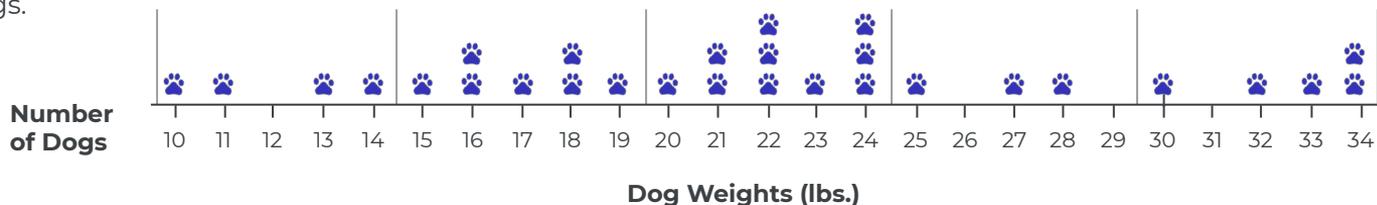
# What happens when we look at displays of data together?

Looking at different **types** of data and looking at data in different **ways** allows us to draw more complex conclusions and make better decisions.

Sam's idea is to make a product that gets muddy paws clean. Looking at this data, he wants to know two things:

- What **kind of fur** should he make the product for?
- What **size dog** should he make the product for?

Sam learned the largest group of potential customers own medium-sized, long-haired dogs.



Phew!

# Visualizations are FUN!

*Let's practice now.*





## Why practice problems?

Using practice problems will help you **build your data superpowers**, so you understand how to create and use data visualizations first hand.

Practice **using sample data** will help you focus on learning the skills related to the data tool versus analyzing your own data.

### With each practice problem...

...you will see how Sam uses these data tools to understand something about his business.

Sam's examples will help you understand the kinds of questions you can answer with each type of visualization.

Practice  
Visualizing Data

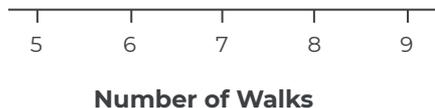


# Practice 1: Dot Plots

The frequency table shows the number of walks this set of dogs took in the last week.

Use the data provided to create a dot plot showing the number of walks these dogs went on.

Number of Walks	Number of Dogs
5	1
6	2
7	3
8	1
9	1



## What does it show?

Now Sam can understand how often his paw scrubber might be used by each pet owner each day.

The **dot plot** can help you, as an entrepreneur, understand data **about your customer's most common experiences.**



TIPS

See [Line and Dot Plots — \(Khan Academy Video\)](#) to learn more!

# Practice 2: Frequency Tables

Complete the frequency table using the data provided to show the amount of time most dog owners spend cleaning.

Here are the lengths of time, in minutes, that dog owners in Sam's neighborhood spend cleaning up after walking their dogs:

12 13 15 16 18 19 24 25 26  
26 26 29 32 34 35 38 40  
41 41 42 44 47 48 51 56

Complete the frequency table to show the amount of time most dog owners spend cleaning.

Length	Frequency
0 minutes to less than 10 minutes	
10 minutes to less than 20 minutes	
20 minutes to less than 30 minutes	
30 minutes to less than 40 minutes	
40 minutes to less than 50 minutes	
50 minutes to less than 60 minutes	

## What does it show?

Now Sam can understand **how much time pet owners spend cleaning** up after each walk.

The **frequency table** can help you, as an entrepreneur, understand data about **how big a customer's problem might be** or **how often they enjoy a similar** product or service.

# Practice 3: Bar Graph

Make a bar graph for each dog age group, with a bar each for morning and evening.

Sam wants to consider when dogs are taking most of their walks, so he found this data table that shows the walking time preferences for each age of dogs.

Dog Age	Morning	Evening	Total
<b>Puppies</b> (2 years or younger)	20	15	35
<b>Middle-aged dogs</b> (2 to 7 years)	17	23	40
<b>Old dogs</b> (over 7 years old)	9	16	25
<b>Total</b>	<b>46</b>	<b>54</b>	<b>100</b>

## What does it show?

Now Sam can compare the **walking preferences for dogs of different ages**, which helps him understand his customer's needs even better.

The **bar graph** can help you, as an entrepreneur, compare quantities about **any aspect of your customer's experience**.



## Now let's look at your data!

But what are we looking for? By asking a few questions and using these data displays as tools for critical thinking, you can be more strategic.

Data can **inform decisions about your product or service** and the **strategies for selling your customer** on your idea.

Exploring your data in different ways **may tell you things that aren't immediately obvious** in a table full of survey data.

Sam has concrete facts about his customer and their needs.

- **Most** of his friends and family have long-haired, medium-sized dogs.
- Most of his friends and family take their dogs for at least one walk **daily**.
- People spend a lot of time cleaning up. One in four people spends between 10 and 20 minutes a day, while **over half of them spend 30–60 minutes**. Every! Day!
- Walks and clean-up **take even more time when dogs are younger**.



You may be wondering,  
**“What if I don’t  
have data yet?”**

That’s OK. You can come back to this step when you do!

It’s possible that you sent out your survey so recently the responses aren’t back yet. That’s fine. Don’t be afraid to follow up with people every other day and remind them that it will only take them less than a minute to help out a kid entrepreneur.

Who could say no to that?

# Let's analyze your data

What insights does it offer?

Remember the tools you know how to use now:

- Use your **table** to create a **dot plot** of your numeric data to see what experience is most common.
- Break your dot plot into **bins**, and create a **histogram** to compare quantities.
- Create a **bar graph** to compare categories.

After reflecting on this data, consider how you will improve or refine your product or service.



TIPS

**Use free data analysis tools to increase your number powers.**

Chances are, you will need these skills for life, so take a few minutes and check out free tools like [Google Sheets](#), [Google Slides](#) and [Math is Fun!](#)

**Visualize Your Own Data**



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You may be wondering,  
**“How will all  
this impact  
my pitch?”**

Data will strengthen your pitch!

**Again, Challenge 5 will focus on drafting** the deck, but if you've already gotten started, you can revisit what you added to the template to make it stronger.

You have data now, can you **add some facts** about the problem you're solving or the joy you're sharing to your notes for developing your pitch?

Can you **illustrate these facts in a chart**?



3

## CHALLENGE 3

# Research Your Market



# Challenge 3: Research Your Market

3

- 5 hours -

As you complete this challenge, you will be **Researching Your Target Market**. That means you will learn more about the many possible customers who might benefit most from your great product or service. You will also learn how much money they spend on products or services like yours today.

## KEY TERM

**Market** refers to an actual place, such as the U.S. market, or a group of people who buy your product.



# How do these steps help you?

**Objectives:** To understand the potential of the opportunity for your business—how big it can really get.



## Understand why percentages rock

You'll learn why and how entrepreneurs use percentages to make assumptions about their market size.

**What will you have at the end of this step?** An idea of the size of your market and its needs.

- 30-60 minutes -



## Send a follow-up survey and do your research

You'll ask more specific questions and use available data about your product or service.

**What will you have at the end of this step?** Survey data and research about your market.

- 20-40 minutes -



## Analyze your data and identify key statistics

You'll use your data and research to visualize your numbers in different ways.

**What will you have at the end of this step?** A clear idea of your market size and great data visualizations for your pitch!

- 60 minutes -

# Why do entrepreneurs research their markets?

It is important to learn exactly **who might benefit** from your product or service and why, so you can start to **estimate the size of the market**—that is, the number of people who might use your product or service—and the total size of the opportunity.

In the first challenge, you made a list of specific people who were likely to enjoy your product or service—you sent them the survey! **We're going to call this group of people your sample.**

**What you learned from your sample** can help you **make predictions** about your market, assuming that the overall market—your whole school, your whole town, a whole country—would **respond in the same way** your family or friends did.



## TIPS

Sometimes grocery stores offer **samples**—small bites to give an idea of what something tastes like. In the same way, **a sample of your market** is a small group that suggests how a larger group would respond.

## Why do percentages rock for this kind of research?

**Fractions** and **percentages** can be helpful, because we can't include the whole world in our surveys. We have to **make guesses** about **how a large group will behave** based on **how a smaller fraction of people behave**.

### How do percentages help Sam think about markets?

Eight of his 10 neighbors have dogs or cats. As a fraction, that is  $\frac{8}{10}$ .

To see a fraction as a percentage, we make the denominator 100. In this case, we multiply by 10. When we say percent, we mean "out of 100."

$$8 \times 10 = 80$$

$$10 \times 10 = 100$$

[Dive into Percentages](#)



# Practice 1: Fraction to Percent

The **fractions** in this table show the number of pet owners in a group that own only dogs, only cats, and both dogs and cats.

Use this table to figure out what percentage of people belong in each group.

- First, multiply the original fractions to create a new fraction with a denominator of 100.
- Using the fraction over 100, write the percent for each row.

Types of Pets	Original Fraction	Fraction over 100	Percent
Only Dogs	$3/5$		
Only Cats	$1/4$		
Dogs and Cats	$3/20$		

## What does it show?

Sam realized that, in addition to dog owners, **his paw scrubber could also be helpful for cat owners!**

The percentages help him think about the potential of the feline additions to his market.

## Practice 2: Another Percentage

There were 20 people who responded to Sam's survey question asking what they spent the most money on.

Fill out the rest of this table to show the fraction of respondents and the percent of respondents in each row.

Remember, **20 dog owners responded**.

Biggest Expense for Dog Owners	Respondents	Fractions	Percent
Grooming	6		
Toys	1		
Food	10		
Furniture	3		

### What does it show?

The data show that the **biggest segment** of the group **spends the most money on pet food**.

Because Sam's product is in the grooming category, what percentage of his target market would he predict will spend the most money on grooming?

What do you think he can learn from that statistic?

## Practice 3: Percentage to Dollar Amount

Sam found most households with pets spend around **\$500 per year on their pets**. The table shows the percentage of that \$500 they spend on each category.

Use the percentages to figure out how many dollars per year Americans typically spend on each category.

- First, turn the percentage into fractions over 100.
- Use the fraction to find the dollars spent in each row.

Category	Percentage	Fraction Over 100	Fraction Over 500	Dollars Spent Per Year
Pet Food	45.7%			
Pet Supplies	40.6%			
Pet Services	9%			
Live Animals	4.7%			

### What does it show?

Sam's product is in the pet supplies category. His calculation shows him how much money each of his customers might spend on that category each year.

Supplies for caring for pets is almost as large as the food category.

That's a lot of dollars! It seems reasonable that some money could go to a daily problem like dirty paws.



You might be wondering...

**“How does all  
this relate to  
my business?”**

**Remember, you're practicing these skills so you can measure your market.**

Before you or anyone else invests time and money in your business, you need to know if there is really a market for your idea. Making estimates based on percentages will help you prove it.

**Say you learned** people spend \$100 on the type of product or service you offer. Out of that \$100 they spend 40 percent—or \$40—on the exact kind of offering you want to sell. That data shows it's close to half of what they spend overall.

Will they be willing to spend money on your product? Seems like you have data to guess: **YES, people will buy your product!**

# Let's send a follow-up survey!

Think about how you can determine what customers like yours spend money on today, and turn those ideas into 3 to 5 questions, numerical and categorical.

- How much do they spend on similar products?
- How important are products like yours to them?
- What would they be willing to pay for this?

Send out your survey and ask people to respond within a couple of days.

**For example, Sam has started with his neighborhood to answer some questions:**

- What kinds of muddy pets do you have?
- How much money are you spending already on pet supplies?
- What kinds of products are you spending money on already for your pets?
- Might you be willing to spend money on my product? If so, how much?



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**Market  
Research  
Questions**

**3** **b** SEND A FOLLOW-UP SURVEY AND DO YOUR RESEARCH

# While you are waiting for responses, you can also do good, old-fashioned research!

## Think like an entrepreneur:

What information will help you learn about the needs and desires of people in your market? If you could find out how many people were like your neighbors, you could guess how big your business could be!

## For example:

- How many people in my school, city, or country have muddy cats and dogs like the people in my original sample?
- How much money do Americans spend on pets?
- What kinds of pet things do they spend money on?



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tools

[Search the  
Internet for  
Reliable Data](#)

# Take a look at your raw numbers

Based on your first look at the survey data and your research, what jumps out at you? **Think like an entrepreneur:** Can you answer any of these questions?

- **How many people** would be interested in buying your product or service locally? How many similar people are there in your state? Nationwide?
- **How much money are people already spending** on similar products or services?
- How much would your ideal **customers be willing to pay** for this product or service?

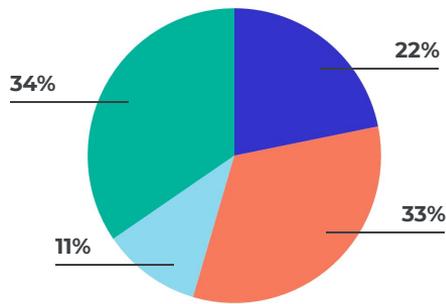
Visualizing this data in **different ways** will help you gain new insights.

[Make Guesses  
Using Data  
and Research](#)

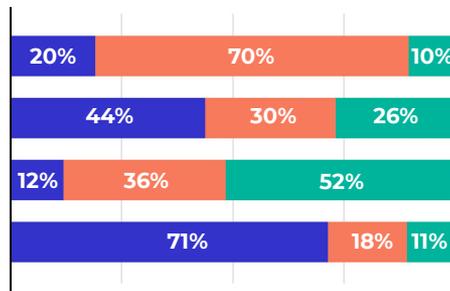


# Three easy ways to display percentages

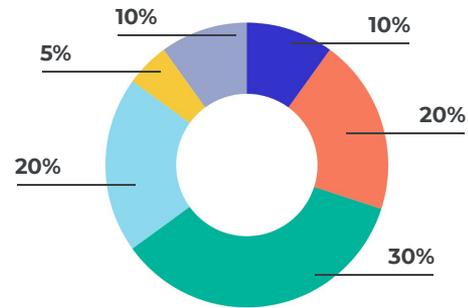
**Pie charts, stacked bar charts, and donut charts** allow you to see and easily show percentages as pieces of a whole — that is, out of 100% — to make easy comparisons.



A **pie chart** shows you different percentages as slices of a pie.



A **stacked bar chart** shows the different percentages as sections of a line.



A **donut chart** is like a pie chart, but with a hole in the middle.

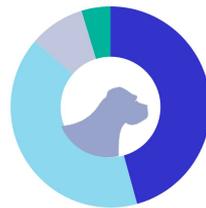
# Let's dig into your data!

Analyze your data in different ways to see what it tells you.

Remember all the tools in your kit:

- Fractions & Percents
- Pie Charts
- Stacked Bar Charts
- Donut Charts
- Dot plots
- Frequency Tables
- Histograms
- Bar Graphs

Don't forget to use the recommended digital data tools. What are you learning as you look at all of these different slices of data?



## For example:

Sam was also wondering:  
**how much do people spend when buying things for their pets?**

He gathered some data about the pet industry in the U.S. and put the numbers into a **donut chart**. The chart showed just over **40 percent** of pet owners' purchases fit into the pet supplies category. It's less than they spend on pet food, but more than 4 times what they spend on services like grooming.

Because his product also fits into the category of **pet supplies**, he's excited!



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[Visualize Your  
Own Data](#)



You may be wondering...

# “What do I do with my market research statistics?”

## Statistics will be useful throughout your pitch!

Statistics can be powerful. Not only do they give you a set of tools to think critically, but they can also help you build confidence around your idea when you include them in your pitch.

Whether it is a small, local market or a large, national market, you have numbers that help explain the exciting opportunity ahead.

Later, you might also use statistics to help your customer better understand the problems your product solves and the benefits your solution provides.

# Celebration of Learning Reminder

The Celebration of Learning is a great opportunity to pitch! Here are a few preparation reminders for your upcoming Celebration:

- ✦ If you haven't done so already, check out this month's [Celebrate](#) tool and finalize the date, time, and virtual location.
- ✦ Invite friends and family, especially those who have contributed to your surveys or might be interested in your product or service! Be sure to include information about how to join your virtual presentation.





4

## CHALLENGE 4

# Create a Business Model



# Challenge 4: Create a Business Model

4

- 5 hours -

Now that you know more about your product and your customer, you need to think about how your business will work. A key part of that is understanding **how much it will cost** you to deliver this beneficial product or service and **what price your customers will see as fair**.

## KEY TERM

**Business model** refers to your plan for creating your product or service (what it costs) and selling it (your pricing).



# How do these steps help you?

**Objectives:** To figure out how much your product costs and how much you can charge, so customers believe they paid a fair price for the value you offer.

## a Calculate your costs

Simply put, you have to figure out how much every item, including your time, will cost.

### What will you have at the end of this step?

A list of your costs.

- 60 minutes -

## b Learn about mean, median, and mode

Learn about and use mean, median, and mode to understand pricing.

**What will you have at the end of this step?** Mean, median, and mode skills.

- 20-40 minutes -

## c Complete your price analysis

You will consider prices in the market and your costs.

**What will you have at the end of this step?** Pricing data points to consider.

- 30 minutes -

## d Name your selling points

Determine the price, and decide how you will advertise to your customers.

**What will you have at the end of this step?** A price and key selling points.

- 30-60 minutes -



# What goes into a business model?

A business model is a detailed description of how your business will deliver its product or service and make money doing it. For your pitch deck, we're going to focus on two things: costs and pricing.

**There are a few ways entrepreneurs think about pricing:**

**How much does it cost you to build and sell your product?**

**What do similar products or other solutions to the same problem cost?**

**What do people see as a fair price in exchange for the value they are receiving?**

A few data analysis tools can help you understand this information better.

# Looking at Costs

Your costs include the money you'll spend to create, build, and deliver your product or service. **Costs** can include a lot of different things:

- **Materials** or **supplies**
- The ways you let people know about and value your offering (this is called **marketing**)
- **Packaging**
- **Delivery**
- Your **time**

## Let's look at Sam's costs:

Sam started with a large paw scrubber for customers with medium sized, long-haired dog(s).

For one paw scrubber, Sam needed a container, a sponge, two fast-drying cloths for multiple walks per day, and a labeled storage bag. He wanted everything to be reusable and dishwasher safe, so people can reduce waste and easily clean up on really muddy days! Finally, he needed some cool labels for the logo he designed.

# Let's calculate your costs

Calculate your costs to build your product or deliver your service.

How do you do that?

- **Research your costs**—what you will have to spend to deliver the product or service.
- Consider the cost of delivering to a single customer. While you will sell more than one, you need to know the **exact cost of one** first.
- Be sure to **consider all the great data** you collected and analyzed.

**For example:** How much will it cost Sam to make his product?



Item	Cost per paw scrubber
Deli Containers	\$0.70
Silicone Sponges	\$2.48
Labels	\$0.05
Storage Bags	\$5.19
Fast-drying Cloths (2 per bag)	\$2.55
<b>Total Cost of Materials</b>	<b>\$10.97</b>
<b>+\$10.00 for Sam's time</b>	<b>\$20.97</b>



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**Find Your  
Costs**

# Now you know how much your project costs, but how much can you charge?

To see what people are willing to pay, you have to see what they pay now.

## Look at categories:

- If your product or service were for sale in a store, what department would it be in?
- What else would be on the shelves with it?
- Answering those questions can tell you what category to put it in.

## Look at direct competitors:

- How much are people spending to solve the problem or find the joy today?

For each of these, examine the **mean, median, and mode**.

These “middle” numbers will help you understand how your customer might perceive your solution’s pricing compared to others.

# Using mean, median, and mode to analyze a range of numbers

To know how much you can charge, you need to see how much people are willing to pay. You'll find that prices can range widely. These tools can help.

<b>Mean</b>	Also called the average. It's found by adding up a set of numbers and dividing by the number of items in the set. If you added up the prices of <b>ten</b> different dog foods and divided by <b>ten</b> , you would get the mean, or average, price.
<b>Median</b>	The median is the number in the <b>middle</b> when we list the numbers from least to greatest.
<b>Mode</b>	The mode is the number that occurs the <b>most often</b> in a data set.

**TIPS**

These “**middle numbers**” may be telling!

Understanding the middle gives another insight into knowing what people are willing to spend.

# Examining Prices in the Same Category

You want customers to see your price as reasonable or fair:

- How much do **other products** or services in the same category cost?
- Based on that, what **price range** seems reasonable?

You should be able to find a price people will see as **fair for the value** they will receive.

Sam realized the range of prices was huge, so it was hard to make a good guess.

How much is dog shampoo?



Brand A	\$5.39
Brand B	\$39.95
Brand C	\$6.99
Brand D	\$17.61
Brand E	\$6.99
Brand F	\$18.00
Brand G	\$25.00
Brand H	\$21.66
Brand I	\$17.00

# Sam's mean, median, and mode

Sam analyzed shampoo prices in the dog grooming category.

How much does dog shampoo cost before tax?	
Brand A	\$5.39
Brand B	\$39.95
Brand C	\$6.99
Brand D	\$17.61
Brand E	\$6.99
Brand F	\$18.00
Brand G	\$25.00
Brand H	\$21.66
Brand I	\$17.00
<b>Total</b>	<b>\$158.59</b>

	What is that again? And how do you figure that out?	Answer
<b>Mean</b>	<b>The average number</b> The total (\$158.59) divided by the number of different products (9)	\$17.62
<b>Median</b>	<b>The center number</b> Line up the items from most expensive to cheapest and find the one in the middle.	\$17.61
<b>Mode</b>	<b>Number that occurs most often</b> Just like it sounds; which number do you see most often in the data set?	\$6.99



# Why are these numbers meaningful?

And what's the most meaningful for our example, Sam?

## Mean

The mean, \$17.62, shows how much people on **average** pay for dog shampoo.

## Median

The median, \$17.61 shows how much people pay for the shampoo in the **middle of the data** set between the cheapest and most expensive.

## Mode

The mode, \$6.99 shows the price people see **most frequently** on the store shelf.

**The median and mean let Sam know how much people are spending, so he can set his price to avoid his customers seeing it as too high or too low.**

# Let's examine prices in your category.

Look at similar products or services within the **same category** as yours. Put together a list of products or services and prices. Build a table like the one below.

Then, calculate the **mean**, **median**, and **mode** values.

Think about what makes these numbers meaningful to you.

Items in the Category of your Offering	Price



## TIPS

Imagine walking through a store and seeing your offering on the shelf next to each of the others.

How might your customer respond based on these comparisons?

**Category**  
**Price Analysis**



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# Examining Prices of Direct Competitors

You can also look at what people spend to solve the same challenge or experience a similar joyful experience.

Sam looked at a few different methods his friends and family use to clean paws. He compared those prices to see what people are currently paying to solve the problem of muddy paws. People were spending a lot of money! Also, they were often doing things that were bad for the environment and inconvenient.



Current Product	Price of Item	Quantity Needed Per Month?	Total Cost Per Month
Roll of Paper Towels	\$3.84	5	\$19.20
Disinfectant Wipes	\$10	3	\$30
Doggie Towels	\$10	4	\$40

# Let's examine your competitors' prices.

Look at products or services that solve the same problem or share the same joy. Put together a list with prices. Build a table like the one below.

Then, calculate the **mean**, **median**, and **mode** values.

Think about what makes these numbers meaningful to you.

Direct Competition	Price



## TIPS

When thinking about your customer's spending, consider size and frequency, so you can make fair comparisons to your product (for example, per month or per 2 oz. serving).

**Competition  
Price Analysis**



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# Let's name your price, based on your business model data

To understand what you can charge, you have to think through all of these numbers. Then, name your price!

## Consider This...

- Average price of products in the category.
- Average price of the current solution/competition.
- Your costs

## Determine This...

- What is the average price of similar products?
- What are people spending today to solve the problem you solve or to enjoy a similar experience?
- What are your costs per delivered item or per service?

### TIPS

You can always change your price later, but you have to start with a price you can test with customers, and all of the analysis you have done should make you feel confident with your price.

# Sam's pricing thought process

Let's look at how Sam used his cost and price analysis to think through pricing.



What Sam Considered	Data Point	What Sam Determined
He considered the average cost of dog shampoo; it showed how much people pay for clean pets.	\$17.61	\$17.61 is slightly less than what Sam would have to charge to cover his costs, but it's not that far off.
He considered the average monthly cost of current solutions, so he understood the actual spending on direct competitors in the clean paw space.	\$29.73	\$29.73 This is a lot more than what Sam would have to charge to cover his costs. But his product would last 4 months, and it's more convenient.
He considered what it took to make and deliver the product, which should last for 4 months. During that process, he also realized his product reduces waste.	\$20.97	\$21 dollars covers Sam's costs, but it lasts 4 months, which makes the real monthly cost a little over \$5 per month, <b>a fraction of the current spending</b> . And it is more convenient! If Sam charged \$26 per scrubber, he would be able to donate \$5 to a local rescue service too!

# The final step is making sure your value is clear to your customer!

Customers have many choices in the marketplace. How do you increase your chances that they will pick your offering?

This is called a **value proposition**.

Value propositions tell your customer why your product is valuable and why it is better than other options they have.

## Sam came up with his selling points too.

Here is what Sam's sales pitch sounded like.

- Customers save valuable cleaning time every day by stopping muddy paws more quickly and easily right at the door. (Saves time)
- Paw scrubber kit cleans paws for a fraction of the cost—about \$5 per month compared to the average cost of \$30 every month for wipes and paper towels. (Saves money)
- Customers stop creating waste from paper towels and wipes, and we're donating \$5 to our local rescue organization for every paw scrubber kit we sell. (Contributes to a good cause)

# Let's name your selling points!

Consider emphasizing 3–4 benefits—**your unique value propositions**—in your customer pitches. For example:

- Problem solved (describe in hours)/Joy shared (describe experience)
- Money saved (describe in relation to current solutions)
- Pollution or waste avoided
- People served
- Good feeling experienced (less stress, more joy, pride, etc.)
- Profits donated

Adding a few of these data points can make your business model even **more powerful**.

[Selling Your  
Value  
Proposition](#)





You may be wondering...

**“Do I write my  
pitch deck now?”**

### **Yes, it's time!**

The next challenge will have you draft and share your awesome business idea, and now you have tools and information you need to do it well.

This is going to be challenging and fun! You'll get to use your creativity and show off your data superpowers!



**5**

## CHALLENGE 5

# Pitch Your Idea



**100%**

*complete!*



# ■ Challenge 5: Pitch Your Idea

5

- 5 hours -

You'll practice sharing your pitch with at least one reviewer before the final revision and editing.

**Be open to the ideas your reviewers share.**

Their questions may be the same as other audience members, and **your response to their feedback may clinch the success of your business!**



# How do these steps help you?

**Objectives:** To make and deliver a winning presentation for customers and supporters who want to see your product or service come to life!

**a**

## Draft your pitch

You will put all you have learned into a simple and short presentation!

**What will you have at the end of this step?** A pitch for your product or service.

- 60 minutes -

**b**

## Find a trusted partner to review it

You will find a fresh set of eyes, someone who can give you honest and helpful feedback!

**What will you have at the end of this step?** Great feedback for revisions.

- 20-40 minutes -

**c**

## Pitch your idea!

You will present your pitch to friends and family, reflecting on all you have learned and achieved!

**What will you have at the end of this step?** Support for your project!

- 30 minutes -



# This is where you put it all together.

Remember your goal is to pitch a business, so you can create a product or solution that provides a benefit to customers.

Use the power of numbers to tell your story and influence thinking, decision-making, and behavior!

Remember you have done all of the research and have data to back up everything you say, so be confident in your pitch!



# Tools for your deck!

## Creating a Pitch Deck

- Check out templates on Google Slides or Powerpoint.
- [Canva](#) has free tools for visuals and templates for presentations!

## Visualizing Data

- Explore your slide and spreadsheet apps.
- Check out [Math is Fun](#) to build charts and graphs!

## Get Inspiration

Get inspired! See how other kid entrepreneurs constructed their pitches. See examples from the [Young Entrepreneurs Academy](#)



# Don't forget to feature your numbers!

As you write your draft, see if there are ways to use your data to make your pitch more powerful. Here are some some sentence stems to help you show off your data ninja skills and win over your audience!

<b>Dot plot</b>	There are more ___ than any other ___.
<b>Frequency table</b>	The most common ___.
<b>Histogram</b>	More than any other ___, the ___.
<b>Bar graph</b>	One of the biggest problems is ___.
<b>Pie chart</b>	On average, people spend ___ (dollars, minutes, hours, days).
<b>Donut chart</b>	The largest percentage of ___ is spent on ___.
<b>Stacked bar chart</b>	Imagine the amount of ___ we could save if ___.
<b>Mean, median, mode</b>	The mean ___ is, ___ while the median is ___, which means ___.



# Let's introduce your idea!

Create three slides to explain your reason for pitching this new idea.

1

## Slide 1:

### Problem You're Solving or Joy You're Sharing

Pictures are worth a  
thousand words here.

2

## Slide 2:

### Your Product/ Service/Solution

Pictures are worth  
a thousand words  
here, too.

3

## Slide 3:

### How it Works

Sometimes spelling  
out the process is  
helpful in a diagram  
showing the steps.

# Let's back your idea with data!

The numbers show you've done your research and considered the details!

4

## Slide 4:

### The Size of the Target Market

Showing how big your business can become gets people excited to help.

5

## Slide 5:

### Price of Product/Service

You can even show how many people could pay that price in the U.S., based on your research about the target market.

6

## Slide 6:

### Your Costs (Time + Money!)

How much you'll need to get started.

X

Show the size of your market multiplied by the price of your product—**that's the opportunity.**

# Let's share your plan and inspiration!

Share your plan to sell, and get your audience rooting for you!

7

## Slide 7:

### Sales Strategy

Explain your value proposition—the appealing benefits of your product or service. Do you have survey data that proves this is likely?

8

## Slide 8:

### Plan for What You'll Do with the Proceeds

If you build the business, what will you do with the money? Will you give back to others?

9

## Slide 9:

**Include your own story as a founder, and explain why everyone can believe in you!**

# Feedback can help perfect your deck!

Getting feedback from others can help you refine your pitch. Entrepreneurs look for feedback to help understand:

- What questions did the reviewer have about the topic?
- Was my plan clear and specific?
- Did the charts and graphs make sense?
- Which slides seemed most compelling?



## TIPS

Find a reviewer who is willing to share their feedback on your pitch.

Practice presenting, or ask them to read through your slides.

# Let's get feedback!

Find a trusted reviewer to read or listen to your pitch.

**Explain** that your pitch is a slide presentation used to share your business idea with helpers or potential customers.

**Ask** the reviewer to make sure the pitch deck contains the components listed here.

**Share** the tips for providing feedback in this month's *Celebrate!*

## Your pitch deck should include these components:

- Problem You're Solving
- Your Product/Service/Solution
- How It Works
- Target Market
- Price of Product/Service
- Your Costs (Time + Money)
- Sales Strategy
- Plan for What You'll Do with the Proceeds
- Summary and Founder Information

# Revise your numbers!

**Just about there!** Use your reviewer feedback and everything you've learned to polish your pitch.

- If your **tables and charts** weren't understood easily, revise to make them more clear. Check labels and measurements to make sure they're accurate.
- Be sure each number you provide is the best one to **prove your point**.
- You need not use all the data you have collected, so **take it out** if it doesn't make the story compelling.

# Revise your language!

- Use as few words as possible to say what you need to say. **Less is more!**
- **Strengthen your headlines** to say exactly what you want your audience to take away from each slide. Reading the headlines as one long narrative is often helpful.
- **Paint a picture** of a great experience, a strong business model, and an amazing founder!



# Polish it up!

You don't want minor issues distracting from your pitch!

- Clean up any remaining errors in grammar, mechanics, and style.
- Check any links you've added to make sure they're working.
- Review your visuals to make sure they're clear and appropriately labeled.

# Time to Pitch!

Friends and family are a wonderful first market for your product or service. We're pretty sure they are as impressed as we are with your number powers and your product or service.

- Savor the accomplishment, and take time to think about all you've done and learned.
- As you reflect on the power of numbers, reflect on how they work in your own life and how you can now use them moving forward!



## TIPS

Creating a first product and having a real customer use it, however rough the actual product might seem, is the best way to continue learning and building your company. Go forth and build!



# You did it!

All 5 challenges complete.  
Time to *Celebrate!*

[Prepare for Your Celebration](#)

LEARNING SUPPORT *tools*



# Celebration of Learning Reminder!



Remember, a [celebration of learning](#) is an opportunity for you to showcase your work, feel pride in your accomplishments, and expand your comfort zone to present to family, friends, and the community.

The celebration is a terrific opportunity to share your final product and everything you've learned in making it. So, let's celebrate! Everyone is excited to see what you've learned.



# Appendix

## Appendix A: Answer Keys

Sample answers to practice problems. Remember, “wrong” answers can be as helpful as “right” answers. Use these keys, not to judge yourself, but to help you learn the concept. You can do this!

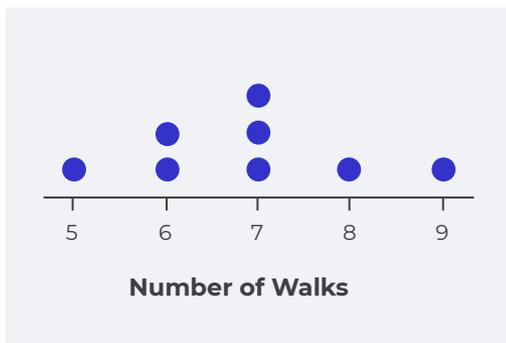
## Appendix B: Resources

These tables summarize, in one handy location, additional instructional resources and Learning Support Tools provided throughout the project—handy for finding things later, don’t you think? In addition, the tables describe the cognitive and academic skills used in each step, so you can share with others all the great things you’re learning.



# Challenge 2: Research Your Product

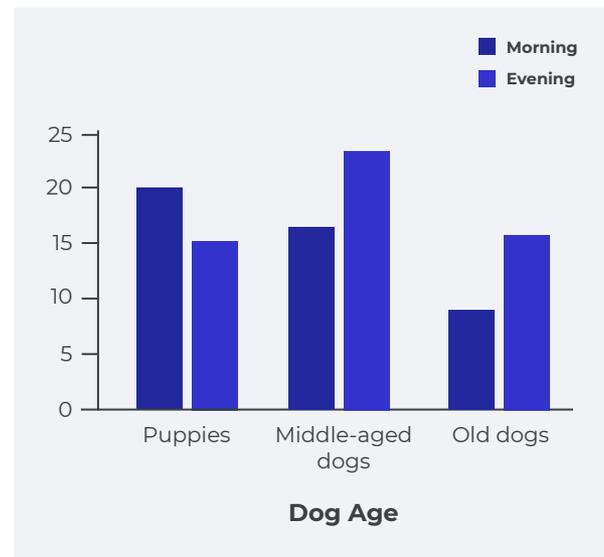
## Practice 1: Dot Plots



## Practice 2: Frequency Tables

Length	Frequency
0 minutes to less than 10 minutes	0
10 minutes to less than 20 minutes	6
20 minutes to less than 30 minutes	6
30 minutes to less than 40 minutes	4
40 minutes to less than 50 minutes	7
50 minutes to less than 60 minutes	2

## Practice 3: Bar Graphs





# Challenge 3: Propose a Solution

## Practice 1: Fraction to Percent

Types of Pets	Original Fraction	Fraction over 100	Percent
Only Dogs	$\frac{3}{5}$	$\frac{60}{100}$	60%
Only Cats	$\frac{1}{4}$	$\frac{25}{100}$	25%
Dogs and Cats	$\frac{3}{20}$	$\frac{15}{100}$	15%

## Practice 2: Another Percentage

Biggest Expense for Dog Owners	Respondents	Fractions	Percent
Grooming	6	$\frac{6}{20}$ or $\frac{3}{10}$	30%
Toys	1	$\frac{1}{20}$	5%
Food	10	$\frac{10}{20}$ or $\frac{1}{2}$	50%
Furniture	3	$\frac{3}{20}$	15%

## Practice 3: Percentage to Dollar Amount

Category	Percentage	Fraction Over 100	Fraction Over 500	Dollars Spent Per Year
Pet Food	45.7%	$\frac{45.7}{100}$	$\frac{228.5}{500}$	\$228.50
Pet Supplies	40.6%	$\frac{40.6}{100}$	$\frac{203}{500}$	\$203
Pet Services	9%	$\frac{9}{100}$	$\frac{45}{500}$	\$45
Live Animals	4.7%	$\frac{4.7}{100}$	$\frac{23.5}{500}$	\$23.50



# Challenge 1: Identify Your Project Focus

The table below provides concepts, resources, and learning support tools used throughout the first challenge. Use this table as a reference as needed. Links to resources and learning supports are also provided within the project pages.

Cognitive Skills	Words Your School Might Use to Describe This	Linked Instructional Resources	Provided Learning Support Tool
<b>Step a: Brainstorm your business ideas</b>			
Asking Questions	<ul style="list-style-type: none"> <li>• Making Lists</li> <li>• Mind-mapping</li> </ul>		Finding Your Inspiration Brainstorming Joys and Challenges
<b>Step b: Pick your favorite idea</b>			
Organizing & Representing Information	<ul style="list-style-type: none"> <li>• Graphic Organizers</li> <li>• Problem-Solving</li> </ul>		Use a Decision Quadrant Role-Play Your Product or Service
<b>Step c: Role-play to understand more</b>			
Defining a Design Problem	<ul style="list-style-type: none"> <li>• Predictions</li> <li>• Acting it Out</li> </ul>		Extension Activity: Craft Your Elevator Pitch
<b>Step d: Make a list of potential customers</b>			
Designing a Solution	<ul style="list-style-type: none"> <li>• Writing Concisely</li> <li>• Synthesizing</li> </ul>		Make a List of Potential Customers



# Challenge 2: Research Your Product

The table below provides concepts, resources, and learning support tools used throughout the first challenge. Use this table as a reference as needed. Links to resources and learning supports are also provided within the project pages.

Cognitive Skills	Words Your School Might Use to Describe This	Linked Instructional Resources	Provided Learning Support Tool
<b>Step a: Create and send your survey</b>			
Asking Questions & Modeling	<ul style="list-style-type: none"> <li>Estimation</li> <li>Categorizing Information</li> </ul>	<a href="#">Estimating decimal addition</a>	Create and Send Your Survey
<b>Step b: Learn about data analysis tools</b>			
Planning & Carrying Out Investigations	<ul style="list-style-type: none"> <li>Writing Specific Questions</li> </ul>	<a href="#">How to Do a Survey</a>	Practice Visualizing Data
<b>Step c: Analyze your data</b>			
<ul style="list-style-type: none"> <li>Organizing and representing information</li> <li>Identifying patterns and relationships</li> </ul>	<ul style="list-style-type: none"> <li>Tables</li> <li>Graphs</li> <li>Sense-Making</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Representing data</a></li> <li><a href="#">Setting up a frequency distribution table-Middle School Math</a></li> <li><a href="#">Guided practice for 'Make inferences about a population by analyzing random samples'</a></li> </ul>	Visualize Your Own Data



# Challenge 3: Research Your Market

The table below provides concepts, resources, and learning support tools used throughout the first challenge. Use this table as a reference as needed. Links to resources and learning supports are also provided within the project pages.

Cognitive Skills	Words Your School Might Use to Describe This	Linked Instructional Resources	Provided Learning Support Tool
<b>Step a: Understand why percentages rock</b>			
Identifying Patterns and Relationships	<ul style="list-style-type: none"> <li>Calculating Percentages from Fractions</li> <li>Using Percentages to Make Predictions</li> </ul>	<a href="#">Math Antics - What Are Percentages?</a>	Dive Into Percentages
<b>Step b: Send a follow-up survey and do your research</b>			
Planning & Carrying Out Investigations	<ul style="list-style-type: none"> <li>Collecting Data</li> <li>Conducting Research</li> </ul>	<a href="#">Writing Good Survey Questions</a>	<ul style="list-style-type: none"> <li>Market Research Questions</li> <li>Search the Internet for Reliable Data</li> </ul>
<b>Step c: Analyze your data and identify key statistics</b>			
Predicting/ Hypothesizing	<ul style="list-style-type: none"> <li>Reading Graphs</li> <li>Creating Graphs from Data</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Reading pie graphs (circle graphs)</a></li> <li><a href="#">Types of Graphs and when to use them</a></li> </ul>	<ul style="list-style-type: none"> <li>Make Guesses Using Data and Research</li> <li>Visualize Your Own Data</li> </ul>



# Challenge 4: Create a Business Model

The table below provides concepts, resources, and learning support tools used throughout the first challenge. Use this table as a reference as needed. Links to resources and learning supports are also provided within the project pages.

Cognitive Skills	Words Your School Might Use to Describe This	Linked Instructional Resources	Provided Learning Support Tool
<b>Step a: Calculate your costs</b>			
Organizing and Representing Information	<ul style="list-style-type: none"> <li>Data Analysis</li> <li>Estimation</li> </ul>		Find Costs
<b>Step b: Learn about mean, median, and mode</b>			
Comparing and Contrasting	<ul style="list-style-type: none"> <li>Measures of Center</li> <li>Summarizing</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Mean, median, &amp; mode example</a></li> <li><a href="#">Central Tendency-Mean Median Mode Range- Math</a></li> </ul>	Category Price Analysis Competition Price Analysis
<b>Step c: Complete your price analysis</b>			
Interpreting Data/Info to Make Valid Claims	<ul style="list-style-type: none"> <li>Measures of Center</li> <li>Putting Numbers in Context</li> </ul>	<a href="#">7th Grade Math Topic 6 Lesson 2- Draw Inferences from Data</a>	Selling Your Value Proposition
<b>Step d: Name your selling points</b>			
Evaluating Competing Design Solutions	<ul style="list-style-type: none"> <li>Data Analysis</li> <li>Synthesizing Multiple Sources</li> </ul>		