

# The Data Storyteller's Handbook

How to create **business impact**  
using data storytelling

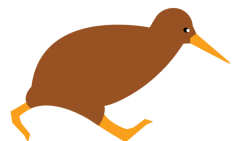


**Kat Greenbrook**

# The Data Storyteller's Handbook

How to create **business impact**  
using data storytelling

**Kat Greenbrook**



This book is for anyone who has ever been  
asked to **"tell a story"** with their data.

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# Foreword

Once upon a time, there was a land filled with data. Countless analysts tried to tame the seemingly unending array of numbers, filling databases and spreadsheets and aggregating them into dashboards and reports. While these sensible structures helped, the quest to find meaning and convey insights continued. Years passed by. One day, an age-old concept came to the land: story. Those who learned to harness its magical power found their audiences captivated, recommendations followed, and careers propelled.

Whether you've been using this potent way to present data or this is your introduction to it, you're about to learn from an insightful data storyteller named Kat. Kat understands that—while it isn't advisable to begin your next board meeting or presentation with the phrase “Once upon a time...”—there are strategic and profound ways to use story in business. Clients, investors, executives, and other stakeholders all crave data. However, data, in isolation, lacks impact; it's the meaning we bring to it that drives comprehension, decisions, and action.

With this book, Kat has distilled her process for teaching people across industries and roles into a succinct and practical guide. Learn from the characters in each chapter

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as you connect with their relatable situations and challenges. Practice new approaches with the provided frameworks and worksheets. Apply the strategies shared to bring your data communications to a new level.

Finally, recognize that data stories are not just about numbers. They are about people. By placing the audience at the center of the narrative, Kat underscores the importance of empathy and connection in data communication. She reminds us that behind every interesting dataset is a tale waiting to be told—a narrative that can engage and enlighten.

*The Data Storyteller's Handbook* is an incredible resource that will inspire a new generation of storytellers to find enchantment in numbers and share their learnings with the world.

## **Cole Nussbaumer Knaflic**

Bestselling author of *storytelling with data, let's practice!*, and *storytelling with you*



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# Introduction

**Do you work with data,  
but struggle to explain to  
others why it matters?**

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**Data is no longer reserved for specialists.**

But simply having data isn't enough. If you want to be a data-driven business, it's important for decision-makers to understand the significance of data insights.

Data storytelling communicates business stories using the language of data insights. It serves as a bridge, connecting the world of data analytics with the realm of business stakeholders.



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**This book is for anyone who has to communicate data.**

It's your ultimate business guide to data storytelling.

Whether you're a data analyst, business leader, marketer, researcher, accountant, or anyone else working with data—this book is for you. While you may not aspire to be an expert Data Storyteller, you recognise the significance of this skill in achieving your goals.

Designed for busy professionals, it's the perfect resource to enhance data communication skills quickly.





**PROBLEMS**

Are there times when your explanation of data insight leaves others confused?

Do you find it challenging to hold the attention of your audience when presenting data?

Do you feel stakeholders don't support your work because they don't understand the impact it could create?



**SOLUTION**

Use effective data storytelling to better communicate your data insights.

**BENEFITS**

**Achieve business goals**

Data storytelling enables many data-driven business actions.

**Enhance decision-making**

Data storytelling leads to more informed and empathetic decision-making.

**Engage people with data**

Data storytelling communicates data in a way that resonates with a specific audience.

**Increase data literacy and business acumen**

Data storytelling enhances an audience's understanding of both data insights and business concepts.

**This book enables you to be a skilled Data Storyteller.**

This book is your illustrated guide for using data storytelling to communicate. It's based on a proven workshop structure and takes a practical approach to the data storytelling process. It will equip you with the knowledge, tools, and mindset you need to become a master of data storytelling.

As your time is valuable, diving into a dense, in-depth text might not be your top priority. That's why this book provides concise, illustrated, and actionable guidance you can put into practice immediately. You'll feel empowered to turn (what some might see as boring) data into a compelling story that truly makes an impact.



**This is not another data visualisation book.**

As more people work with data, many are recognising the importance of data communication skills. But data storytelling is a hard skill to master if you don't understand what it is or how to get started.

When you're learning, it's important to differentiate between data storytelling and data visualisation—they are not always the same thing.

So, while this book talks a bit about data visualisation, it's not primarily a data visualisation book. This book will teach you not only what data storytelling is, but also how to do it.



**DATA STORYTELLING  
COMMUNICATES  
A DATA-DERIVED  
MESSAGE.**

**THIS MAY OR MAY NOT BE VISUAL.**

**DATA VISUALISATION  
PRESENTS DATA  
VISUALLY.**

**THIS MAY OR MAY NOT TELL A STORY.**

---

**This book doesn't cover everything.**

What this book covers will enable you to become a better Data Storyteller. But there are things it doesn't cover (for good reason), which you may be expecting it to.

- **This book won't teach you how to analyse data.** Data analysis happens before data storytelling (or at least it should!). This book focuses on how to communicate the insights gained from data analysis using data storytelling.
- **This book won't teach you data visualisation best practices.** Best-practice data visualisation is a whole book on its own. This book focuses on how to use data visualisations to communicate your data story.
- **This book won't teach you how to design a dashboard.** In my opinion, dashboards aren't data storytelling tools. Unlike data storytelling, they don't communicate a specific message, but rather present data for an already knowledgeable audience to interpret.

- **This book will teach you to understand how the work you do contributes to business success.** This understanding helps you better communicate, collaborate, and influence within the business.
- **This book will teach you how to understand (and build more empathy) for your audience.** Data communication is a two-way street, so considering your audience will help make your data storytelling resonate.
- **This book will teach you how to find story building blocks from your data analysis.** Data analysis uncovers many stories, but understanding what data is part of what story will help you communicate a clear message.
- **This book will teach you how to write an engaging and compelling data narrative.** Data storytelling weaves data into a narrative of context and explanation.
- **This book will teach you how to communicate your data story using visuals.** Data storytelling visuals are usually less focused on aesthetics and more focused on how effectively they communicate a message.

**CHAPTER BREAKDOWN**

**Know**

**Chapter 1: Why Visualise Your Data?**

**Chapter 2: Why Tell Stories with Your Data?**

**How**

**Chapter 3: The Business**

Why do you want to communicate?

**Chapter 4: The Audience**

Whom will you communicate with?

**Chapter 5: The Data Story**

What is your message?

**Chapter 6: The Telling**

How will you communicate your data story?

**Do**

**Chapter 7: The Practice**



**Feel free to jump around in this book.**

You don't have to read this book from cover to cover.

While I suggest starting with the first two chapters to get some context, feel free to mix it up and explore the chapters that catch your attention. It's a journey. Make it your own!

If you're a fan of skim reading, you're in luck. This book is designed with your reading style in mind. Simply flip through the pages, and you'll discover something interesting.

## Who am I to write this book?

Kia ora / Hi. My name is Kat.

I live in New Zealand, work as a Data Storyteller, and am easily annoyed by unclear data visuals. I also buy books with the hope of magically absorbing the content. This book is a product of all the above.

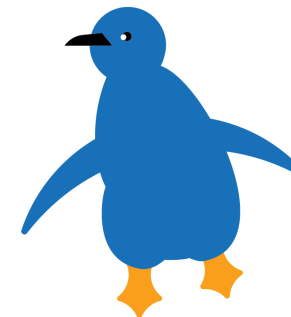
I spent the first ten years of my career in different analytics roles—Reporting Analyst, Insight Analyst, Data Scientist. But the deeper I delved into data, the more disheartened I became. I saw such a disconnect between data and business teams. It was frustrating to work hard on building an analytical model to have it not be used. So, I hatched an escape plan and got a degree in graphic design—"maybe, I could be a graphic designer?"

But the universe had other ideas. It countered my decision to leave the data space, with the rise of the data visualisation field. And this is a field I leaned into—hard. I saw data visuals as a way to engage others with analytics—"maybe, if my data looked good, it would get noticed?"

And it did get noticed, at least for a few minutes. My visuals grabbed initial interest, but this faded when the design appreciation wore off. I learned good design alone won't make data resonate with others. Something was missing... and that something was the magical buzzword "story".

In 2016, I established the data storytelling company Rogue Penguin (before you ask, yes, there are real penguins in New Zealand). Rogue Penguin exists to help business professionals communicate data insights.

This book is the result of hundreds of data storytelling workshops, along with years of refining content and techniques. It represents the very best of what I've learned and witnessed. I hope this book helps you on your data storytelling journey.

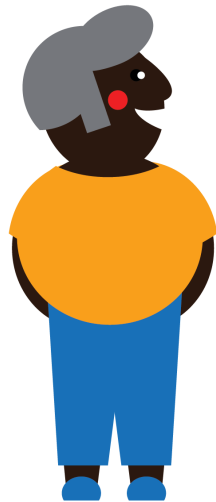


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CHAPTER 1

# Why Visualise Your Data?

To understand



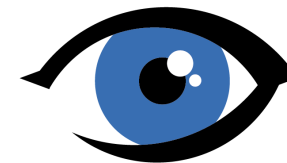
**Data storytelling is different from data visualisation.**

Data visuals might be involved in data storytelling, but not all data visuals are created to tell stories.

It's important to understand how data visualisation fits into the data storytelling process. This chapter describes the three main reasons a business visualises data.



## Data Visualisation

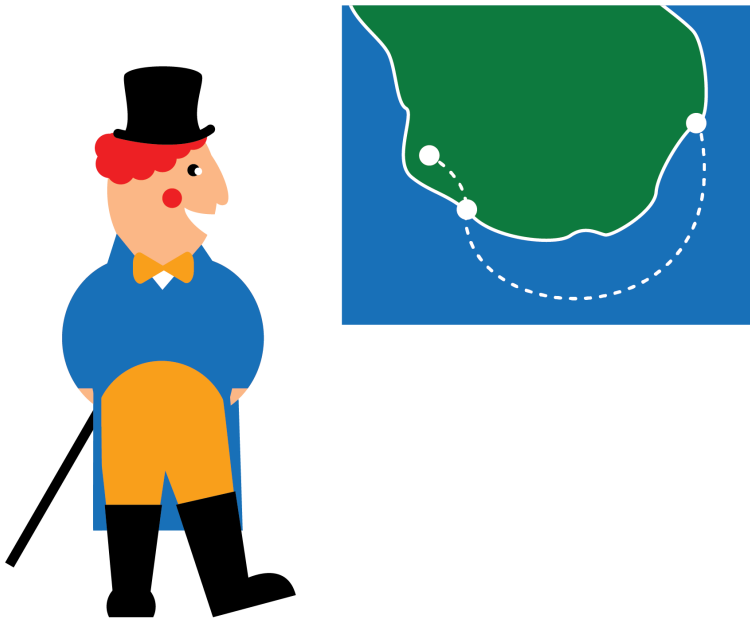




### Data visualisation existed before you did.

Despite its widespread use today, data visualisation actually dates back hundreds of years. Maps are some of our oldest data visuals used by explorers to navigate, mark ownership, and record the locations of geological resources.

It wasn't until the 1800s that data visuals began to resemble the graphs we see today. Graphs became popular as governments and businesses collected and needed to analyse more and more data.



**Florence Nightingale** was a British nurse sent to the Crimean War in 1854. On arrival at the military hospital, she saw more soldiers suffering from disease (caused by poor hospital conditions) than from their battle wounds. Florence set about establishing good medical and hygiene practices—but it wasn't until a broken sewer was repaired that death rates began to improve.

When she returned to England two years later, Florence was determined to help improve military healthcare. She had kept detailed records of soldier illness and deaths, and knew this data could provide the evidence leaders needed to create change.

To help both the government and public understand the data, Florence created visualisations to show the impact improved sanitation had on death rates (they fell by 95%!). Her work publicised the army's healthcare failings and highlighted an urgent need for change. Many improvements were made, based on Florence's data analysis and visual communication.

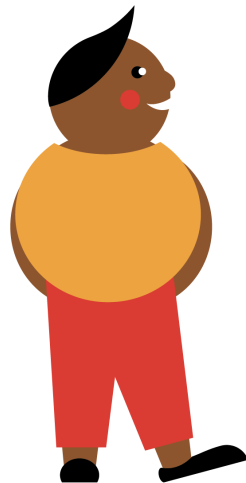


**Businesses typically visualise data for three reasons.**

Data visualisation began as a relatively simple field—visualising data made it easy to analyse. But as data became a key part of business operations, visuals went from being an analytics tool to also being an effective way to share insight.

Today, some are used as tools to discover data insights, while others have become a form of modern communication.

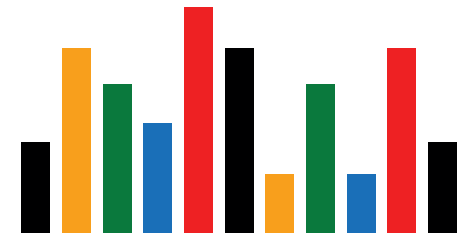
In business, the three main reasons to visualise data are to **Discover**, to **Inform**, or to **Educate**.



**3 REASONS TO VISUALISE DATA**

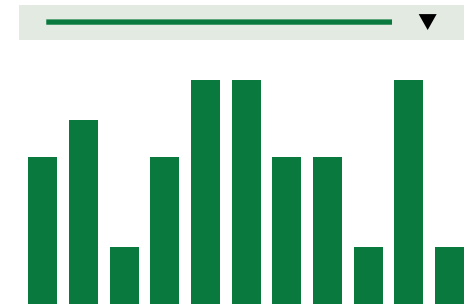
**DISCOVER**

I want to **discover** insights in my data.



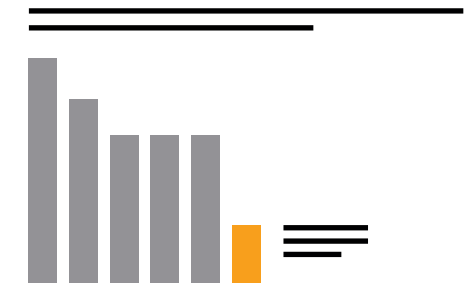
**INFORM**

I want to **inform** others of my data.



**EDUCATE**

I want to **educate** others about my data.



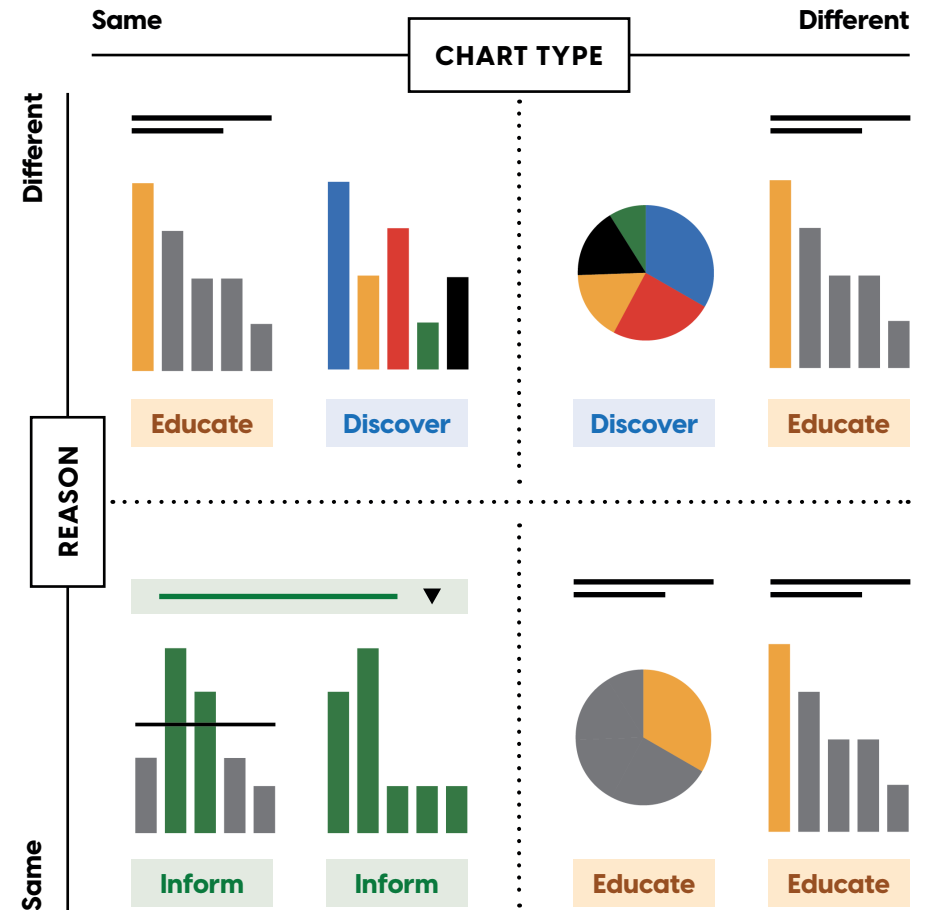
Your reason to visualise data is a separate decision to the chart type you use.

Sometimes, you'll use the same chart type to **Discover**, **Inform**, and **Educate**.

And sometimes, you'll use different chart types to **Discover**, **Inform**, and **Educate**.

Your choice of chart type should be based on your data or your audience (usually both). For example, you might be comfortable using a complex chart type to analyse data (**Discover**) but then need a more familiar chart type to communicate it (**Inform** or **Educate**).

**REASON IS INDEPENDENT OF CHART TYPE**

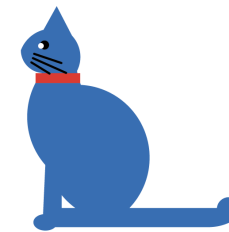


Not all data visuals are created to tell stories.

Data storytelling is used when you want to **Educate** your audience. However, it's still important to know how visuals to **Discover** and **Inform** relate to the data storytelling process.



## Visualising Data to **Discover**



CURIOSITY KILLED THE CAT, BUT SATISFACTION BROUGHT IT BACK.  
IGGY POP

When analysing data, visuals help you discover insights.

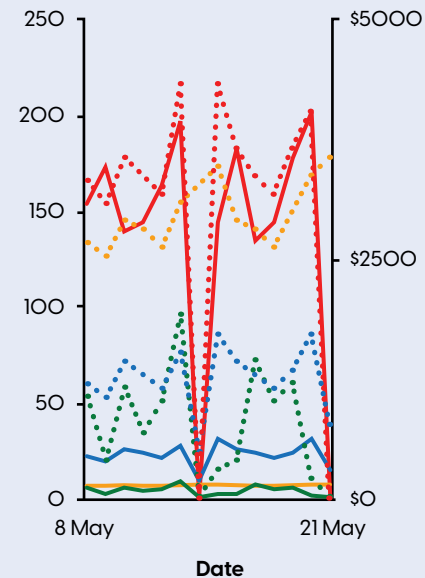
**Discover** data visuals aren't designed to be shared. You are their primary audience, so focus on how they can help you analyse the data. Don't worry if they look messy or break data visualisation "rules".

**Discover** data visuals are often created in large quantities and associated with the term "chart vomit". Don't let this label stop you from using them.



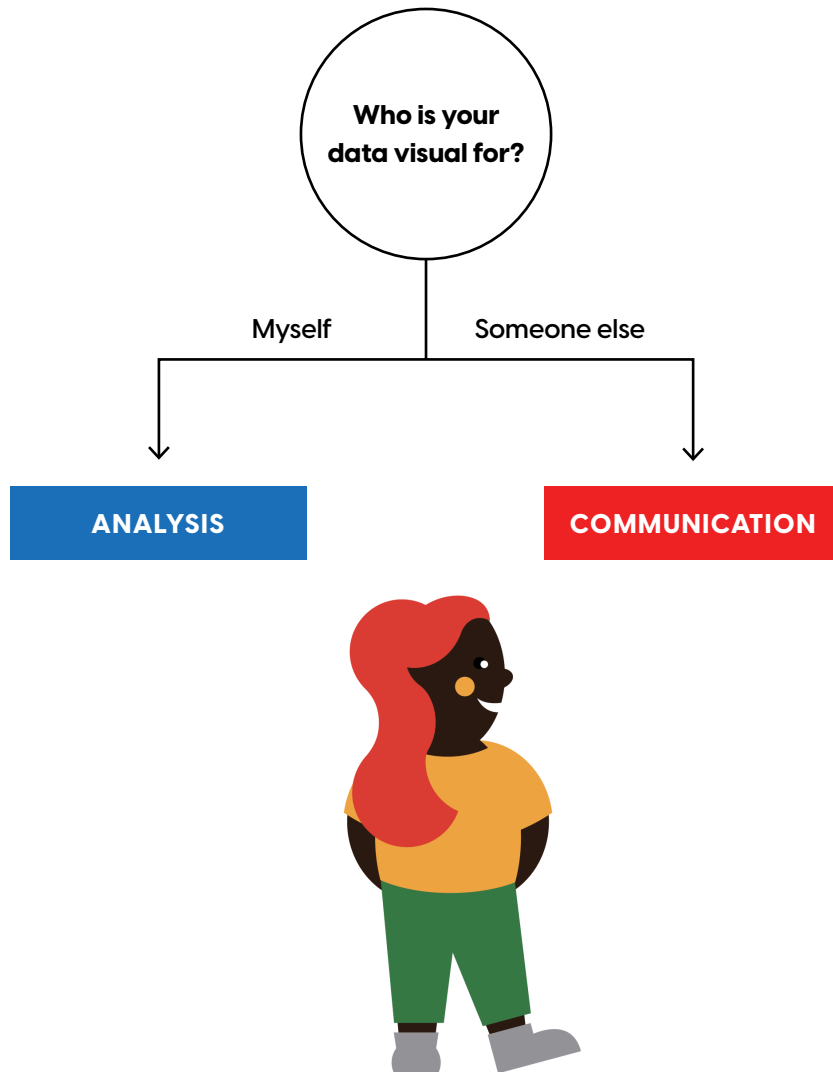
**ANATOMY OF A DISCOVER VISUAL**

**Bakery sales**



There is no wrong way to design Discover visuals.

ARE YOU COMMUNICATING DATA?



A DATA VISUAL  
DESIGNED FOR  
SOMEONE ELSE  
IS A FORM OF  
**COMMUNICATION.**

DISCOVER VISUALS PLAY AN IMPORTANT ROLE IN THE ANALYTICS PROCESS, BUT THEY ARE **NOT** A FORM OF DATA COMMUNICATION, BECAUSE THEY ARE DESIGNED ONLY FOR YOU.

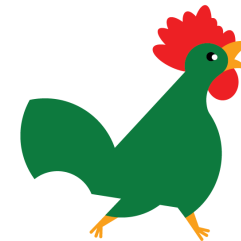
**Keep your Discover visuals for yourself.**

**Discover** visuals are part of the analysis process and aren't designed to be shared (unless you're also sharing the analysis with someone). These visuals help you see patterns and discover insights.

The next step is to share those insights by using either an **Inform** or **Educate** visual. Before sharing, pause for a moment and make sure your information is accurate.



## Visualising Data to **Inform**



A ROOSTER CROWS ONLY WHEN IT SEES THE LIGHT. PUT HIM IN THE DARK AND HE'LL NEVER CROW.  
MUHAMMAD ALI

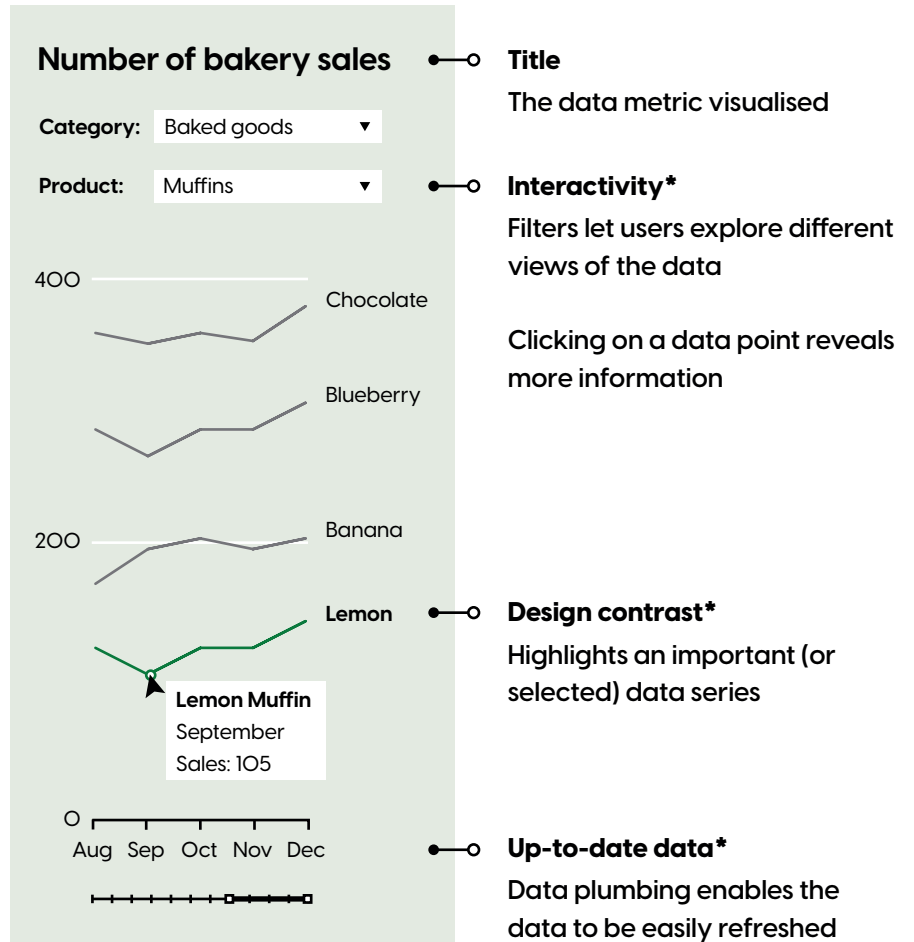
**Inform visuals make data easy to view and access.**

A good example of **Inform** visuals is the graphs included in dashboards. These graphs show specific metrics, arranged in an ordered way, so users can quickly understand the latest data.

It can be hard for people to access and understand data for a number of reasons. Accessing the data system might be difficult or require specialised knowledge or tools, or it might be that the good data is surrounded by lots of other data that isn't important, creating "data noise".

Both complicated systems and data noise create barriers to accessing data. **Inform** visuals help address these issues.

**ANATOMY OF AN INFORM VISUAL**



\* optional



Don't overestimate your audience.

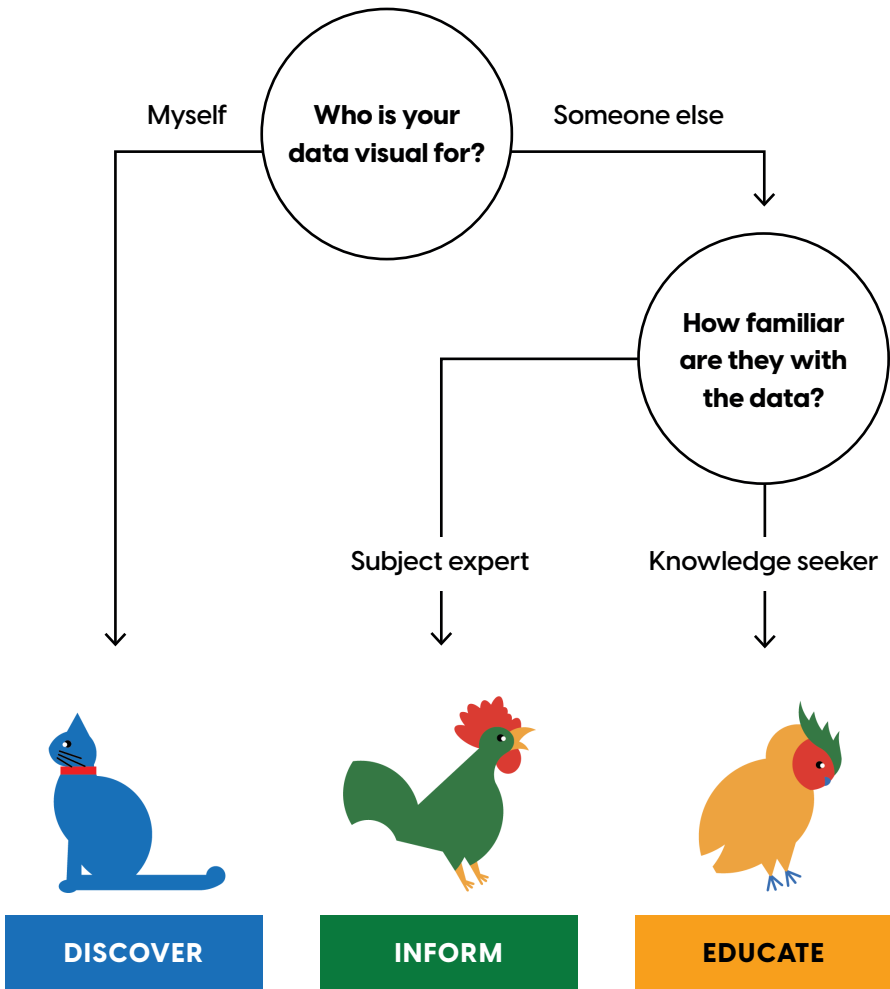
While **Inform** visuals present data clearly, they don't explain what the data means. It's important not to assume your audience is familiar with the data or topic. I talk more about this in **Chapter 4: The Audience**.

If you think your audience needs more context, an **Educate** visual may be more suitable.



**TO ENSURE  
YOUR AUDIENCE  
UNDERSTANDS  
YOUR DATA,  
YOU FIRST NEED  
TO UNDERSTAND  
YOUR AUDIENCE.**

**WHAT'S YOUR REASON TO VISUALISE DATA?**



# Visualising Data to Educate

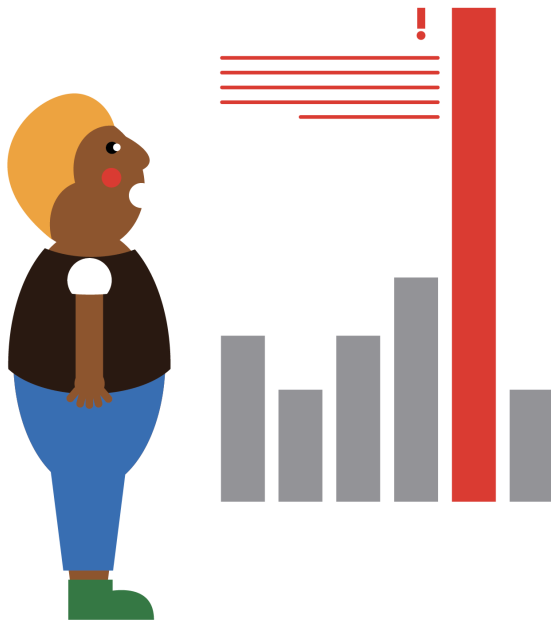


THERE'S ALWAYS A HIDDEN OWL IN KNOWLEDGE.  
E. I. JANE

**Educate visuals explain the meaning of data.**

**Educate** visuals don't just show an audience the data (like an **Inform** visual); they tell the audience what it means. To do that, they need to include a story.

The biggest difference between **Educate** and **Inform** visuals is the presence (or absence) of a story.



**ONLY EDUCATE VISUALS NEED A STORY**

	Consider your audience	Identify your data story
<b>DISCOVER</b>	✗	✗
<b>INFORM</b>	✓	✗
<b>EDUCATE</b>	✓	✓



Educate visuals are how you tell a data story.

**Educate** visuals are found in many forms of business communication, including reports, infographics, and presentations.

**Educate** visuals are covered more in **Chapter 6: The Telling**.



**YOU CAN'T DESIGN  
EDUCATE VISUALS  
WITHOUT FIRST  
UNDERSTANDING  
THE DATA STORY.**

**ANATOMY OF AN EDUCATE VISUAL**

**Data story** (covered in **Chapter 5: The Data Story**)

A data story is a narrative that explains the data's meaning to an audience. It helps to outline the bigger picture. Here's an example of a data story:

**Sweet Delights** is a family-owned and operated bakery. They were established over 30 years ago and have a strong local reputation. But recently, after another bakery opened nearby, Sweet Delights' sales began to drop. So, to win back customers, their team launched a successful loyalty program.

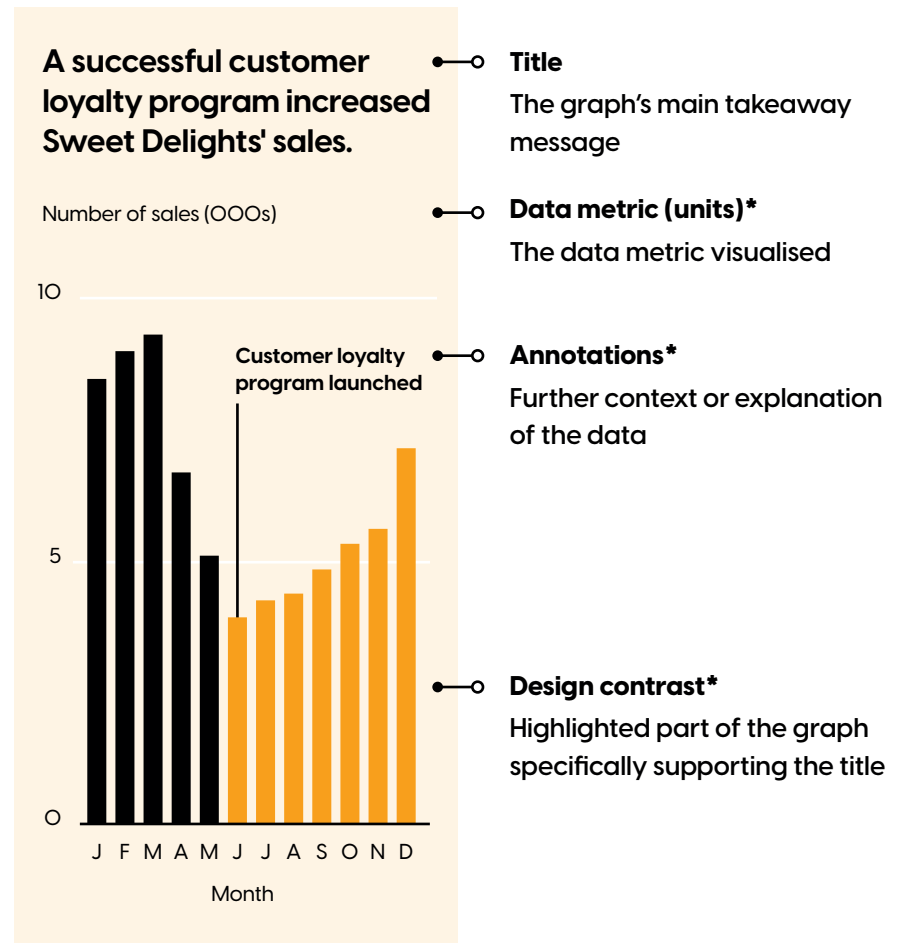
**Emotive elements**

Images, colours, or words can be used to emotionally connect an audience with what the data represents.



**Educate visual**

This graph supports all—or part—of the data story.



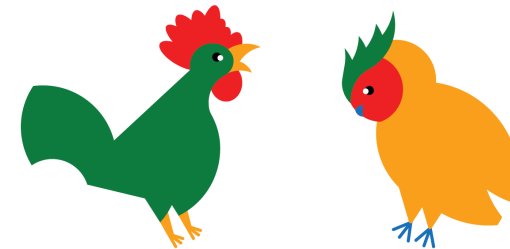
\* optional

**Recognise when a data visual needs to tell a story.**

You don't have to tell a story every time you communicate data. Before learning the data storytelling process, it's important to understand when you'll need to use it.



**To Inform or  
to Educate?**

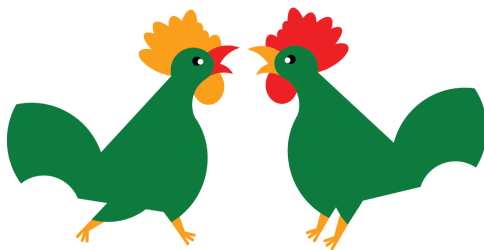
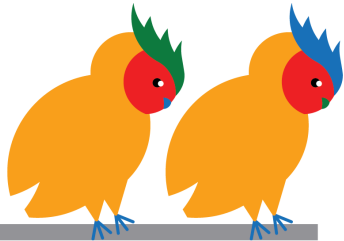


**Data visuals don't usually exist in isolation.**

When communicating data to others, you'll need to choose between creating an **Inform** or **Educate** visual. In practice, you'll usually create multiple visuals.

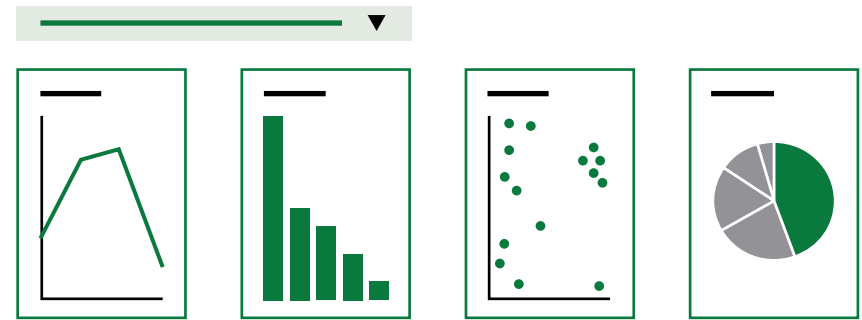
**Inform** visuals are usually grouped to create a **Dashboard**.

**Educate** visuals are usually grouped to tell a **Data Story**.

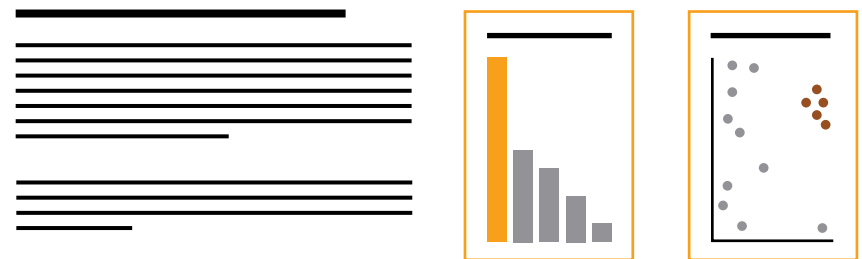


**MULTIPLE VISUALS ARE COMMON**

A **Dashboard** is created using multiple **Inform** visuals.



A **Data Story** can be told using multiple **Educate** visuals.



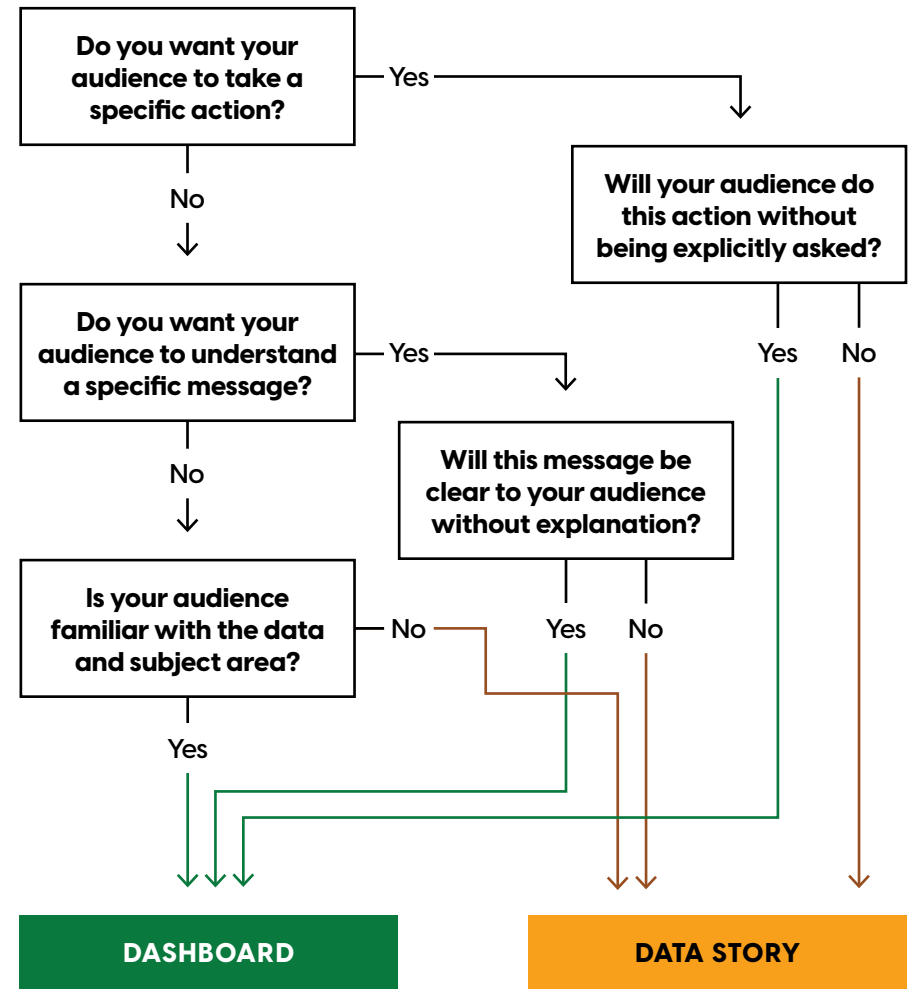
**Be clear on your data communication goals.**

To decide whether you need an **Inform** or an **Educate** visual, think about what you want to achieve.

Providing either too little (or too much) context can get in the way of an audience's understanding of data. If your audience is familiar with the data, an **Inform** visual should be fine—but if they're not, an **Educate** visual will help guide their understanding.

If you want your audience to take a specific action or understand a specific message, an **Inform** visual (presenting data without context or explanation) probably isn't enough, and you'll need to create an **Educate** visual.

**A DASHBOARD OR DATA STORY?**



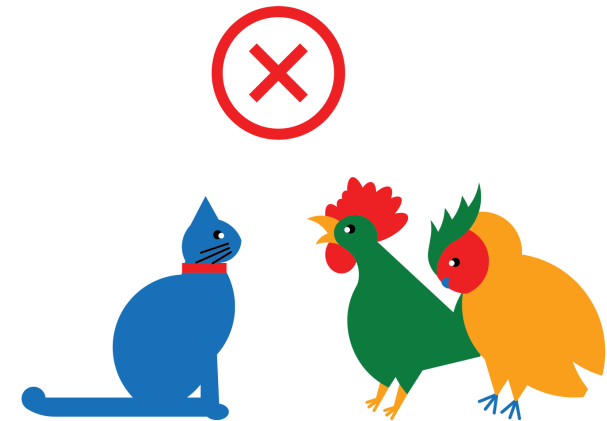


A **DASHBOARD** IS  
CREATED TO **INFORM**.

A **DATA STORY** IS  
CREATED TO **EDUCATE**.

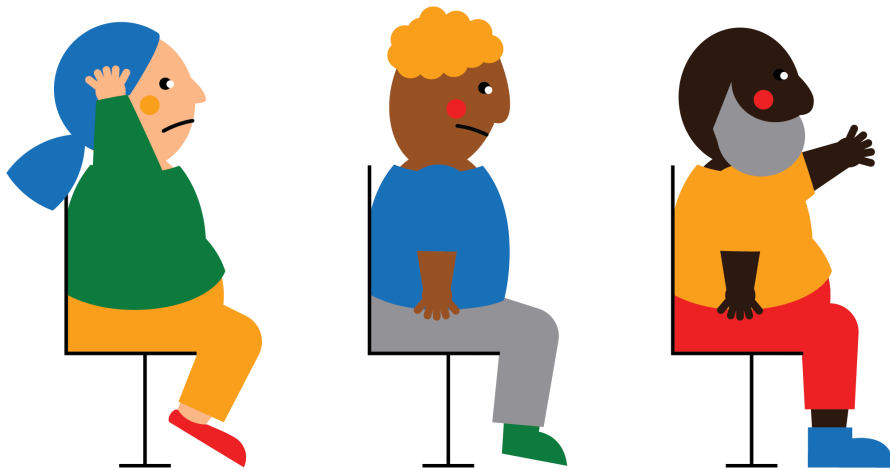
A DASHBOARD IS NOT A DATA STORY.

## Mistakes to Avoid



### Mistake Number 1: Sharing Discover Visuals

These visuals are designed as a tool to help you analyse data but they're not a form of data communication and aren't meant to be shared. Although these visuals make sense to you (as the person who analysed the data), they are unlikely to be easily understood by others.



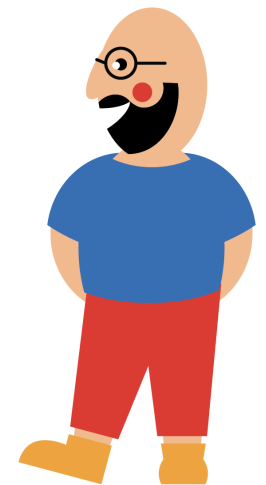
**Sam** is a Finance Analyst at a small boutique bank.

Recently, he analysed the credit risk of bank customers. Excited to share his findings with his wider team, Sam presented his Discover visuals during a meeting. He knew they weren't pretty, but thought they still clearly showed the important information.

Sam began to present his data... then, mid-presentation, he had a horrible feeling of regret.

He realised that what had been obvious to him (after going through the analysis process) was less obvious to his colleagues. Sam assumed the team would understand the visuals without further explanation.

After reflecting on the meeting, Sam now designs visuals for his audience (not himself) when presenting data.



## Mistake Number 2: Overestimating Your Audience

When communicating data (and choosing whether to create an **Inform** or **Educate** visual), you need to know what your audience understands. If you present information that is too advanced for your audience, you will lose their attention. So, start with what they already know. This is covered further in **Chapter 4: The Audience**.

Use an **Inform** visual for an audience of subject experts or an **Educate** visual for an audience seeking to learn.



**Ari** is a Reporting Analyst at an insurance company.

After building a new financial dashboard, he was excited to be asked to share this with the marketing team. He was proud of what he had created.

All eyes were on Ari as he began to present his dashboard. His presentation focused on what he found most interesting—the technology. Ari had spent weeks working on the interactivity and data drill-downs. He wanted to show this functionality off.

One by one, his audience's eyes glazed over. He knew they had stopped listening. When his presentation was over, the only questions Ari got were about the data's significance. He felt frustrated.

Ari had assumed the marketing team had the same level of data knowledge he did, but they didn't. Therefore, they couldn't appreciate his dashboard's potential because they didn't understand the meaning of the data in it.

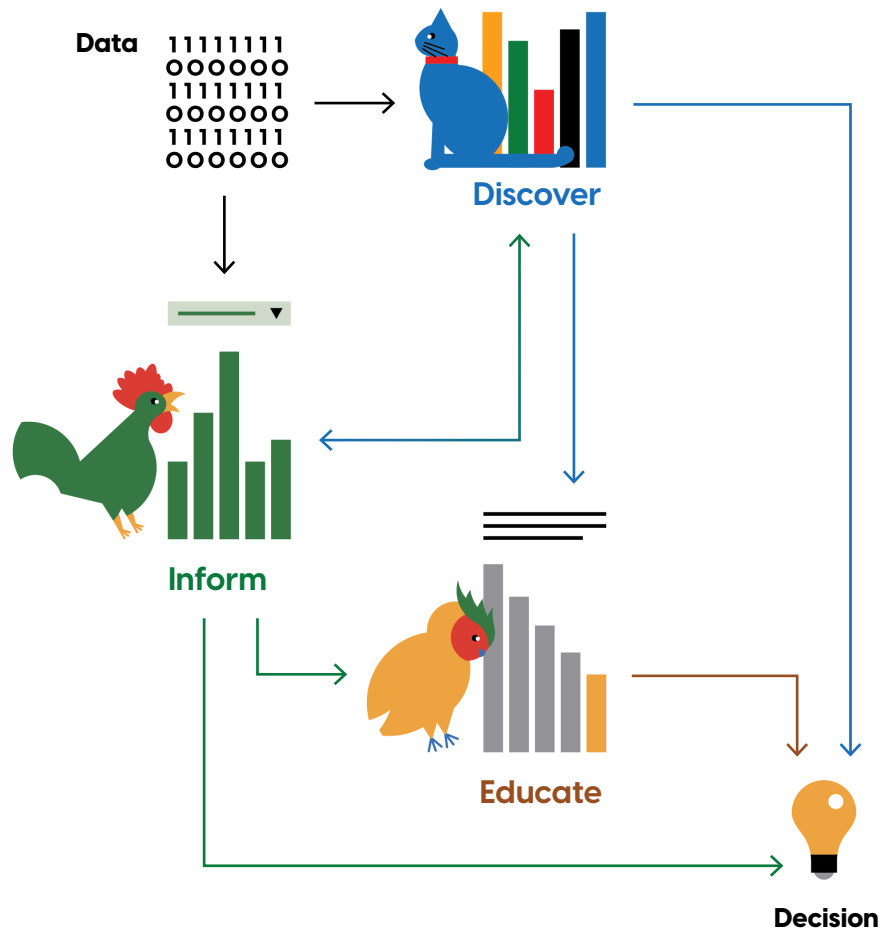


**DATA CONTEXT IS  
HOW YOU FRAME THE  
MEANING OF YOUR  
NUMBERS AROUND  
THE KNOWLEDGE OF  
YOUR AUDIENCE.**

## The Pathways of Data Insights



**THE DATA INSIGHT PATHWAYS**



**The three reasons to visualise data (to Discover, to Inform, and to Educate) work together within the insight pathway.**

In a large organisation, there's a high chance you'll need to visualise your data in multiple ways. Before creating a data visual, know your reason and audience.

You might create **Discover** visuals to understand the data, then present the key metrics as **Inform** visuals in a dashboard. In time, these metrics might be important for non-subject experts, so you'll create **Educate** visuals for them and tell a data story.

It's okay to visualise the same data differently—in fact, it's recommended!

**Michelle** is a Pricing Analyst at a large energy retailer. She helps others make informed decisions about pricing strategies.

When analysing data, Michelle creates lots of Discover visuals. They're one of her favourite things to make because it doesn't matter what they look like. They're for her eyes only. These visuals help her identify patterns and trends.

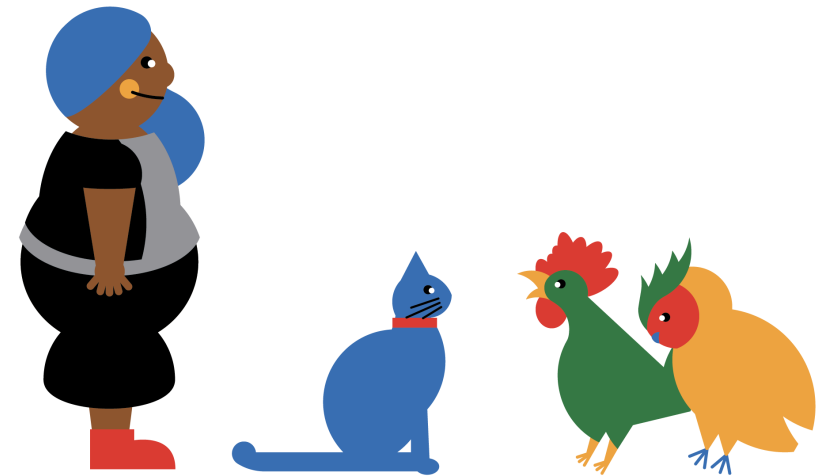
When she understands the key metrics, Michelle creates Inform visuals (as part of a dashboard) that she shares with business experts. These visuals make it easy for others to understand and act upon the data.

Senior leaders also need to understand the metrics. So, Michelle creates Educate visuals for them to help her communicate a data story.

Through the use of Discover, Inform, and Educate visuals, Michelle plays a vital role in decisions that shape the energy retailer.

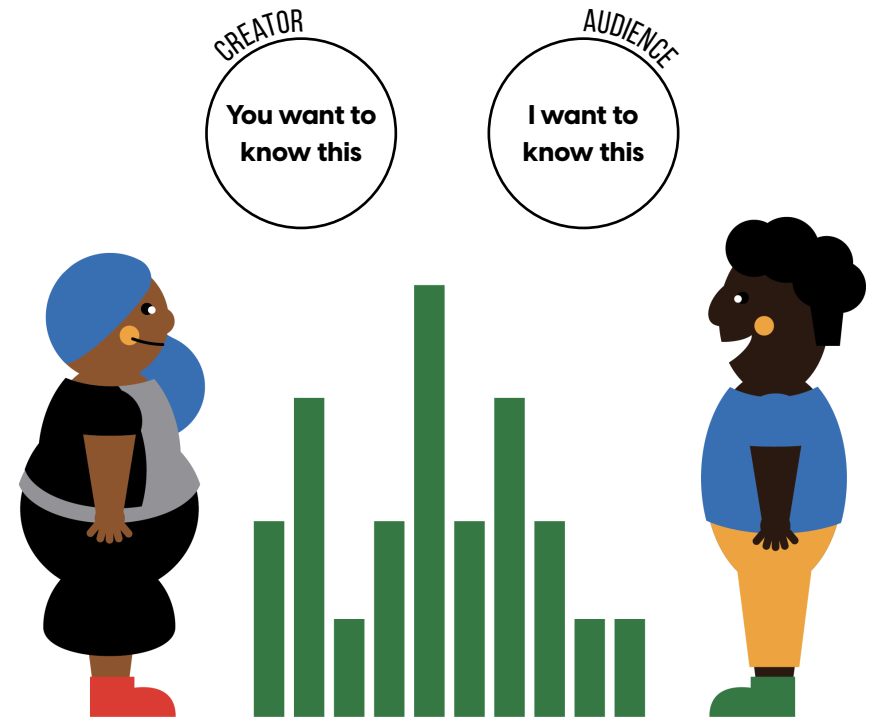
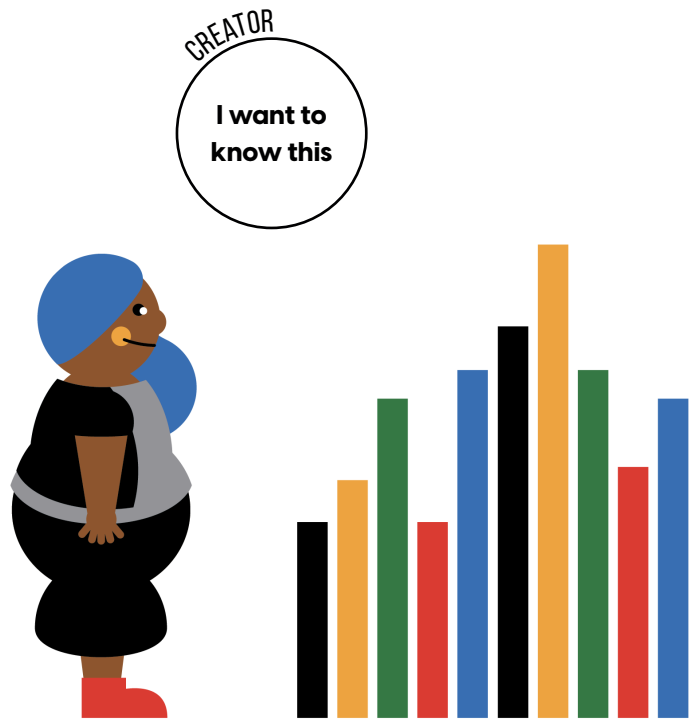


## Whom Are You Visualising Data For?

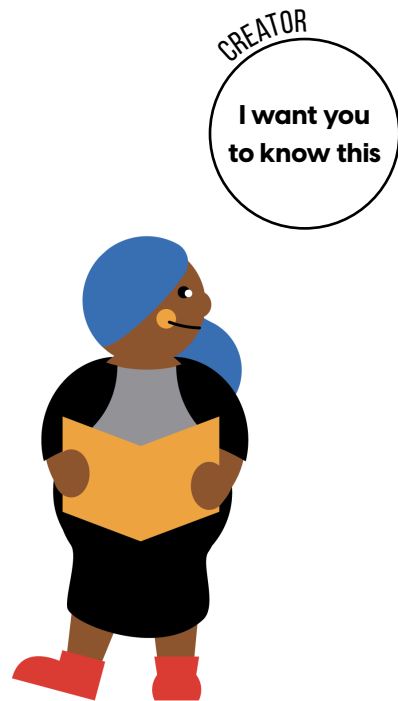


# DISCOVER VISUALS ARE DESIGNED FOR THEIR CREATOR.

# INFORM VISUALS ARE DESIGNED FOR THEIR AUDIENCE.



# EDUCATE VISUALS ARE DESIGNED FOR THEIR CREATOR...



# ...AND THEIR AUDIENCE.





## Not all data visuals are designed to tell data stories.

Understanding your reason to visualise data helps determine whether you need a data story.

If you know you're using **Discover** visuals as part of your analytics process, you don't need to worry about data storytelling—yet.

If you know your audience will understand an **Inform** visual as part of a dashboard, you don't need to worry about data storytelling—yet.

But if you know your audience will struggle to understand the significance of data without explanation, then you'll need to use data storytelling. Identifying that is a valuable starting point for your data storytelling project.

CONSIDER THE  
FUNCTION OF YOUR  
DATA VISUAL BEFORE  
DESIGNING ITS **FORM.**

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CHAPTER 2

# Why Tell Stories with Your Data?

To educate

