# Why visualization matters

Data visualization is the graphic representation of data, which plays a crucial role in storytelling by presenting insights more effectively than words alone. This reading will explore the importance of visualizations and how to make them accessible to a wide audience.

## Principles of effective visualizations

An effective visualization is clear, quickly understandable, and relevant to the audience. It communicates key insights within seconds, using graphs, charts, and accessible color palettes to draw attention to important areas. Simplicity is key; visualizations should be uncluttered and free from overwhelming elements. Alternative text, clear labels, and intentional patterns reduce visual load, and make your visualization more accessible to viewers.

As an analyst, your job is to select only relevant data for your visualizations, to help reach audiences with varying technical backgrounds. Stakeholders usually have contextual knowledge or additional information you may be lacking that can help make your visualization better. Incorporating stakeholder feedback is crucial for refinement. It'll be up to you to determine which feedback to implement. Remember, visualizations are not just about displaying data but making it understandable and actionable.

## Create a compelling visualization

To create compelling visualizations, you'll need to identify exactly what the audience needs to know, organize your thoughts around those needs, and focus on patterns and key findings during your analysis to highlight those elements.

### Identify what the audience needs

Before you can start crafting your visualization, consider the questions your audience is trying to answer, and what goals they're hoping to accomplish by answering these questions. Think about the questions your audience might have about the topic, and how your visualization can answer those questions. Determining a purpose for your visualization at the start will drive other decisions later on.

### Structure and organize your thoughts

One objective to consider when planning a data visualization is whether it will be used to inform or persuade. Structure and organize your thoughts around this objective, which is context-specific and usually determined by your stakeholders. For example, a retail company wanting to persuade a major chain store to buy their products would want to include sales

performance data to show profitability. A local non-profit group might choose to create a visualization to create awareness around an issue, and inform their community.

In this phase, you'll need to think about how information will be presented to your audience. Digital presentations offer many color, graphics, and interactivity options, along with the ability to share information in an instant. But, your audience might need to interact with your visualization as a physical print. This consideration will impact the visualizations you choose, and how you layout your presentation.

### Interpret patterns

While you're sorting through data, you might notice patterns. You also might find characteristics about your data that surprise you. Both elements may be important to call attention to in your visualization. Think about how these patterns and characteristics fit into the overall narrative of your analysis. Ask yourself questions like:

- How do these elements support your narrative?
- What do you want your audience to notice from the data?
- What's the best way to showcase these points to get the audience to see what you see?

### Identify and highlight key elements

The key elements of your findings will set the stage for how you organize your data. Consider the data points, or parts of your data that demonstrate the main point of your data story. You'll want to make sure these elements are visualized clearly and effectively for your audience.

There are cases when your data doesn't behave as expected, or it tells a different story. You'll need to investigate what your data is telling you, and what this means for your audience.

## Data visualization elements: a summary

David McCandless, a data journalist best known for his intricate and compelling visualizations, highlights four critical elements for creating a visualization:

1. Information/Data: The raw, unprocessed facts and figures forming the foundation of your visualization
2. Story: The context that adds meaning and relevance to the data
3. Goal/Function: What you want your audience to do with the information
4. Visual Form: The aesthetic elements and structure, including color choices, shapes, and layouts. Include text labels, icons, or patterns to distinguish visual elements, and include viewers with visual impairments.

## Key takeaways

Effective data visualization transforms complex data into understandable and engaging narratives. When you present data to stakeholders, make it resonate with your audience, by ensuring the visualization is impactful, accessible and tailored to the needs of your audience. Mastering data visualization means creating visuals that are not only informative but also memorable and persuasive.