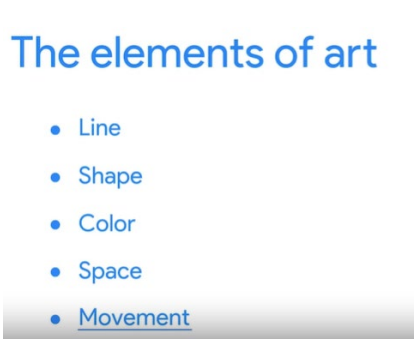
Week 1

- The four elements of effective data visualization are the information (data), the story (concept), the goal (function), and the visual form (metaphor); a successful data visualization must have all four elements.
  - **Information (data):** The information or data that you are trying to convey is a key building block for your data visualization. Without information or data, you cannot communicate your findings successfully.
  - **Story (concept):** Story allows you to share your data in meaningful and interesting ways. Without a story, your visualization is informative, but not really inspiring.
  - **Goal (function):** The goal of your data visualization makes the data useful and usable. This is what you are trying to achieve with your visualization. Without a goal, your visualization might still be informative, but can't generate actionable insights.
  - **Visual form (metaphor):** The visual form element is what gives your data visualization structure and makes it beautiful. Without visual form, your data is not visualized yet.
- 

- In Tableau, floating items can be layered over other objects. Tiled items are part of a single-layer grid that automatically resizes based on the overall dashboard size.

Nine basic principles of design

There are nine basic **principles of design** that data analysts should think about when building their visualizations.

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- Data composition: combining the individual parts in a visualization and displaying them together as a whole.
- Data visualizations have three essential elements: clear meaning, a sophisticated use of contrast, and refined execution. Refined execution means paying deep attention to detail. This is done by using visual elements such as lines, shapes, colors, value, space, and movement.
- Design thinking: a process used to solve complex problems in a user-centric way.
- Five phases of design process: empathize, define, ideate, prototype, test.
    1. **Empathize:** Thinking about the emotions and needs of the target audience for the data visualization
    2. **Define:** Figuring out exactly what your audience needs from the data
    3. **Ideate:** Generating ideas for data visualization
    4. **Prototype:** Putting visualizations together for testing and feedback
    5. **Test:** Showing prototype visualizations to people before stakeholders see them
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Week 4

- An initial hypothesis is a theory you're trying to prove or disprove with data. Examples of an initial hypothesis include: a trend of annual revenue growth from an increasing number of online sales, a relationship between the holiday season

and increased traffic congestion, and an increase of wildlife presence from a record high in annual rainfall.

- In the McCandless Method, the first step involves communicating to the audience where they should focus and what the graphic is about. This is the step for introducing the graphic by name.

  As a refresher, the McCandless method is a set of guidelines for presentations. It suggests that you start with broad, general ideas and then work your way into the details.

  The steps of the McCandless method include:

  1. Introduce the graphic by name

  2. Answer obvious questions before they're asked

  3. State the insight of your graphic

  4. Call out data to support that insight

  5. Tell your audience why it matters

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