

## Paper - Pencil Principle For Data Visualization

Transforming raw data into easily understood visualizations allows you to make decisions based on reliable, trustworthy information. Good data visualizations should be accessible to the intended audience. Plus, they should be visually pleasing, clear, and elegant.

From presentation infographics to websites or apps, all visualizations must be clear and easily understood visual representations of information. They can either tell a story or identify patterns and trends.

Before we get into design principles, let's explore the process or steps a data visualization designer would take in crafting a visualization.

### Step 1:

After receiving the brief, a designer will start researching and gathering data.

### Step 2:

Then they will start thinking about the design. Designers must keep the intended audience in mind at all times. When gathering data, the designer must use up-to-date, reliable, and unbiased data.

### Step 3:

The designer will sketch out the concept and ideas on a tablet or computer. Many designers still use paper and pencils for this stage.

### Step 4:

When the idea and design are complete, the designer will present them to the team. The team will brainstorm the concept and make suggested revisions and tweaks.

### Step 5:

When revisions are complete, the designer will seek approval for the project. Publishing takes place once the client's satisfied.

## The 7 Key Design Principles

Most experts differ on key design principles. Or put another way, most place more emphasis on some above others. Once designers settle on a concept, their designs need to take into account the following principles:

### 1. Identifying The Target Audience

The first key principle is for the designer is to know their audience. This is important from the very beginning of the design process. The designer must have a good idea of the message or messages they want to convey. Designers must also be clear on the target market and their levels of literacy. They should also take into account ethnicity and cultural values.

## 2. Focusing On Focus

Creating a visual hierarchy or focus on key areas is the main point of data visualization. This means that the most important information should be the most prominently displayed.

There are three simple techniques for establishing a visual hierarchy: size, contrasting colors, and position. Designers will also take into account “eye flow”, the way the eye moves from left to right and then down and left to right again. This pattern is the Z path. Obviously, the opposite is in use for designs using Arabic text.

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## 3. Keeping It Simple

The third principle is simplification. Breaking data down into digestible bites is essential. Making information easy for people to understand at a quick glance is a major consideration when designing data visualizations.

## 4. Balancing Layouts

Next up is layout, meaning the composition or presentation of information. A presentation should be balanced and elegant. This is usually accomplished by using a grid as the underlying skeleton of the design. A common element used are columns to organize information, much like the style of newspapers, magazines, and documents.

## 5. Organizing Alignment

The fifth principle is grouping related content together and separating unrelated content. Lines, backgrounds, and boxes are usually used to show connections or related content. Separations use spacing and enclosures, such as boxes, color, and backgrounds. Group related elements together and do the opposite for unrelated information.

## 6. Creating Consistency

Unity or consistency is up next. Design elements must all remain the same. This could entail standardizing font usage and point size, the consistent use of color for graphical elements, and keeping an eye out for consistency in the visual hierarchy.

Themes are important too. Every part of the design should stick to a considered design standard. If the client has a corporate identity or brand, the designer would take careful note of this.

## 7. Elevating Engagement

Finally, we have design considerations. Form should follow function. Designers must consider balance, movement, and interactivity. Keeping the target audience interested, engaged, and

invested in the message means success. If visualization is not engaging, the intended message will not reach its audience