This lecture: Visuals in general (vs. presentation visuals): Choosing, using, types of visuals.

Gardening; springtime. Use this as an illustration of some of these principles.

Tell me what carrot greens look like. Can you describe them?
some things are even more important to be shown than to be explained in words
A visual explanation is often much easier to follow than a verbal explanation.
A picture may be worth 1,000 words, but you still may need 1,000 words to tell people what to look at and what to see (Flesh, of Flesh-Kincaid readability scale)
Carrot greens, or the leaves of a carrot, grow in a rosette, or a circular arrangement. At the upper end of the carrot stem is the seed leaf. The first true leaf appears about 10–15 days after germination. Subsequent leaves are alternate (with a single leaf attached to a node), spirally arranged, and pinnately compound, with leaf bases sheathing the stem. As the plant grows, the bases of the seed leaves, near the taproot, are pushed apart. The stem, located just above the ground, is compressed and the internodes are not distinct. When the seed stalk elongates for flowering, the tip of the stem narrows and becomes pointed, and the stem extends upward to become a highly branched inflorescence up to 60–200 cm (20–80 in) tall.

Text adapted from https://en.wikipedia.org/wiki/Carrot
Image source: https://tinyurl.com/y4mdx4v7
There are not many dramatic visuals in technical communication.
Edward Tufte says that great visuals show the greatest amount of information in the shortest time with the least ink in the smallest space. In other words: Avoid chart junk.
Dramatic visual
Dramatic visual* vs. informative visual.

*One could argue that this is informative in a way, depending on what you intend to show.
Dramatic and informative at the same time—but over the top? Chart junk?
drawings are often much more useful than photographs because you decide what the audience sees (the emphasis)
Photograph of carrot bed surrounded by onions: Pictures are vivid but may not be very informative.
Gardening plot for onions and carrots, including space needed and types of onions and carrots that can be grown together

<table>
<thead>
<tr>
<th>Plot</th>
<th>Onions</th>
<th>Carrots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double row onions - 140416</td>
<td>Pulsar, Milestone, Patterson</td>
<td></td>
</tr>
<tr>
<td>Double row carrots - 140416</td>
<td>Sugarsnap, Mokum, Leguna, Bokero, Sweet Baby Jane, Baby Sweet</td>
<td></td>
</tr>
<tr>
<td>Double row onions - 140416</td>
<td>Walla Walla, Red Zeppelin, Patterson</td>
<td></td>
</tr>
</tbody>
</table>

https://tinyurl.com/yyal57kh
your purpose determines what visual you use, and whether you use one
Labels often make visuals much more informative—and you can direct your readers' attention to the parts you want them to see.
using doubles of a visual can show relationship
Lateral Roots

Phloem

Vascular Cambium

Xylem

Periderm

Collar

Shoulder or Crown

Lateral Root Scars

Lateral Roots
Lateral Roots

Phloem

Vascular Cambium

Xylem

Periderm

Collar

Shoulder or Crown

Periderm

Lateral Roots
you can adapt existing visuals to your own purposes
The visuals on slides 10, 16, 17, 19, 20, and 21 were all modified from this visual, the original (in those, the source information on my slides notes “modified from …”).
when you use a visual in a document, you must both refer to it in the text and include an informative label and caption.
Carrot greens, or the leaves of a carrot, grow in a rosette, or a circular arrangement (Fig. 1). At the upper end of the carrot stem is the seed leaf. The first true leaf appears about 10–15 days after germination. Subsequent leaves are alternate (with a single leaf attached to a node), spirally arranged, and pinnately compound, with leaf bases sheathing the stem. As the plant grows, the bases of the seed leaves, near the taproot, are pushed apart. The stem, located just above the ground, is compressed and the internodes are not distinct. When the seed stalk elongates for flowering, the tip of the stem narrows and becomes pointed, and the stem extends upward to become a highly branched inflorescence up to 60–200 cm (20–80 in) tall.

Text adapted from https://en.wikipedia.org/wiki/Carrot

Figure 1. Young carrot greens with the seed stalks and leaves growing in a rosette (they are spirally arranged). Image source https://tinyurl.com/y4mdx4v7
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Figures are conventionally labeled below the figure; tables are labeled above. Both are numbered sequentially (but separately from each other).
DISTINCT VISUAL TYPES & THEIR USES
PICTURES
drawings & photos

GRAPHS
line graphs & bar graphs

CHARTS
pie charts, flow charts, org charts, Gantt charts

DIAGRAMS
diagrams & exploded diagrams

MAPS, TABLES
shows continuing data and the relationship between a dependent and independent variable.
the x axis shows the independent variable

the y axis shows the dependent variable
What is missing?
Title visuals, and label them fully with what you intend to show.
Figure 2. GTN Bestsellers All Barcode Products Index. Data indicates hundreds of gardening products sold week by week during Epos Sales, January to April 2013 - 2019.

In this modified version, the explanation within the graph has been moved to the caption. A Y axis has been added, as well as axis labels. The unnecessary borders on the top and bottom of the graph have been removed.
useful for showing relative amounts of different things at the same time; good for showing big differences
VISUAL PRINCIPLE don't feel the need to “dress up” your data
3D renderings such as this are unnecessary and can skew data visually
Renderings such as this are often considered chart junk, and can also skew data.
useful for showing a series of parts that add up to 100%—but not if there are too many parts.
Labels and percentages, but the 3D can skew the perspective. Avoid.
Labeled, but missing percentages.
choose the right visual to display what you are trying to convey
Classic example of the wrong visual being used to display data
In the previous example, the percentages are without basis.
simplified drawing showing appearance, structure, or workings of something
Exploded diagram of a fruit-slicing machine, which would be accompanied by a list that identifies the numbered parts.
symbolic depiction emphasizing relationships between elements of a space
Suppose you gave me a map showing the route you took on a trip to the Matthei Botanical Gardens and Trails, and marked it like this. Would this be necessary?
Figure 3. We took the marked trail around Willow Pond, which is located just north of the Picnic Grove and Display Gardens. We entered from the south, since we had parked in the additional parking lot to the south of the Display Gardens (not pictured).
We went over tables in discussion, so will not spend additional time discussing them here.
What is wrong with this?
The last image was not attributed.
credit the creator or owner of any visual you use or adapt to your own purposes