

Comparison between raster graphics and vector graphics:

Raster Graphics

- **Composition:** Made up of a grid of pixels, each pixel representing a single point of color.
- **Resolution:** Dependent on the image’s resolution; higher resolution means more pixels and better detail.
- **File Size:** Typically larger in size due to the pixel data.
- **Scalability:** Lose quality and become pixelated when resized, especially when scaled up.
- **Usage:** Ideal for complex, detailed images like photographs. Common file formats include JPEG, PNG, and GIF.
- **Editing:** Best edited in software that manipulates pixels, such as Adobe Photoshop or GIMP.

Vector Graphics

- **Composition:** Created using paths defined by mathematical equations, including points, lines, curves, and shapes.
- **Resolution:** Resolution-independent; they can be scaled to any size without losing quality.
- **File Size:** Generally smaller as they store mathematical instructions instead of pixel data.
- **Scalability:** Can be resized infinitely without loss of quality or pixelation.
- **Usage:** Ideal for logos, icons, and illustrations that require clean lines and scalability. Common file formats include SVG, AI, and EPS.
- **Editing:** Best edited in software that manipulates paths and shapes, such as Adobe Illustrator or Inkscape.

Here’s a quick summary:

Feature	Raster Graphics	Vector Graphics
Composition	Pixels	Paths
Resolution	Resolution-dependent	Resolution-independent
File Size	Typically larger	Generally smaller
Scalability	Quality loss when resized	

Feature	Raster Graphics	Vector Graphics
		Scalable without quality loss
Usage	Photographs	Logos, icons, illustrations
Editing	Photoshop, GIMP	Illustrator, Inkscape