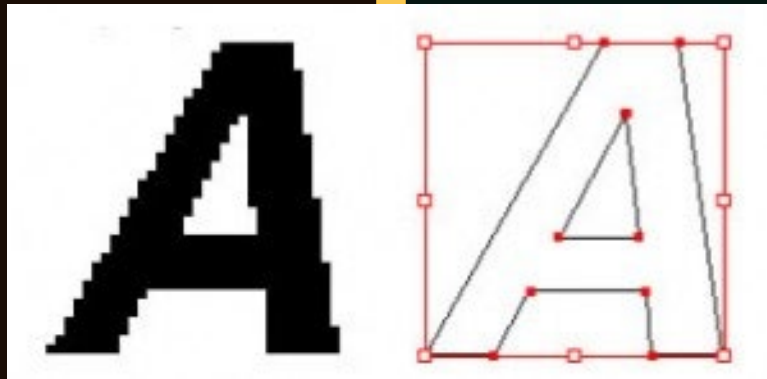


IMAGE TYPES

RASTER

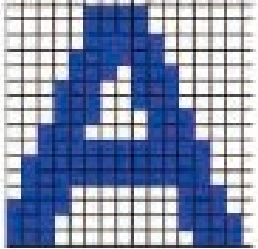
VECTOR



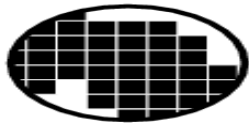
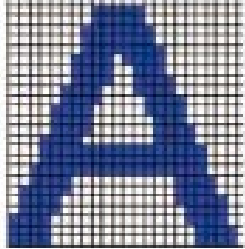
Pixels vs. Mathematics • Resolution • Scalability • File Formats

RASTER IMAGES

1024 pixels with gaps



MEDIAGLOBE-III



What is it?

A raster image (also called a bitmap) is made up of a grid of tiny colored squares called pixels. Each pixel has a specific color and position.

Scaling

Enlarging a raster image stretches pixels, causing pixelation — a jagged, blurry appearance. Quality degrades when resized beyond original dimensions.

Best for

Photographs, detailed artwork, scanned images, and any content with complex color gradations.

File formats

PSD · TIFF · BMP · PNG · JPG · GIF

VECTOR IMAGES

Raster images



- Made of pixels (tiny dots).
- Scaled up image will lose quality.
- Extra time to convert to vector.
- File types:
PSD, TIFF, BMP, PNG, JPG, GIF
- Perfect for printing & photographs.

Vector images



- Made of mathematical calculation that form objects and lines.
- Scaled to any size in same quality.
- Can be printed at any resolution.
- Can be easily converted to raster.
- File types: EPS, AI, CDR
- Good for engraving & sandblasting.

Vector: mathematical paths define shapes — infinitely scalable

A vector image uses mathematical formulas to define points (vectors) along shapes or paths. Because they rely on math rather than pixels, they can be scaled to any size with no loss of quality.

Resolution Independent

Scale to any size — business card to billboard — with zero quality loss. File size stays the same.

Mathematical Paths

Built from points, lines, curves and fills defined by equations — not pixel grids.

Web Friendly

Smaller file sizes than raster images mean faster download times and crisp display on any screen resolution.

File Formats

EPS · AI · SVG · CDR

RASTER vs. VECTOR — COMPARISON

CATEGORY	RASTER (Bitmap)	VECTOR
MADE OF	Pixels (tiny colored squares)	Mathematical paths & points
SCALABILITY	Loses quality when enlarged	Infinitely scalable — no quality loss
FILE SIZE	Larger — grows with resolution	Smaller & stays constant
BEST USE	Photos, complex colour images	Logos, illustrations, typography
FORMATS	JPG · PNG · GIF · BMP · TIFF	SVG · EPS · AI · CDR
SOFTWARE	Photoshop · GIMP · Paint	Illustrator · CorelDraw · Inkscape

PIXELATION – WHAT HAPPENS WHEN YOU SCALE RASTER IMAGES

Raster images



- Made of pixels (tiny dots).
- Scaled up image will lose quality.
- Extra time to convert to vector.
- File types: PSD, TIFF, BMP, PNG, JPG, GIF
- Perfect for printing & photographs.

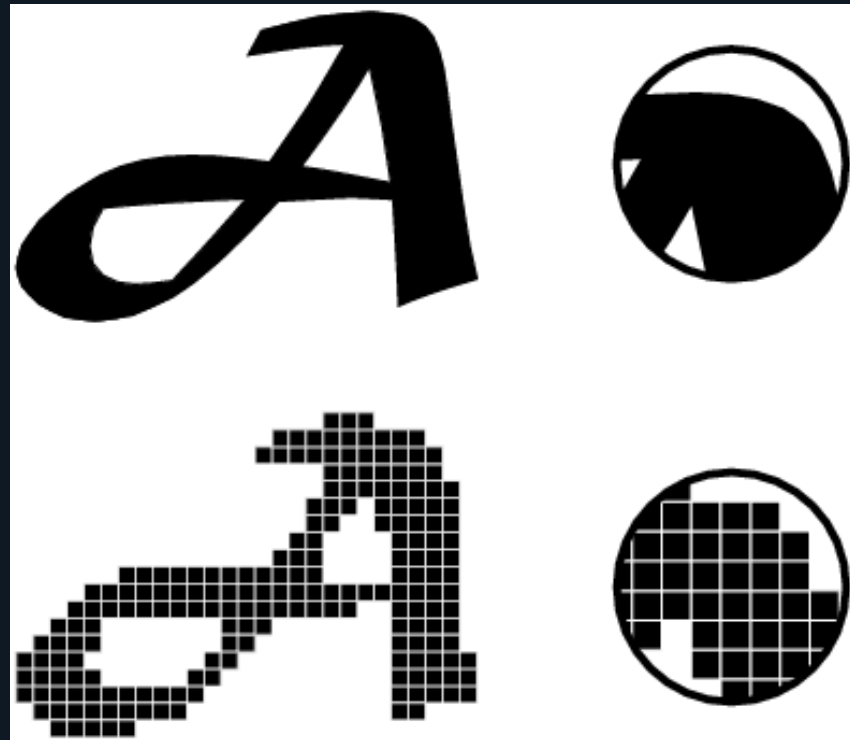
Vector images



- Made of mathematical calculation that form objects and lines.
- Scaled to any size in same quality.
- Can be printed at any resolution.
- Can be easily converted to raster.
- File types: EPS, AI, CDR
- Good for engraving & sandblasting.

PIXELATION

Image distortion that results from pixels being stretched when a raster image is enlarged beyond its original resolution. Each pixel becomes a visible block, creating a jagged, 'blocky' appearance.



SOFTWARE & FILE FORMATS

Vector based programs:



Corel
Draw



Adobe
Illustrator



Flash



Freehand

File extensions:

.eps .ai

Raster based programs:



Adobe
Illustrator



Microsoft
Paint



Corel
Paintshop Pro

File extensions:

.bmp .jpg .tiff .png

Raster formats:

.jpg

.png

.bmp

.tiff

.gif

.psd

Vector formats:

.eps

.ai

.svg

.cdr

.fh

RASTER SOFTWARE

- Adobe Photoshop
- GIMP (free)
- Microsoft Paint
- Corel PaintShop Pro
- Affinity Photo

VECTOR SOFTWARE

- Adobe Illustrator
- CorelDRAW
- Inkscape (free)
- Adobe Flash / Animate
- Macromedia Freehand

WHEN TO USE RASTER vs. VECTOR

USE RASTER WHEN...

Photography

Digital photos always start as raster — cameras capture pixel data.

Digital Painting

Complex colour blending and brush strokes require pixel-level control.

Photo Printing

High-resolution raster files produce photographic-quality prints.

Web Images

JPG and PNG are standard web formats — optimised for fast loading.

VS

USE VECTOR WHEN...

Logos & Branding

Logos must scale from favicon to billboard — vectors handle this perfectly.

Illustrations

Clean line art, icons, infographics and technical drawings.

Large Format Print

Banners and signage need infinite scalability — no pixel limits.

Typography

Text as vector paths stays sharp at any size.