Computer Graphics

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What is Computer Graphics?

topics and definition

- What do you think computer graphics is?
- What sort of topics do you think it includes?

What is Computer Graphics?

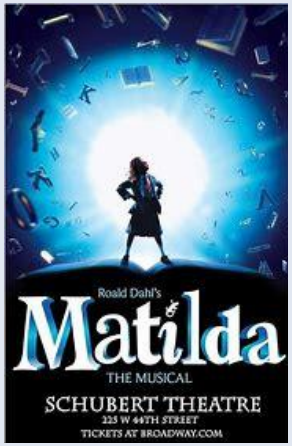
topics and definition

- "Visual images produced by computer processing"
  (Oxford Languages Dictionary)
- Animation, UI, graphic design, vector and pixel graphics, rendering, AR and VR, and simulations are all included in CG

Graphic Design

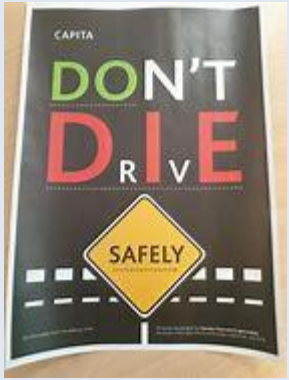
What is graphic design?

Graphic design is when someone combines fonts, images and shapes to share a message to the world. Graphic design is mostly used in logos and advertising. These need to be eye-catching while also looking nice and appealing to the viewer.



These are both examples of graphic design.

Which advertisements are better?

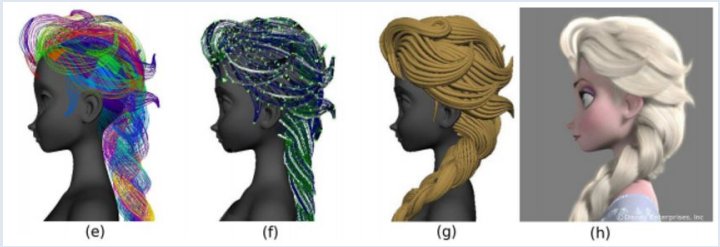


Examples of graphic design advertisements.

Rendering + Animation

Animated Movies

Studios like Disney and Pixar are well-known for their 3D animated movies. A lot of that relies on complicated rendering technologies that process textures, depth, lighting, shapes, and more to produce a 2D movie.

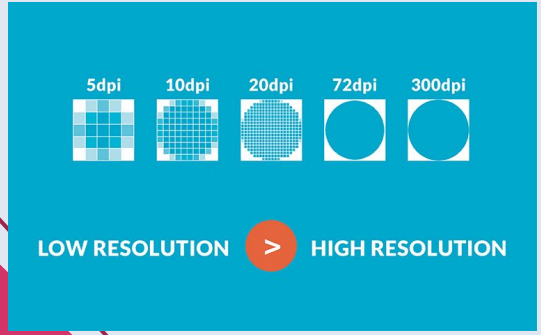


Examples of rendering steps in Moana and Frozen

Vector + Raster Graphics

Raster

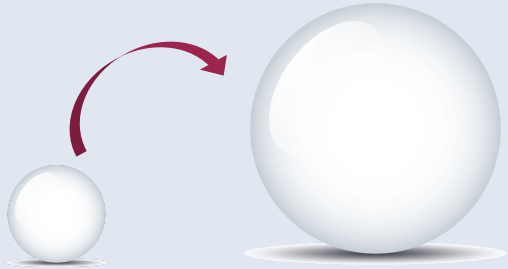
Raster graphics utilizes many **pixels** to create an image. Each pixel is a small cube filled with color. The more pixels there are, the higher the **resolution.** DPI, or Dots Per Inch, is a measure of resolution.



This image shows a circle drawn in multiple Dpis, or resolutions.

Vector

"Vector art is created by using mathematical formulas to define points in two-dimensional space. These points are then connected by curves, resulting in a clean, cohesive image." (cre8tiveskill). Vector art can be enlarged easily with no quality decrease, and remains crisp.



A vector image being resized retains its quality.

Activity

Pixel Art or Vector Art?

Raise your hand...

Vector!!
From Despicable Me!

Experiment with making pixel art!

pixelart.com/draw

Can you draw an apple using pixel art?

https://disneyanimation.com/process/

https://www.youtube.com/watch?v=NldkLGYYJKg

Alternative: see how disney movies are made!

Sources + Citations

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