Graphics

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Today’s topics - Graphics

- Why are graphics important?
- Beauty in video games
- Art preparations
- Modern 3D graphics creation
- Simple ways to make good looking graphics
The secret sauce

Graphics don’t have to be beautiful but they have to be **interesting** and **memorable**!

Will your graphics stand out?
Graphics are your main marketing tool

6 screenshots from Steam new releases, which games would you play?
Graphics are your main marketing tool

6 screenshots from popular indie games.
It helps if you know how to stand out!

Firewatch

The Last Night
Artists don’t draw their best picture on the first try!
Good art requires multiple iterations!
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Stardew Valley character art over time: https://boards.fireden.net/v/last/50/424223059/
Beauty in video games

GDC video Analyzing Beauty in Video Games: https://www.youtube.com/watch?v=BqZzxAmlKP4
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Preparations

- Finding reference materials - **what kind of material?**
- Choosing color palette
- Material design
- etc.
Finding reference materials

Famous paintings:

Historical images:
Storing reference materials
Concept art

The goal of concept art is to visually convey ideas!

Concept art does not have to look good.

Author: Raido Kikas
Concept art

This is not a concept art, it is an illustration:
Concept art
Making concept art

Multiple variants of the same thing lets you find the best concept.
Choosing color palette
Puzzle
Puzzle
Puzzle
Puzzle
Puzzle
Puzzle
Puzzle
Puzzle
Choosing a color palette
Choosing a color palette

- Hue change
- Intersection points

Less is more
The meaning of colors

Is there a meaning?
The meaning of colors

Blue

Orange
Graphics workflow design

- Graphics making process
- Materials
- Post-processing

Blackthornprod: https://www.youtube.com/watch?v=nMquxE6ywpg
Workflow automation in Ground Forge
Workflow automation in Ground Forge

Custom Unity editor script

xBRZ scale
Material design

PBR materials
Post processing
Post processing

Should be used moderately!
Are 3D games more popular?

2D games
- Simple controls
- Easier development
- Easier instructions

3D games
- Real feeling
- High-quality graphics
- Versatility

Modern 3D workflow

AAA quality Tombstone

1. Reference images:
Modern 3D workflow

2. Lowpoly modelling

Do not be afraid of triangles!
Modern 3D workflow

3. Make your model optimal

68 tris BAD  |  28 tris GOOD
Modern 3D workflow

4. Sculpting

Millions of polygons!
Modern 3D workflow

5. Retopology (sometimes necessary)
Modern 3D workflow

6. UV unwrap

JUST LIKE A PAPERCRAFT
Modern 3D workflow

7. Baking

Ambient Occlusion Map  Cavity Map  Normal Map
Modern 3D workflow

8. Texturing

Modern tools:
- DDO-painter
- Substance-painter
Making 3D graphics takes more time!

Making this dude while learning Blender took me 90h.

→ not feasible for a full game.

But there are alternatives!
Different approach: Texture first model later

Different approach: Texture first model later

1. Analyze what textures you will need
2. Find those textures and make a texture sheet
3. Model your environment

Benefits:
- Can see the result while modelling (more fun)
- Can reuse the textures
Battlefield 4 vs Star Wars Battlefront graphics

AAA graphics take too much time even for the industry.

Star Wars Battlefront pipeline: https://www.youtube.com/watch?v=U_WaqCBp9zo&t=577s
3D scanning / photogrammetry

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3D scanning / photogrammetry

Blurred surface + tiling texture
3D scanning / photogrammetry
Make your own graphics workflow:

Example: Hardland

Easy way to make unique looking games

Low poly flat shaded art

Some examples: https://forums.tigsource.com/index.php?topic=42034.0
Easy way to make unique looking games

Low poly + atmospheric effects
Easy way to make unique looking games

Pixelart
Easy way to make unique looking games

Photographed or scanned art

Lumino city: http://www.thisiscolossal.com/2014/12/lumino-city/
Easy way to make unique looking games

Geometry based games

Manifold garden: [http://manifold.garden/](http://manifold.garden/)
Lecture task

Find a game that has an unique graphic style.

Post a picture of this game that illustrates its art style.

Describe what element or technique makes this art style good in your opinion.
Lecture task - Example

Tetris Effect

A lot of glowing particles that have a matching color scheme with the Tetris blocks.
Conclusion

- Graphics are your main marketing tool
- Good graphics requires multiple iterations
- Don’t skip the preparations
- Make your own workflow
Next week

- **User Interface Design**
  - Design rules
  - Readability
  - Different UI styles