

Art 384: Introduction to 3D Animation

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Lecture 11

Schedule

- Roll
- Review for Exam
- more poly modeling

Review for Exam

- Next time!
- 20 minutes, short answer, definitions
- if it's in the PDF's, you are responsible
 - otherwise not
- Questions?

Level of Detail

- After you plan all your shots, you know what your models need to do.
- Also, you know what they do not need to do

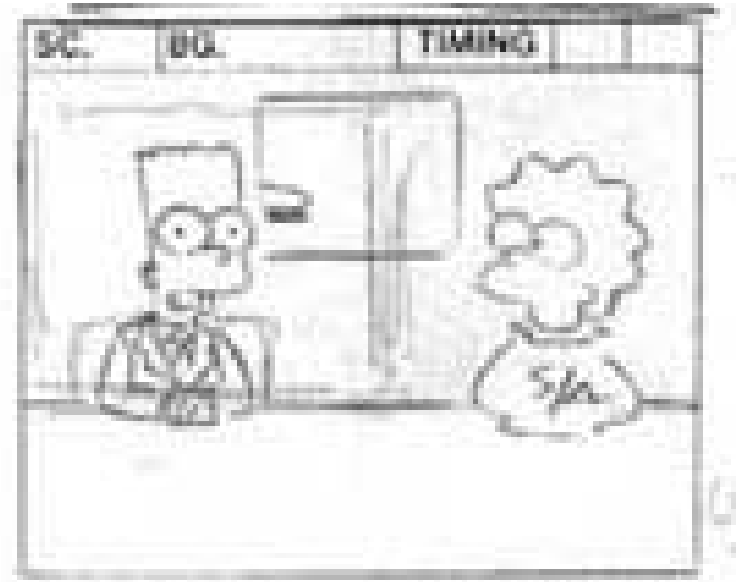
Analysis of a storyboard frame

We know we DO need

- a desk
- Bart
- Lisa
- A background plane

We do NOT need

- Bart's feet, socks, toes, pants
- Bart to be able to stand
- other characters
- front of desk



Level of Detail

- A way of classifying models
 - I'll give you the ILM classifications, SIGGRAPH 2005
- 4 levels of detail
 - Hero-hero
 - Hero
 - Middle
 - Low

Hero-hero LOD

- For long-held, extreme closeup shots
- When Yoda senses order 66's outcome
- Eyelashes, individual hairs, structure in irises, nostril content
- Whole body?



Hero LOD



- Waist-up to full-body shots
 - Even further out, if held for a long time
 - Audience has time to notice wrong details
- Hair, eyelids, clothing details, fingernails
- Still, not hero-hero

Middle LOD

- Shots that are less than 5 seconds, in which the model does not fill more than 1/3 of the screen
- Relatively rare

Low LOD

- For objects that are
 - small relative to the image frame
 - in continuous motion
 - not the center of attention
- Polygon count in the 100s to low 1000's.
Cheat on clothing, use textures rather than light.

LOD for games

- You betcha
- All assets have multiple LOD's, keyed at least on distance
- Gun models that you look at for 30% of game time vs. the standard 20-polygon phone
- Engines will automatically switch between different LOD's-- criteria vary
- Different engines define different LOD's

Why do LOD?

- Movies: time is money
 - less detail => faster render time, lighting iterations, animation is easier to work with
 - often, hero models will be rigged with low-poly models.
 - The low-poly model gets hidden for final render
 - The hero model will be hidden while the animator works
- Games: framerate is money
 - game engines impose tris/sec limit

More why LOD?

- It always takes more time to do high detail than low.
 - labor is the main expense
 - **Do only the work you need to do.**

Hints on modeling

- axis alignment
- center on origin
- work from low detail to high
- use groups to pose and unpose
- use groups to manage complexity

Use of layers!

- Just like photoshop
- Use to manage pick complexity
- Other uses...