Screencast Storyboard
DRAW / WRITE

Title: Designing for 3D Printers pt. 1: know your printer

Quick overview of content to be covered
- mostly spoken, who I am, why I'm doing this, what this set of slides will be looking at.

Build area and volume:
- What are they?
- Screenshot from MakerBot website: printer statistics (return to same image later when talking about resolution)
     - Use callout on important areas

How big should you print:
- Printing big pieces is usually a bad idea: try to print small things and join them.
- Mechanics of warping will be addressed in the next slide set

Nozzle diameter and resolution
- The nozzle diameter determines print speed and accuracy: a smaller nozzle can deposit plastic more accurately

Tradeoff between nozzle diameter and speed: a bigger diameter allows more plastic/second, but less accuracy.

x-y resolution is largely irrelevant: plastic spreads out when extruded, and it's going to be much more than the positional error.

Resolution: z-axis positioning.
- This is the important figure: it gives you a minimum layer height. Show an example of large and small layer heights.
- You get to set your layer height when you send your model to print: it should be greater than the resolution and smaller than the diameter of your nozzle

Set the layer height so your small features are evenly divisible by the height: include an example

Materials: what each material is good for, PLA vs. ABS.
- Only a quick overview now to call it out as an important printer fact, more on the topic later (i.e. how you can tell if your printer can use an exotic filament)

Try to examine previously printed parts from that printer if you can
- Compare feature size, warping, strength
- If you can't, look at hobbyist websites of people with similar printers/materials

Review: what statistics are important? Is the printer accurate enough? What contributes to accuracy? What has the printer previously made?

Brief intro/tease to next section, dealing with support material
- Most difficult part about designing with printers...