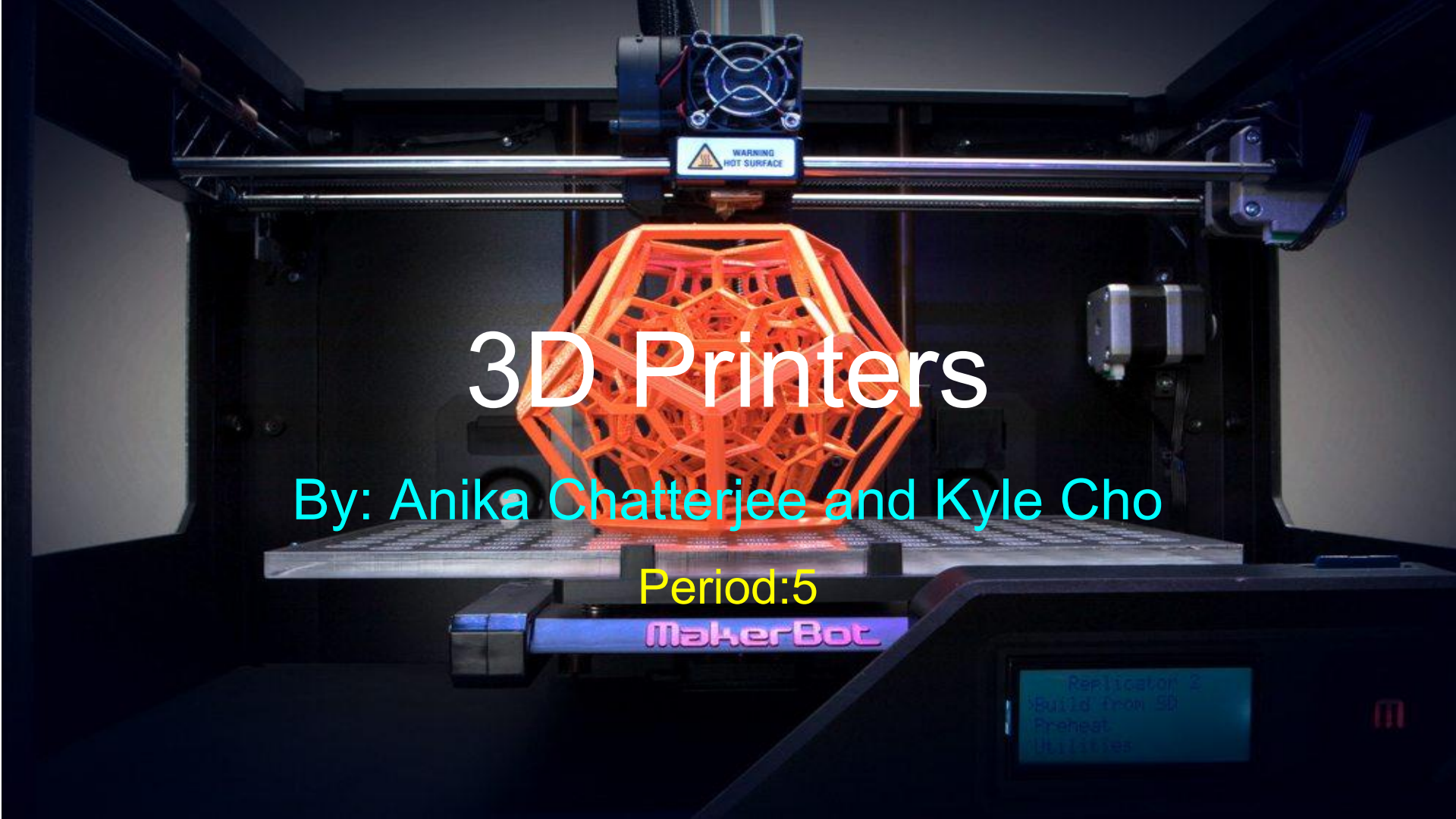
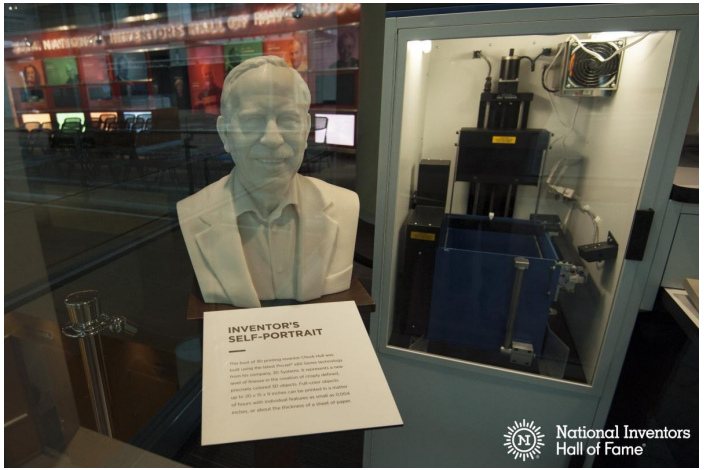


3D Printers

By: Anika Chatterjee and Kyle Cho

Period:5

The Beginning:

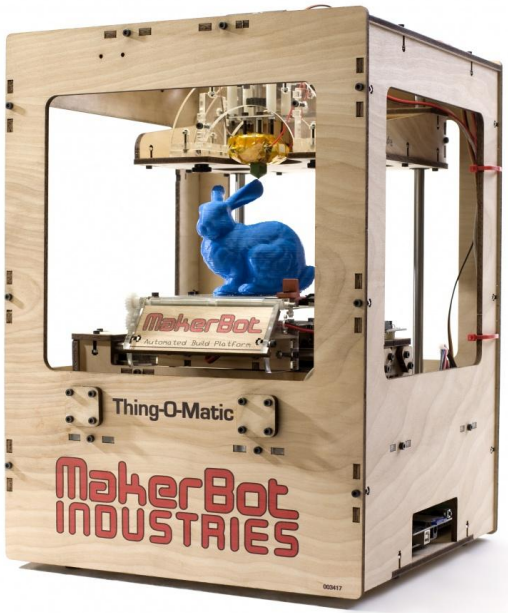


The first 3D printer was invented in 1984 by a man named Charles Hull. He created the idea of stereolithography, which is a printing process that takes digital pictures and made them actual objects.

The first 3D printer was quite similar to what we have today. It used a type of plastic called photopolymer to make a design layer by layer. The difference, however, was how the old fashioned printer worked. Instead of both the platform and laser moving in unison to make the design like it does today, the laser only moved its aim and the platform went up and down to help with the layering. Also, instead of the material coming from the laser itself, the platform was in a vat of fluidized material and when the laser hit the liquid, it hardened.

Disciplinaries and Constraints

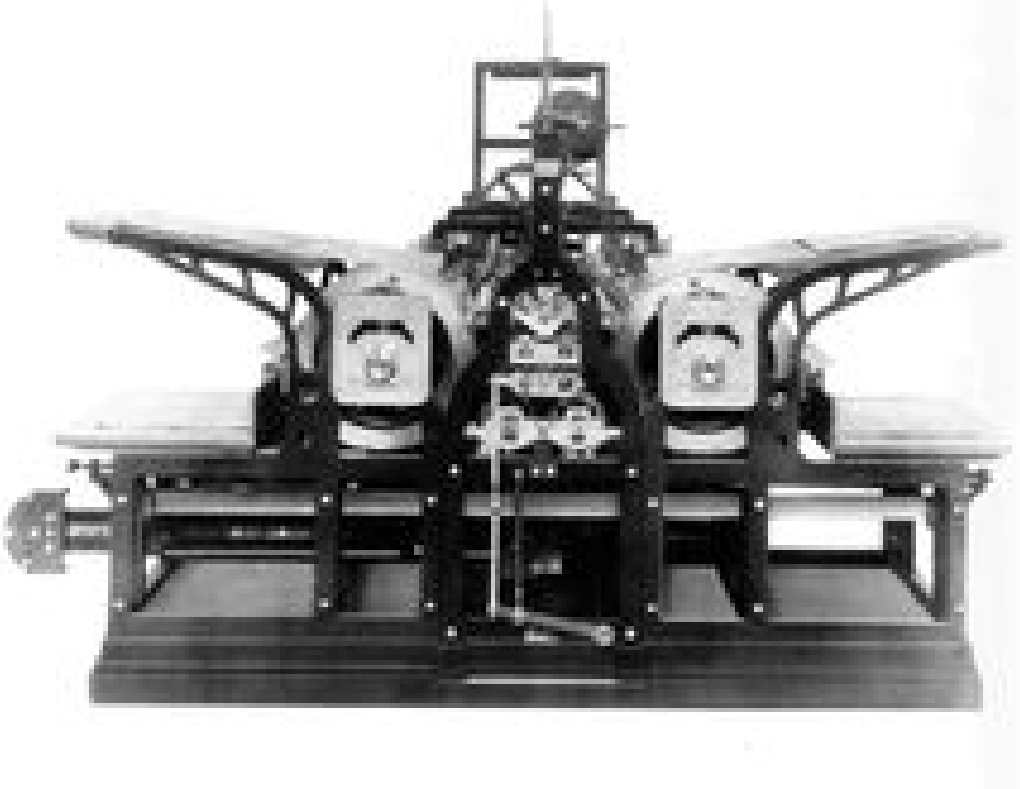
Like every product, the 3D printer had constraints. A big one was the fact that it had to be extremely accurate. The main purpose for the printer was that it could be used to make a custom product. If it wasn't completely accurate, it defeated that purpose. Another constraint was that it had to be more convenient than just going out and buying what you need. This meant to make an object, it had to be cheaper and faster. Both of which were achieved.



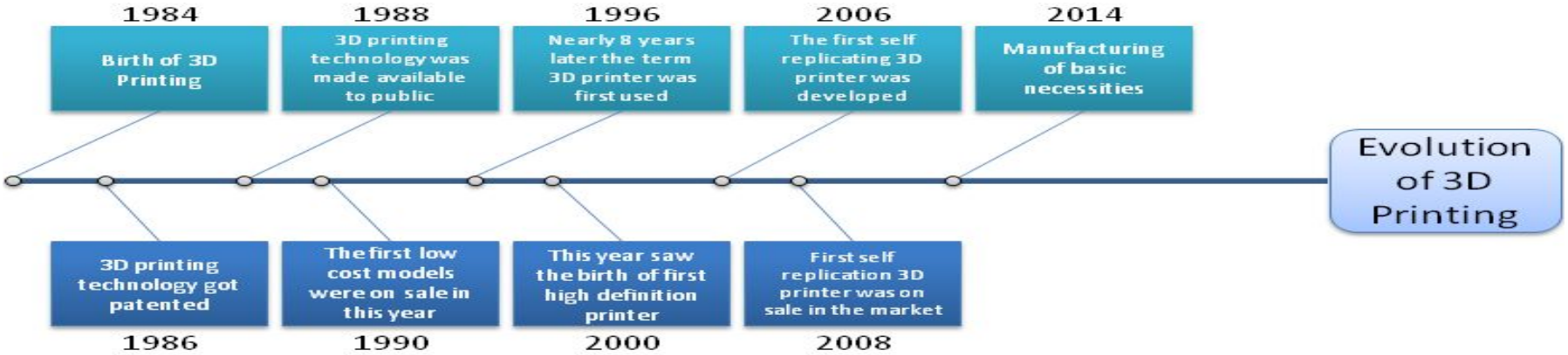
The Inspiration, The Original, The Printing Press

The first printing press was invented around 1440-50 AD in Europe. The inventor, Johannes Gutenberg, was determined to find a more efficient and faster way of printing. He broke wooden blocks and carved letters, numbers, and symbols on them. He created ink by combining linseed oil and soot. Lastly, he devised a mechanized way of printing the ink on paper.

From that point forward, the invention of the printer improved. It became digital based in 1938 by Chester Carlson. In 1984, the 3D printer was finally invented and we could make actual objects at home.



History and Evolution of 3D Printer



-1984, first 3D printer invented by Charles Chuck Hull. Later, he went on to found 3D system.
-2002, working 3D kidney created.
-2008, first person to walk with 3D printed prosthetics leg.
-2009, Bio3D printer print the first blood vessel and MakerBot start to sell DIY 3D printing kits.

-2011, a prototype 3D printed car and aircraft.
-2012, first 3D printed prosthetic jaw implanted.
-2014, manufacturing of basic necessities.
-March 2014, a women in Norway becomes the world's first recipient of a 3D printed skull transplant.
-April 2014, a Chinese company figure out how to print 2000 sqft houses.

Impact on Society

In recent years, 3D Printers have been becoming more and more popular at home. You can print almost anything with them with only size and complexity as a constraint. This is both good and bad. It is good because it makes things more convenient for people since it's a faster, more accurate,and cheaper method of getting what you need. The downside is if you can create almost everything, bad people can print dangerous and possibly illegal objects.

Why is the 3D Printer Important?

3D printers are important because you can make custom products that are much more accurate than the ones you can get at stores. Also, if you need something immediately, and stores do not carry it, you don't have to wasted 3-5 business days by buying it online. You can just printing in a matter of hours. The space station also uses 3D printers to create things in space rather than wasting time and money bringing the object up from Earth.

Change and Prediction

If we could change the 3D printer in any way, we would make it more faster so you don't have to wait hours for the product to be finished. We would also make it safer by adding a cover so one cannot stick their hand in and get burned. We would also make the printer have the ability to print more than one material or at least more than one color per design.

In ten years, we predict the 3D printer will have a more clean, efficient design that will be lighter and not have wires visible. There will be many choices for size ranging from small and portable to large and stationary. They would also be more mainstream and be in many normal people’s houses, just like the regular digital printer.

Sources:

https://individual.troweprice.com/staticFiles/Retail/Shared/PDFs/3D_Printing_Infographic_FINAL.pdf

Where is 3D printing used? | Ultimaker. (n.d.). Retrieved September 01, 2017, from https://ultimaker.com/en/explore/where-is-3d-printing-used
https://www.pcmag.com/ article2/0,2817,2394720,00.asp -originally made

Haria, R., Clarke, C., Jackson, B., Khorajiya, T., Printing, T. F., Petch, M., . . . Miller, A. (2017, August 26). The Evolution of 3D Printing: Past, Present and Future. Retrieved September 01, 2017, from https://3dprintingindustry.com/news/evolution-3d-printing-past-present-future-90605/

History of Printing Timeline. (n.d.). Retrieved September 01, 2017, from https://printinghistory.org/timeline/ -regular printer

Ponsford, B. M., & Glass, N. (2014, February 14). 'The night I invented 3D printing'. Retrieved September 01, 2017, from http://www.cnn.com/2014/02/13/tech/innovation/the-night-i-invented-3d-printing-chuck-hall/index.html -materials

Goldberg, D. (2017, August 18). History of 3D Printing: It's Older Than You Think. Retrieved September 01, 2017, from https://www.autodesk.com/redshift/history-of-3d-printing/

Walker, A. (2013, June 21). 3D printing for dummies: How do 3D printers work? Retrieved September 01, 2017, from http://www.independent.co.uk/life-style/gadgets-and-tech/features/3d-printing-for-dummies-how-do-3d-printers-work-8668937.html -3D printing. How it works. Then vs Now
Matthews, M. (2015, September 28). The Evolution of the 3D Printer. Retrieved September 01, 2017, from https://prezi.com/m/ya2xlt8afhg-/the-evolution-of-the-3d-printer/ -evolution of 3D printer