CHAPTER: 001: INTRODUCTION

College Bot builder's guide

I want to LIVE!

Explorations in Engineering
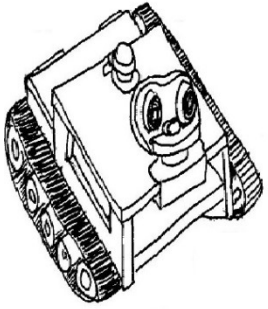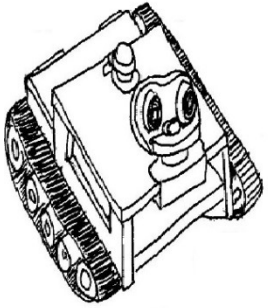
- This Class
- 3D Printing
- Computer Aided Design (CAD)

OBJECTIVES FOR TODAY

1. Introduction to the class and overall course objectives

2. Introduction to 3D printing
    1. What it is and how it's used
    2. The three layers of the "toolchain"

3. Practice modeling and printing

WHAT ARE WE GOING TO DO?

ONE ROBOT PER CHILD

In the news! $6,000 stretch goal!

▶ PLAY

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Deliver a personal robotics experience to every student in our class this spring, while also getting a cool robot yourself!

59 backers

$5,588 pledged of $2,300 goal

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WHITE   TRANSLUCENT   LIGHT BLUE
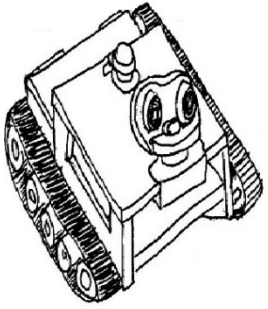BLACK   ORANGE   BLUE
PINK   GOLD   PURPLE

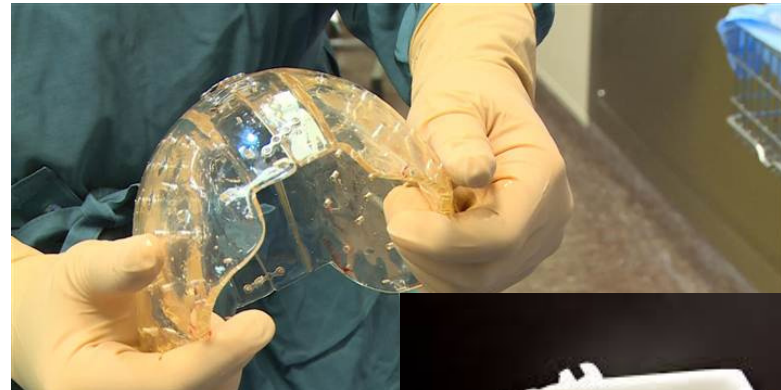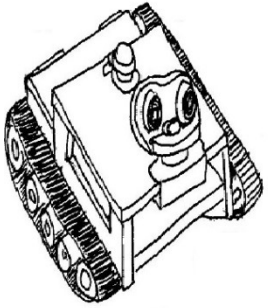More details in the "Comic Book" (handed out at the end of class)

WHAT IS 3D PRINTING?

A 3D model is "sliced" into layers and each layer is then printed with melted plastic, each layer on top of the last one

Medical First: 3-D Printed Skull Successfully Implanted in Woman
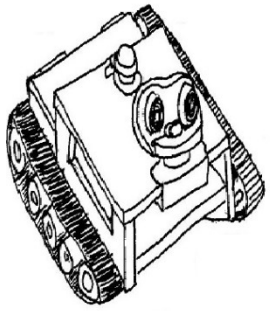
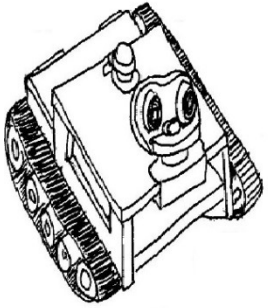BY JAMES ENG

WHAT IS 3D PRINTING?

- "Robohand" (video)

Other materials

A PERSONAL EXAMPLE

THE LAYERS OF 3D PRINTING

3D Modeling	Slicing	Printing
What? A description of the shape you want to print	A translation of the shape into specific layer-by-layer instructions a printer can use	A "robotic hot glue gun" heating plastic to just over the melting point and putting it in the right place
How? • Download • Graphical modeling (CAD) • Code modeling	• Sli3er • MakerWare	• Conventional XYZ printer • Delta printer