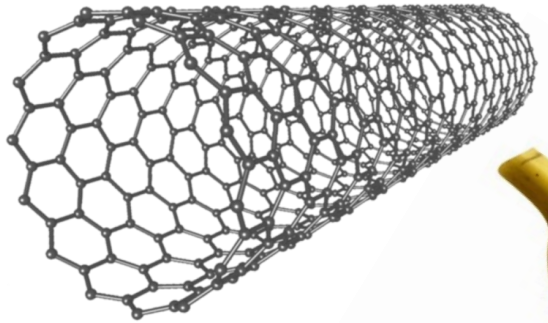
SOLIDWORKS



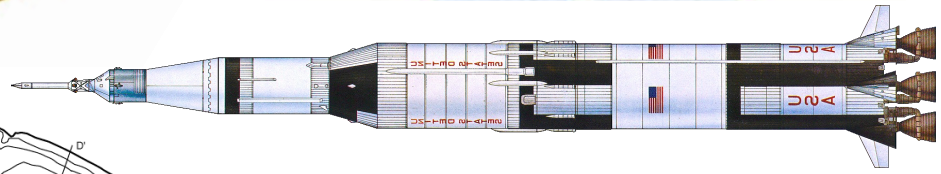
How to CAD almost anything!

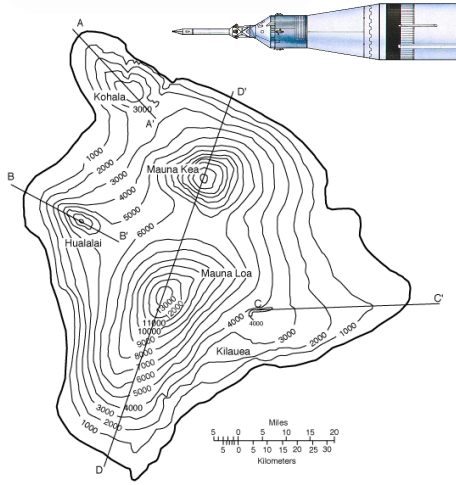
MIT IAP 2024

Instructor: Andy Eskenazi

Session 1

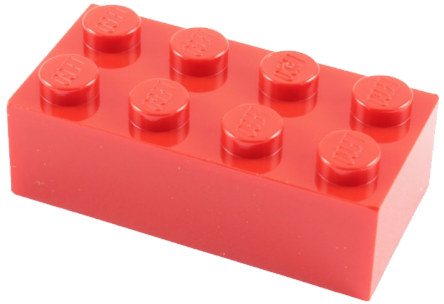
MIT AEROASTRO

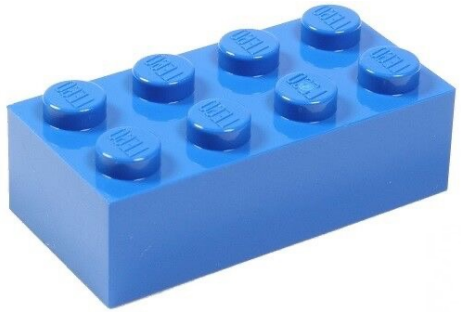




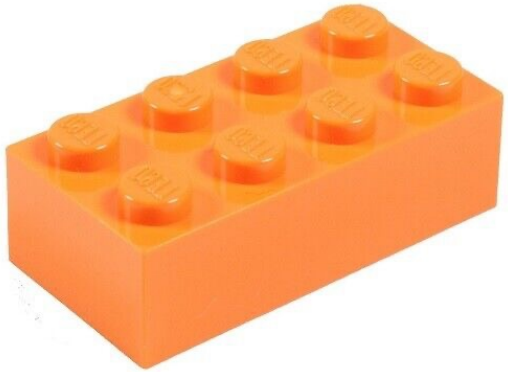
MIT

Agenda





- Quick intros!
  - Why are you here?
- Workshop logistics and important info
  - Overview of sessions and projects
- Session 1:
  - Demo of the session's solidworks commands: *sketches, plane selection, boss extrude/cut, fillet/chamfer, colors, material properties…*
  - Demo of projects: cake, iPhone 6, pencil



- Questions?
- Preview of Session 2

Quick Intros!

1) Name, major, year
   - Ex: Andy, AeroAstro, PhD Y1
2) Hometown
   - Ex: Buenos Aires, Argentina
3) Spirit animal
   - Ex: Angus Aberdeen cow
4) Why CAD almost anything?
   - Ex: I think it's cool to look at a random object and imagine how to cad it. Also, I love Solidworks.

Why are you here?

"I want to get better at CAD"

"Making cool renderings from designs"

"Building a portfolio"

"How CAD decisions are informed by how the finished part might be manufactured"

"Learning how to make strange objects for 3D printing"

"Nothing in particular, this just sounds very fun"

"Looking forward to best practices"

"Figure out where I can apply CAD for my research project"

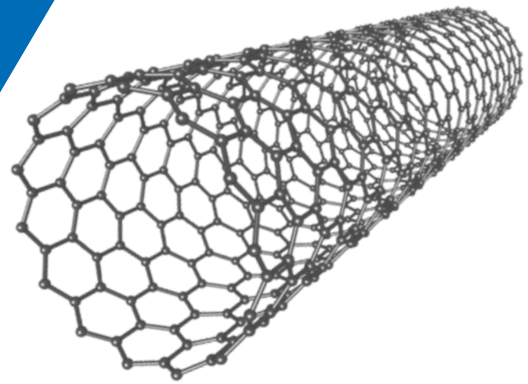
"Not needing to watch tutorials for every item I try to CAD"

"A new skill that is fundamental in most engineering degrees"

"Becoming more confident"

"Learning to make moving parts"

"To really be able to CAD almost anything"



Welcome!

How to CAD almost anything!

MIT IAP 2024

Workshop logistics

Week 1		Week 2		Week 3	
Session 1: 16/01		**Session 4:** 22/01		**Session 7:** 29/01	
Sketches, basic feature commands, editing and defining sketches, coloring parts, changing material properties	• Cake • iPhone 6 • Pencil	Loft, sweep	• Boat hull • Control tower • Banana!	Sketch/feature names, equations, design table, configurations	• Set of 6 screwdrivers • Set of 4 drones
Session 2: 17/01		**Session 5:** 24/01		**Session 8:** 31/01	
Spline tool, sketch picture	• Topographical map • Logo keychain	Review of all commands + wrap, renders	• Diet coke can • Saturn V • Brass rat ring	Engineering drawings, GD&T	• Wooden manikin • Drawings
Session 3: 19/01		**Session 6:** 26/01		**Session 9:** 02/02	
Revolve, mirror, circular pattern, plane creation	• Fidget spinner (w/ airfoils!) • Carbon n.tube	Assemblies, exploded view, animations	• Lego 2x4 block • Lego minifig • Lego house!	Gears, mechanical mates, motor torque animation	• Spinning teacups assembly!

Important info

- Two cohorts (MWF):
  - Morning: 10:00am – 12:00pm
  - Evening: 3:30pm – 5:30pm
- GIS & Data Lab (Rotch Lib)
  - Open M – F: 10:00am – 6:00pm
  - There is a 24/7 pilot program?
  - 16 computers w/ Solidworks
- Office hours:
  - Weekday @ TBD
  - Sunday @ TBD
  - Happy to help with any of the workshop's/personal/research projects!

How to CAD almost anything!
IAP 2024 – AeroAstro Workshop

A compressed yet rewarding introduction to the mechanical design software Solidworks, for beginners (no experience at all) and pro-users alike. Come learn how to CAD (computer-aided design) essentially almost anything!

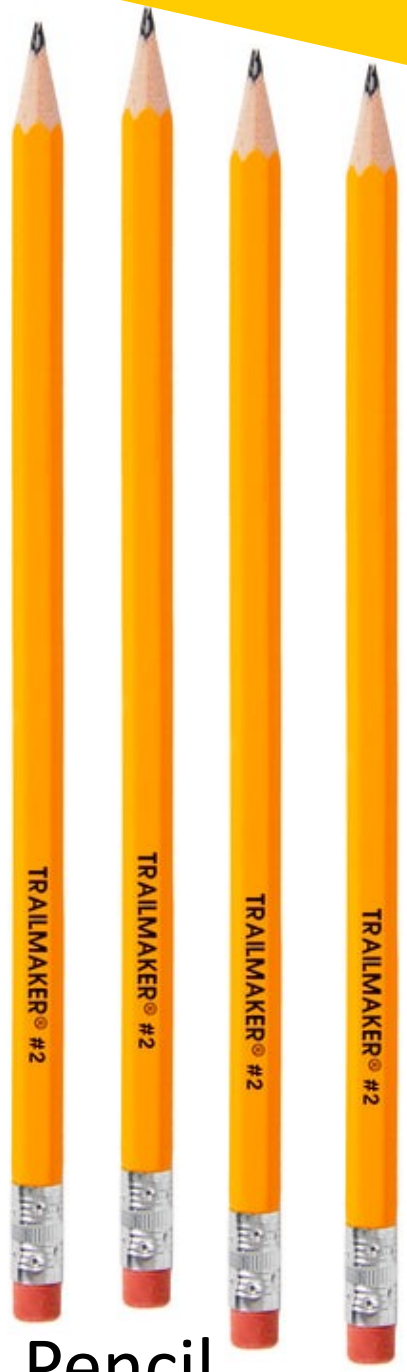
Yes, this could be YOU at the end of the workshop! You'll be equipped with the tools to design cool looking things such as a bicycle, a chess set, a Chinese violin (Er Hu), a model train, a mug and even a Trumpet!

Check out the syllabus if you have more questions!

Session 1

Cake

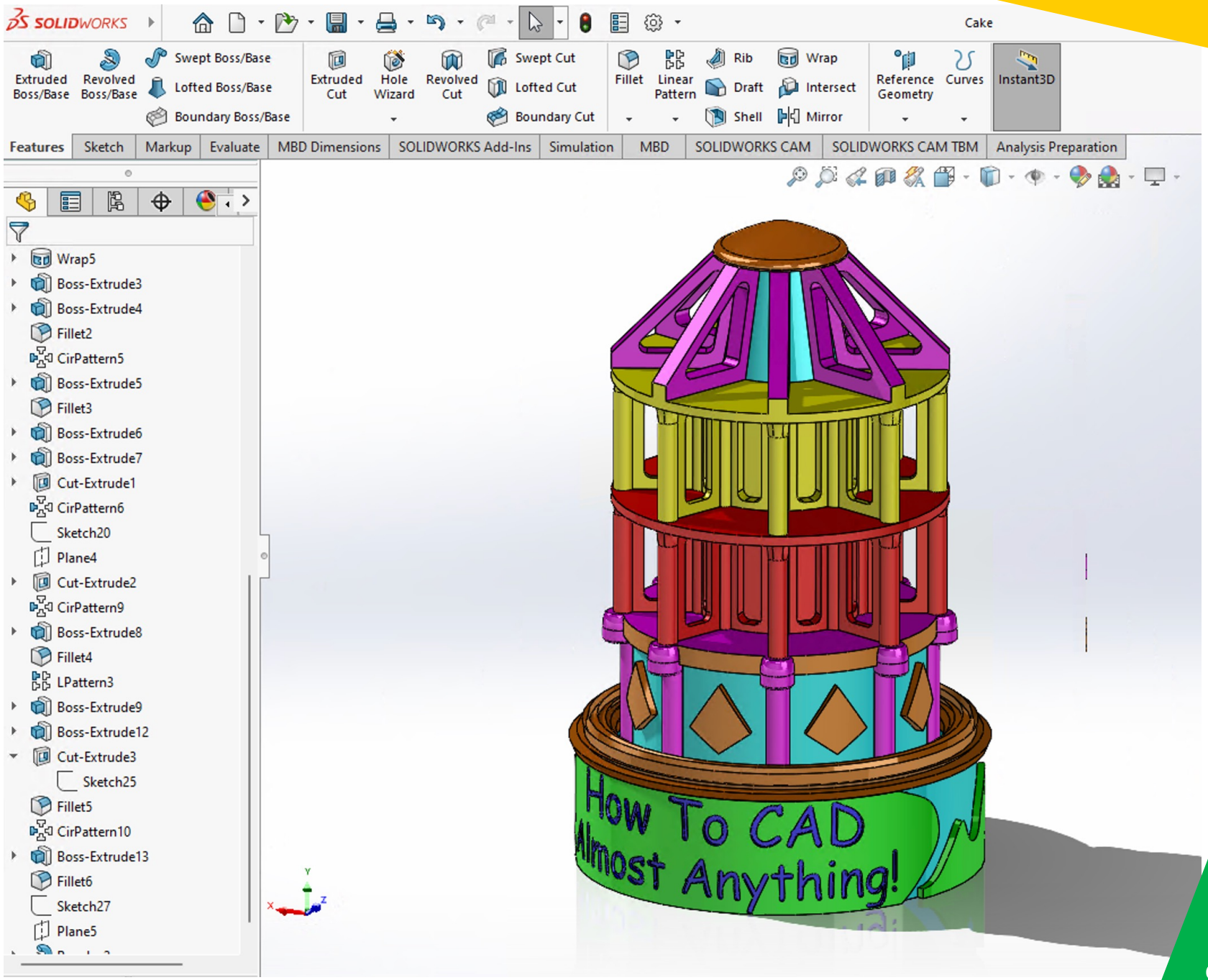
iPhone 6



#2 Pencil

Cake

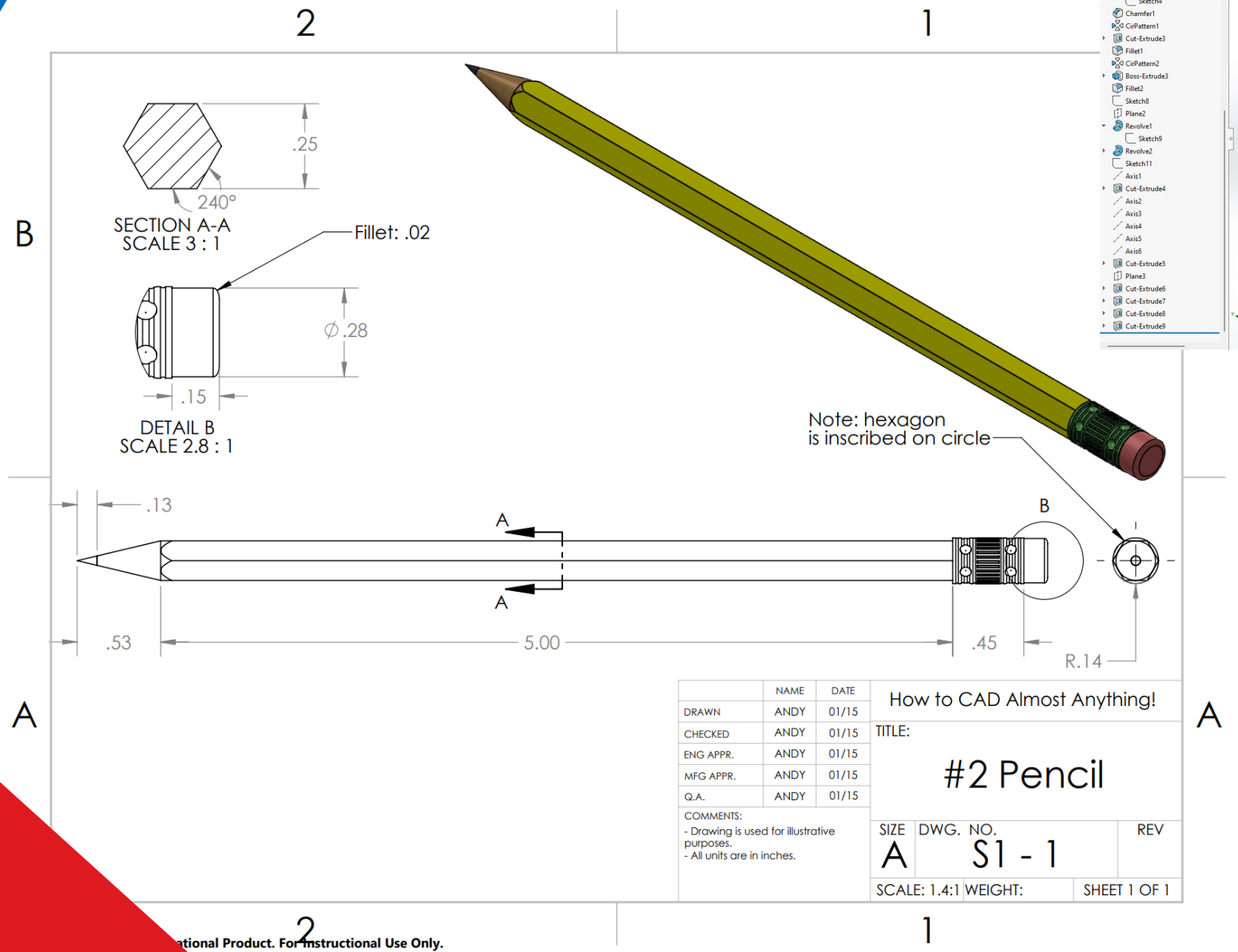
- Let's CAD a colorful cake!
  - Be creative
  - Make it 4 stories or more tall
  - Try to incorporate as many of the new commands as possible

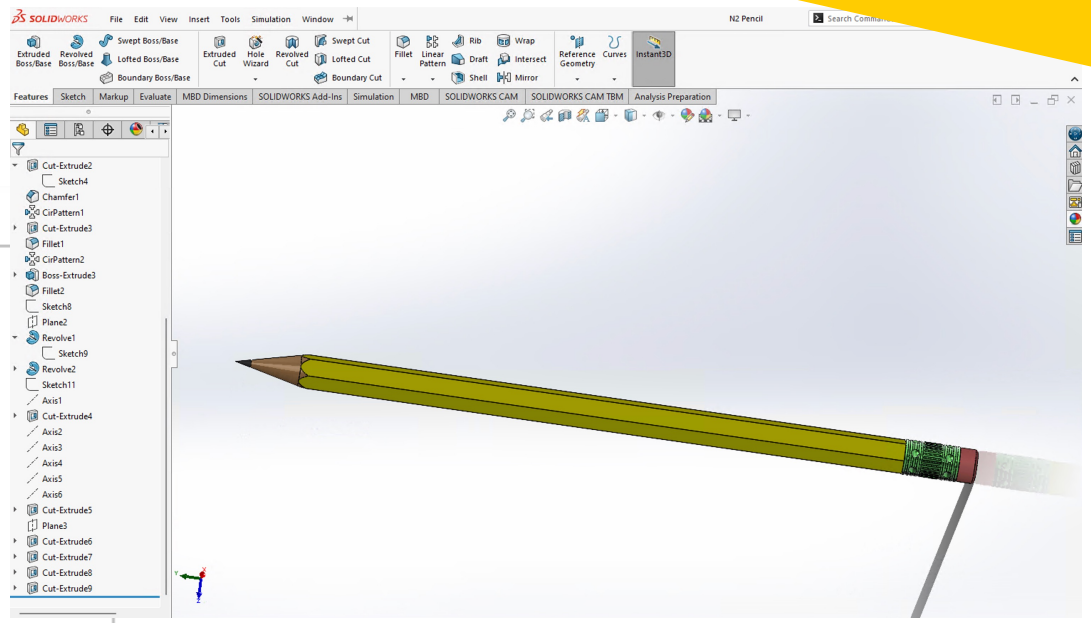


iPhone 6

- Dimensions
  - Height: 5.44’’
  - Width: 2.64’’
  - Depth: 0.27’’

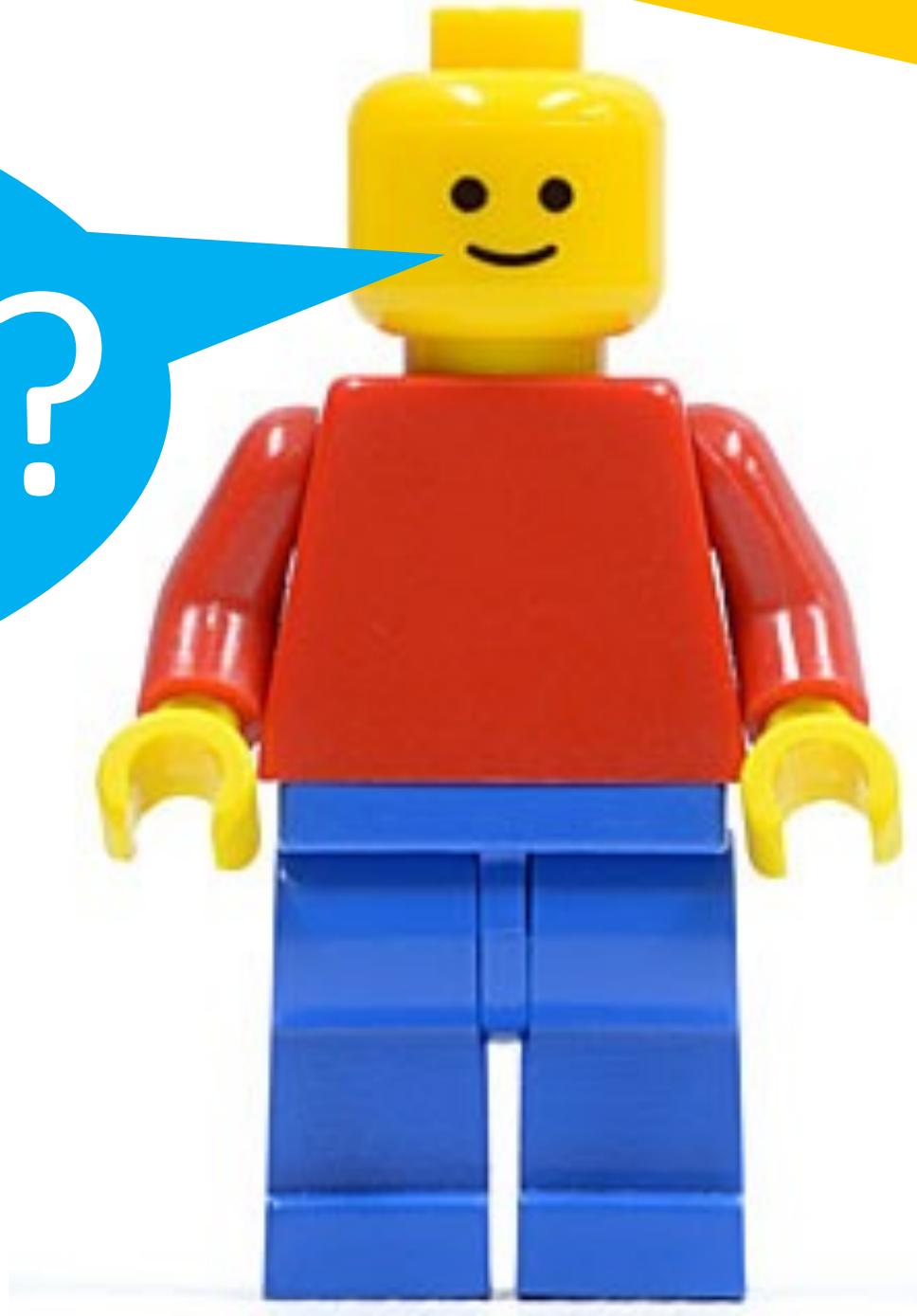
#2 Pencil





- Let's CAD the #2 Pencil
  - Use the engineering drawing available on the workshop's website

Questions?



Office Hours:

- Weekday @ TBD
- Sunday @ TBD (we need to figure out both now!)

Preview into Session 2

Topographical 3D model out of a map

Logo keychains