



Design with just 12 commands: The essential modeling commands in Autodesk Fusion 360

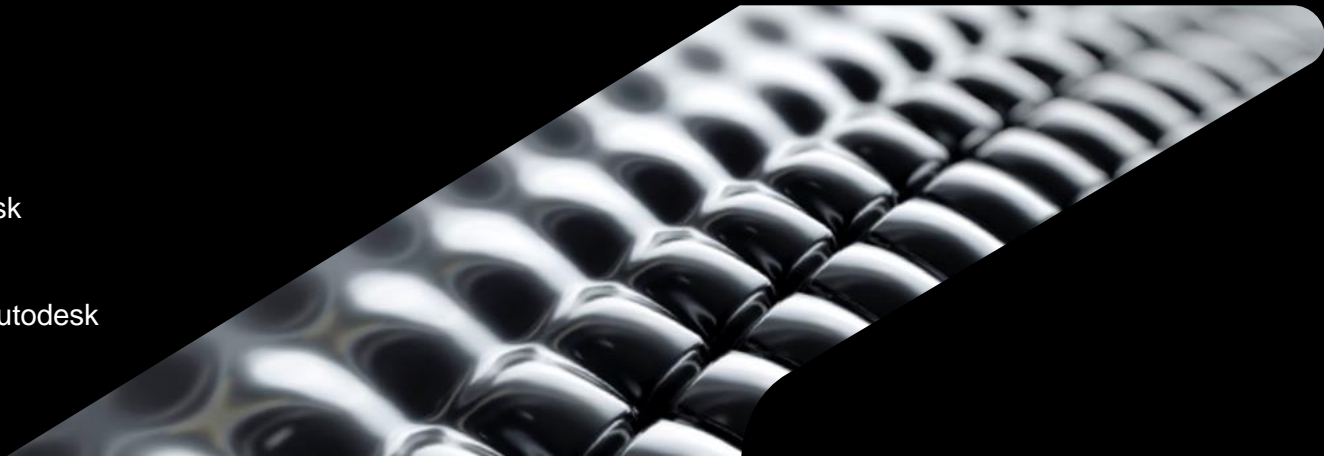
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Agenda

- A brief introduction
- Demonstration time!
- Q & A

Our entire focus today will be on the Design workspace. We will not cover Simulation or CAM



Your instructors

Phil Eichmiller



- Mechanical designer.
- 10 years testing Fusion 360 in development.
- Working with the Fusion online community.
- Teaching Fusion 360 at a local community college.

Jeff Strater



- Developer with Fusion since the very beginning
- Focused on general modeling/sketching.
- Prior developer and architect on Inventor, also before R1.

Why we are putting on this class

Why do we think this exercise is important?

- Both of us spend a lot of time with customers (Fusion forum, customer support, direct interactions, etc.)
- A theme we hear from some new users is:
 - "Fusion is so hard to use"
 - "Fusion has so many commands – where do I start?"
 - "It takes too long to learn"

Fusion *can* be intimidating to new users. But...

- You can create a LOT of geometry with a very small number of commands!
- Start by building a strong foundation on basics

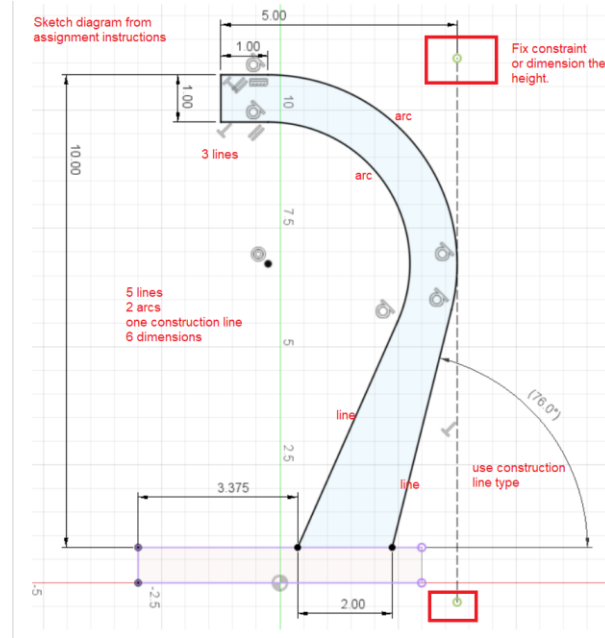
A few key concepts are all you need

We realized that once you master these concepts, you will understand enough so that the rest is just repeating these patterns

- Learning a language
 - Learn the grammar conventions
 - Then, later, add lots of vocabulary by just using the language, listening, and reading
 - Don't start by trying to memorize lots of words

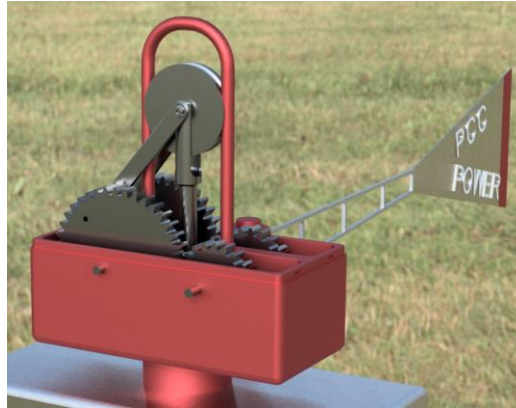
Classroom transformations

After two sessions...

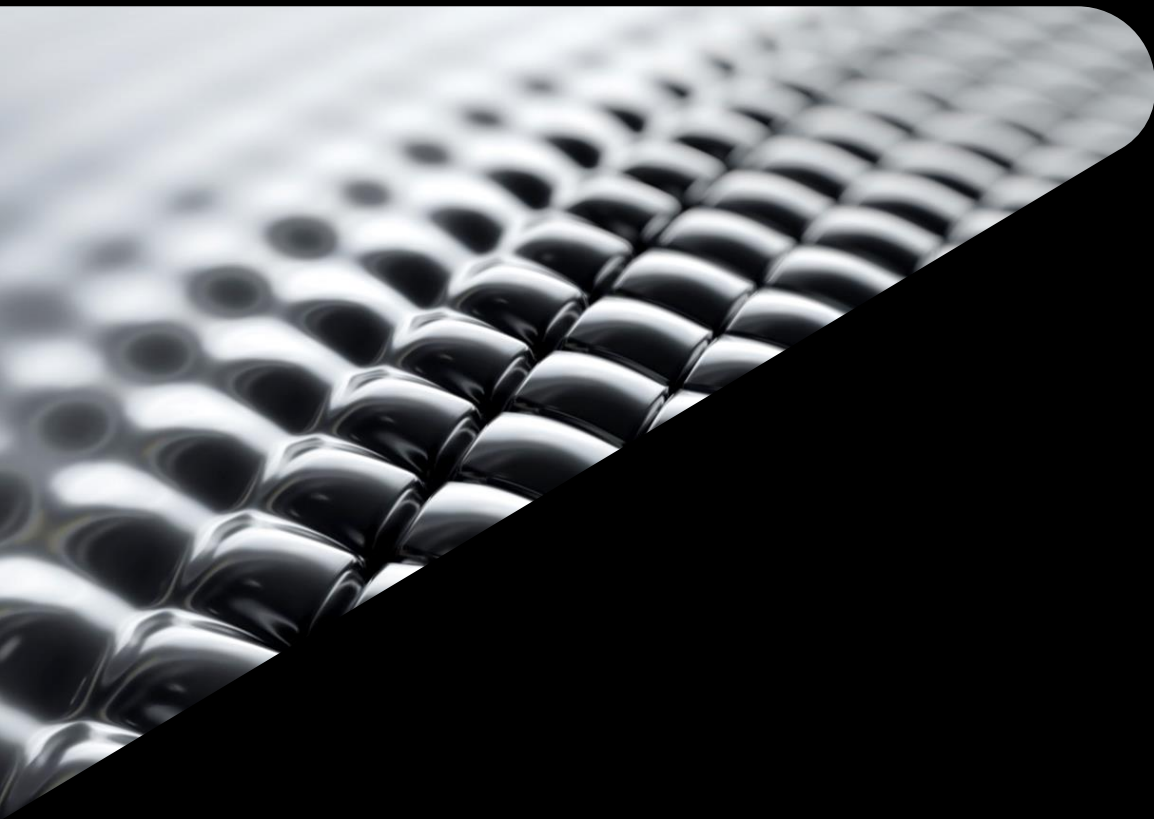


Classroom transformations

After twenty sessions...



Model by John Hartzell used with permission



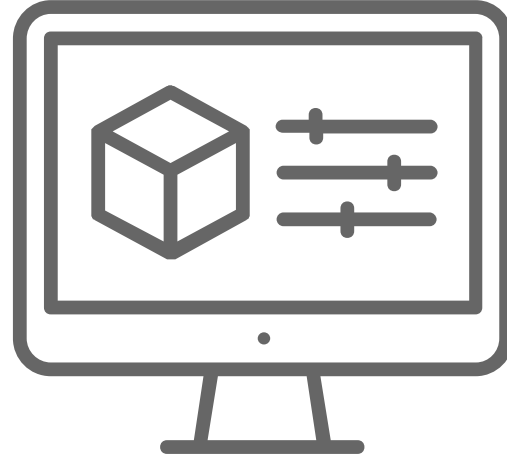
Demo

And a confession

... we lied a little (by accident).

It's more like 15 commands.

- We didn't use press-pull as one command
- We underestimated the impact of sketch and some assembly workflows
- We're software guys, and can't count properly anyway

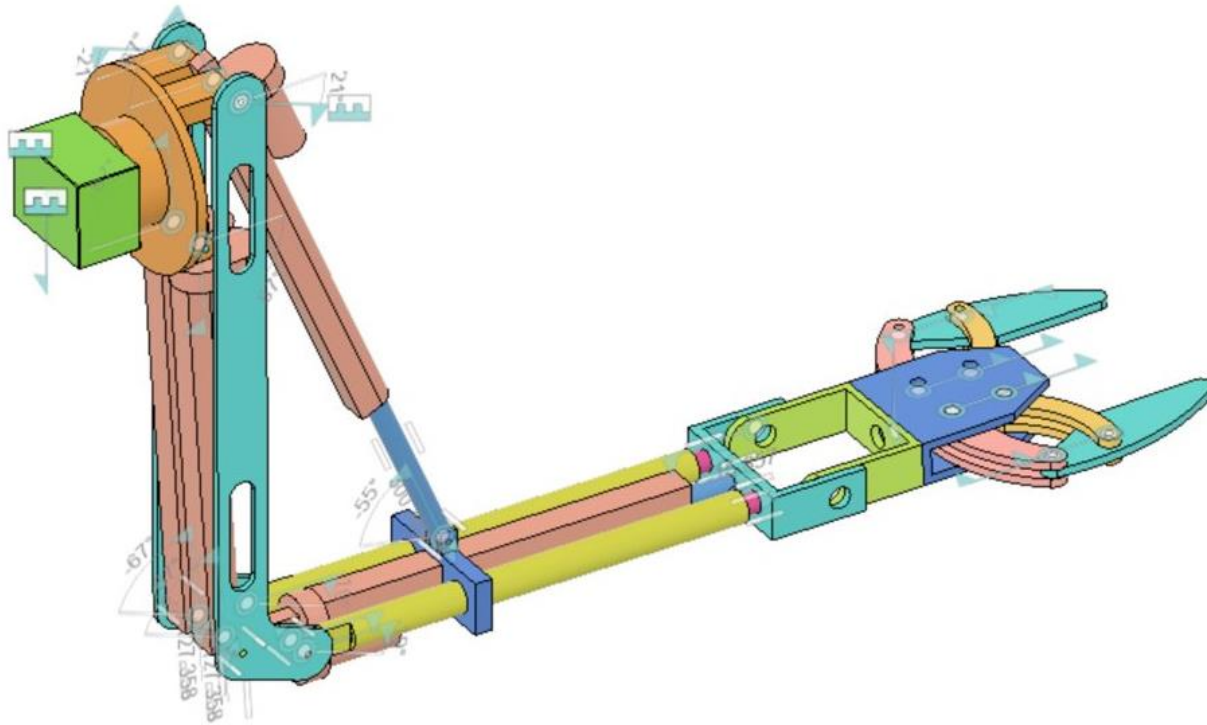




The plan for the demo

- We will stick to our ~~12~~ 15 commands
- But, as we go, we will also show you why the other 1488 commands exist
 - Often, more complex commands exist as a convenience to help speed up your work
 - Once learned, it is much easier to use the more complex commands
 - For instance, we will demonstrate creating a rounded slot using rectangles and fillets. But this is common enough that Fusion has a command just for this purpose
 - Or, to create more complex geometry
- This is a good way to learn Fusion
 - Learn a handful of simple commands and how they work together, then add more complex ones into your repertoire

Build this model



Command list

- 1.Create component
- 2.Create Sketch
- 3.Sketch Line
- 4.Sketch Circle
- 5.Sketch Dimension
- 6.Sketch Rectangle
- 7.Sketch Project
- 8.Sketch Project->intersect

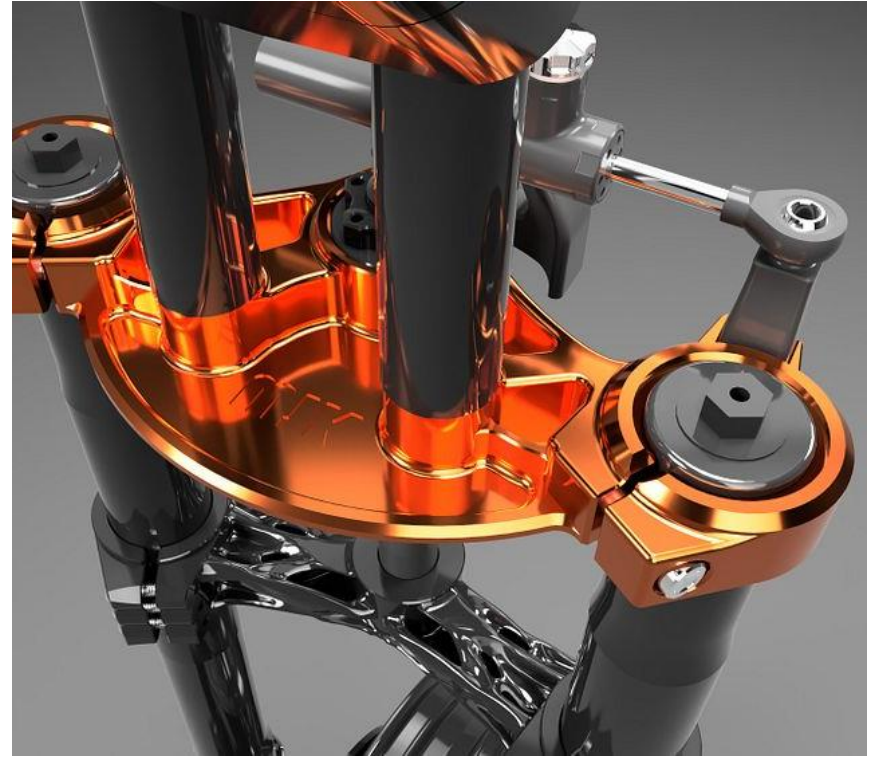
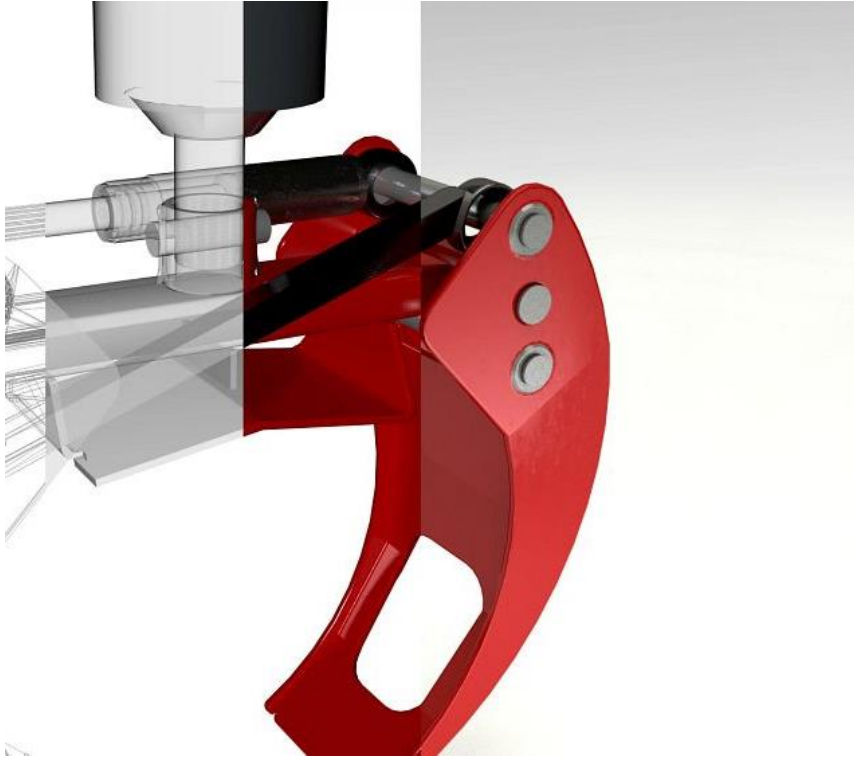
- 9.Extrude
- 10.Hole
- 11.Fillet
- 12.Offset workplane
- 13.Copy/Paste Component
- 14.Joint
- 15.As-Built Joint

Assembly

Sketch

Create

Going from here...





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