

Student Handout

The take-home cheat sheet for the Fusion 360 Basics class. The same sheet is in the **Digital Fabrication** book as the Fusion 360 Cheat Sheet.

The core workflow

You will repeat this for almost everything you build in Fusion 360:

1. SKETCH a 2D shape on a plane or face
2. EXTRUDE it into 3D (add material)
3. SKETCH on a face of your 3D object
4. CUT to remove material (extrude inward)
5. FILLET to round edges and finish
6. Repeat steps 3 to 5 to add detail

Keyboard shortcuts

Shortcut	Action
S	Search (find any tool by name)
L	Line
C	Circle
R	Rectangle
D	Sketch Dimension
E	Extrude
F	Fillet
Q	Push/Pull
M	Move/Copy
Ctrl+Z / Cmd+Z	Undo

Tip: press **S** and type a tool's name. It's the fastest way to find anything.

Mouse navigation

Action	Control
Orbit	Middle mouse button
Pan	Shift + middle mouse button
Zoom	Scroll wheel
Reset view	Click the house icon on the view cube (top right)

The class project: phone stand

Dimensions are included so you can rebuild it at home.

Step 1: Base

1. **Create Sketch** on the XZ plane (the floor).
2. Draw a **rectangle**: 70 mm x 80 mm.
3. **Finish Sketch**.
4. **Extrude** (Symmetric): 10 mm.

Step 2: Back support

1. **Create Sketch** on the back face (the 70 mm x 10 mm face).
2. Draw a **rectangle** from the top-left corner: 70 mm wide x 60 mm tall.
3. **Finish Sketch**.
4. **Extrude**: 10 mm, away from the base.

Step 3: Phone slot

1. **Create Sketch** on the top face of the base.
2. Draw a **rectangle**: 50 mm x 4 mm, 5 mm from the back wall.
3. **Finish Sketch**.
4. **Extrude** as **Cut**: -8 mm (leaves a 2 mm floor).

Step 4: Fillet

1. Select **Fillet** (or press **F**).
2. Click the top edges of the back support, radius **5 mm**.
3. Optionally fillet the bottom edges of the base: **3 mm**.

Dimensions

BASE:	70 x 80 x 10 mm
BACK SUPPORT:	70 x 60 x 10 mm
PHONE SLOT:	50 x 4 mm, 8 mm deep cut
FILLETS:	5 mm (top), 3 mm (bottom)

Stuck? Check here first

Problem	Fix
Can't see my sketch	Click the Home icon on the view cube
Extrude is grayed out	Click Finish Sketch first
Extrude didn't cut	Undo, redo the extrude, set Operation to Cut
Sketch lines are still blue	Add dimensions to fully constrain it (it still works if you don't)
Can't select a face	Zoom in and hover until the <i>face</i> highlights, not an edge
Model disappeared	Check the eye icons in the browser panel (left side)

What to learn next

1. **Components:** organizing multi-part models
2. **User parameters:** named variables for dimensions
3. **Patterns:** repeat features in circles or grids
4. **STL export:** File, Export, STL to 3D print your designs

Resources

- **Product Design Online** (YouTube): excellent beginner Fusion 360 tutorials
- **r/Fusion360:** Reddit community for questions and inspiration
- **Waukesha Makerspace:** come in and practice. Find upcoming classes at <https://waukeshamakers.com>.

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