



# TECH TALK: MAKERSPACES – 3D PRINTERS

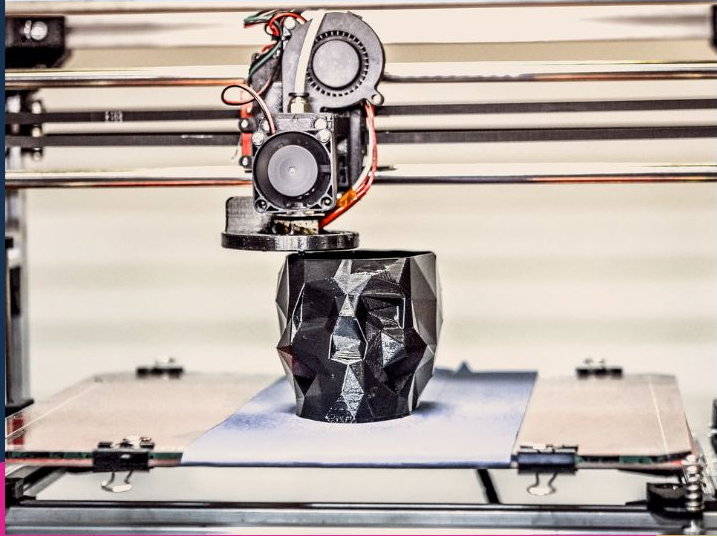
BEYOND PLASTIC: EXPLORING THE  
CREATIVE WORLD OF 3D PRINTING

# Session Goals

By the end of this session, participants will:

- Understand what 3D printers are and how they work
- Learn how to use the Creality Ender 3 with AstroPrint and Thingiverse
- Discover different types of 3D printers and materials (filament, resin, ceramic)
- Explore how makerspaces use 3D printing for prototyping, art, education, and repair
- Leave with resources to start printing today—on a budget or in a lab





# What Is 3D Printing?

- 3D printing = additive manufacturing
- Objects are built layer by layer from digital designs
- Common uses:
  - Prototyping
  - Custom tools/parts
  - Art, cosplay, and fashion
  - STEM education
  - Medical devices and models
- ✚ If you can model it—you can probably print it.



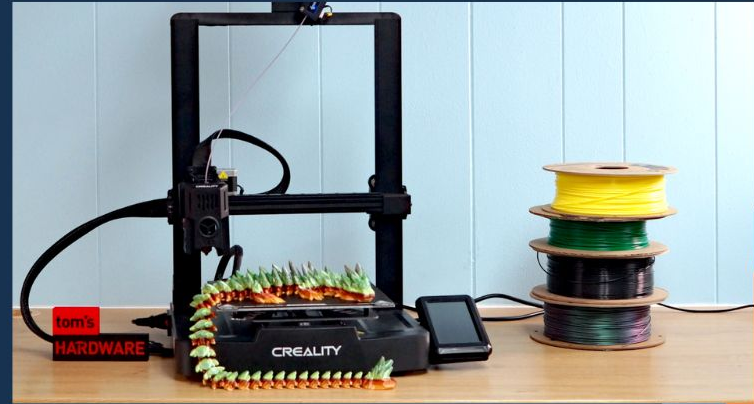
# What Is a Makerspace?



- A community workspace for building, experimenting, and sharing
- Typically includes:
  - 3D printers
  - Laser cutters
  - Vinyl cutters
  - Soldering stations
  - Laptops with CAD and slicing software
- Great for:
  - Students, engineers, artists, educators, tinkerers
- 📌 Makerspaces = hands-on innovation hubs.

# Creality Ender 3 – Budget-Friendly Power

- Why it's popular:
  - Low-cost, reliable, hackable
  - Large online community support
  - Excellent entry-level printer for under \$200
- 💡 Tip: Watch for MicroCenter coupons
  - [Slickdeals coupon](#)
- Uses PLA, PETG, ABS filaments
- Requires bed leveling and tuning—but delivers great quality
- 📌 Think of it as the “Honda Civic” of 3D printers—customizable and dependable.



# Tools You Use – AstroPrint & Thingiverse



## 🔧 AstroPrint

- Cloud-based interface to manage 3D printers
- Upload models, slice files, monitor print jobs remotely
- Works great with Ender 3
- Clean interface for beginners

## 🎨 Thingiverse

- Huge library of ready-to-print models
  - Categories: Tools, toys, gadgets, brackets, art
  - Free to use
  - Ideal for non-CAD users who want to print right away
- 📌 Find, slice, and send—3D printing is easier than ever.

# Types of 3D Printers

Printer Type	What It Prints	Example
<b>FDM/FFF</b> (filament)	PLA, PETG, ABS	Ender 3, Prusa i3
<b>Resin (SLA/DLP)</b>	High-resolution resin	Formlabs Form 3+
<b>Ceramic/Clay</b>	Wet clay or porcelain	WASP Clay Printer, LUTUM
<b>Metal/Industrial</b>	Titanium, steel (powder)	EOS, Markforged (industrial use)

✦ You're not limited to plastic—3D printing is now part of art, science, and engineering.

# Spotlight: Resin Printing (Formlabs)



- Formlabs Form 3+
- Uses resin cured by laser (SLA)
- Exceptionally smooth finish
- Used for:
  - Dental models
  - Jewelry molds
  - Miniatures & figurines
- Requires:
  - Resin cartridges
  - Post-curing & washing station
  - ✦ Best for high-detail, professional-quality parts.

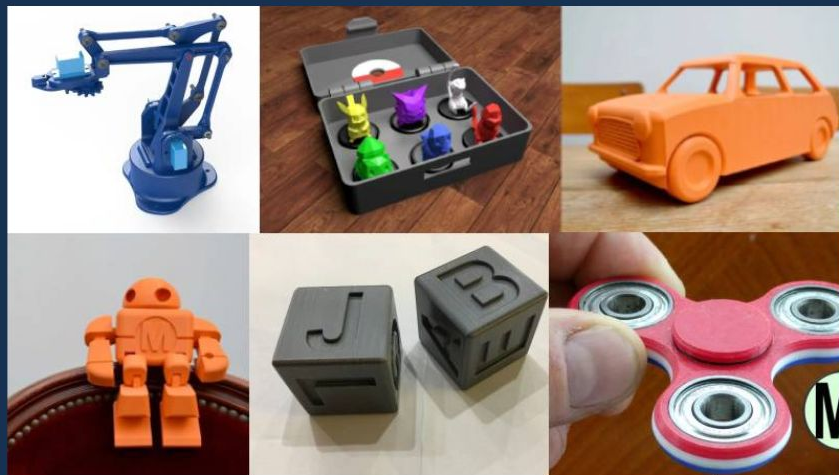
# Spotlight: Ceramic Printing

- Prints with wet clay, layer by layer
- Kiln firing required afterward
- Great for:
  - Pottery
  - Architectural components
  - Art installations
- Examples:
  - LUTUM (used by artists and schools)
  - WASP Clay printers (Italy-based, open-source tech)

📌 Blends tradition with tech—3D clay printing brings ceramics into the future.



# What Can You Print?



- 🛠️ Replacement parts (broken brackets, appliance feet)
- 🧸 Toys and fidgets
- 🏠 Classroom models (cells, atoms, landmarks)
- 🖼️ Custom art and decor
- 🛠️ Tool organizers and jig fixtures
- 🎭 Cosplay gear and props
- 🌸 Start practical. Get creative.



# Tips for Getting Started

- Choose a printer that fits your budget and needs
- Start with PLA filament—easy to use and safe indoors
- Use AstroPrint for remote control
- Browse Thingiverse or Printables.com for ideas
- Learn from:
  - YouTube tutorials
  - Reddit: r/3Dprinting
  - Local makerspace groups

# Final Takeaways

- 3D printing opens up new possibilities for learning, making, fixing, and creating
- Whether it's an Ender 3 at home, a Formlabs printer in a lab, or a ceramic machine in a studio – there's a 3D printer for every purpose
- 📌 The future of creativity is in layers—literally.



THANK  
YOU!

