# Hello! We are **VPrintLab**

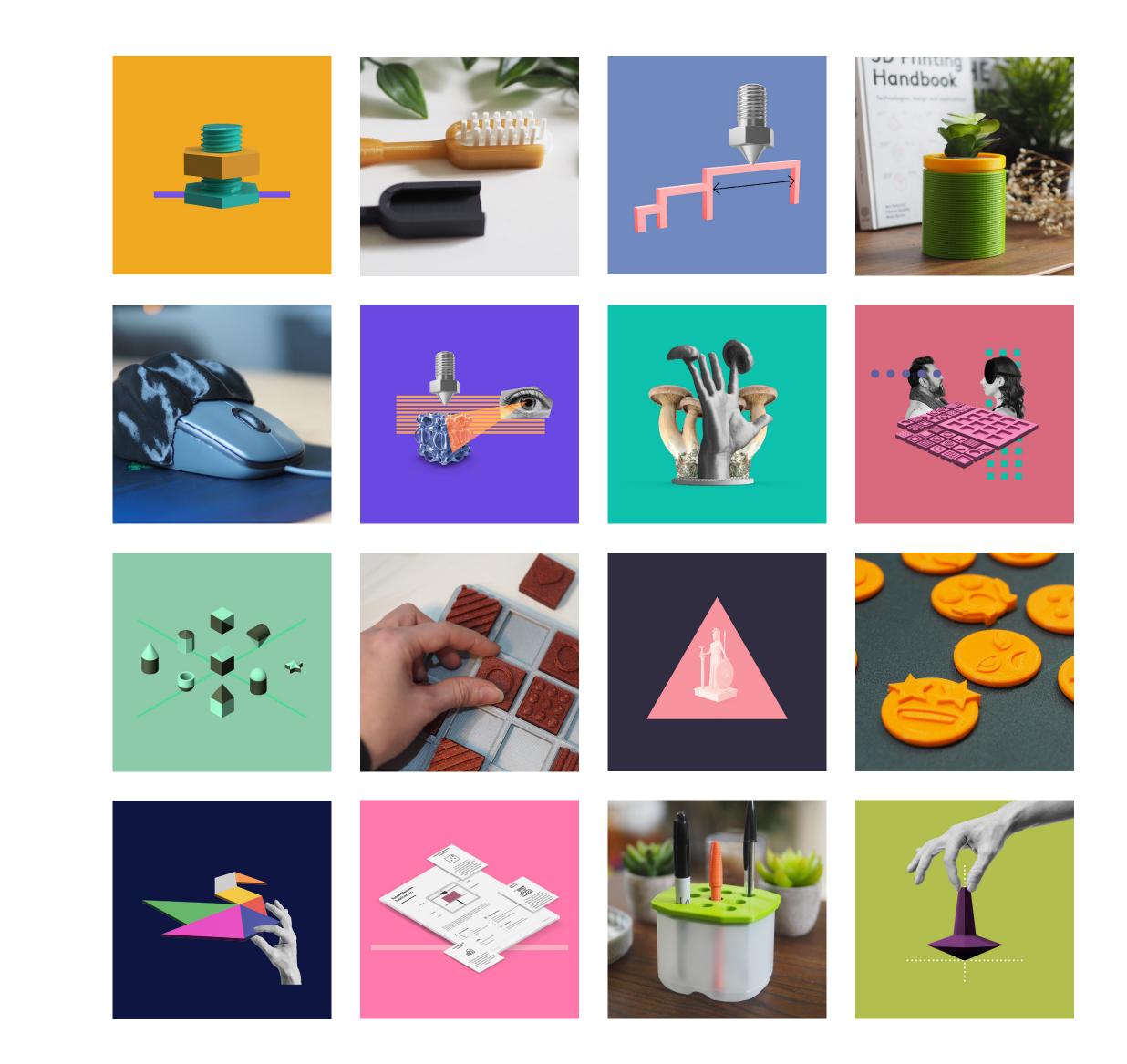
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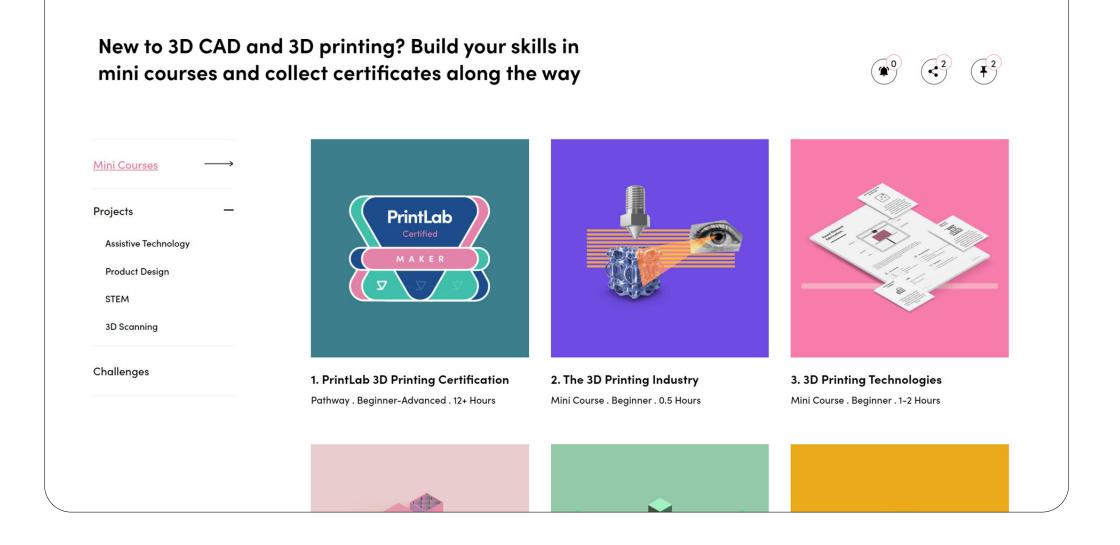
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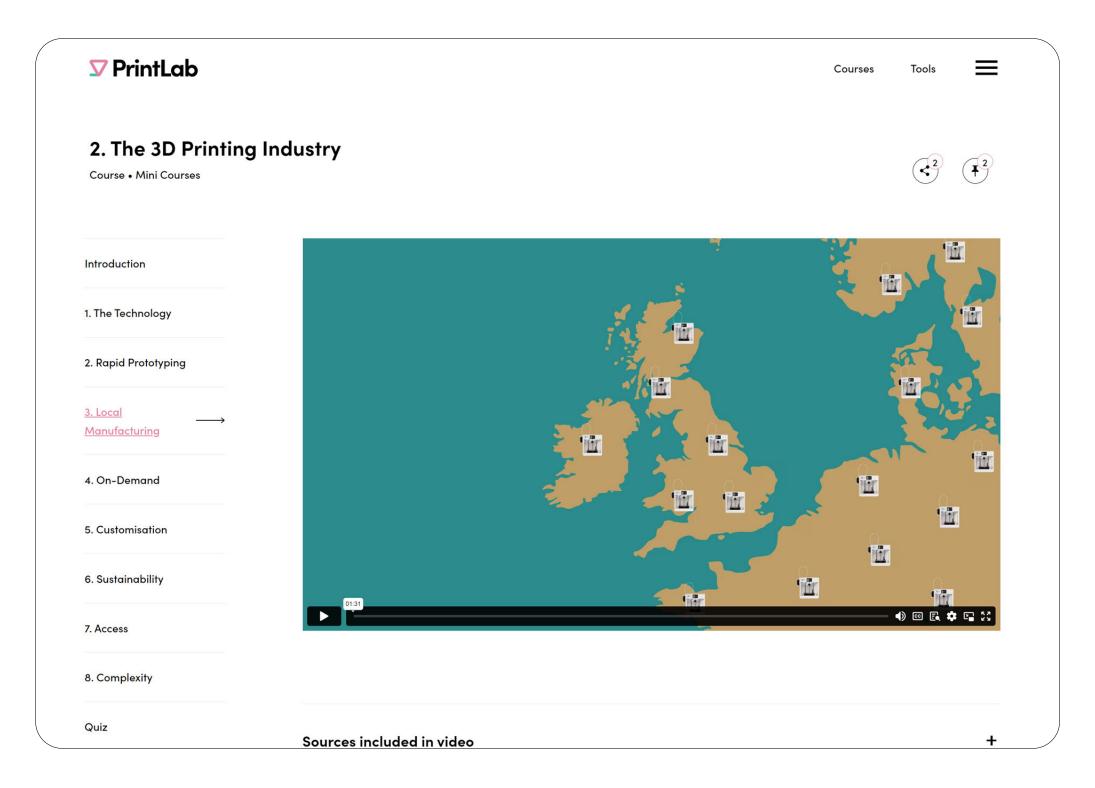
# PrintLab is an online platform that offers courses, tools, and certifications in 3D CAD and 3D printing.

Our mission is to empower educators, students, and makers with industry-recognised skills and credentials, while guiding them in designing meaningful products along the way – whether it's assistive technology, sustainable homeware, or many other innovative solutions enhanced by the customisation of 3D printing.



There are 3 course types available in PrintLab's library, that you can pick and choose from – mini courses, projects and challenges.





# Begin by selecting **mini courses** for professional development, before sharing with students.

Mini courses feature informative videos or step-by-step tutorials, building foundational 3D printing knowledge and 3D CAD skills in Tinkercad or Autodesk Fusion (both free for education). Each course ends with a quiz, and you can download a certificate if you score over 70%.

# Then move on to **projects**, where students will go through the full creative process.

Projects guide students through each stage of the design process to create products in the fields of assistive technology, product design, and STEM. They offer a blend of online and offline design activities, editable template portfolios, and standards-aligned lesson plans for educators to use in the classroom.



### Ӯ PrintLab

### **Ergonomic Transformations**

Project • 3D Scanning

Tools

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### Introduction

**3D Scanning Options** 

Transformation Methods

Skill Building

Define the Brief

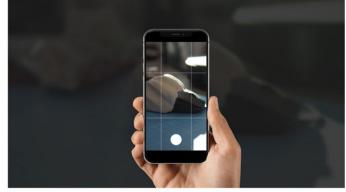
<u>Design + Make</u>

Submit



### **STEP 1: Clay Model**

Gather the product you will be transforming, together with modelling clay. We recommend using a white air drying clay. Ask your end user to mould the clay around the product in order to create an attachment that is suited to their natural behaviors. Encourage them to refer to the design criteria to ensure they are addressing all the pain points identified.



STEP 2: Photograph

In this final section, we'll be generating multiple design ideas before selecting one to make through an iterative process. The main activity

we'll be using is called 'Real-time Prototyping', which is a way of rapidly creating rough models in a dynamic, free-flowing way. Follow the

steps below to complete the project. Remember to document the entire process with photos/videos and notes.

When the clay design is complete, photograph the outcome and ask your end user what they like about the design and why they created it in such a way.







# <section-header>

# Courses and projects will prepare students for open-ended design challenges.

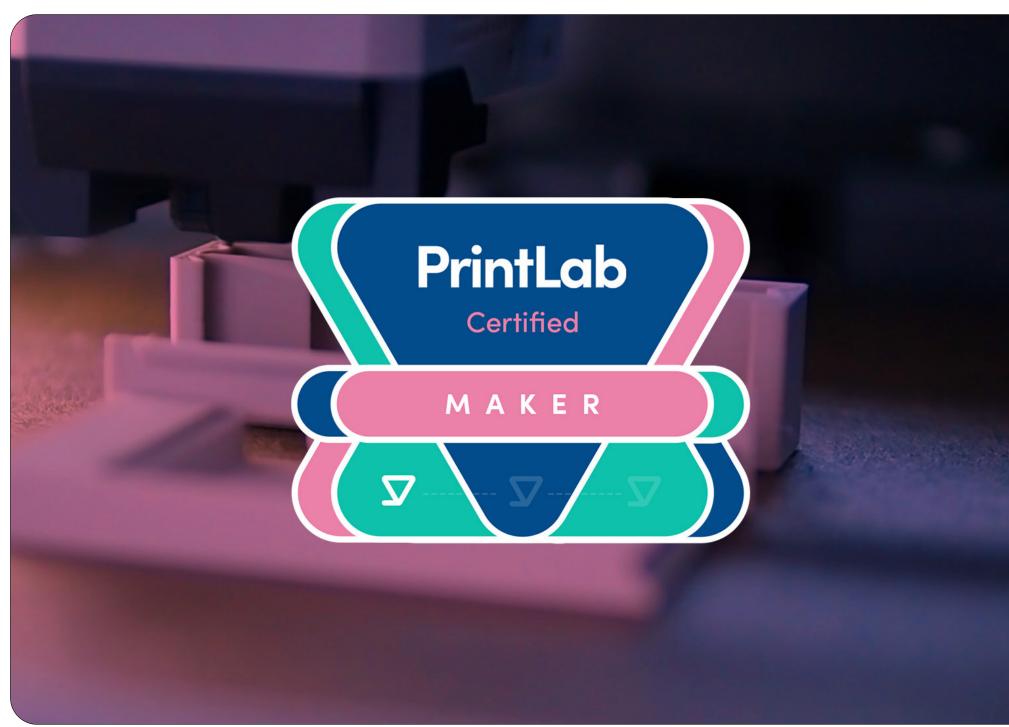
Challenges are live briefs that give students the opportunity to design creative solutions for real organisations and individuals. They offer complete freedom in both product and process, and to support students, they will have full access to our Tools Library—a comprehensive collection of design activities, tips, templates, and tutorials that can assist at any stage of the design process.

# While using PrintLab, you can submit evidence of your work and earn **certifications** along the way.

While progressing through mini courses, projects, and challenges - you can earn industry-recognised credentials in the form of digital badges along the way. These verifiable and shareable micro-credentials are ideal for showcasing on your email signature, resume, social media, or digital portfolio, allowing you to highlight your skills to peers, employers, educational institutions, and the broader community.

Digital badges are awarded upon submitting your mini course certificates, as well as example student portfolios and challenge solutions. Additionally, there is a version of the program specifically for students, where they can submit their own work to earn their badges.







Accelerating the growth of 3D printing in education is at the heart of what we do, which is why we have a range of features designed specifically for educators.

∑ PrintLab		Courses Tools 🗮
Self-Watering F Project • STEM	Planters	<ul> <li>         (</li></ul>
	In this project, you'll be designing and making a 3D printed self-wa following tutorials to design a basic self-watering planter. In the mo improve the design and develop a plant growth strategy, which will	Share Resource X The resource is now being shared in your library. Copy the link and share it with your students. The link can
Photosynthesis	through the project sections to learn more about the journey. *This project guides you through the design process using a series	also be accessed from your resource library.
Skill Building	to take an alternative approach to the project instructions, feel free	https://weareprintlab.alhaytham.aws.carboncode.co.uk/
Design + Make		Copy link Remove
Submit		

# Share Links

Select a course, generate a share link and send it to your students to	Each a
give them one-click access to the learning platform. No logins required!	you w

course comes with a teacher instructions tab, which provides vith step-by-step lesson plan instructions. As you go through the resource sections, the teacher instructions update accordingly.

<b>∑</b> PrintLab		Courses Tools 🗮
Project Upcycle Project • Product Design	_	
ntroduction	In this project, you will be combining waste materials with 3D prints upcycling, you'll use a design method called a 'photo diary' to docu design potential and take this forward to explore product ideas. Th	Teacher instructions × Hello Educators and welcome to Project Upcycle! Let's begin with some key details and resources:
Jpcycling	Watch the intro video below and browse through the project sectio	• The project is suited for students of ages 11+ who have
kill Building	*This project guides you through the design process using a series to take an alternative approach to the project instructions, feel free	moderate-strong skills in 3D design and 3D printing.  • The project is suited for all design, technology, engineering and STEM classes. Cross-curricular links can
Generating Ideas		be made to Maths, Art and Computing. Curriculum alignment documents are available for the following
Design + Make		standards: <u>NGSS, ISTE, UK National Curriculum</u> , and <u>Australian Curriculum for Design and Technologies (v9</u> ). • The teacher instructions guides you in running the
šubmít		project over the course of 6 x 1 hour sessions. The project can be run in shorter or longer periods of time depending on the number of iterations you allow students to make.

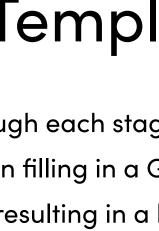


# **Teacher Instructions**

# Portfolio Templ

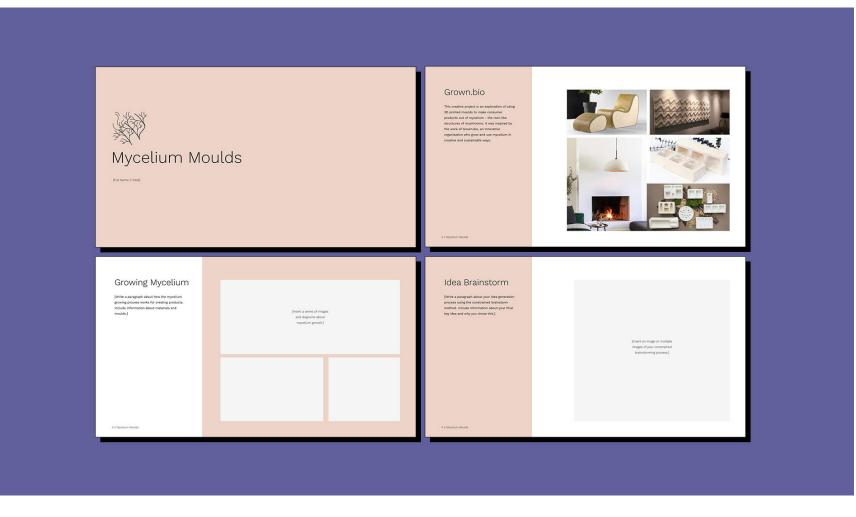
As students move through each stag platform guides them in filling in a C their design process - resulting in a of work.

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	Courses Tools 🚍
	چ رخ ، بخ
ls with 3D printe to diary' to docu	Teacher instructions     ×       Hello Educators and welcome to Project Upcycle! Let's       begin with some key details and resources:
oduct ideas. The e project section s using a series	<ul> <li>Degin with some key details and resources:</li> <li>The project is suited for students of ages 11+ who have moderate-strong skills in 3D design and 3D printing.</li> </ul>
uctions, feel free	<ul> <li>The project is suited for all design, technology,</li> <li>engineering and STEM classes. Cross-curricular links can</li> <li>be made to Maths, Art and Computing. Curriculum</li> </ul>
	alignment documents are available for the following standards: <u>NGSS, ISTE, UK National Curriculum</u> , and <u>Australian Curriculum for Design and Technologies (v9)</u> .
	<ul> <li>The teacher instructions guides you in running the project over the course of 6 x 1 hour sessions. The project can be run in shorter or longer periods of time</li> </ul>
	depending on the number of iterations you allow students to make.



# ctions

r instructions tab, which provides structions. As you go through the ctions update accordingly.

# Portfolio Templates

As students move through each stage of a project, the learning platform guides them in filling in a Google Slides template to document their design process - resulting in a beautiful and professional portfolio of work.

Rethinking Plastics			Assessment Rub		
	1 pt   Below	2 pts   Approaches	3 pts   Meets	4 pts   Exceeds	
Product Analysis	I was unable to provide an analysis of the product I chose to redesign.	I was able to provide a limited analysis of the product I chose to redesign by describing its materials and features.	I was able to provide a comprehensive analysis of the product I chose to redesign by describing its materials, features and life cycle.	I was able to provide a deep insightful analysis of the product I chose to redesign. I used both writte summaries and diagrams to describ- its materials, features and life cycle. Additionally, I outlined the negative environmental and societal impacts at each stage of the life cycle.	
Design Criteria	I was unable to generate any design criteria based on my product analysis.	I was able to generate a list of design criteria. However, the criteria was mainly down to my personal preferences and not driven by my product analysis.	I was able to generate a list of design criteria, driven by insights from the product analysis phase.	I was able to generate a list of desig criteria, driven by insights from the product analysis phase. Additionally, used my own knowledge of 3D printing and the circular economy to blend in my own technical criteria.	
Idea Generation	I was unable to generate any design ideas.	I was able to generate some design ideas but they only partially met my design criteria.	I was able to generate a range of design ideas that fully met my design criteria.	I was able to use divergent thinking to generate an abundance of design ideas that met my design criteria. M ideas ranged from simple to comple by 'thinking outside of the box' in search of innovative solutions.	

## **Assessment Resources**

Our curriculum is aligned to the following standards: NGSS, ISTE, UK National Curriculum, New Zealand Curriculum and Australian Curriculum for Design and Technologies (v9). Resources come with both curriculum alignment documents and editable assessment rubrics, which can be used to grade student portfolios.



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### License Options.

### Teacher License: \$299 (1 Year Access)

PrintLab's Teacher License is for individual teachers and STEM instructors. It provides you with 1 teacher account and all the content/ features listed in the table opposite.



### Site License: \$999 (1 Year Access)

UNLIMITED teacher licenses, UNLIMITED certifications for teachers and students, and each teacher can share UNLIMITED resources with students. \*Please note that all teachers and students must be part of the same individual school and all licenses expire exactly 1 year after the first license is activated. For multiple schools or district pricing, please contact us for a bespoke quote.

Mini courses	Ś	Tools library		Assessment rubrics
Design projects	<b>⊘</b> ī	Standards-aligned lesson plans	Å	Share 3 resources at a time
Design challenges		Portfolio templates	+	Certification (1 teacher, 35 students)

Generate up to 3 share links at any one time. Share links only give access to the specific *<* resource shared and up to 35 people can use an individual share link at any one time.



# Frequently Asked Questions.

### What equipment do I need?

To make the most out of your PrintLab experience, you'll need access to a 3D printers, filament and computers with internet access. In terms of software to design 3D models, you can either use Tinkercad (for beginners) or Fusion (for intermediate-advanced users). Both options are developed by Autodesk and are completely free for education.

### What order do I teach the resources in?

PrintLab was built as a flexible library of resources that you can pick and choose from depending on your curriculum requirements, student skill level and personal preference. We do however recommend following the certification pathway by starting with a selection of mini courses, progressing to projects, and finally tackling challenges for a comprehensive learning experience.

### What age group is PrintLab for?

PrintLab resources are suitable for users of ages 10+. Our customers range from Elementary/Primary schools to top-tier Universities. In the teacher instructions (where relevant), we suggest various ways in which you can adapt projects and challenges for both younger/beginner students and older/advanced students.

### What subjects is PrintLab for?

Many of our users teach Design, Technology or Engineering classes but several projects have cross-curricular links to other subjects, such as Science, History and Geography. We have seen great success with our site license users, where Design teachers provide support and guidance for teachers in other subjects.

### How does it work for makerspaces not part of schools?

Makerspaces can utilise PrintLab just like schools, with instructors taking on the role of teachers to offer in-person workshops and certifications to members. Alternatively, you can share resources online, allowing members to complete courses at their own pace and then bring their creations to life using your makerspace's 3D printers.

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So, I just love what these guys are doing! They definitely have a grasp of what is needed in the classroom for sure. I feel like everything is laid out perfectly here. This would be something that I feel like I wouldn't really have to tweak at all. Honestly, with the future unknown, this content would be priceless for teachers like me. From what I have seen from this company, they are doing a phenomenal job! I highly recommend it!

Bill White, Avonworth School

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I was just selected as District Teacher of the Year and will be competing at the regional level in the coming months. Your curriculum has played a big role in my success, so I appreciate you so much. The assistive device lesson has led me to a partnership with the high school nursing program and their connection to local nursing homes. I'm so excited to see where that relationship leads. So many career connections!

Becky Wynne, Maryville Middle School















# Learn more and start a free trial at www.weareprintlab.com

Academic Representative



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