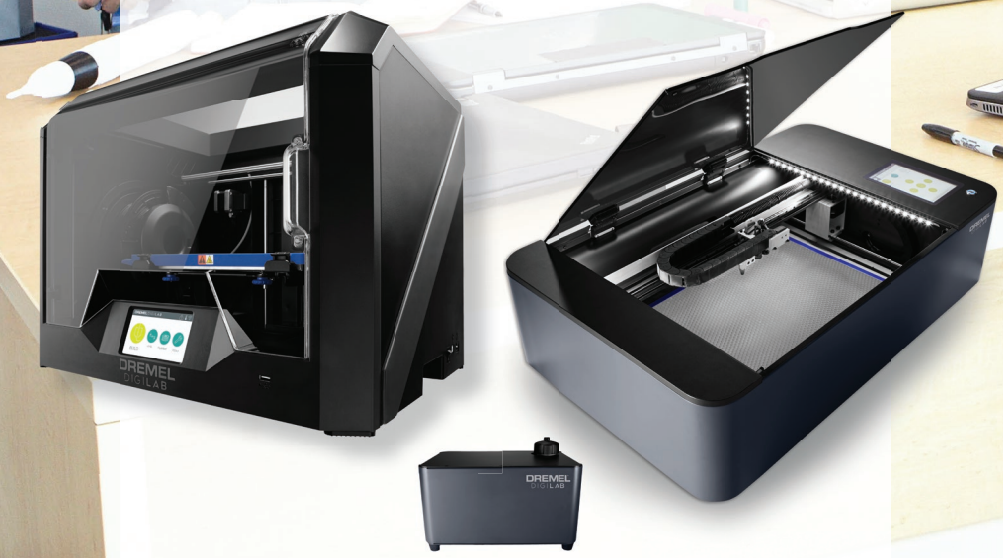
DREMEL® DIGILAB

Dremel is proud to design digital fabrication tools that provide a frustration-free experience so you can focus on your students, not your equipment.

COLLABORATE, CONCEPTUALIZE, CREATE



Introducing our new Dremel DigiLab, digital fabrication technology for a next generation learning experience.

INDEX

SIMPLE FROM THE START

OUR GOAL

IS TO EMPOWER EDUCATORS

to bring a hands-on learning experience to the classroom, developing skills and competencies that improve the future for students. Bring STEM education to the next level by encouraging students to understand how their ideas can transform the world.

TRAINING

Get started with Dremel DigiLab 3D Printers in an easy-to-follow, online lesson.

LIFETIME CUSTOMER SUPPORT

Should you need additional assistance, our exceptional customer support team is here to help.

PROFESSIONAL DEVELOPMENT CREDITS

Included in the 3D40 EDU suite, you can learn the basics of Dremel 3D printing in an online training for 4 hours of Professional Development.

LESSON PLANS

Designed for K-12 education, Dremel supplies lesson plans for both beginners and intermediate users. Our lesson plans inspire educators to integrate 3D printing into a hands-on learning experience.

RELAX, ITS DREMEL

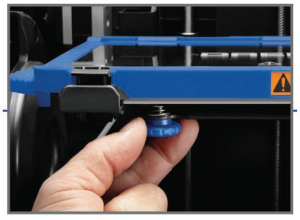
For over 85 years, Dremel has provided well-engineered products that customers trust.

3D40

The most cost effective, reliable solution for education

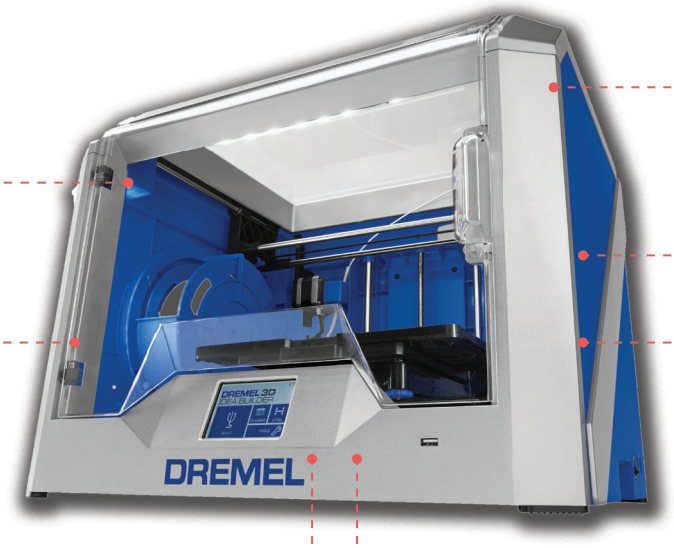
KEY HIGHLIGHTS

Network-enabled to send prints over WiFi or Ethernet



Semi-automated leveling

Full-color touch screen



Clog resistant extruder with active filament monitoring

Print high quality parts with PLA filament

Network-enabled to send prints over WiFi or Ethernet

Semi-automated leveling

Easily accessible USB input to transfer files to printer

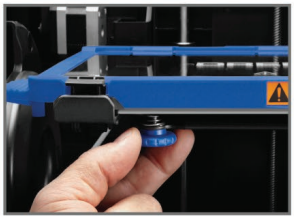
Full-color touch screen

1-year warranty, lifetime customer support

3D45

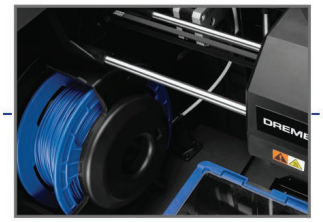
Advanced capabilities
for greater efficiency

KEY HIGHLIGHTS



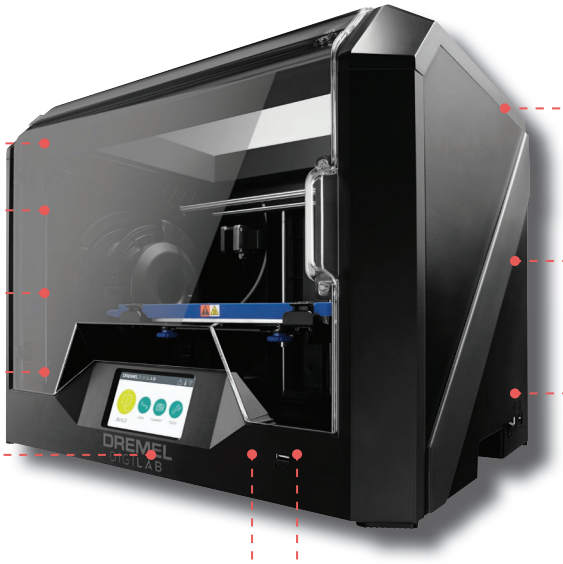
Heated build plate allows you to create strong and flexible prints using Nylon, eco-ABS, PETG, and PLA filament

50 micron print resolution extrudes 1/20th of a mm in layer thickness



RFID reader allows you to spend less time adjusting settings; automatic filament detection system will adjust settings automatically

Integrated camera allows you to monitor prints remotely and record the print start to finish



Integrated HD camera

Automatic filament detection

Semi-automated leveling

Full-color touch screen

Compatible with Nylon, eco-ABS, PETG and PLA filaments

Clog resistant, all-metal extruder heats up to 280°C, with active filament monitoring

Carbon and particulate filters to help protect against emissions

1-year warranty, lifetime customer support

Heated print bed, up to 100°C

Easily accessible USB input to transfer files to printer

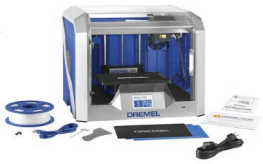
50 micron print resolution

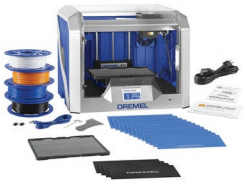
Network-enabled to send or queue prints over WiFi and Ethernet

PC PCMAG.COM EDITORS' CHOICE™

3D PRINTER

Comparison Chart





		3D40-01	3D40-EDU	3D45-01
PRINTING	Build Size (in.)	10.0 x 6.0 x 6.7	10.0 x 6.0 x 6.7	10.0 x 6.0 x 6.7
	Total Build Volume	402 Cubic in.	402 Cubic in.	402 cubic in.
	Minimum Layer Height	100 microns	100 microns	50 microns
	Glass Build Plate	●	●	●
	Single Extruder	●	●	●
	Heated Build Plate			●
CONNECTIVITY	Wifi-Enabled	●	●	●
	USB Connectivity	●	●	●
	Ethernet	●	●	●
HARDWARE	Clog-Resistant Extruder	●	●	●
	Semi-Automated Leveling	●	●	●
	Fully Enclosed	●	●	●
	LCD Touchscreen	●	●	●
	HD Camera			●
FILAMENT	Nylon & PETG Compatible			●
	Eco-ABS Compatible			●
	PLA Compatible	●	●	●
	Material Auto-Recognition			●
	Run-Out Detection	●	●	●
	Cost per 1/2 kg Spool			
	Spools Included in Box	1 PLA	4 PLA	1 Nylon, 1 Eco-ABS
ECOSYSTEM	Professional Development		●	
	Standards-Based Lesson		●	
	Plans	●	●	●
	UL-Certified	●	●	●
	Warranty	●	●	●
	Lifetime Tech Support	●	●	●
	MSRP			

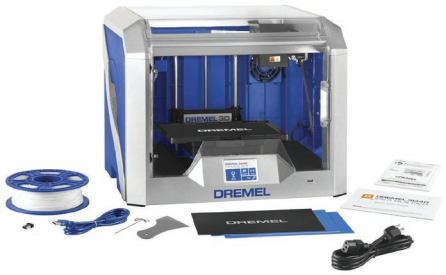
DREMEL 3D PRINTERS INCLUDE

ALL THREE VERSIONS COME WITH:

Access to desktop and cloud based slicing software on **digilab.dremel.com**

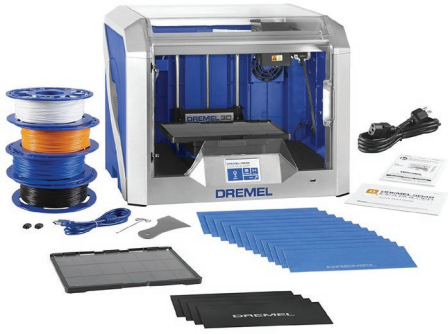
ALSO INCLUDES:

- Object removal tool
- USB connection Cable
- 1-year warranty
- User manual &
- Quick Start Guide
- Unclog tool



3D40-01 INCLUDES

(1) Idea builder 3D40
(1) USB Flash Drive with sample prints and slicing software
(1) Build Plate
(1) White Filament Spool
(1) Sheet Black Build Tape
(2) Sheets Blue Build Tape



3D40-EDU INCLUDES

(1) Idea builder 3D40
(1) USB Flash Drive with sample prints and slicing software
(2) Build Plate
(1) White Filament Spool
(4) Sheet Black Build Tape
(12) Sheets Blue Build Tape
(30) Standard Aligned Lesson Plans (3rd-12th)
(1) Professional Development Course (4 hours)
(1) Black Filament Spool
(1) Blue Filament Spool
(1) Orange Filament Spool

3D45-01 INCLUDES

(1) Idea builder 3D45
(1) USB Flash Drive with sample prints and slicing software
(1) Build Plate
(1) Nylon Filament Spool -Black
(1) Eco-ABS Filament Spool - Black
(2) Glue sticks

FILAMENT

PLA

PLA is a bioplastic that is the most commonly used filament in 3D printing. This filament is good choice for creating reliable, high detail prints. PLA is ideal for cosmetic prints used in low-stress applications.

It is a perfect option for beginners due to its ease of printing.

ECO-ABS FILAMENT

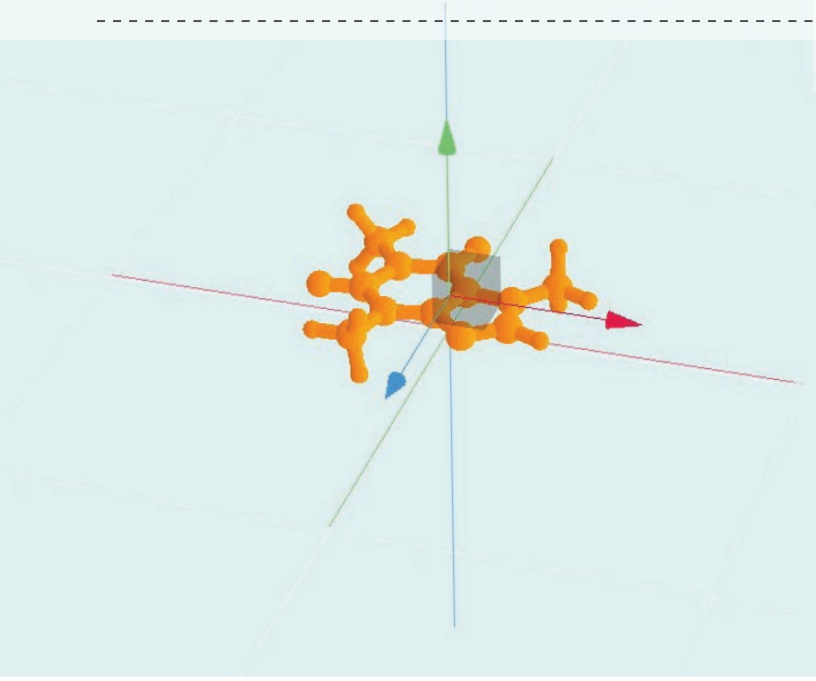
Eco-ABS is a modified version of PLA that offers the same high detail finish but with added strength, flexibility and durability. It is great for making durable mechanical parts with a smoother surface finish.

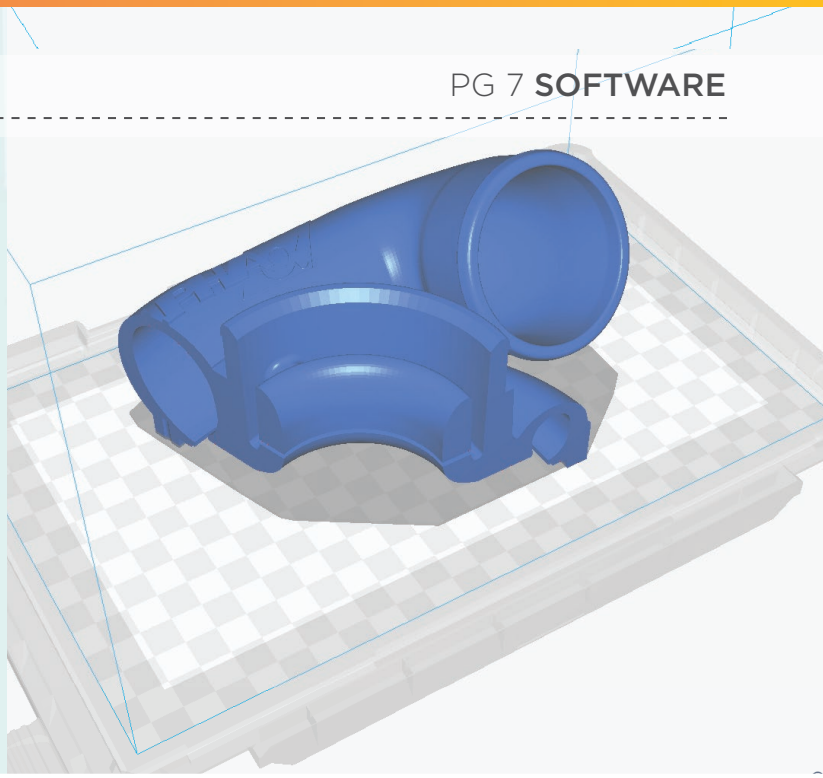
NYLON FILAMENT

A synthetic polymer that provides strong and flexible prints with heavy wear resistance. Nylon requires a little more care when printing, however it is ideal for parts that require strength or that endure wear over time, such as gears and working hinges.

PETG FILAMENT

PETG is a thermoplastic filament that combines the strength and flexibility of ECO-ABS with the easy printability of PLA. It is also very durable and temperature resistant. It is good for printing mechanical parts and protective components. It is also good for printing large objects due to its stability and minimal tendency to warp.





SIMPLE 3D PRINTING PROCESS

FROM DESIGN TO PRINT

1. Download or create a CAD design
2. Load the .STL CAD file to Dremel DigiLab 3D Slicer or Dremel Print Cloud
3. Format size, position, and print settings in software, save sliced print file as .gcode
4. Load print file to printer via USB or internet

DREMEL OFFERS TWO SOFTWARE SOLUTIONS

Dremel offers both desktop and cloud based slicing software, that converts CAD to print-ready files. The software allows you to determine the size, placement, number of objects per print, and print settings such as print resolution, in-fill density, and supports.

Dremel Digilab Slicer

- Trusted, easy-to-use CURA based desktop software
- Download to Mac or PC from Dremel Digilab website
- Advanced print settings for fine-tuning prints

Dremel Print Cloud

- Set-up an account on Dremel Digilab website and access through your web browser
- Compatible on all mobile and desktop devices with any Internet browser
- Remote printing allows you to print anywhere, anytime
- Supports printer sharing for maximum printer utility
- Print queue allows for multiple users to backlog prints
- Remotely monitor and video record prints with the 3D45 printer camera

DREMEL DIGILAB PRINT FARM

DREMEL OFFERS

the most advanced print farm capability in the industry that allows you to manage and connect an endless number of printers to a server securely and simply.

DREMEL PRINTERS

- WiFi AND Ethernet connectivity
- Static IP configuration for easy network management
- Proxy configuration allows management of printer's access to network for greater security
- Separate print and network dedicated processors for more responsive performance

DREMEL PRINT CLOUD SOFTWARE

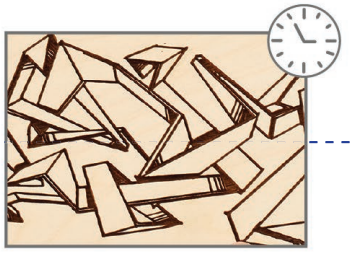
- Dedicated print cloud servers - designed so your printers operate at their fastest speed
- Administrator portal – manage user access to printers and print queue
- Print management reporting – get insights to printer productivity and output
- Monitor 3D45 printer remotely and record printing through Dremel Print Cloud

CREATE & EXPAND YOUR PROJECT PORTFOLIO

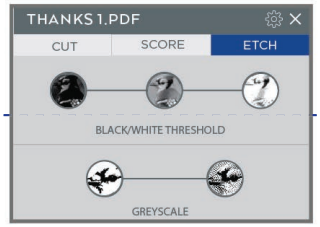
Bridging the tradition of making with the future of digital creation, Dremel DigiLab Laser Cutter adds a new edge to your projects. Whether you're creating custom pieces or engraving high res artwork — Dremel's digital tools make it easy to transform your vision into reality. The only limit is your imagination.

LASER CUTTER VS. OTHER TOOLS

Cut & Engrave a variety of materials and projects



Intuitive & Dynamic Software



Fast and Accurate High Detail

Engraving and Cutting

Dual LED strip illuminates projects

Safety sensors help detect potential hazards

Safety and performance optimized high voltage power supply

Full color touch screen for laser control + project management and integrated software for high performance project processing

40W high endurance Laser Tube

Connect to network via WiFi, Ethernet, Static IP, or Proxy

Fire resistant steel frame

Built-in camera for scanning and aligning artwork

Painless cooling and air assist solution

Engraving area: 18.4”x12”
Cutting area: 20”x12”
Max Engraving: 1.25”
Max Cutting Height: 1/4

Up to 1000 x 1000 DPI for crisp precision engraving

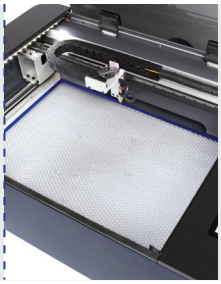
Laser Cutter

Hex Box

Hardware Dimensions

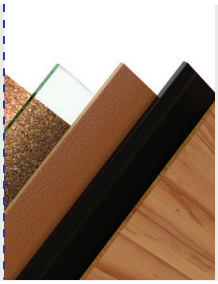
Laser Cutter:
Height: 7-7/8”
Width: 32-1/3”
Depth: 20-3/8”

Hex Box:
Height: 5”
Width: 9-1/2”
Depth: 7”



Included aluminum honeycomb plate for optimal ventilation

Easy setup with integrated Hex Box air assist and cooling system

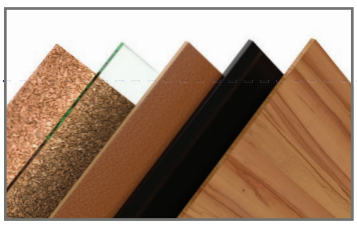


High endurance 40W laser cuts and engraves a variety of materials

ECOSYSTEM

BOFA

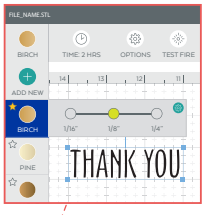
Partnership with BOFA on filtration



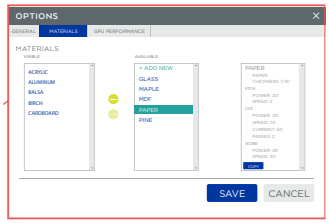
Coming soon: Precut Digilab material bundles

Content & Project Inspiration

Simple, intuitive interface

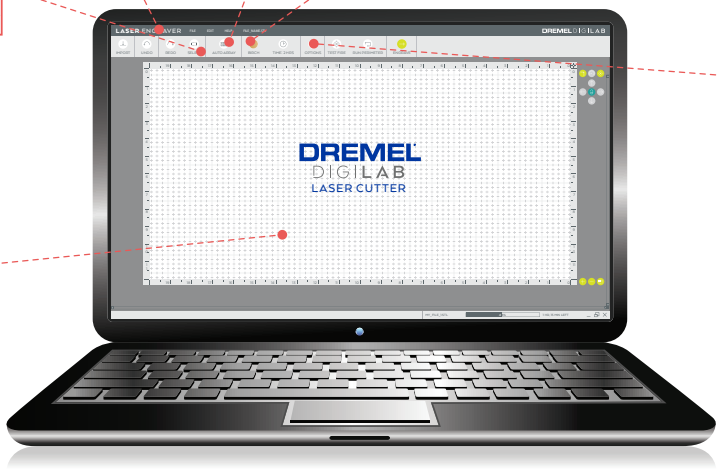


Material library with suggested settings to get you printing immediately

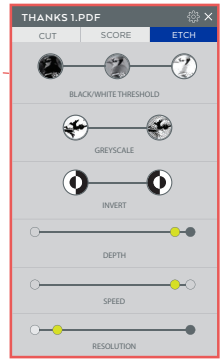


Change default materials and print settings to reflect your favorites

Auto array to quickly fill up bed and optimize space



Grids, snaps, and rulers for precise placement



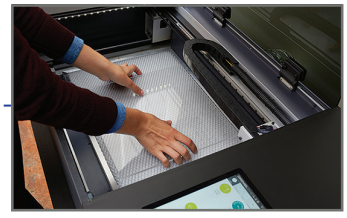
Engrave by shade for novice users & Engrave by power/speed for advanced users

Save and run jobs directly on touchscreen

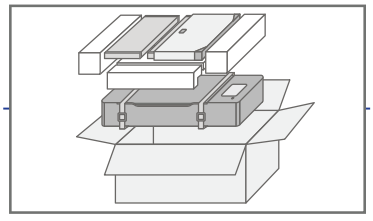
Built in camera to import photo of material, reducing misprints

Integrated SMART sensors detect potentially hazardous situations and help troubleshoot

INCLUDES



Video Turtorials



Frustration free packaging and unboxing experience

DREMEL® SHOP

Assistance from us

WHY DREMEL?

DREMEL®

Brand

For over 85 years Dremel has been helping Makers create with our full line of versatile, easy-to-use tool systems. Focused on developing the highest quality products for the most optimal user experience.

Reliability

The brand that Makers have come to know and trust, Dremel's focus on quality product development & engineering ensure that you have the most reliable products to complete your projects

Innovation

With the expansion of the Digilab suite, Dremel is advancing our products to meet the needs of Makers and what they are creating.

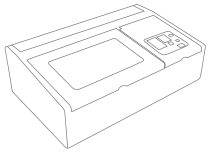
Customer Service

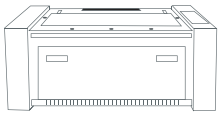
Our team is always by your side to help you with world-class customer support.

Safety

Following strict safety standards and thorough testing helps ensure optimal products and services for our users.

DREMEL VS COMPETITION





PRODUCT	VALUE LASERS	DREMEL DIGILAB	INDUSTRIAL LASERS
RELIABLE BRAND		●	●
SAFETY & UL APPROVED		●	
INNOVATIVE PRODUCT & SOFTWARE		●	
QUALITY & ENDURANCE TESTING		●	●
WIFI CONNECTIVITY		●	●
UNIT TOUCH SCREEN		●	
SAFETY SENSORS		●	
MATERIAL LIBRARY		●	
CAMERA INTEGRATION		●	
SAFE METAL HOUSING	●	●	●
COOLING & AIR SOLUTION		●	●
LOCAL CUSTOMER SERVICE & SUPPORT		●	
PRICE	$	$$	$$$$

INTRODUCTORY LESSON PLANS: ALIGNED TO CCSS, NGSS, AND FLORIDA

Everything you need to get started right away. With your Dremel 3D printer, you get access to 10 introductory lesson plans that are created by MyStemKits in conjunction with educators & are aligned to Common Core and the New Science Initiative to ensure that teachers & instructors can easily integrate 3D Printing technology into their curriculum and also help students to develop 21st century skills.

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Get 3D Printing integrated into classroom learning right out of the box. Written by actual teachers and subject matter experts. Dremel 3D hands-on lesson plans tie an abstract concept with a printed model for better understanding, engagement and retention.

BALLISTA FORCE GENERATOR KIT

GRADES
8-12

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

PENCIL CATAPULT KIT

GRADES
6-12

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

LOADED DICE KIT

GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

PYTHAGOREAN PROOF KIT

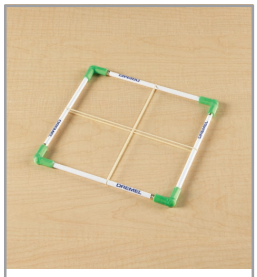
GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

PUNNETT SQUARE DICE (GG) KIT

GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH



PENCIL QUADRAT KIT

GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

MOTHS KIT

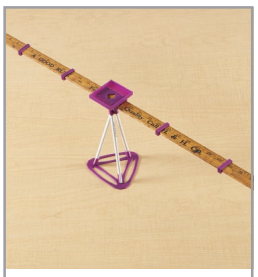
GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

MEASURING PRECISION KIT

GRADES
9-12

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH



CORIOLIS EFFECT KIT

GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

DNA TRANSFORMATION KIT

GRADES
6-8

PHYSICAL SCIENCE
LIFE SCIENCE
NATURAL SCIENCE
MATH

DESIGN THINKING LESSON PLANS: ALIGNED TO CCSS, NGSS AND TEKS

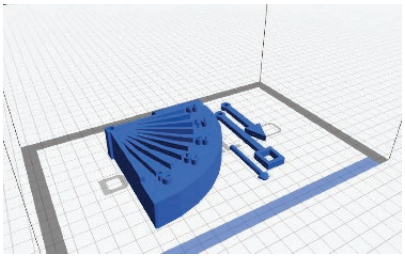
The next set of lesson plans are open ended and present students with the opportunity to solve a grade level challenge in multiple ways by creating their own models and prototypes. Students gain experience using the design and printing software and are encouraged to test a variety of solutions until they satisfy the criteria outlined in the lesson plan or by the instructor.

20

All projects (3 grade clusters) will begin with a design challenge, so that students gain experience with the entire 3D printing process: designing with Auto-desk software, printing, finishing, and re-designing if needed to achieve the desired outcome and pass the lesson.

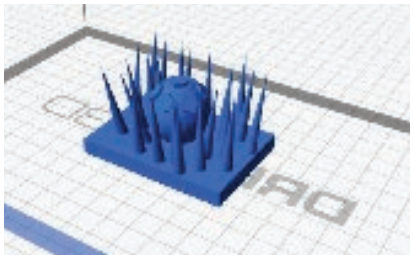
Elementary School

Grade: Elementary
Subject: Math
Sexton



Through modeling their own sextant designs in 3D and then 3D printing them, students can gain a deeper understanding of the complexity of developing accurate and precise measurement tools. After applying their learning about angle formation and measurement in late elementary school, students may continue to use their own sextants in middle school geometry and the use of the Pythagorean Theorem.

Grade: Elementary
Subject: English
Memoir - Memento

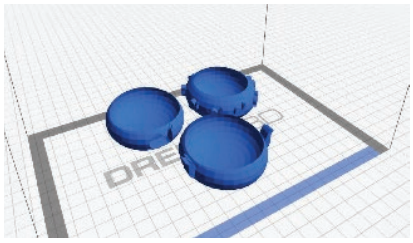


By 3D designing and printing a particularly important object or symbol to accompany a personal narrative, student writers have an opportunity to learn about narrowing their focus to the most important elements of the story and student readers or listeners gain a physical anchor to help interpret their classmates' stories.

Grade: Elementary
Subject: Math
Modular Frame

This lesson presents an opportunity for students to design modular picture frames that can be clicked together and can have decorations added or removed to suit the item in the frame. It also presents an opportunity for students to practice measurement skills, as well as many design and engineering skills.

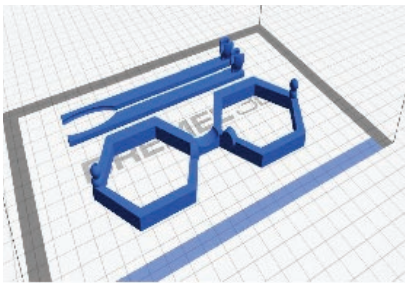
Subject: Math
Grade: Elementary
Artifacts for an Invented Ancient Civilization



Studying civilizations throughout the ancient world is an exciting project-based activity that many classrooms participate in inventing their own class "civilization" with "seven characteristics of civilization" and artifacts from the invented civilization. By incorporating 3D design and printing, students can create sturdier, more detailed artifacts that include more consistent common motifs. This lesson includes an archaeological dig!

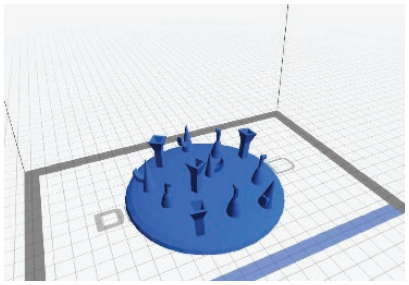
Middle School 6th -8th

Grade: Middle School
Subject: Art, Social Studies
Sunglass Frames



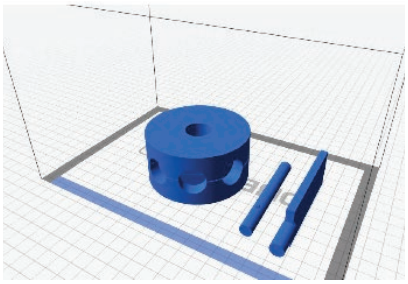
Sunglasses have long been a key element of personal style and their design possibilities are seemingly endless. However, their practical purpose has become more and more important as our understanding of atmospheric changes and the harmful effects of the sun's ultraviolet (UV) rays increases. This challenge gives students an opportunity to create a fashion element that also protects the human eye from harmful radiation.

Grade: Middle School
Subject: Science
Cell Receptors and Antigens



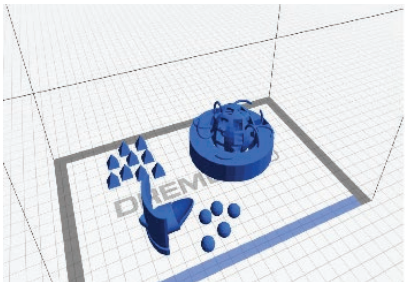
In this lesson, students will be presented with an example of a hypothetical simplified cell surface, and will create and 3D print viruses with antigens that could allow the virus to enter that cell. Students will then exchange viruses to invent and 3D print immune system antibodies that could recognize those viruses to mount an immune response.

Grade: Middle School
Subject: Social Studies
Wind Power



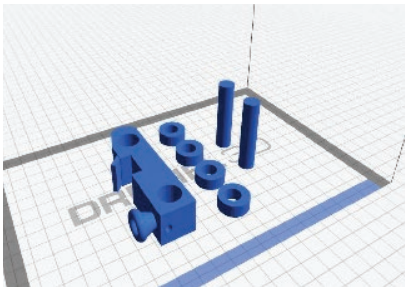
By designing a blade and hub for a windmill or turbine capable of lifting a load a specified height from the floor, this challenge encourages students to explore the harnessing the wind to do work or generate electricity through a project focused on designing windmill or turbine blades.

Grade: Middle School
Subject: Biology
Seeds and Dispersal Mechanisms



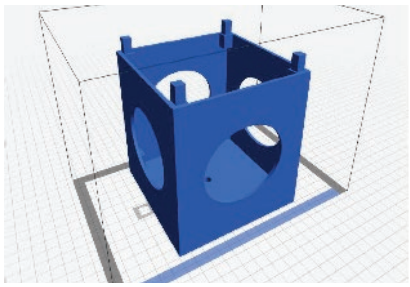
By applying their understanding of adaptations and known seed dispersal mechanisms to designing a new mechanism for a plant in a specific environment, in this lesson, students draw a random selection of characteristics for a hypothetical habitat and 3D design and print a seed and a seed dispersal mechanism that would be ideal for a plant in that habitat.

Grade: Middle School
Subject: Math
Ballon Car



In this challenge, students design a car that is powered by a balloon. The lesson reinforces concepts central to Newton's laws of motion and forces that affect motion.

Grade: Middle School
Subject: Math, Science
Plant Tower



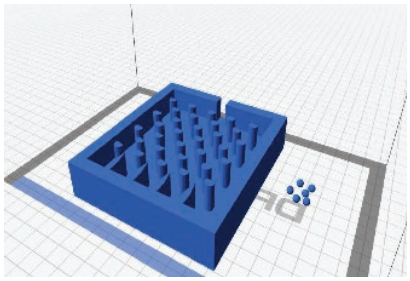
In this challenge, students work in teams to collaboratively design a plant tower with limited or no outdoor space for a garden to grow.

High School 9-12th grade

Grade: Middle School
Subject: Social Studies
Boat Propeller

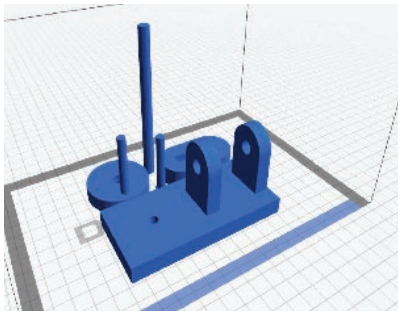
This challenge gives students an opportunity to explore the core scientific and engineering principles associated with propellers by designing, 3D printing, and testing their own boat propeller components.

Grade: Middle School
Subject: Math
Unfair Math Games



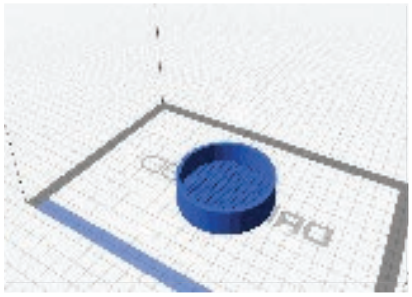
Students will calculate the statistical outcomes of several typical casino games, and then invent and create slightly modified versions of the games to change the statistics.

Grade: High School
Subject: Math, Science
Nerve Cells



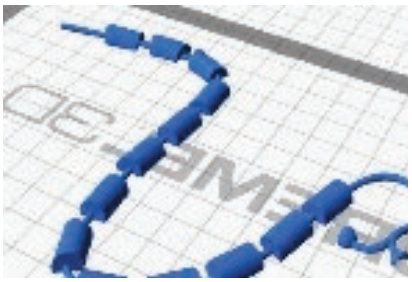
Models that provide a visual representation of basic concepts can be a valuable addition to these efforts. In this design challenge, students will create models that can help members of the public visualize the basic structure of nerve cells.

Grade: High School
Subject: Math, Science
Reusable Emergency - Water Filter



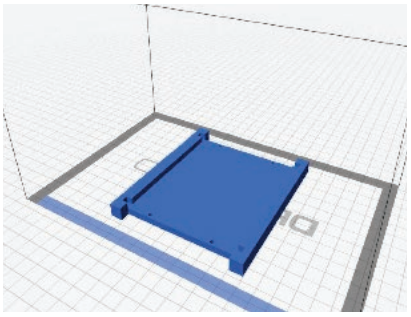
In this design challenge, students create a reusable water filter that can be used as a first step toward making water safe to drink.

Grade: High School
Subject: Math, Science
Scotch Yoke



The Scotch yoke mechanism has been around a long time and was used in the steam engines that powered the Industrial Revolution. Old mechanisms can be the heart of new inventions that are very relevant to the needs of the 21st century. In this design challenge, students will create models of the Scotch yoke to demonstrate the basic operation of this mechanism.

Grade: High School
Subject: Math
CubeSat Enclosure



In this design challenge, students create models of a CubeSat enclosure. Such models are an early step in CubeSat projects, since they can be used to design other components so that they will meet the requirements for standard CubeSat dimensions. In addition, these models can be used to help build interest and support for citizen space projects.

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