

Community Example: North Grand High School

Makerspace Internship

Details of the Makerspace Internship held at North Grand High School. The Makerspace Internship focused on utilizing an in-house makerspace to train student experts in Arts and Communication and IT. Resources include internship description, sample nomination letter, interview resources, bilingual 1-pager for equipment use, and equipment badging system.



I-WIN

Illinois Work-Based Learning
Innovation Network

Hyperlinks

- [Internship interview questions, scorecard and rubric](#)
- [Badging system for grading equipment use expertise](#)

Attachments

1. Makerspace Internship Career Development Experience Template
2. Internship Nomination Letter
3. Internship Orientation Slides
4. Bilingual 1-pagers for equipment use (not vetted by native speaker)

Career Development Experience: Makerspace Internship

PROJECT OVERVIEW	
Career Development Experience Title	Makerspace Internship
School	North Grand High School
Industry Partner(s)	School Makerspace
Endorsement Area	Information Technology, Arts and Communications
Description of CDE	<p>Goal is to develop a cohort of student experts to teach the technology of the Makerspace to teachers and students at the school. Students also assist with planning and implementation of parent nights and community events, including the Admitted Own Night for incoming Freshman.</p> <p>Program can start as early as Freshman year. Each week students complete a mini project with clear, accountable products using the Adobe software in order to receive certifications. Students earn badges and develop a sense of ownership for the school's Makerspace. The projects are structured so that students can incorporate their personality into the completion of the product.</p> <p>Students educate the entire community to lead demonstrations and teach students, staff, and families how to use the technology.</p> <p>Students interview for the internship by completing a performance task working in groups and a panel interview where they are asked a series of questions.</p>
<u>Essential Employability/ Technical Competencies</u>	Participants earn Level 3 expert badges in 5 technologies and develop skills to be a leader in the school/community to lead events and trainings.
Credit and/or Compensation Provided to Participants	Students receive school credit and receive support from a vendor to pay students.

Delivery Model & Location/ Platform	Utilize Makerspace within the school.
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This resource was created by [Education Systems Center at Northern Illinois University](#).

The Illinois Work-Based Learning Innovation Network (I-WIN) is designed to help employers, educators, and students leverage innovative models for scaling high-quality work-based learning opportunities in school districts and community colleges across the State. This network explores ways to create equitable opportunities for students through both in-person and virtual learning. For more information on I-WIN and additional work-based learning resources, visit edsystemsniu.org/i-win/.

Hyperlinks included throughout this template are from the [Career Development Experience Toolkit](#).



YOU WERE NOMINATED to apply for the After School Makerspace internship.

Good afternoon <<First Name>>!

If you are receiving this letter, it means that one of your teachers thought that you were a good fit for the North-Grand After School Matters **Makerspace Internship Program**. The application for this program is open to all students and all students were emailed about it, but you have not yet applied and at least one of your teachers believes you are an excellent fit for this program.

When is it? Mondays and Wednesdays, from 3:30-5:30pm, from February 23rd to May 4th

What is it? Students in the program will learn the equipment in the Makerspace, including the recording studio, laser cutter, 3D printers, vinyl cutters, drone, and filmmaking equipment. Students who participate will be eligible to be re-hired next year as Makerspace interns.

Do I really get paid? YES, on a debit card that will be loaded up every other week. But you have to **commit** to the program - students with 3 absences will be dropped from the program. *Note: students ineligible to work in the United States can also receive payment, but will earn a maximum of \$150.*

How do I sign up?

Step 1: **Search your CPS Gmail** for “NGHS Makerspace” and **follow the instructions in my email** to apply on the After School Matters website.

Step 2: **Watch your email** for updates and next steps - students will have to complete a screener form and group interview to be accepted to the program.

If you have any questions, please contact Ms. Abid at ieabid@cps.edu.

Thank you!

STEAM Team
Ms. Abid and Ms. Born

<<First Name>> <<Last Name>>

7th Period: <<7th Period>>

8th Period: <<8th Period>>



USTED FUE NOMINADO para solicitar la pasantía After School Makerspace .

¡Buenas tardes <<First Name>>!

Si recibe esta carta, significa que uno de sus maestros pensó que usted era un buen candidato para el **programa de pasantías Makerspace de North-Grand After School Matters**. La solicitud para este programa está abierta a todos los estudiantes y todos los estudiantes recibieron un correo electrónico al respecto, pero aún no ha presentado la solicitud y al menos uno de sus maestros cree que es una excelente opción para este programa.

¿Cuándo es? Lunes y miércoles, de 15:30 a 17:30, del 23 de febrero al 4 de mayo

¿Qué es? Los estudiantes del programa aprenderán sobre el equipo en Makerspace, incluido el estudio de grabación, la cortadora láser, las impresoras 3D, las cortadoras de vinilo, el dron y el equipo de filmación.

¿Realmente me pagan? SI. Pero debe **comprometerse** con el programa: los estudiantes con 3 ausencias serán eliminados del programa. *Nota: los estudiantes que no son elegibles para trabajar en los Estados Unidos también pueden recibir pago, pero ganarán un máximo de \$150.*

¿Cómo me registro?

Paso 1: Busque "NGHS Makerspace" en su cuenta de Gmail de CPS y **siga las instrucciones en mi correo electrónico** para presentar su solicitud en el sitio web After School Matters.

Paso 2: Esté atento a su correo electrónico para obtener actualizaciones y los próximos pasos: los estudiantes deberán completar un formulario de evaluación y una entrevista grupal para ser aceptados en el programa.

Si tiene alguna pregunta, comuníquese con la Sra. Abid en ieabid@cps.edu.


¡Gracias!

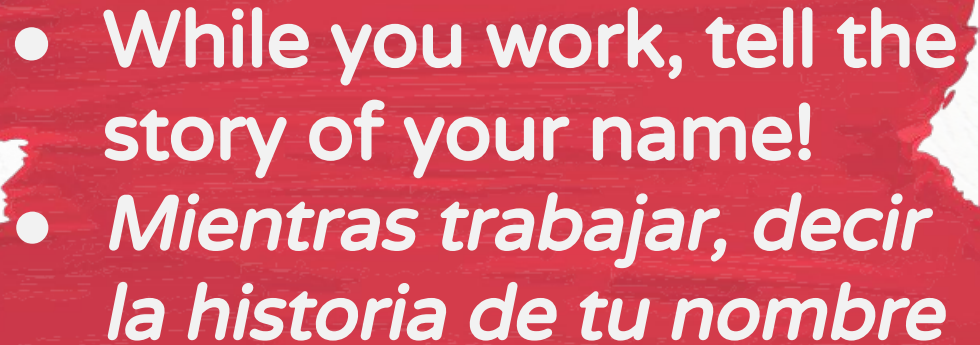
Equipo STEAM
Sra. Abid y Sra. Born



NGHS Makerspace Interns Welcome!

Draw a button design in the template -
include your name! /
*Dibujar un diseño para una insignia en la
plantilla, y incluir tu nombre*

- 
- Make a button design with your name!
 - *Crear una insignia con tu nombre*

- 
- While you work, tell the story of your name!
 - *Mientras trabajar, decir la historia de tu nombre*

TODAY

Hoy

01

Community Building
Construcción comunitaria

02

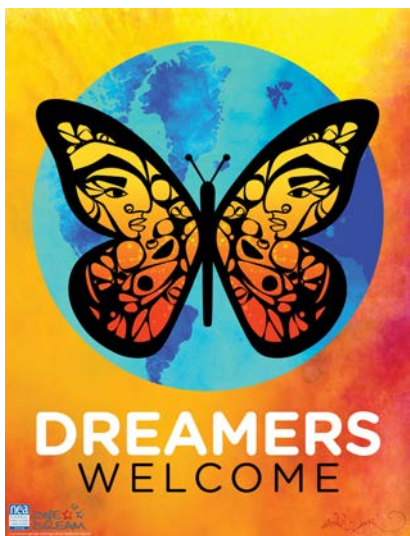
Paperwork and Info
Papeleo e información

03


Planning Our Program
Planificación de nuestro programa

04



Turbo Buttonmaking
Fabricación de botones turbo



About language and
identity /
*Sobre el idioma y la
identidad*



When / *Cuándo*

- **Every Monday and Wednesday /
*Cada lunes y miercoles***
 - **3:30–5:30pm**
 - **Room 290**
- 
- 

Absences / *Ausencias*

- **4 absences (excused or not) maximum /
*4 ausencias (justificadas o no) máximo***
- **Arriving after 3:45pm may count as absence
*/ Llegar después de las 3:45pm puede
contar como ausencia***



\$\$\$

- **Wisely card (or paper check in mail if no SSN) / *Tarjeta Wisely (o cheque en papel por correo si no tiene SSN)***
- **Call phone number on back to activate your card / *Llamar al número de teléfono en la parte posterior para activar su tarjeta***



\$\$\$

- **Wisely card loaded with money every 3 weeks (3 payments total) / Tarjeta 'Wisely' cargada de dinero cada 3 semanas (3 pagos en total)**

Pay Period / Período de pago	Date / Fecha	\$\$\$
1	March 20 / 20 marzo	108
2	April 17 / 17 abril	108
3	May 8 / 8 mayo	109
	Total	325

Benefits / *Beneficios*



- **Free therapy (8 sessions without informing parents)
*/ Terapia gratuita (8 sesiones sin informar a los padres)***
- **Send an email to achsdtwo@adler.edu to schedule /
*Enviar un correo a achsdtwo@adler.edu para programar***



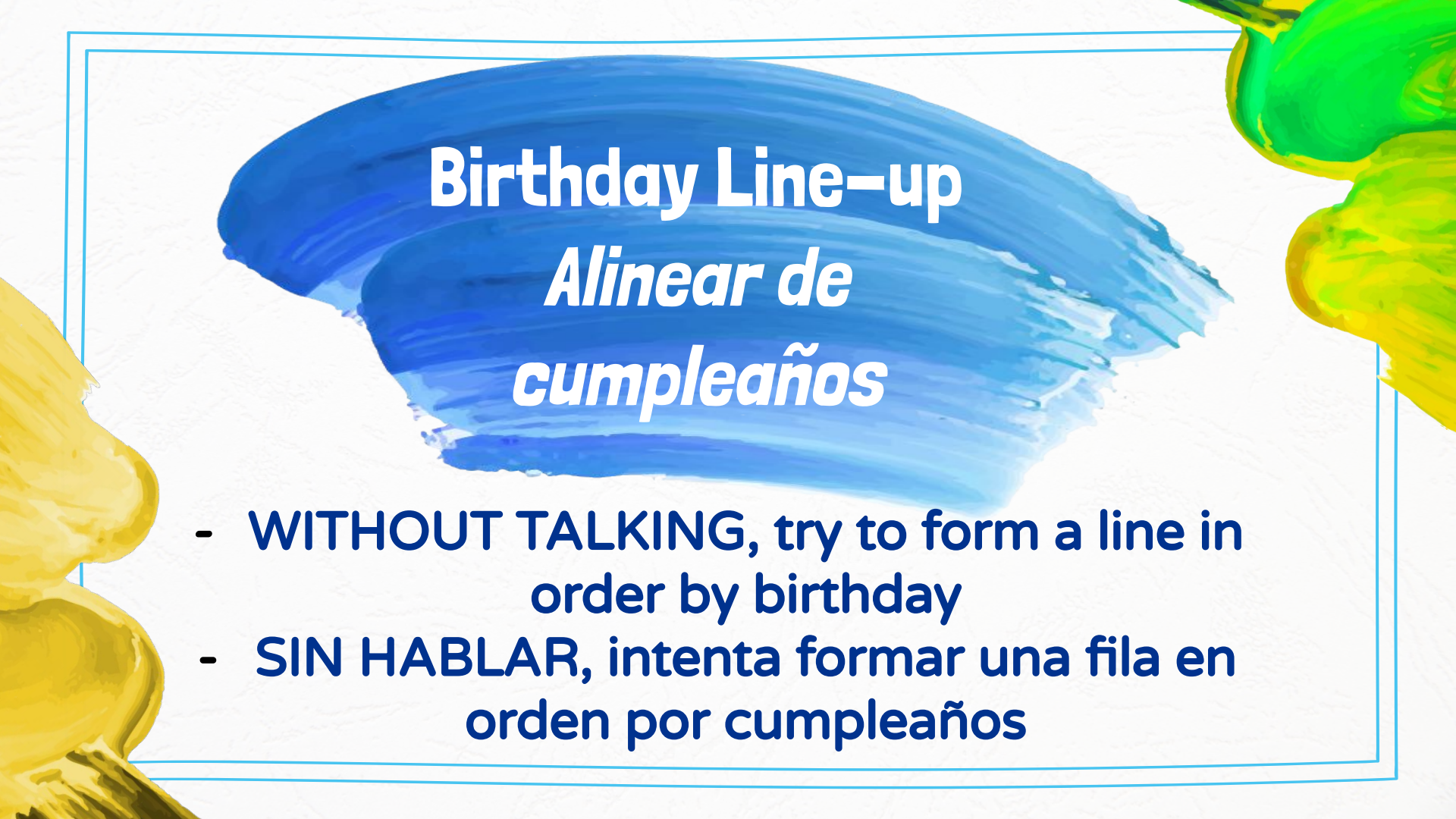
**Let's take
a tour!**

***¡Hagamos un
recorrido!***



Group Planning

*Planear en
grupo*



Birthday Line-up

Alinear de cumpleaños

- **WITHOUT TALKING**, try to form a line in order by birthday
- **SIN HABLAR**, intenta formar una fila en orden por cumpleaños

Partner Interview / *Entrevista a tu compañero*

- **Name and grade / *Nombre y grado***
- **Favorite class at NGHS / *Clase favorita en NGHS***
- **Hobby or thing they love / *Pasatiempo o algo que ama***



NGHS Makerspace Interns Welcome!

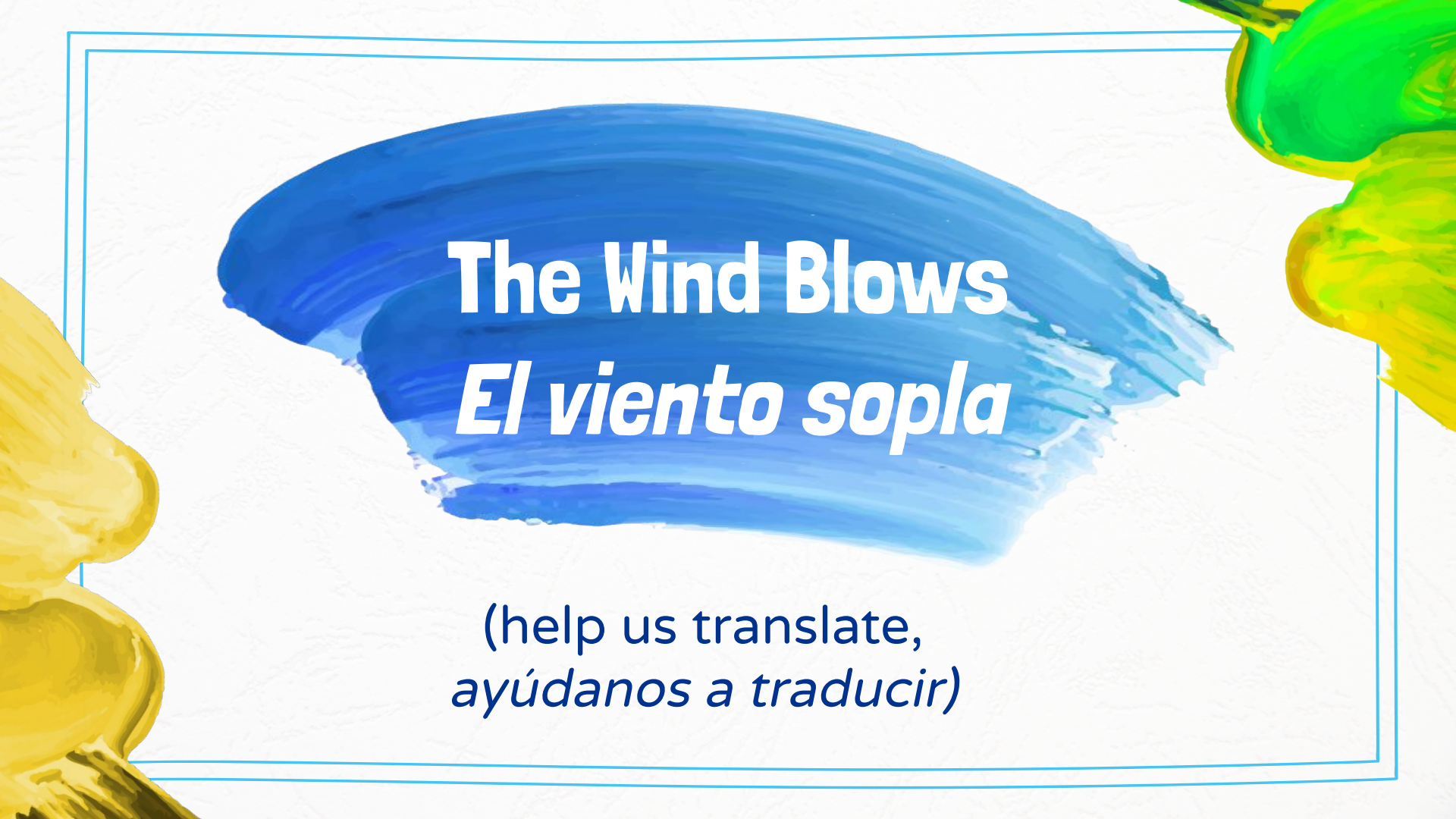
Put on your
nametag button!
*¡Pon tu insignia
con tu nombre!*

A thick, horizontal red brushstroke with a textured, painterly appearance, serving as a background for the text.

Digital Buttonmaking /
Fabricación de insignias
digitales

A thick, horizontal blue brushstroke with a textured, painterly appearance, serving as a background for the text.

Sticker/T-shirt
Pegatinas y
camisetas



The Wind Blows

El viento sopla

(help us translate,
ayúdanos a traducir)

Digital Buttonmaking /

Fabricación de insignias digitales

- **At least 2 buttons with 1 co-created design /
*Hacer 1 diseño juntos – al menos crear 2 insignias con esto***
- **More buttons with personal designs if time/
*Más insignias con diseños personales si hay tiempo***

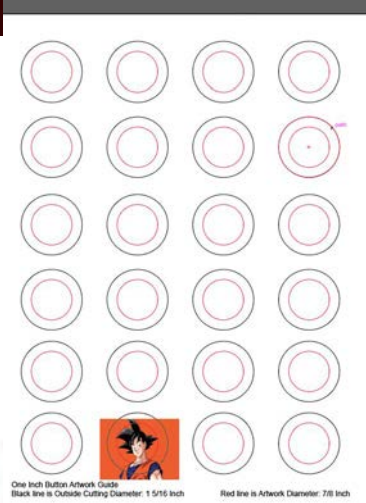
- Open **Adobe Illustrator** and login / *Abrir Adobe Illustrator e iniciar sesión*
- **IMPORTANT:** Choose 'School Account' / *Ojo: Eligir 'School Account'*
- Download and open 1" or 2.25" template / *Descargar y abrir la plantilla de 1" o 2,25"*



One Inch Button Artwork Guide
Black line is Outside Cutting Diameter: 1 5/16 Inch



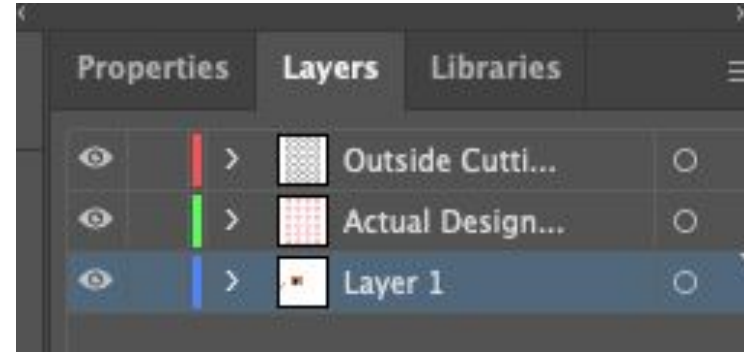
Red line is Artwork Diameter: 7/8 Inch



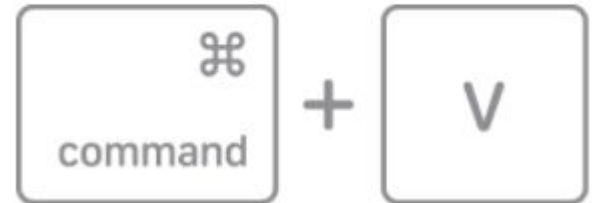
One Inch Button Artwork Guide
Black line is Outside Cutting Diameter: 1 5/16 Inch
Red line is Artwork Diameter: 7/8 Inch

Layers / Capas

- Layers keep complex designs organized / *Las capas mantienen los diseños complejos organizados*
- Click **Layers** and select **Layer 1** / *Hacer clic en **Layers** y seleccione **Layer 1***
- Find images on the internet and paste into **Layer 1** / *Encontrar imágenes en Internet y pegarlas en **Layer 1***



Paste / Pegar

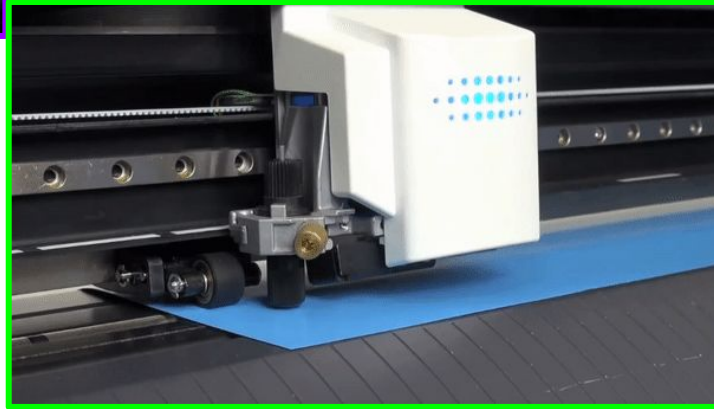




STEP 1: Create design on computer / Crear diseño en computadora

- Adobe Illustrator or Canva + Adobe Illustrator

STEP 2: Cut / Cortar



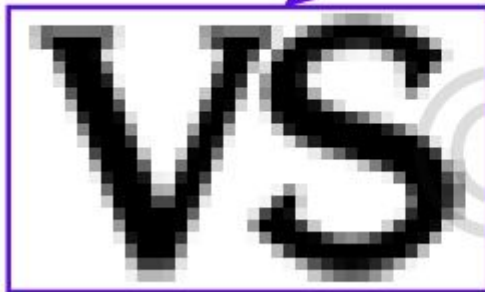
STEP 3: Weed out excess vinyl Eliminar el exceso de vinilo



STEP 4: Heat press / Prensa de calor



Raster VS Vector



Raster Image

File types:

*.jpg, *.png, *.gif, *.mp4

Pixels - tiny points of light on a screen

Píxeles - pequeños puntos de luz en una pantalla

Vector Image

File types:

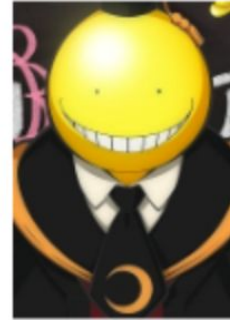
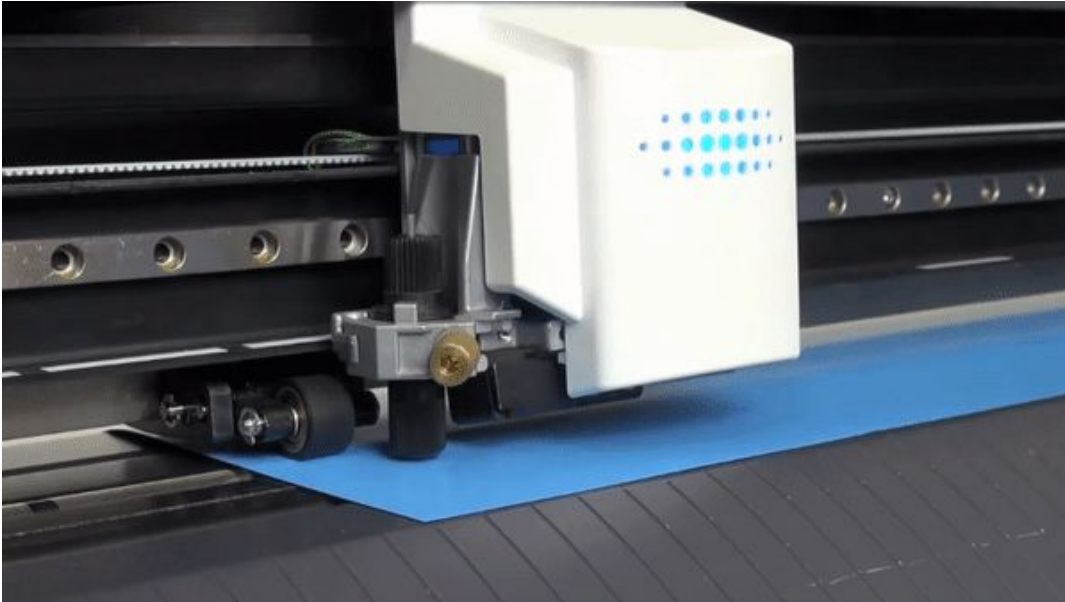
*.svg, *.ai, *.wmf, *.eps

Lines/paths determined by math

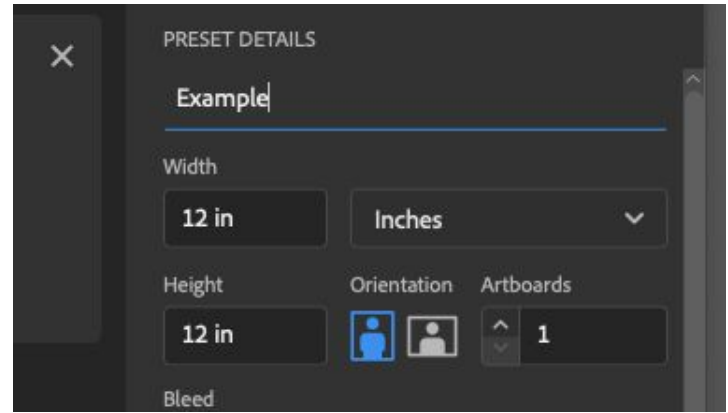
Líneas/caminos determinados por matemáticas

Why use VECTOR images instead of raster images with the vinyl cutter (and laser cutter)?

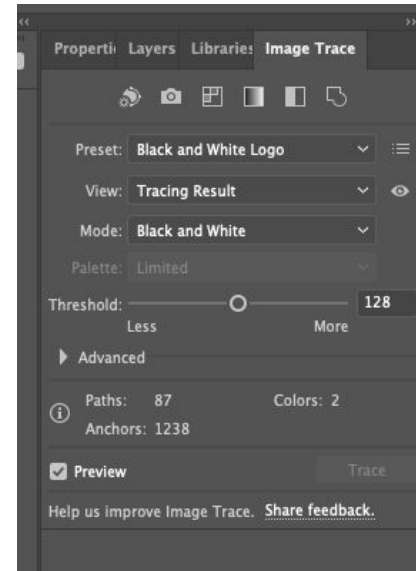
¿Por qué utilizar imágenes VECTORIALES en lugar de imágenes rasterizadas con la cortadora de vinilo?



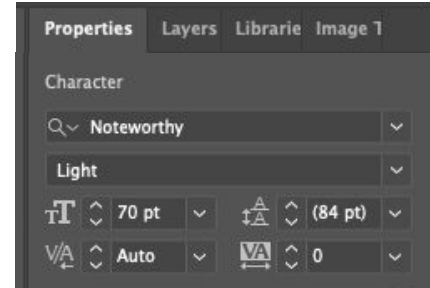
- **In Illustrator:**
 - **File -> New**
 - **Change/*cambiar* 'Points' to 'Inches' -> 12" X 12"**
 - **File -> Open -> timonpumbaa.png**



- **Window -> Image Trace**
 - **Preset: Black and White Logo**
 - **View: Tracing Result**
 - **Mode: Black and White**
- **Change/*cambiar* Threshold!**

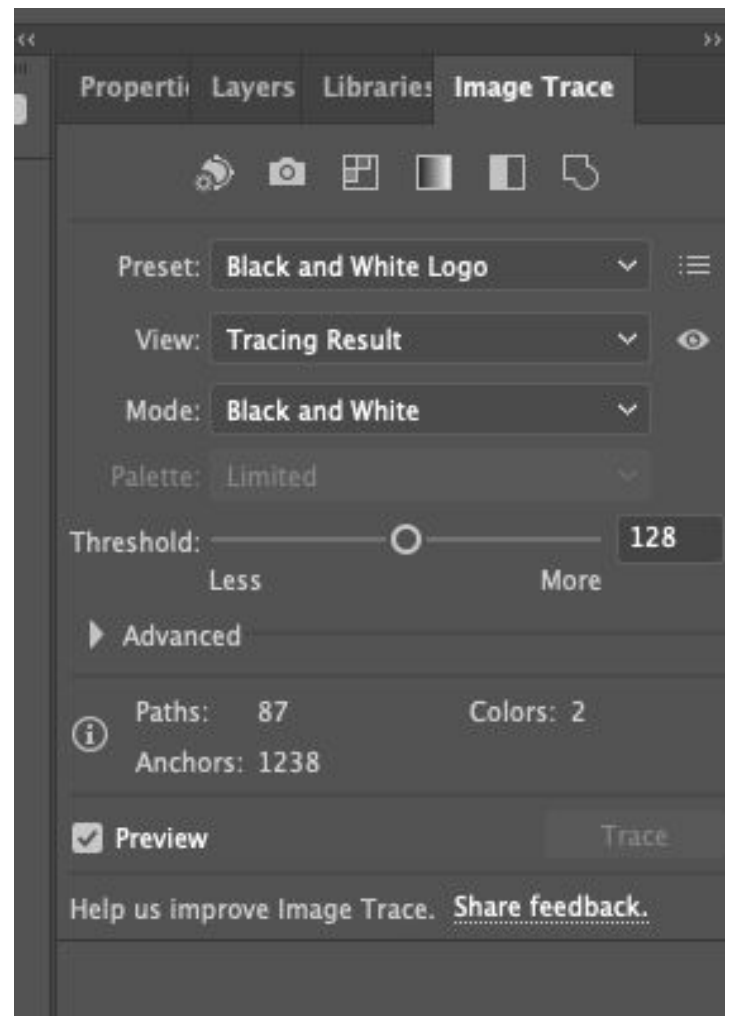
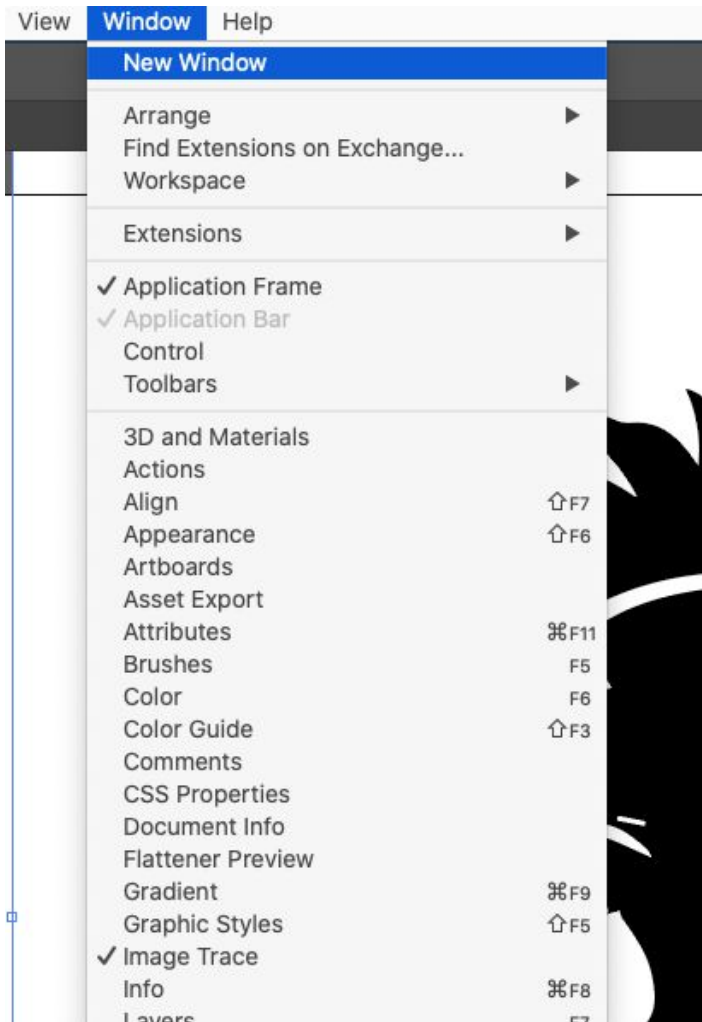


- **Add text / agregar texto**
- **Use 'Properties' to change text font, size, and alignment / Usar 'Propiedades' para cambiar la fuente, el tamaño y la alineación del texto**



- **Prepare / preparar**
 - **Object -> Image Trace -> Expand**
- **Cut / cortar**
 - **Window -> Extensions -> Roland Cutstudio**
 - **Model: GS-24**
 - **Mirror:**
 - **Move to Origin: ✓**





- **In Illustrator:**
 - **File -> New**
 - **Change/cambiar 'Points' to 'Inches'**
 - **Set the desired size of your sticker! /
*¡Establece el tamaño deseado de tu pegatina!***

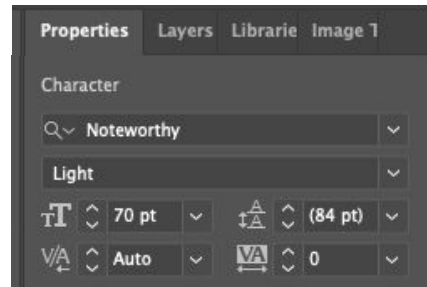
Create your Artboard

Crear tu Artboard

- **Google Images (images.google.com)**
- **Avoid photographs / *evitar las fotos***
- **Ctrl + clic -> Save image as or Copy image**
- **Paste or Open in Artboard**

Find Images



Buscar imágenes



Add and customize text

Añadir y personalizar texto

WHEN YOUR DESIGN IS READY.... CUANDO TU DISEÑO ESTÉ LISTO....

- **Prepare / preparar**
 - **Object -> Image Trace -> Expand**
- **Cut / cortar**
 - **Window -> Extensions -> Roland Cutstudio**
 - **Model: GS-24**
 - **Mirror:** 
 - **Move to Origin:** 



NGHS Makerspace Interns

Put on your
nametag button!
*¡Pon tu insignia
con tu nombre!*

Welcome!

REMINDER: Get me your parent consent
form!

**Edisson, Marilyn, Yeimy, Romeo, Thomas,
Othello**

Group Counting

Contar de grupo

1	2	3	4	5	6	7	8	9	10
uno	dos	tres	cuatro	cinco	seis	siete	ocho	nueve	diez
one	two	three	four	five	six	seven	eight	nine	ten



What can you do if
you finish early?
*¿Qué puedes hacer si
terminas temprano?*

A thick, horizontal brushstroke of red paint with a textured, layered appearance, set against a white background.

Digital Music /
Música digitales

A thick, horizontal brushstroke of blue paint with a textured, layered appearance, set against a white background.

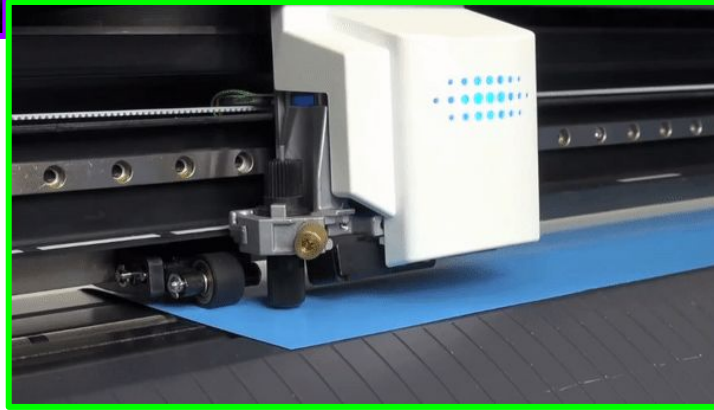
Sticker/T-shirt
Pegatinas y
camisetas



STEP 1: Create design on computer / Crear diseño en computadora

- Adobe Illustrator or Canva + Adobe Illustrator

STEP 2: Cut / Cortar



STEP 3: Weed out excess vinyl Eliminar el exceso de vinilo



STEP 4: Heat press / Prensa de calor





Adhesive vinyl / Vinilo adhesivo

- For stickers / *Para calcomanías*
- Paper backing / *Soporte de papel*
- Cut on color/printed side / *Cortar en el lado colorado*

Heat-transfer vinyl / Vinilo de transferencia de calor

- For shirts, etc / *Para camisetas etc.*
- Shiny clear plastic backing / *Soporte plástico transparente brillante*
- Cut on non-shiny side / *Cortar en el lado sin brillo*



Heat-transfer vinyl /

Vinilo de transferencia de calor

- Shirts, etc / *Camisetas etc.*
- Designs **MUST BE mirrored** before cutting / *Los diseños DEBEN SER **reflejados** antes de cortar*

Mirror: R Я В



Adhesive vinyl / *Vinilo adhesivo*

- Stickers / *Calcomanías*
- Designs are NOT mirrored / *Los diseños DEBEN SER **no reflejados** antes de cortar*



T-Shirt Challenge / *Desafío de la camiseta*

With your partner, create a T-shirt design to represent the NGHS Makerspace internship /

Con tu pareja, crean un diseño de camiseta para esta pasantía de NGHS Makerspace

Your design must / *Su diseño debe*

- Include multiple images / *Incluir varias imágenes*
- Include text / *Incluir texto*
 - What should our name be? / *¿Cuál debe ser nuestro nombre?*
 - Challenge: try to overlay text over images! / *Desafío: ¡intenta superponer texto sobre imágenes!*



NGHS Makerspace Interns Welcome!

Put on your
nametag button!
*¡Pon tu insignia
con tu nombre!*

Deshierbe / Weeding

- *Usa las pinzas y las herramientas para quitar el vinilo extra de tu diseño.*
Use the tweezers and tools to remove extra vinyl from your design.

** CONSEJO / TIP*

- *Retire primero el fondo, comenzando por pelar una esquina.*
Remove the background first, starting by peeling a corner





BUTTONS LEVEL 3

*¡Conviértanse en asistentes de
Makerspace!*

Become Makerspace Assistants!

Level 2 Badge:

- *No puede usar la tecnología hasta que la Sra. Born/Sra. Abid aprueba el diseño y se comunica contigo*
- Cannot use technology until Ms. Born/Ms. Abid approves design and checks in with you

Level 3 Badge:

- *Puede usar la tecnología por su cuenta siempre que la Sra. Born/Sra. Abid están en la habitación.*
- Can use technology **by yourself** as long as an adult is in the room



TODOS / EVERYONE

PROYECTOS de ELECCIÓN de LEVEL 3 CHOICE LEVEL 3 PROJECTS

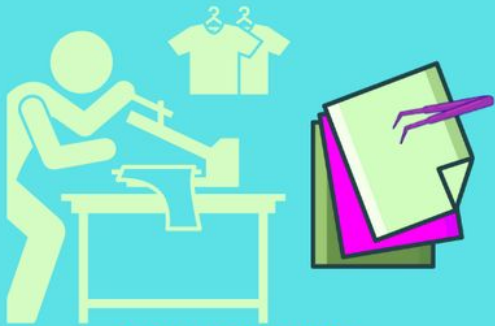
Level 2 Badges:

- *Música / Music*
- *Corte de vinilo / Vinyl Cutting*
- *Drone*
- *Corte por láser / Laser Cutting*
- *Impresión 3d / 3D Printing*
- *Bordado digital / Digital embroidery*
- *Realidad virtual / Virtual reality*

Level 3 Badges:

- *Edición de cine / Film and editing*

- *Música O corte de vinilo / Music OR Vinyl cutting*
- *Corte por láser O impresión 3D / Laser cutting OR 3D printing*
- *Una tecnología más de elección / One more technology of choice*



VINYL LEVEL 2

OBLIGATORIO / REQUIRED:

1. *Desherbar y usar prensa de calor*
Weed and use heat press
2. *Enviar una foto de tu y tu pareja sosteniendo su producto final a ieabid@cps.edu y leborn@cps.edu*
Send a photo of you (and your partner) holding your final product to ieabid@cps.edu and leborn@cps.edu



DIGITAL MUSIC LEVEL 2

OBLIGATORIO / REQUIRED:

Enviar una composición que incluya:

Send a composition including:

- *Al menos 4 pistas / At least 4 tracks*
- *Al menos 4 compás / At least 16 measures*
- *Voz/instrumento alterado / Altered voice/instrument*
- *Sonido externo (grabado o descargado) / External sound (recorded or downloaded)*



The Shangri- Las - Remember (Walking in the Sand) - Long stereo mix

👍 76K 🗨 DISLIKE ➦ SHARE ⬇ DOWNLOAD ✂ CLIP ≡+ SAVE

All From



1. 🗄+C - https://www.youtube.com/watch?v=5Ge8_6rtQvs

2. 🗄+V

YTMP3
Video Converter

Search keywords or paste link here

https://www.youtube.com/watch?v=5Ge8_6rtQvs

Convert

Please note that both keywords and links are supported now

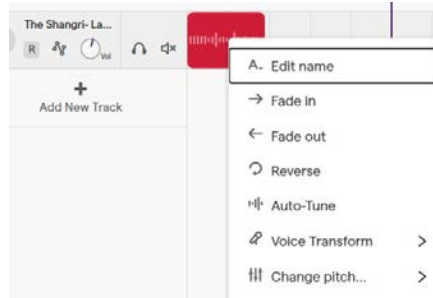
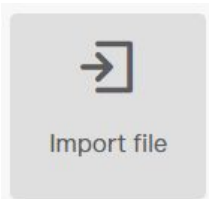
mp3

mp4

3. ➡

Download mp3

4. (Soundtrap)





Point Person: Ms. Born
Persona clave: Ms. Born

REQUIREMENTS / REQUISITOS:

- A Soundtrap song or podcast at least 1 minute long / *Una canción o podcast de Soundtrap de al menos 1 minuto de duración*
- Must use the recording studio / *Debe usar el estudio de grabación*

EVIDENCE: Shared song on Soundtrap



Point Person: Ms. Abid
Persona clave: Ms. Abid

REQUIREMENTS / REQUISITOS:

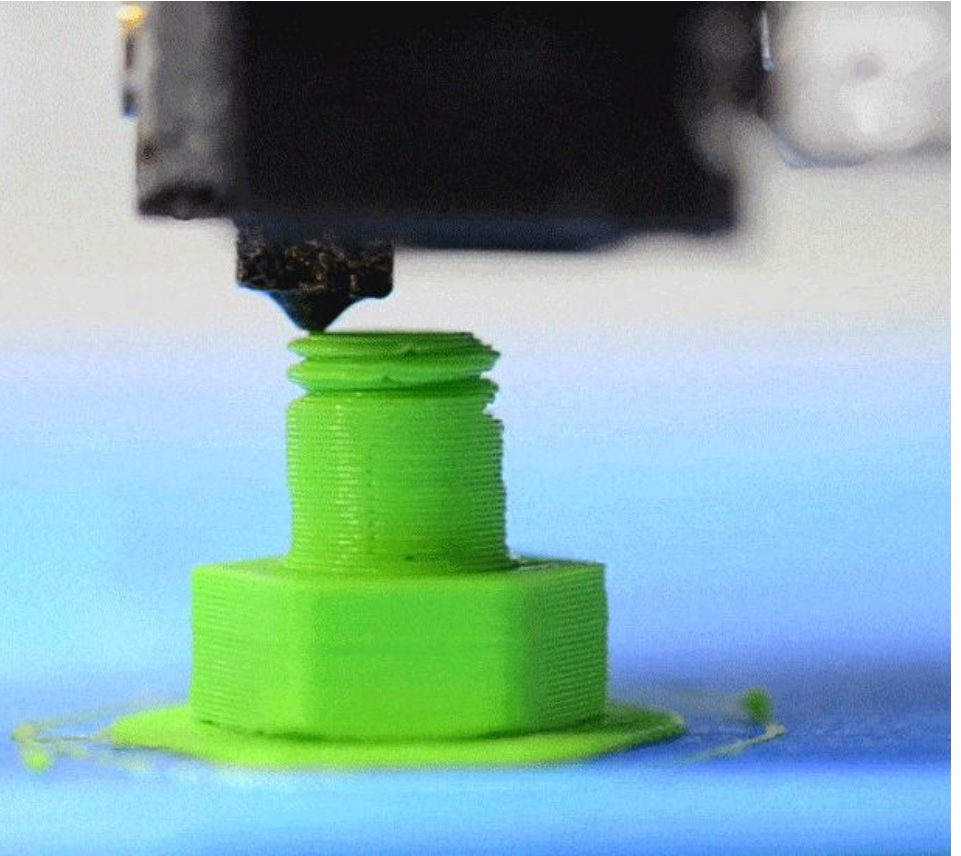
- At least 1 sticker / *al menos 1 calcomanía*
- At least 1 HTV project / *al menos 1 proyecto con HTV*
- No single image projects / *No proyectos de una sola imagen*

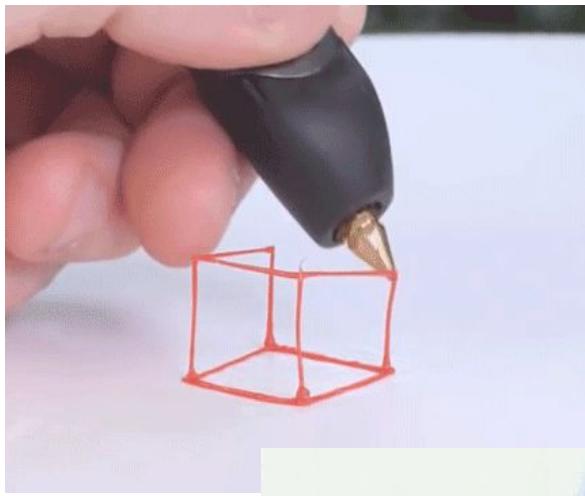
EVIDENCE: Send pictures!

3D DESIGN - DAY 1

Agenda

- **What is 3D printing? / ¿Qué es la impresión 3D?**
- **FOLLOW ALONG:
Using Tinkercad to
make a keychain /
SIGUE A LO LARGO:
Usando Tinkercad para
hacer un llavero**
- **IMPORTING OTHER
MODELS /
IMPORTACIÓN DE
OTROS MODELOS**

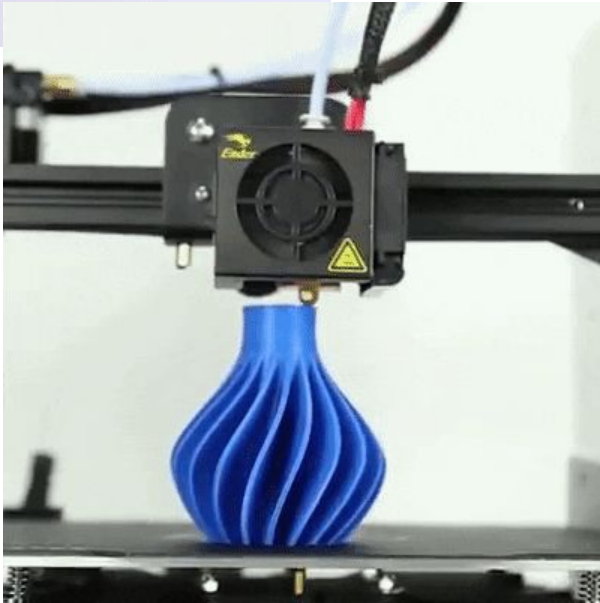




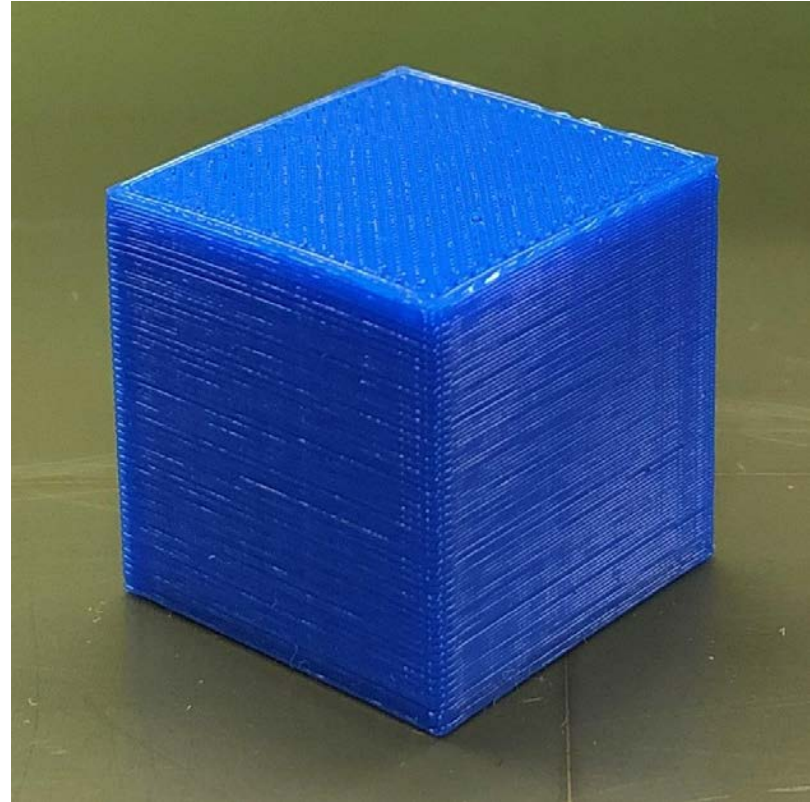
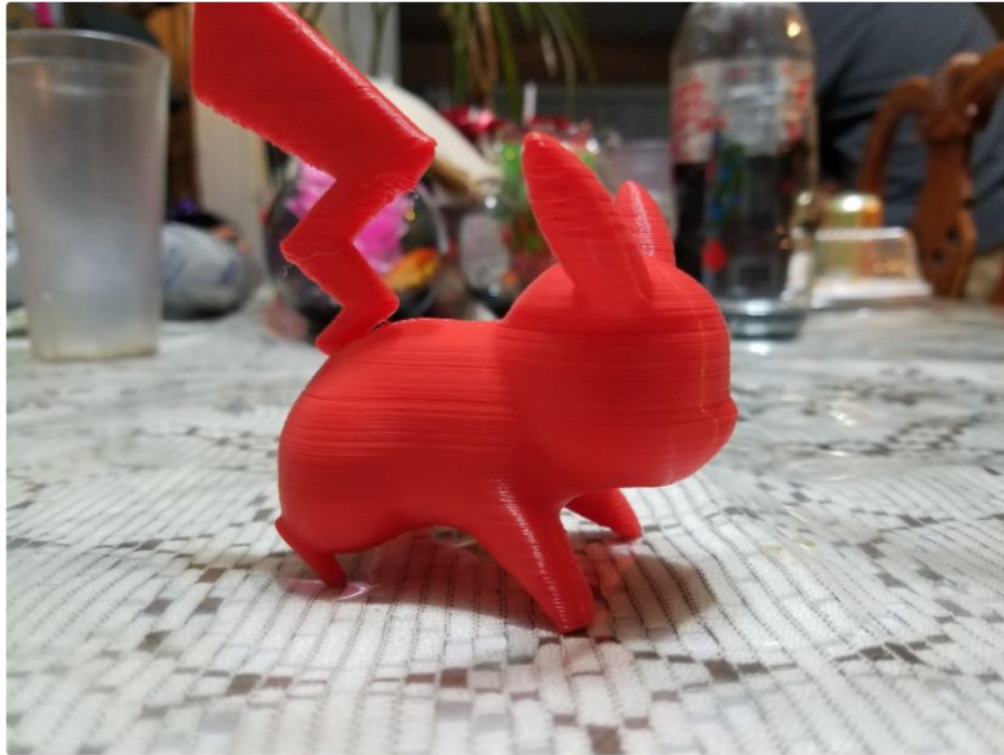
BASIC PRINCIPLES / PRINCIPIOS BÁSICOS

Thin plastic “filament” is extruded through a nozzle, melting temporarily and then hardening

El "filamento" de plástico delgado se extruye a través de una boquilla, se funde temporalmente y luego se endurece.

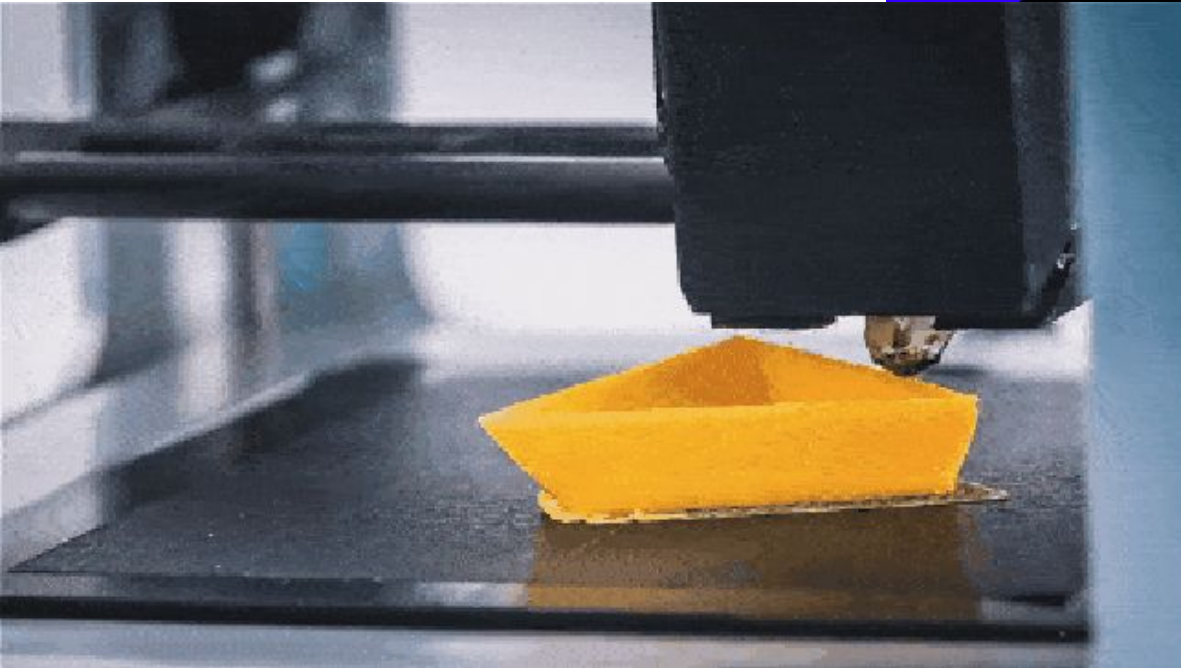
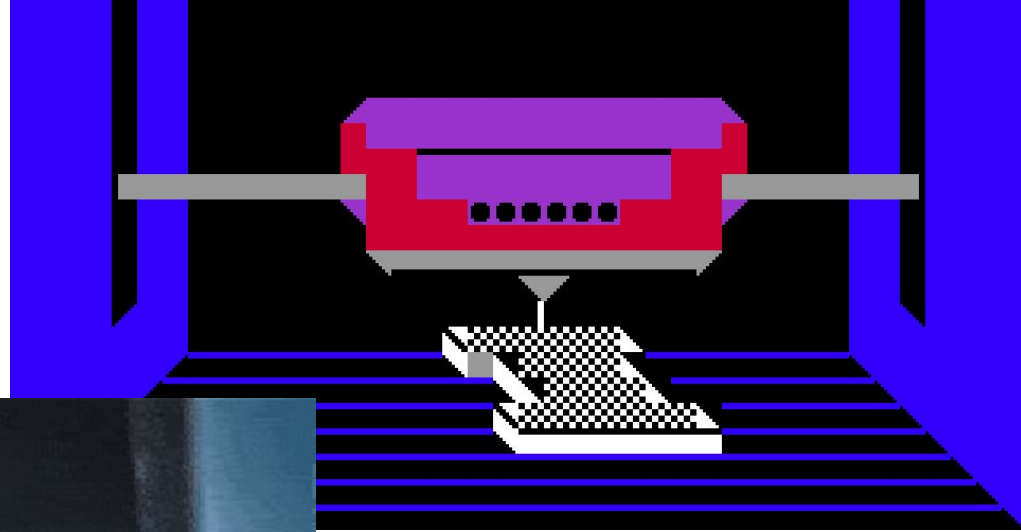


What do you notice about the texture of 3D printed objects?
¿Qué notas sobre la textura de los objetos impresos en 3D?



3D PRINTING

Design is built from bottom to top, by layering 'slices' of plastic



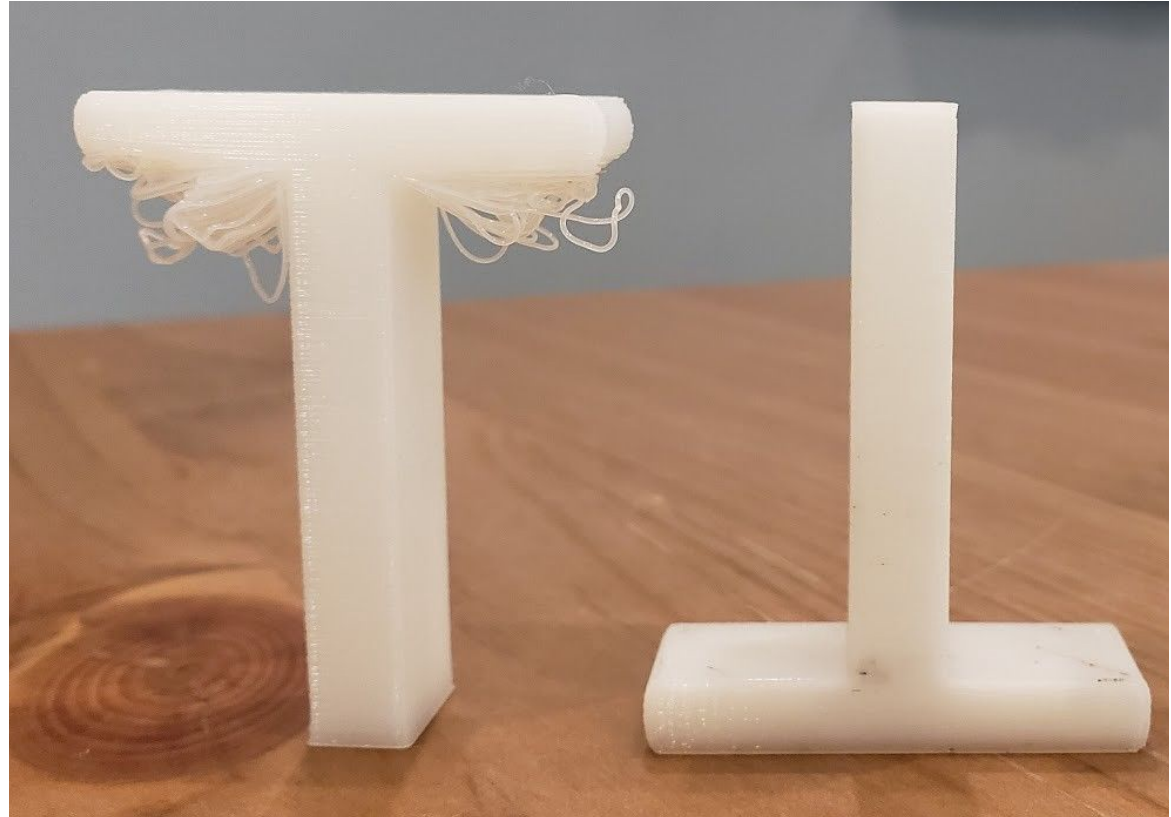
El diseño se construye de abajo hacia arriba, superponiendo "rebanadas" de plástico

Trying to 3D Print the Letter 'T'

Intentando imprimir en 3D la letra 'T'

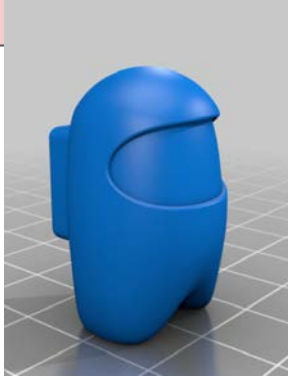
Why do you think placing the letter 'T' upside-down to print works better?

¿Por qué crees que colocar la letra T al revés funciona mejor para imprimir?



STEP 1 / PASO 1:

Create your design, usually as an *.stl file /
*Cree su diseño, generalmente como un archivo *.stl*



STEP 2:

Use software to slice your design and create a file of instructions for the 3D printer / *Use software para cortar su diseño y crear un archivo de instrucciones para la impresora 3D*

STEP 3:

Transfer your .makerbot or .gcode file to the printer and PRINT! / *Transfiera su archivo .makerbot o .gcode a la impresora e IMPRIMA!*

Make a 3D keychain!

1. Go to tinkercad.com and click
Vaya a tinkercad.com y haz clic



JOIN NOW

2. Create a “personal account”
Crea una cuenta personal

3. Close any pop-ups / *Cierra cualquier ventana emergente*

4. Click on
Haz clic en



Create new design

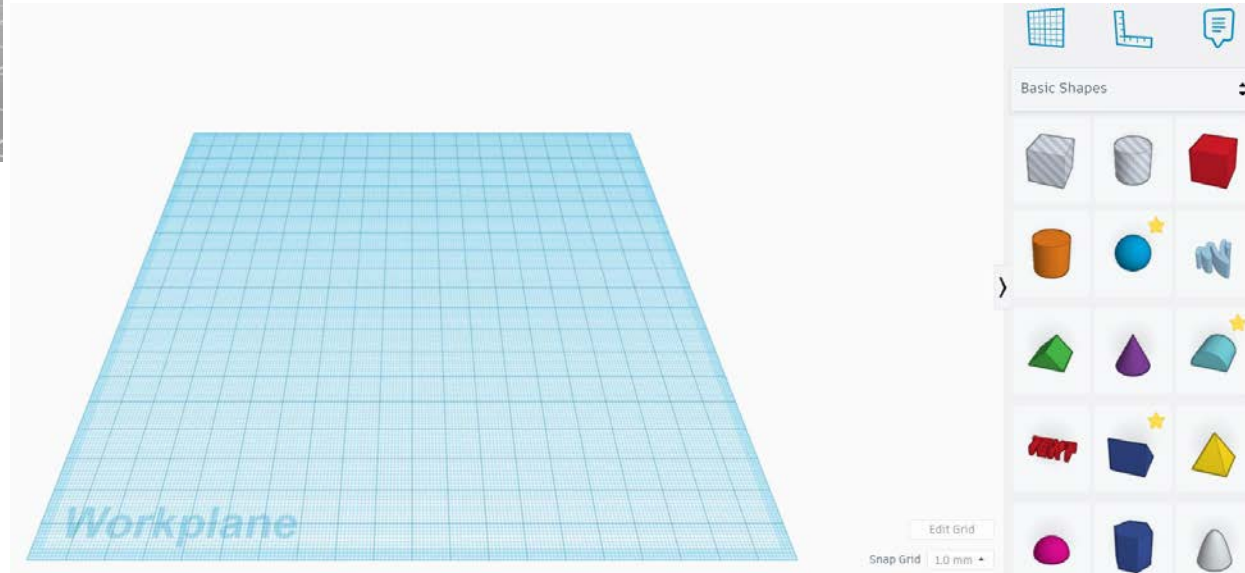
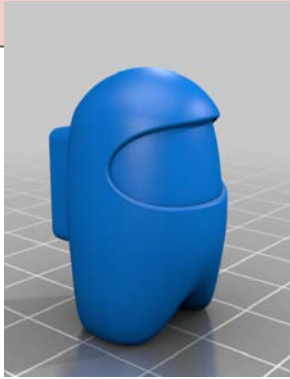


Plan de Hoy

- 3D Printing Part 2 / *Impresion 3D Parte 2*
- 3D Printing / Digital Embroidery
Impresion 3D / Bordar Digital
- Send photos of your 3D printing /
mandanos fotos de tus impresiones 3D

STEP 1 / PASO 1:

Create your design, usually as an *.stl file /
*Cree su diseño, generalmente como un
archivo *.stl*

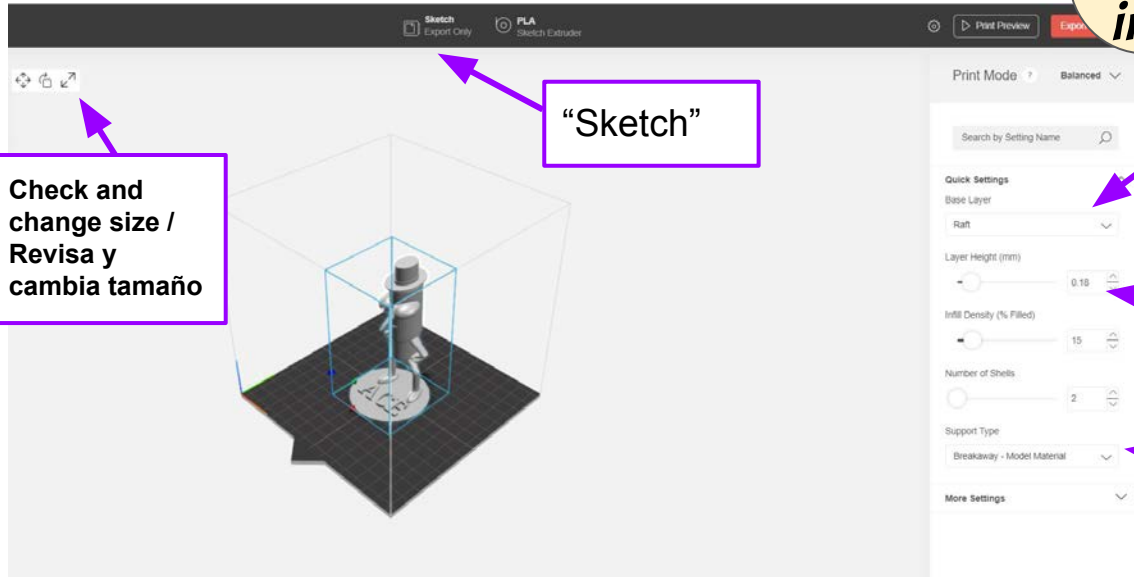


cloudprint.makerbot.com

If it asks your age, you were born in 2000.
Si te pregunta tu edad, naciste en el año 2000.

STEP 2:

Use software to slice your design and create a file of instructions for the 3D printer / *Use software para cortar su diseño y crear un archivo de instrucciones para la impresora 3D*



Check and change size /
Revisa y cambia tamaño

“Sketch”

RAFT - helps plastic stick to bed
ayuda a que el plástico se pegue a la cama

SHELLS - stronger but more time
más fuerte pero más tiempo

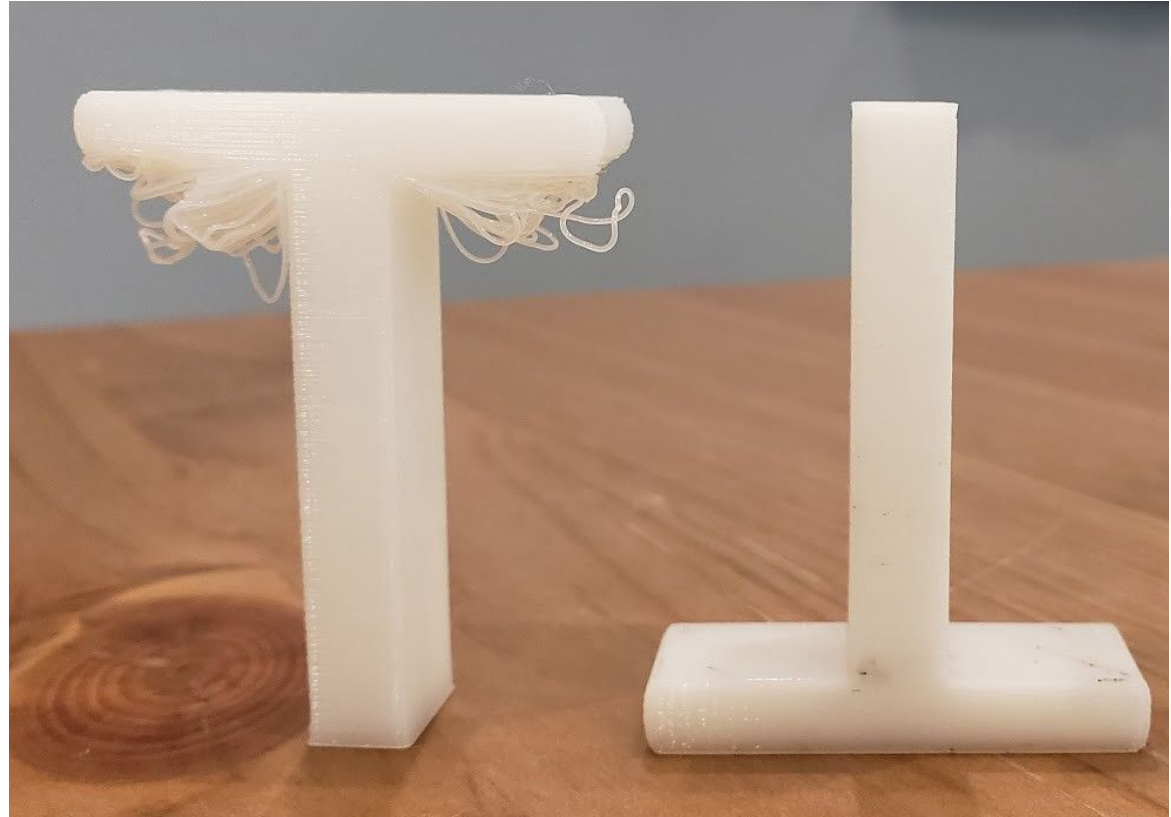
SUPPORTS - needed if your model has unsupported parts
necesario si su modelo tiene piezas no compatibles

Trying to 3D Print the Letter 'T'

Intentando imprimir en 3D la letra 'T'

Why do you think placing the letter 'T' upside-down to print works better?

¿Por qué crees que colocar la letra T al revés funciona mejor para imprimir?



STEP 3:

Transfer your .makerbot or .gcode file to a USB drive and PRINT! / *¡Transfiera su archivo .makerbot a la impresora e IMPRIMA!*

Load / Unload Material

- Ask first, for now / *Pregunta primero, por ahora*
- PLA only / *solo PLA*

Z calibration

- Do before you print, especially something big or complex / *Hazlo antes de imprimir, especialmente algo grande o complejo*
- A piece of paper should move with a little resistance / *una hoja de papel debe moverse con un poco de resistencia*



4 WEEKS LEFT / QUEDA 4 SEMANAS

THIS WEEK
ESTA SEMANA

VIDEO EDITING
EDICIÓN DE VIDEO
(today/hoy)

GREENSCREEN / FILMING /
CATCH-UP
PONERSE AL DÍA
(Thursday/jueves)

AFTER / DESPUÉS
SPRING BREAK

LASER CUTTING
CORTE POR LÁSER

LAST 2 WEEKS
ÚLTIMAS 2 SEMANAS

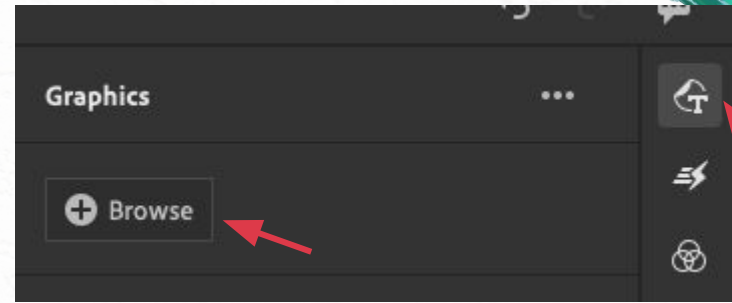
FINAL CHOICE PROJECT
PROYECTO DE ELECCIÓN
FINAL

1. Go to/ vaya a bit.ly/nghsasmvideo1
 - and download the files /
Vaya a y descargue los archivos
2. Find the shot where DOC OCK appears and **SPLIT** the clip / *Encuentre la toma donde aparece DOC OCK y SPLIT el clip*



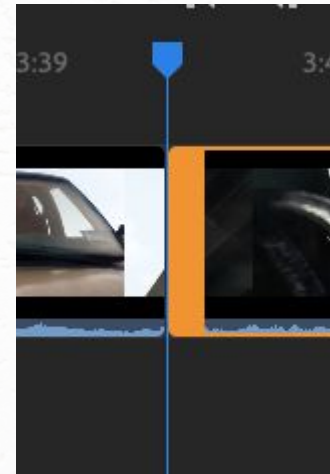
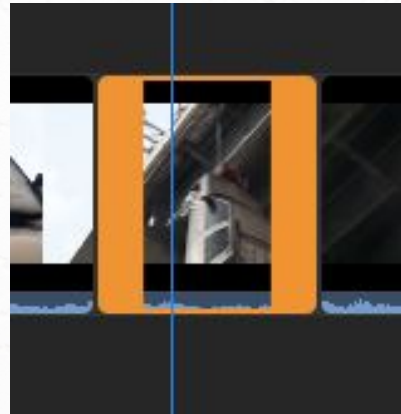
3. Add a title to the start of the clip
- try customizing the color, font,
and words in the title (note: titles
and graphics can go **before, after,**
or **be layered on top of video**)

Agregue un título al comienzo del clip: intente personalizar el color, la fuente y las palabras en el título (nota: los títulos y los gráficos pueden ir antes, después o superpuestos en la parte superior del video)



4. Find a short section you want to remove. Split the clip on both sides and delete.

Busque una sección breve que desee eliminar. Divida el clip en ambos lados y elimínelo.

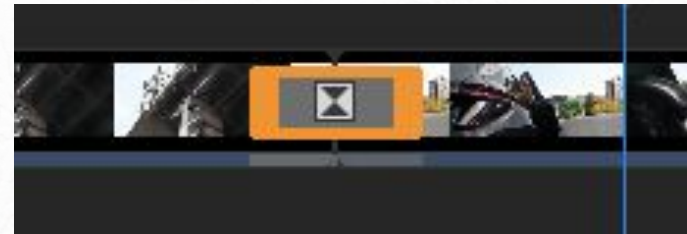
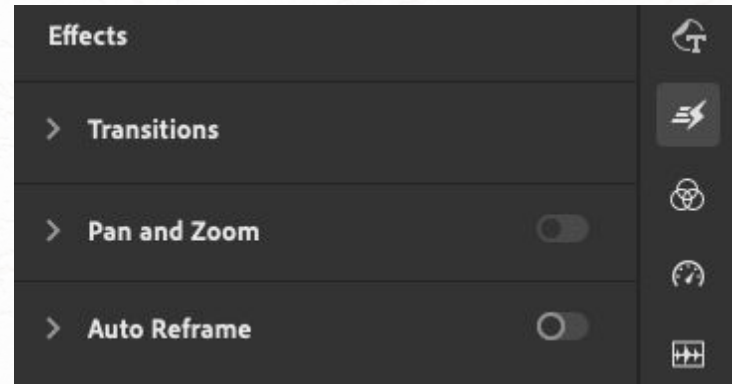


5. Find a point where the scene changes and **SPLIT** the clip. Add a **transition**, like a cross dissolve or fade to black/white.

Adjust the speed of the transition

*Busque un punto en el que cambie la escena y **DIVIDA** el clip. Agrega una transición, como una disolución cruzada o un desvanecimiento a blanco y negro.*

Ajustar la velocidad de la transición.

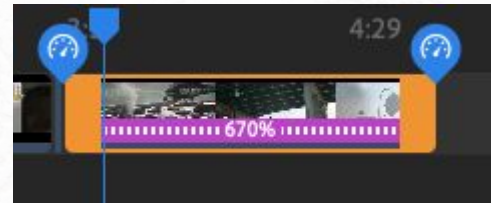
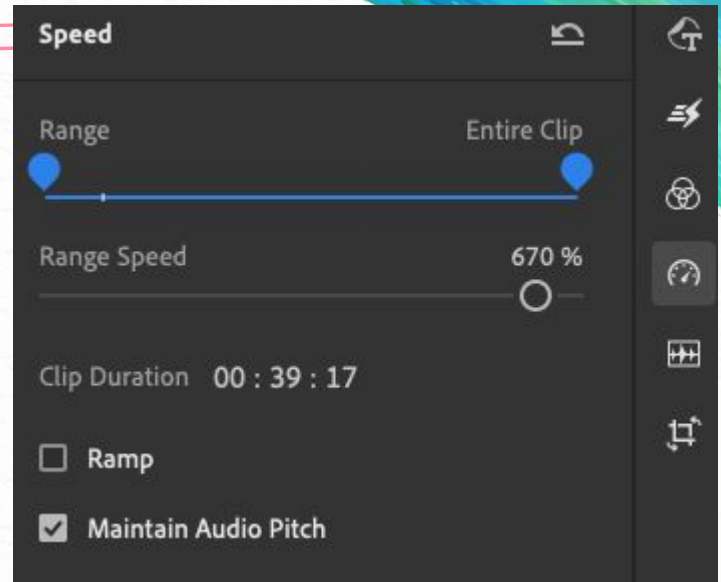


6. Find a clip to put in **FAST MOTION** - split on both sides of the clip, then use the slider to make it __% faster

NOTE: the 'Maintain Audio Pitch' checkbox prevent chipmunk sound

Encuentre un clip para poner en CÁMARA RÁPIDA: divida en ambos lados del clip, luego use el control deslizante para hacerlo __% más rápido

NOTA: la checkbox 'Mantener tono de audio' evita el sonido de 'chipmunk'



7. Find a clip to separate the audio
(shortcut: E)

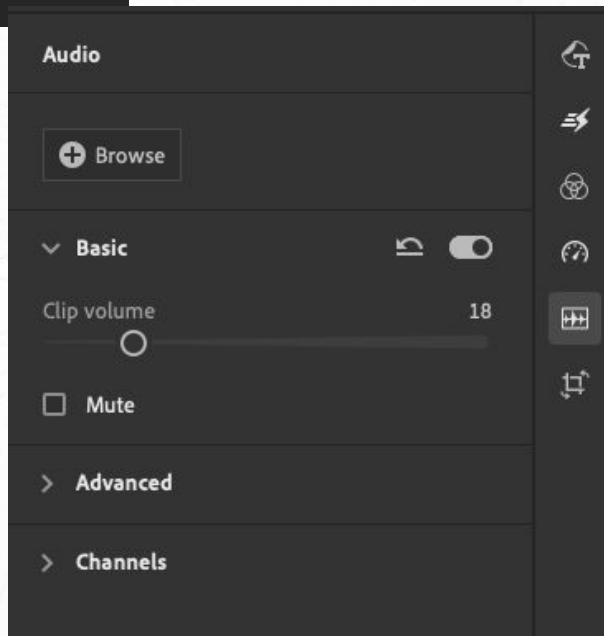
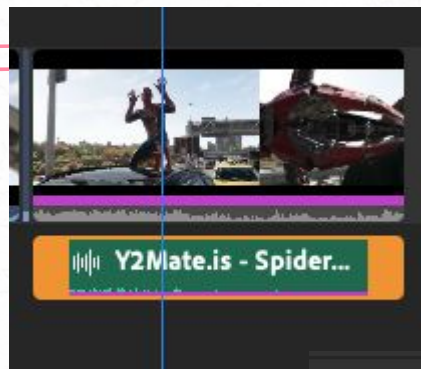
Turn down or delete the audio.

Add the Spiderman song audio track
under the clip

*Encuentra un clip para separar el audio
(acceso directo: E)*

Baje o elimine el audio.

*Agregue la pista de audio de la canción
de Spiderman debajo del clip*



Your job is to use the clips available at

bit.ly/nghsasmvideos

to make a 30-second movie **trailer** of a **particular genre**

*Su trabajo consiste en utilizar los clips disponibles en bit.ly/nghsasmvideos para hacer un **tráiler** de una película de 30 segundos de un **género en particular***

Include/Incluir:

- **graphic**
- **transition**
- at least 5 cuts / *al menos 5 cortes*
- an additional audio file/song / *un archivo de audio/canción adicional*

Géneros de películas / Movie genres

Romantic comedy / *Comedia romántica*

Action / *Acción*

Horror / *Terror*

Sci-fi / *Ciencia ficción*

Comedy / *Comedia*

Drama

Musical

Western / *Vaqueros*

Adventure / *Aventura*

Fantasy / *Fantasía*

Mystery / *Misterio*

30 secs - trailer o video musical

Where to get clips? / *Donde sacar clips?*

- bit.ly/nghsasmvideos
- Youtube -> Y2mate.is

Include / *Incluir:*

- **graphic**
- **transition**
- **greenscreen / *pantalla verde***
- **at least 5 cuts / *al menos 5 cortes***
- **an additional audio file/song / *un archivo de audio/canción adicional***

Géneros de películas / Movie genres

Romantic comedy / *Comedia romántica*

Action / *Acción*

Horror / *Terror*

Sci-fi / *Ciencia ficción*

Comedy / *Comedia*

Drama

Musical

Western / *Vaqueros*

Adventure / *Aventura*

Fantasy / *Fantasía*

Mystery / *Misterio*

Pr

Home

Learn

Sync Settings

New Project...

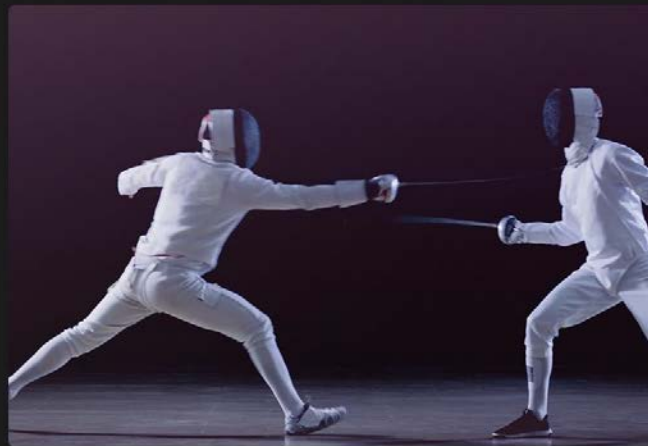
Open Project...

Open Premiere Rush Project...

New Team Project...

Open Team Project...

Build your skills ⓘ



Recent

30 secs - trailer o video musical

Where to get clips? / *Donde sacar clips?*

- bit.ly/nghsasmvideos
- Youtube -> Y2mate.is

Include / *Incluir:*

- graphic
- transition
- **greenscreen / *pantalla verde***
- at least 5 cuts / *al menos 5 cortes*
- an additional audio file/song / *un archivo de audio/canción adicional*

Géneros de películas / Movie genres

Romantic comedy / *Comedia romántica*

Action / *Acción*

Horror / *Terror*

Sci-fi / *Ciencia ficción*

Comedy / *Comedia*

Drama

Musical

Western / *Vaqueros*

Adventure / *Aventura*

Fantasy / *Fantasía*

Mystery / *Misterio*

3 WEEKS LEFT / QUEDA 3 SEMANAS

**THIS WEEK
ESTA SEMANA**

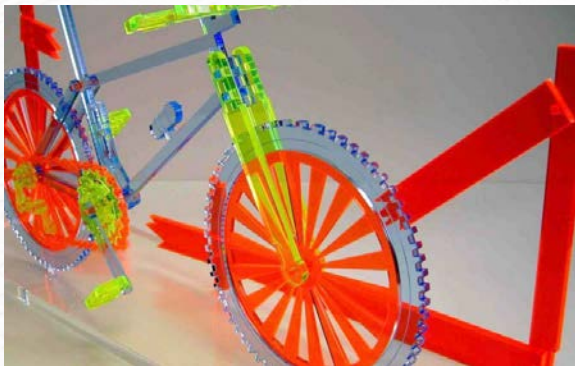
**LASER CUTTING
CORTE POR LÁSER**

**LASER CUTTER / CATCH-UP
PONERSE AL DÍA**

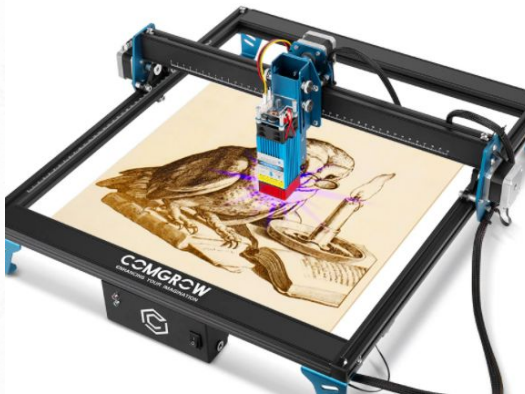
**LAST 2 WEEKS
ÚLTIMAS 2 SEMANAS**

**FINAL CHOICE PROJECT
PROYECTO DE ELECCIÓN FINAL**

LASER CUTTING / CORTE POR LÁSER

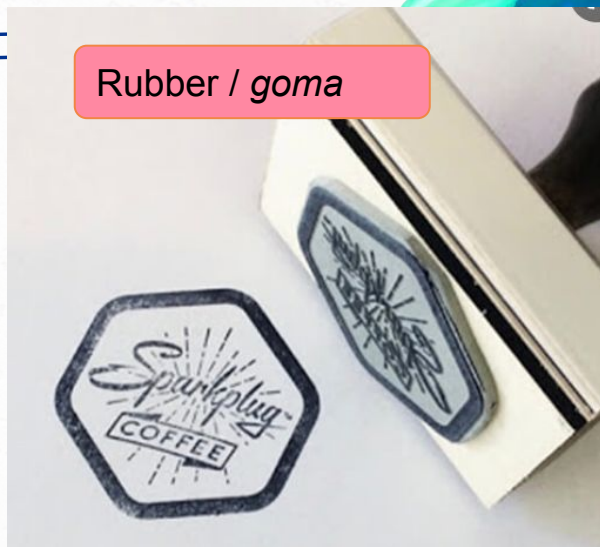


Acrylic / acrílico



Wood / madera

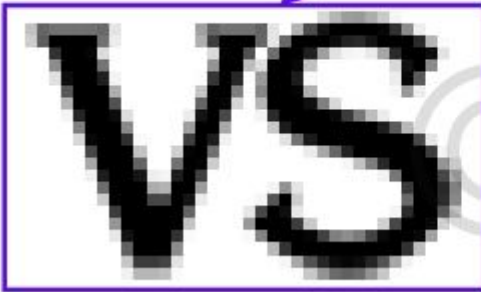
Rubber / goma



Cardboard / cartulina



Raster vs Vector



Pixels



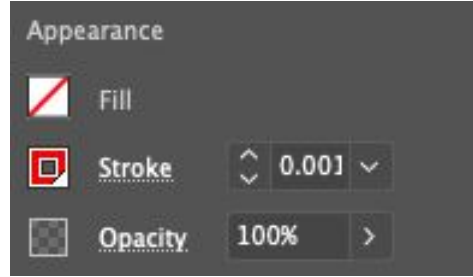
Paths



**Vector Cut - corte
vectorial**

Stroke - red/rojo

Fill - none

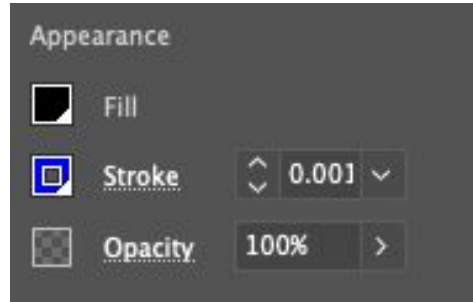


**Vector Draw/Engrave -
Grabado vectorial**
Stroke - blue/azul

Raster Engrave -

Grabado de ráster

Fill - black/negro



STROKE WEIGHT should always be 0.001pt

5 SESSIONS LEFT / QUEDA 5 SESIONES

TODAY
HOY

- CATCH UP / *PONERSE AL DÍA*
- PLAN LEVEL 3 FINAL PROJECT / *PLAN NIVEL 3 PROYECTO FINAL*

LEVEL 3 Opciones:

Digital Music / *Musica digital*
Vinyl / *Vinilo*
3D Printing / *Impresión 3d*
Digital Embroidery / *Bordado digital*
Laser Cutter / *Cortador láser*



LEVEL 3 VIDEO

1 minute+ video showing
the process
*Video de 1+ minuto que
muestra el proceso*

INSPO – LASER CUTTER/ *CORTADOR*



- Multiple pieces
- Any material (acrylic, wood, rubber, cardboard, combination)
- SOMETHING CUSTOM (i.e. no just cutting out files you found premade online)

- *Varias piezas*
- *Cualquier material (acrílico, madera, caucho, cartón, combinados)*
- *ALGO PERSONALIZADO (es decir, no solo cortar archivos que encontraste prefabricados en línea)*



INSPO – 3D PRINTING / IMPRESIÓN 3D



- Multiple pieces
- Can incorporate other materials
- **SOMETHING CUSTOM** (i.e. no just cutting out files you found premade online)

- *Varias piezas*
- *Puede incorporar otros materiales*
- **ALGO PERSONALIZADO** (es decir, no solo cortar archivos que encontraste prefabricados en línea)

Sewing/Digital Embroidery



TODAY
HOY

- **START LEVEL 3 FINAL PROJECT / *EMPIEZA NIVEL 3 PROYECTO FINAL***
- **RECORD video of important steps as you work!
*/ Grabar video de pasos importantes con tu telefono***

Mother's Day

Makerspace Stuff

- Laser-cut signs for equipment/rooms/safety
- Vinyl cut signs with Mac shortcuts
- 3D print - holders for dry erase markers, organizers for cables

[instructables.com](https://www.instructables.com)
[tinkercad.com](https://www.tinkercad.com)
[thingiverse.com](https://www.thingiverse.com)

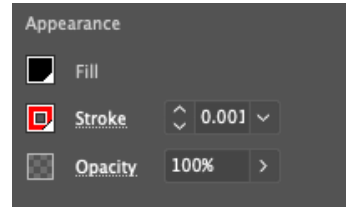


Using Adobe Illustrator to Make Designs for Laser Cutter

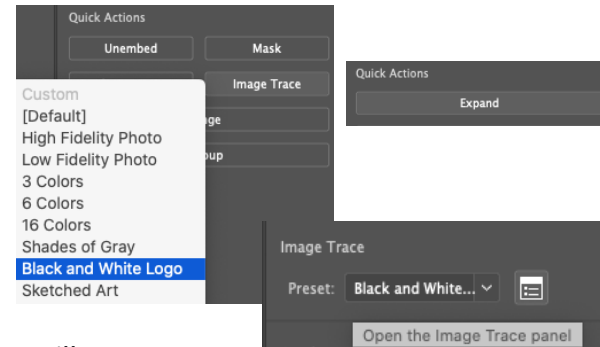


Note: If you ever feel your mouse is behaving strangely, make sure you are set to **Selection Tool** on the toolbar. *If you want to edit individual vector paths, switch to the **Direct Selection** tool.*

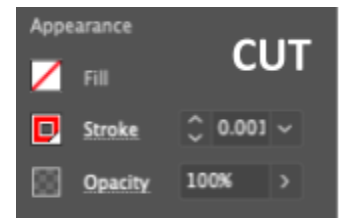
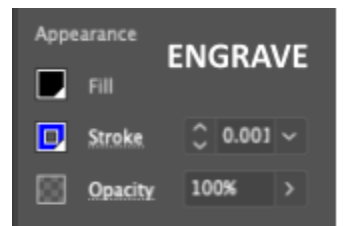
1. Open the laser cutting template in Adobe Illustrator - this has the preset stroke weight (0.001) and colors (black - raster, blue - engrave line, red - cut line) needed for laser cutting designs
2. Add images to your artboard - you can open the files in Illustrator, or you can copy the files from Google Images or other websites. *To paste on a Mac, hold $\text{⌘}+V$. To copy an image from Google Images, hold Ctrl and click the image, then select 'Copy Image' from the menu.*



3. When the image is selected, open the **Properties** tab and select **Image Trace** and **Black and White Logo**. Click **Expand** to complete the trace.
*Note - if you are unhappy with the trace results, you can adjust settings after by opening the Image Trace panel and adjusting settings like **Threshold** or **Paths**.*



4. Set the colors of your paths - **in general** for engraving, you will want a **black object** with a **blue stroke** outline (the blue engraved outline will make your image pop). If you are **cutting out** an object, it should have a **red stroke** and a **transparent or white fill**. **ALL STROKES should have a weight of 0.001 pt.**
*Note - if you want to make particular paths **red (cut)** versus **blue (engrave)**, you can switch to the Direct Selection tool (see top of page) to select individual sub-paths of an image*



5. Add text, customize the appearance and arrange your images. *Remember if you add text or shapes - set the stroke to **blue (engrave)** or **red (cut)** and the fill to **black (raster engrave)** or **transparent (no laser)**.*
6. BEFORE YOU SAVE, click each part of your design and examine the **Properties** tab - **DOUBLE CHECK THAT ALL STROKES ARE SET TO 0.001 weight**. Black should be for engraving, and red and blue should only be used for **OUTLINES**.
7. Save your design as a *.PDF file on a USB flash drive.

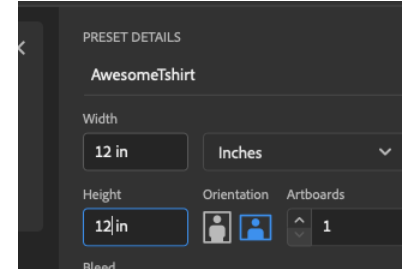


Using Adobe Illustrator and the Roland Vinyl Cutter

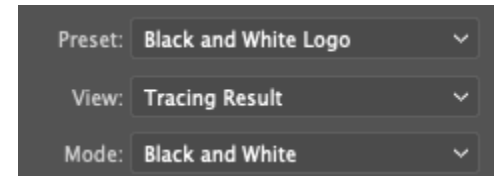


Note: If you ever feel your mouse is behaving strangely, make sure you are set to **Selection Tool** on the toolbar. *If you want to edit individual vector paths, switch to the **Direct Selection** tool.*

1. Create a new file in Illustrator ($\text{⌘}+\text{N}$), and set the dimensions to match your piece of vinyl (for example, width: 12 in, height: 12 in)
2. Add images to your artboard - you can open the files in Illustrator, or you can copy the files from Google Images or other websites. *To paste on a Mac, hold $\text{⌘}+\text{V}$. To copy an image from Google Images, hold Ctrl and click the image, then select 'Copy Image' from the menu.*

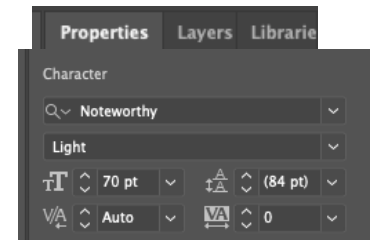


3. From the **Window** menu, select **Image Trace** - set **Preset** mode to **Black and White Logo**. Set **Mode** to **Black and White**. Adjust the threshold until it appears as you like.



4. Expand your trace lines - select the image, then from the **Object** menu select **Image Trace** and **Expand**.

5. Add text, customize the appearance and arrange your images.

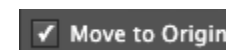


6. Delete any unwanted paths - use the **direct selection** tool from the toolbar to click and delete individual paths.

7. Open the Roland CutStudio extension - from the **Window** menu, select **Extensions** and then **Roland CutStudio**. Set the **model** to **GS-24** - if you do not see 'Ready', double check that the vinyl cutter is plugged into the computer and powered on.

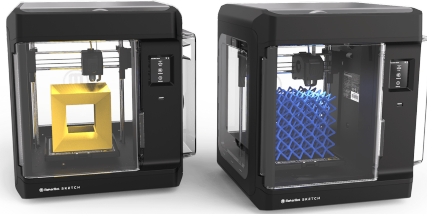
BEFORE YOU CUT

- Trace any text - select the text and the click the **Outline Text** button on the CutStudio extension
- Double check the preview - you can use the **Direct Selection** tool to delete lines you want to get rid of
- Check the **Move to Origin** box unless you know you should not
- **IMPORTANT:** If you are using **heat-transfer vinyl**, make sure to **MIRROR** your design on the CutStudio extension.



LOADING VINYL: Rollers should be on edge of material, but also within white boxes. Pull lever to hold and release vinyl. Select **Roll** or **Piece** with the arrow keys and hit **Enter**.

NOTE: Pen force is different for different materials. Ask for help unless you know what you are doing.

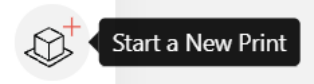


3D Printing with Makerbot Sketch Printers - 1 Pager

Slicing Models and Preparing the Printer

Your model should be a *.stl or *.obj file.

1. Sign into cloudprint.makerbot.com. Click **Start a New Print**.



2. Change the type of printer to **Sketch** and make sure the material type is set to **PLA**.



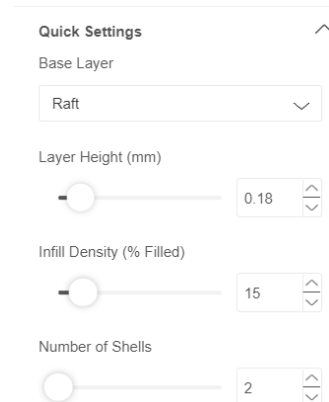
3. Click **'Add Model'** then **'Add File'** and select your model (.stl or .obj file).

4. Adjust the size and placement of your model



5. Adjust other settings -

- a. **Rafts** help your print stick to the surface and are a good idea unless you are printing something very flat
- b. **Supports** are required if your print has any long pieces that overhang the side of the model
- c. Increasing the **infill density** increases how sturdy your model is - however it also increases the time and material use of your print. Get Ms. Abid or Ms. Born's permission before increasing this.
- d. Increasing the **layer height** will make your print faster, but also reduce the level of detail.



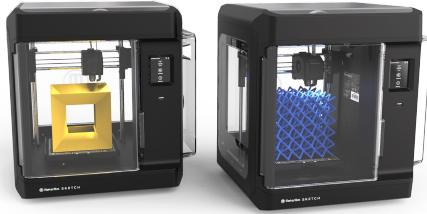
6. When you are done, click **Export**  and add your file to a USB drive.

Settings on the Sketch Printers

Calibrate the Z-axis. From the main menu, press **Settings**, then **Utilities**, then **Calibration**. Once the extruder is homed and touching the build plate, slide a piece of copy paper underneath, and adjust until you can slide the paper back and forth with just a little resistance.

Change the Material. From the main menu, press **Material**, then **Unload**. Rewind the spool slowly. Make sure your new spool is not tangled and the filament end is level (snip with scissors). Press **Material**, then **Load** and follow the instructions on the screen - note it may take a minute for the new filament to reach the nozzle and extrude out, and some old filament will still be in the nozzle at first.

To Print - from the main menu, select **Print**, insert the USB drive and select **USB** and then your file.

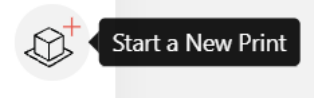


Impresión 3D con impresoras Makerbot Sketch -

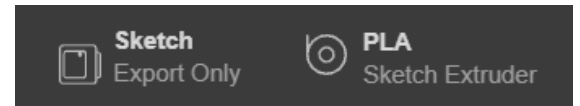
Rebanar los modelos y preparación de la impresora

Su modelo debe ser un archivo *.stl o *.obj.

1. Inicie sesión en **cloudprint.makerbot.com**. Haga clic en **Start a new print**



2. Cambie el tipo de impresora a **Sketch** y asegúrese de que el tipo de material esté configurado en **PLA**.



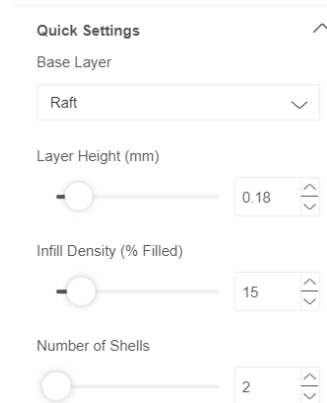
3. Haga clic en **'Add Model'**, luego en **'Add File'** y seleccione su modelo (archivo .stl u .obj).

4. Ajuste el tamaño y la ubicación de su modelo.

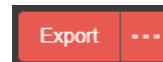


5. Ajuste otras configuraciones:

- a. **Rafts** ayudan a que su impresión se adhiera a la **build plate** y son una buena idea a menos que esté imprimiendo algo muy plano
- b. Usa **supports** si su impresión tiene piezas largas que sobresalen del lado del modelo
- c. Aumenta la **Infill Density** aumenta la solidez de su modelo; sin embargo, también aumenta el tiempo y el uso de material de su impresión. Obtenga el permiso de la Sra. Abid o la Sra. Born antes de aumentar esto.
- d. Aumentar la **Layer Height** hará que su impresión sea más rápida, pero también reducirá el nivel de detalle.



6. Cuando haya terminado, haga clic en **Exportar** y agregue su archivo a una unidad USB.

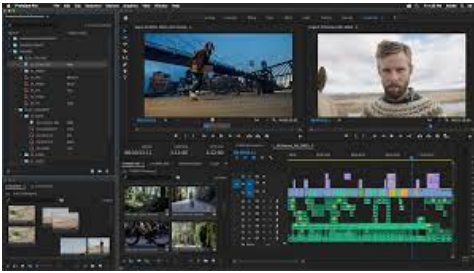


Configuración en las impresoras de bocetos

Z-Calibration. Desde el menú principal, presione **Settings**, luego **Utilities**, luego **Calibration**. Una vez que la extrusora esté en su posición inicial y tocando la placa de construcción, deslice un trozo de papel de copia debajo y ajústelo hasta que pueda deslizar el papel hacia adelante y hacia atrás con solo un poco de resistencia.

Cambia el material. Desde el menú principal, presione **Material** y luego **Unload**. Rebobine el carrete lentamente. Asegúrese de que su nuevo carrete no esté enredado y que el extremo del filamento esté nivelado (corte con tijeras). Presione **Material**, luego **Load** y siga las instrucciones en la pantalla. Tenga en cuenta que el nuevo filamento puede tardar un minuto en llegar a la boquilla y salir, y algunos filamentos viejos todavía estarán en la boquilla al principio.

Para imprimir: desde el menú principal, seleccione **Imprimir**, inserte la unidad USB y seleccione **USB** y luego su archivo.

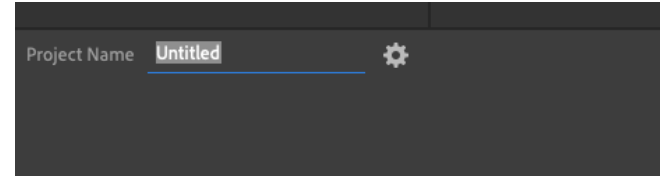


Video Editing with Adobe Premiere RUSH

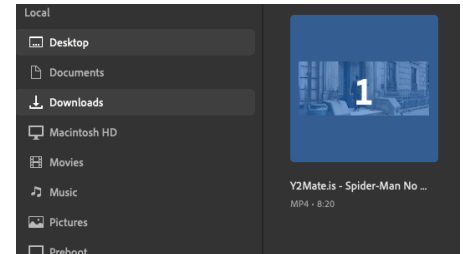
Premiere Rush: simple projects (clips and sounds, no effects)

Premiere Pro: complex projects (color editing/effects, greenscreen)

1. Open Adobe Premiere Rush (hint: hold **⌘Space**, then search for Rush). Give your project a name at the bottom of the screen.











2. Select any video or audio files you want to include in your project.
3. Use the functions below to split and splice together, add in transitions, effects/graphics, audio tracks, or alter the speed of clip.



4. **WHEN YOU'RE DONE:** Click 'Share' at the top of the screen, select 'Local', name your file, and click 'Export' to create an MP4 file on your computer that can be emailed, uploaded to Google Drive, or uploaded to Youtube.

KEY FUNCTIONS:

SPACEBAR Play and pause video.	RIGHT ARROW Move forward in clip 1 frame at a time	LEFT ARROW Move backward in clip 1 frame at a time
 Snip - place playhead at position in clip you need to split clip SHORTCUT: S	 Add Media - add sound or video files to project SHORTCUT: Y	SEPARATE AUDIO - separate sound from clip, to delete or edit separately SHORTCUT: E
 Graphics - add titles and graphics before, after, or layered over a clip SHORTCUT: ⌘1	 Effects - add transitions, zooms, fadeouts, and adjust length SHORTCUT: ⌘2	 Speed - change clip speed (slow or fast motion) SHORTCUT: ⌘3
 Zoom - click and drag circle at bottom to zoom in and out of clips	 Crop and Rotate: crop, flip, zoom in, rotate, or make video transparent SHORTCUT: ⌘4	 Audio- adjust audio clip volume and/or modify stereo output SHORTCUT: ⌘5