













A fashion tech event showcasing young designers' integration of STEAM skills into wearables on a flat fashion runway.











什么是时尚制作教育:科技时装秀?

让小设计师们在时尚T台上展示他们发挥科技工程、艺术、数学能力制作的时装作品的可穿戴科技时装秀

THE STEAM RUNWAY

- For a single piece creation- runway models will wear black clothes + the wearable on the runway.
- For entire ensembles, models will walk the complete creation down the runway.







T台走秀

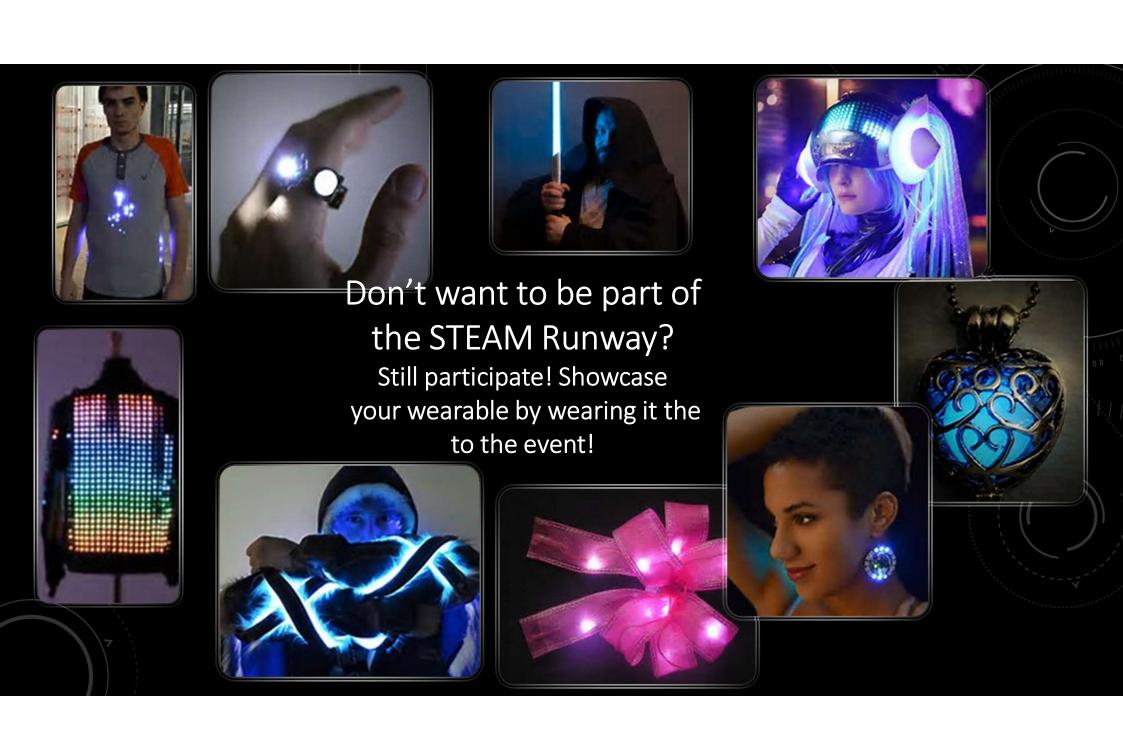
• 单件设计——模特穿着 黑色打底+服饰作品走秀。

· 全套设计——模特穿着 全套服饰作品走秀。



















不想参与T台走秀环节?

欢迎穿上你的科技服饰来参加活动!









Encourages student STEAM, Design Thinking, and application of their academic skills

Platform for our young designers to showcase their work

Connecting the micro-communities and promoting sharing of ideas & innovations



鼓励学生培养科技工程、艺术、数学技能以及设计思维,提高实际运用所学知识的能力。

为小设计师展示他们的作品提供平台。

组织社区小团体,便于创意和理念的分享。



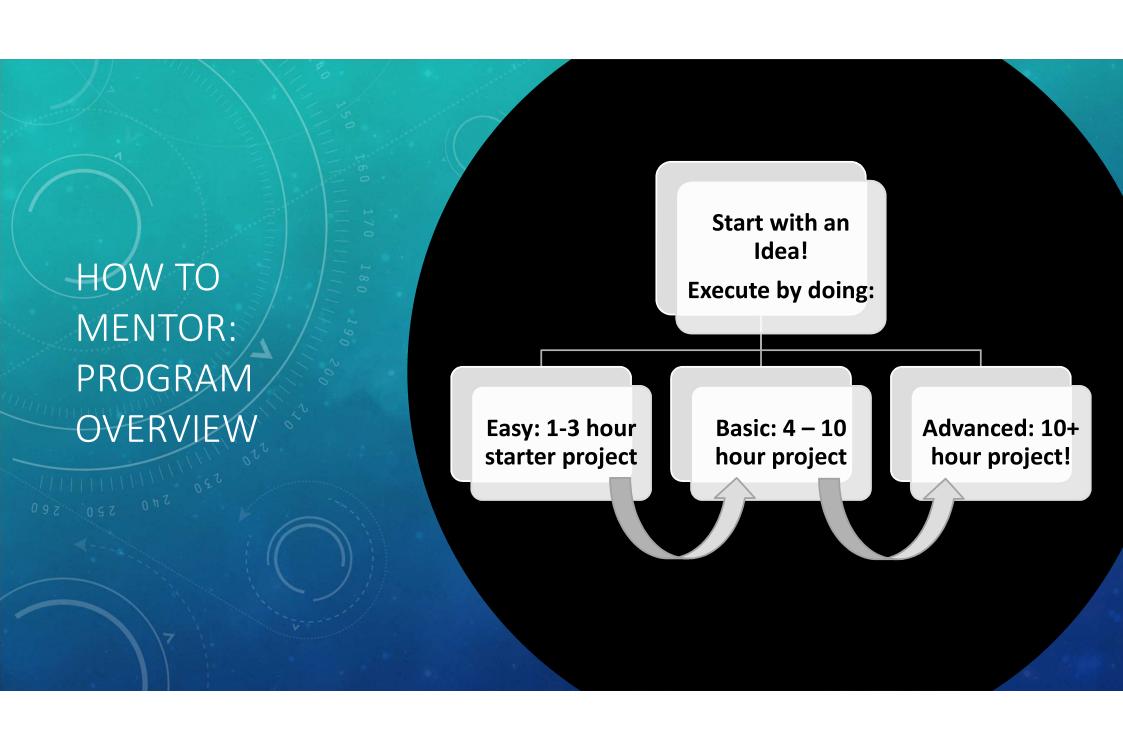


HOW TO MENTOR- WHEN DO I FIND TIME?

- Anyway and whenever you want!
- Don't know how? There are 4 common models in Shenzhen:
 - 1. As a project via Project Based Learning or a unit at your school
 - 2. Integrate it into your school's elective STEAM/Art/Engineering/etc classes
 - 3. Through after school workshops inside or outside the school
 - 4. One on one mentorship with mostly student independent making!

如何指导-我怎样才能找到时间进行?

- 随时随地,任何方法都可以!
- 还是不清楚吗? 在深圳, 大概有四种可行的模式:
 - 1. 作为学校里的一个学习项目或者学习单元
 - 2. 结合到学校的STEAM/艺术/机械工程等选修课中
 - 3. 作为校内或校外的课后活动
 - 4. 一对一指导的同时由学生独立进行大部分工作!





想一个好的主意,然后开始动手吧

简单: 1-3小时 的尝试性项目 基础: 4-10小时的项目

进阶: 10小时 以上的项目

EVERYONE CAN PARTICIPATE!

Starter Project

Students can add ready to use electronics to an existing accessory.

For example, run an LED strip or Christmas lights through a shirt.

Basic Project

Students can integrate electrical inputs and outputs onto self-crafted wearable or an existing accessory.

For example, sew a purse or backpack that lights up when opened.

Advanced Project

A wearable or entire ensemble that is mostly self constructed. Will require programming to make the wearable interactive.

For example, a Matador outfit that outputs flashing LEDs based on muscle tension inputs through sensors.

FREE
WORKSHOPS
AND EXPERT
MENTORS ARE
AVAILABLE TO
HELP LEADING
UP TO THE
EVENT

所有人都可 参与!

尝试性项目

学生们可以将现成的电子器 件装在已有的配饰上。

举例来说:在裙子上围一条 LED灯条或圣诞装饰灯串。

基础项目

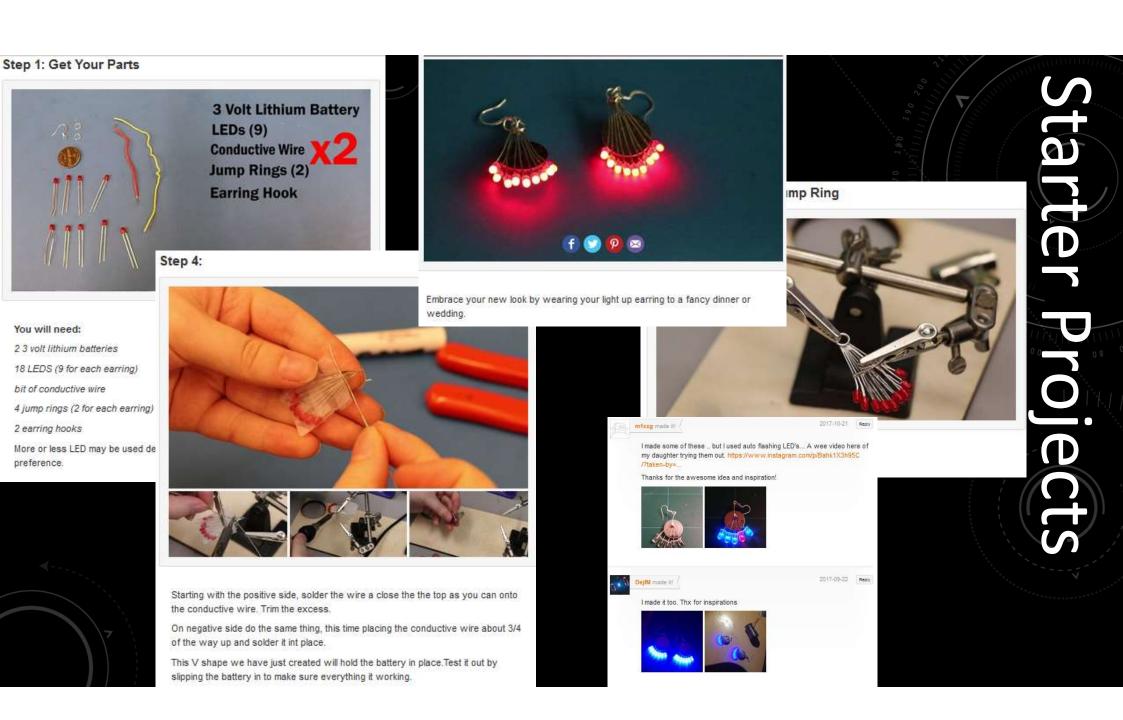
学生们可以将电子电路加装 到自己设计制作或现有的 服 饰上。

举例来说:自己缝制一个打开就会亮灯的钱包或背包。

进阶项目

自己负责制作一个服饰或整 套服饰。并要求通过电脑程 序控制服饰的变化。

举例来说:制作一套斗牛士服装,上面的传感器可以通过感知肌肉张力,从而点亮 LED灯。 免费的工作坊 及专家指导, 直到活动成功 举行



第一步:准备材料



你会需要:

- 2个3伏特的锂电池
- 18个LED小灯泡(每个耳环9个)
- 一些导电线
- 4个扣环(每个耳环两个)
- 2个耳环勾

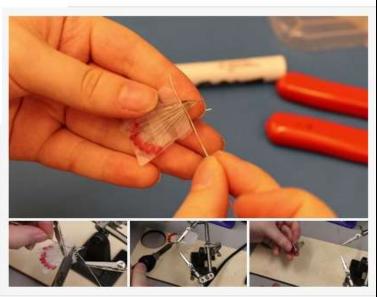
LED灯泡的数量可根据灯泡大小和个人喜好有所增减





带上你的亮灯耳环,以一个全新的造型去享受一顿美味晚餐或参加 一场婚礼吧

第四步:

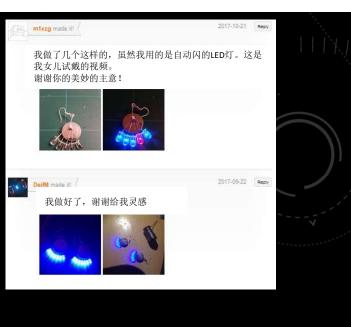


第五步:链接扣环





将扣环焊接到正极端

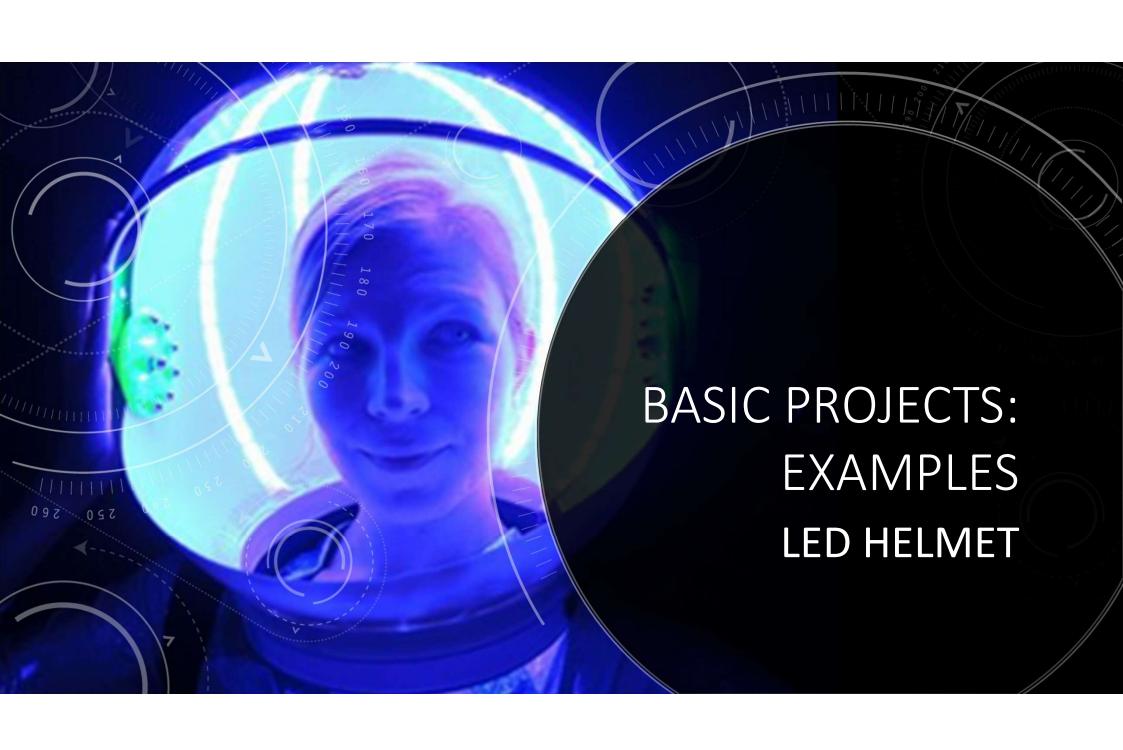


AFTER STARTER PROJECT, CHOICE 1: BASIC PROJECTS

- Add electronic inputs and outputs to a garment or accessory, like starter project, but this time use the student's own design:
 - Descriptive Modeling: drawings, writeups, material lists, etc.
 - User Design: design's purpose, narrative, interaction dynamics, social benefit
 - Crafting: Limit to LEDs and garment modifications (sewing, cutting, wire frames, foam shaping, painting, etc)

尝试性项目之后,选择1:基础项目

- 像尝试性项目一样,将完整的电路加装到一件衣服或配饰上,但是要求学生自行设计:
 - 描述模型: 图纸, 简述, 材料清单, 等等
 - 用户设计:设计初衷,叙述,相互作用,社会效益
 - 制作: 只限于LED灯使用和服饰修改 (缝制,剪裁,规划设计,成型,作画,等等etc)





LED HELMET

• http://www.instructables.com/id/LED-Space-Helmet/

Step 1: Parts and Tools Needed

Space helmet parts list:

- 14" diameter clear acrylic sphere: 1000bulbs
- . 5050 RGB LED kit (LEDs + remote): eBay
- 12V 6800mAh battery: eBay
- . Power cord with barrel jacks: eBay
- . The following hardware in stainless steel:
 - (2) Button head socket cap screws: ½"-20 thread x 1" length (McMaster # 92949A542)
 - (8) Flat-head socket cap screws: 10-24 thread x ¾" length (McMaster # 92210A245)
 - (12) Button-head socket cap screws: 10-24 thread x 3/8° length (McMaster # 92949A240)
 - (20) Acorn Nuts: 10-24 thread x 3/8" width, 5/16" height (McMaster # 90532A150)
 - (2) Acorn Nuts: ½"-20 thread x 7/16" width, 3/8" height (McMaster # 90532A200)
 - (2) Flat washers: 1/4" screw size (McMaster # 92141A029)

Step 7: Electronics!



Step 3: Tape Edges and Start Routing

LED头盔

• http://www.instructables.com/id/LED-Space-Helmet/

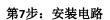
第1步:零件与工具

太空头盔配件:

- ·直径14"的透明亚克力球: 1000bulbs网
- ·5050RGB的LED工具套装(LED若干+遥控器): 易贝网
- ·12伏 6800毫安 电池: 易贝网
- ·带电源线: 易贝网
- ·以下硬件均为不锈钢材质:
 - · (2) 圆头螺丝钉: 1/4-20线*1 "长 (McMaster#92949A542)
 - · (8) 平头螺丝钉: 10-24线*3/4"长 (McMaster#92210A245)
 - ·(12)圆头螺丝钉: 10-24线*3/8"长(McMaster#92949A240)
 - · (20) 盖帽式螺帽: 10-24线*3/8"宽, 5/16"高

(McMaster#990532A150)

- ·(2) 盖帽式螺帽: 1/4"-20线*7/16"宽, 3/8"高
- (McMaster#90532A200)
- ·平面垫圈: 1/4"螺丝大小(McMaster#92141A029)





第3步:用胶带粘贴边缘,开始发送指示

AFTER STARTER PROJECT, CHOICE 2: ADVANCED PROJECTS

- Student design a piece of wearable technology using a range of options
- Expand the choices of electronics:
 - MicroBit or Arduino microprocessors
 - Sensors make tech responsive (ie Sound Sensors)
 - Motors or Speakers add to the projects capabilities
- Students with independent research experience should be supported with Open Make Time (makerspace tools, internet connection, and material sourcing)
- Students who need guidance should be supported with additional Starter Projects (2 hours, one Starter Project per piece of technology you wish to introduce)

完成初级课程后,选择2:进阶课程

- 学生可使用多种工具设计一件可穿戴设备
- 扩大电子零件的使用范围:
 - MicroBit或Arduino的微处理
 - 感应器可以增添设备的互动性,如声音传感器
 - 发动机或扩音器可以扩展设备的能力
- 应当给予有独立研究经验的学生"创客开放时间"(创客工具、可用网络和材料资源)
- 需要知道的学生应当给予额外的"起步课程"(2个小时,把每个你想介绍给学生的技术作为一节"起步课程)

ADVANCED PROJECT EXAMPLES

1

Adding Sound Sensors to make LEDs change color with sounds

2

Programming an LED Strip in a scintillating pattern

3

Using Motors to make electronic angel wings

4

Using simple LEDs, but focusing heavily on the garment's quality and construction

进阶课程例子

1

加入声音传感器让 LED灯岁声音变幻 色彩 2

给LED灯带编辑一个闪烁模式的程序

3

使用发动机制作电 子天使翅膀 4

使用简单的LED装置,但不要过度关注服装的质量和结构

EVENT RESOURCES

- MakeFashion.ca for inspiration and narrative examples
- Instructables.com for how-to guides on everything
- Weekly Open Workshops for teachers and students at SteamHead.
 Every Wednesday from 4-6pm
- Ongoing Mentorship from MG Space, Shenzhen Polytechnic University, SAIS, and Steamhead
- Open Make sessions providing access to materials, tools, and experts.
- SteamHeadSZ.com for Taobao links to materials, teaching resources, Maker Badges for suggested learning metrics.

活动资源

- MakeFashion.ca提供灵感及可实践的案例
- Instructables.com 一切与创客有关的学习指导
- Open Workshops 在SteamHead,每周三下午4-6点,为供老师和学生开放
- Ongoing Mentorship 来自麦高创客空间、深职院、深美国际学校及Steamhead
- Open Make 提供获取材料、工具和专家途径的短期课程
- SteamHeadSZ.com 材料的淘宝链接,根据教育者推荐的学习指标制作的创客勋章

EVENT NOTES

 Participants must register to participate and must have an adult sponsor/supervisor (teachers, parent, etc).

 Participant sponsors/supervisors and participating schools/ organizations are responsible for: materials, transportation, meals, permission slips, media slips, supervision.

STEAM Runway participates must show up to rehearsals.

活动注意事项

- 学生注册后方可参加,且有成人(老师、家长等)陪伴。
- 参与活动的赞助商、监督方、学校和组织应自备、自理以下物品和事项: 材料工具、交通、餐食、许可证、媒体证及监管职责。
- 科技走秀(STEAM Runway)的参与者必须参加彩排。