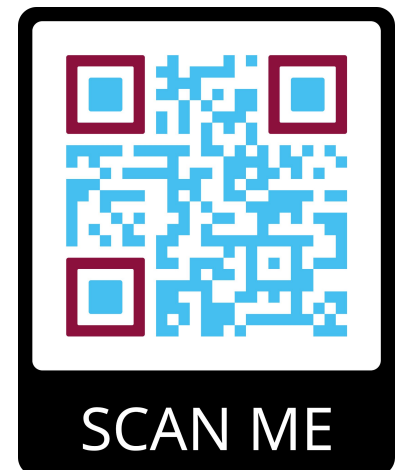


# Mass STEM Hub Learning Teams

Fall Conference, October 18, 2021



# PLTW, WPI, and Mass STEM Hub are working in partnership to support schools in Massachusetts



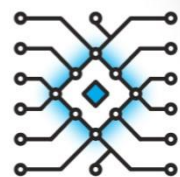
**WPI**



PROJECT LEAD THE WAY

**PLTW**

*Expanding the existing affiliate relationship to provide additional training options for teachers*



**MASS  
STEM HUB**

*Providing premier K-12 curriculum in Computer Science, Engineering, & Biomedical*

*Creating an ecosystem of enrichment activities and supports around PLTW to maximize the impact for students and teachers*

# Mass STEM Hub programming

## IMPLEMENTATION SUPPORT

*Rostering*

*Ordering*

*2 MA-based  
Directors of School  
Engagement*

## INDUSTRY CONNECTION

*Student  
Industry  
Connects*

*Virtual  
Classroom Visits*

## EDUCATOR NETWORK

*Learning Teams  
Fall Conference  
Spring PD Day*

## PROFESSIONAL LEARNING

*Summer  
refreshers  
Fall Conference  
Spring PD Day  
Coaching*

# Who are Community Leads?

- Experienced PLTW educators
- Active participants in the PLTW community
  - Submit student work for Student Industry Connects
  - Host Virtual Classroom Visits from STEM Professionals
  - Attend and present at Fall Conference, Spring PD Day
  - Participate in student showcase events
- Selected by Mass STEM Hub to facilitate Learning Teams
  - Connect educators to each other and to resources

- AR: Ashley Puopolo - Stoneham Central Middle School, Stoneham, MA
- CS: Cristina Serradas - Coakley Middle School, Norwood, MA
- DM: Chakara Cardillo - Randolph Community Middle School, Randolph, MA

# What are Learning Teams?

## **Pathway or Course-specific groups**

**Launch:** all grades and modules

**Gateway:** Automation & Robotics, Computer Science, Design & Modeling

**High School:** Biomedical, Computer Science, Engineering

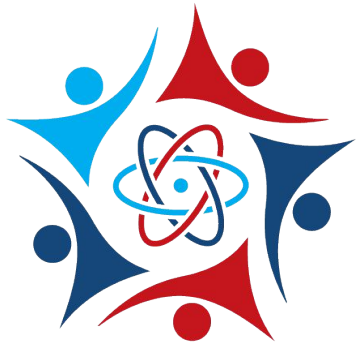
## **A network of PLTW educators**

**Share** resources and best practices

**Meet** periodically (virtually and in-person)

**Problem-solve**, plan, and celebrate student successes together!





# MASSACHUSETTS PLTW LEARNING TEAM

## You are not alone!

Join a Learning Team to:

- Be a part of a course-specific community of fellow PLTW educators.
- Collaborate with peers to plan, share ideas, and problem-solve.
- Learn about meaningful programming to enhance your students' PLTW experiences.



# Student Collaboration

- Collaboration is a key component of the work of all STEM professionals.
- Increased student collaboration increases the number of perspectives represented.
- Collaboration is essential to the success of our society.
- Effective collaboration is an important instrument for improving our lives.
- Collaboration is essential to the success of our society.
- There are multiple ways to effectively collaborate.

Collaboration  
brings joy to our  
work!

**What would you like to achieve during  
our time together today?**

**All questions, comments and concerns  
are welcome.**





# Active Listening Activity

Approximate Time Needed:

Setup - 5 minutes

Game - 14 minutes

Follow-up Discussion - 15 minutes

**GOAL: Draw a picture as described by your partner as accurately as possible.**

- 1) Grab a partner and a piece of paper. Partners sit facing opposite directions.
- 2) Partner 1: grab a picture. **Do not show partner**
- 3) Partner 2: Ask questions about the picture for 5 minutes
- 4) Partner 1: Answers all questions and describes the picture
- 5) Partner 2: Draw the picture for 5 minutes
- 6) Compare the drawing with their original and discuss what did and didn't work.
- 7) Swap roles with a new picture (*skip for now; teachers can do this with students*)

# Discussion

- 1) What was challenging about communicating with each other?
- 2) What are some active listening strategies you could use to overcome these challenges?
- 3) How can these strategies be used when collaborating with others on a project?
- 4) When would you use this activity with students?

# Share Out!



- What are your best tools, resources, or strategies to foster student collaboration?
- What new strategies did you learn about this morning that you plan to use in your classes to foster effective student collaboration?

# Important Dates



## Learning Team Events

Fall Conference - today!

STEM Week (10/18-10/22)

Oct Learning Team mtg. - 10/20/21 at 5pm

Nov Learning Team mtg. - 11/17/21

Dec Learning Team social - 12/15/21

Jan/Feb Learning Team mtg. - 1/19/22

Spring PD Day (March) TBD

April Learning Team mtg. - TBD

May/June Learning Team mtg. - TBD

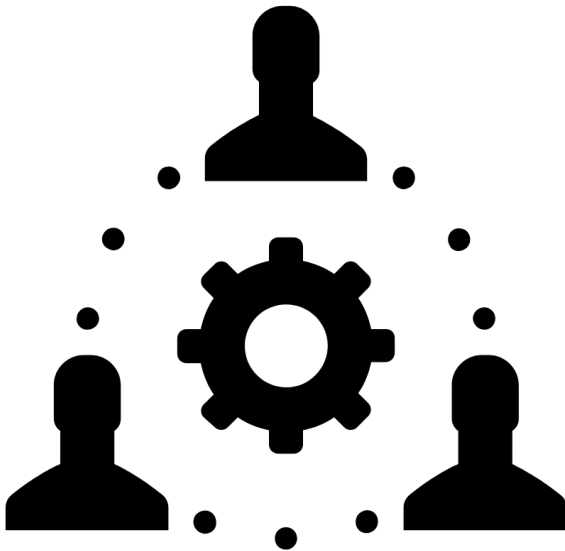
**Poll for future Learning Team Meetings**

# This week is STEM WEEK: Upload student work **BY FRIDAY**

## Student Industry Connects

- Teachers grades 6-12 submit student work
  - Models, sketches, prototypes
  - With student explanation video
- Students receive feedback on their work from industry professionals
- STEM professional schedules a virtual classroom visit
- Students eligible to win prizes

# Co-Planning time!



- In your module or course-specific groups, look at an upcoming project, lesson, or assignment
- How will you apply one of these tools or strategies to increase effective student collaboration for that upcoming lesson?
- What is one challenge regarding effective student collaboration that you want to tackle?



# Automation and Robotics

**Ashley Puopolo - [apuopolo@stonehamschools.org](mailto:apuopolo@stonehamschools.org)**

# AR Events and Projects

## Pull Toy Student Showcase

@Peabody Essex Museum

### In-School Showcase



## Student Industry Connects

STEM WEEK Submission Ideas

Automation through Programming

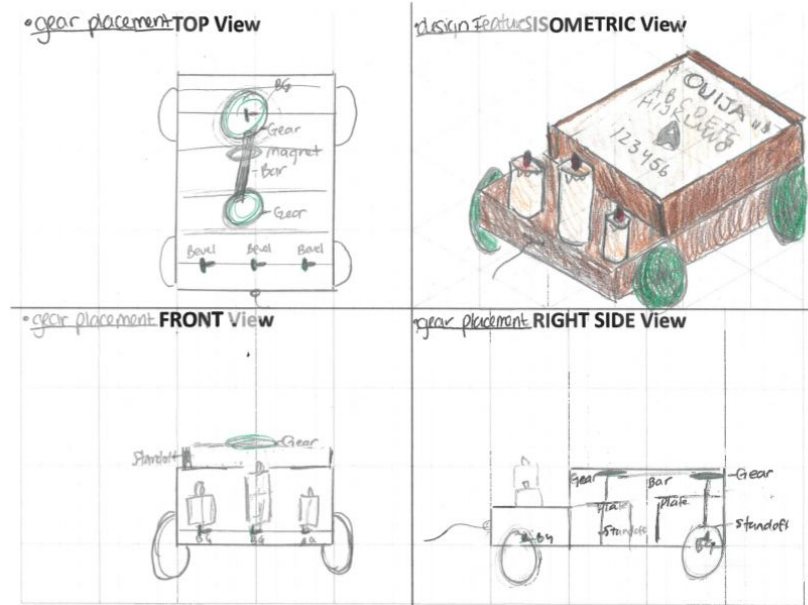
Carnival Ride: A modified Pull Toy  
(Mechanical Systems with Automation)

CANOIE LAKE Carnival Template

Student Example   Rubric

Additional Shared Resources

Share-a-Thon



# Design and Modeling

**Chakara Cardillo - [cardilloc@randolph.k12.ma.us](mailto:cardilloc@randolph.k12.ma.us)**

# Design and Modeling

## Therapeutic Toy Challenge @Boston Children's Hospital

[Boston Children's Hospital](#)



## Student Industry Connects

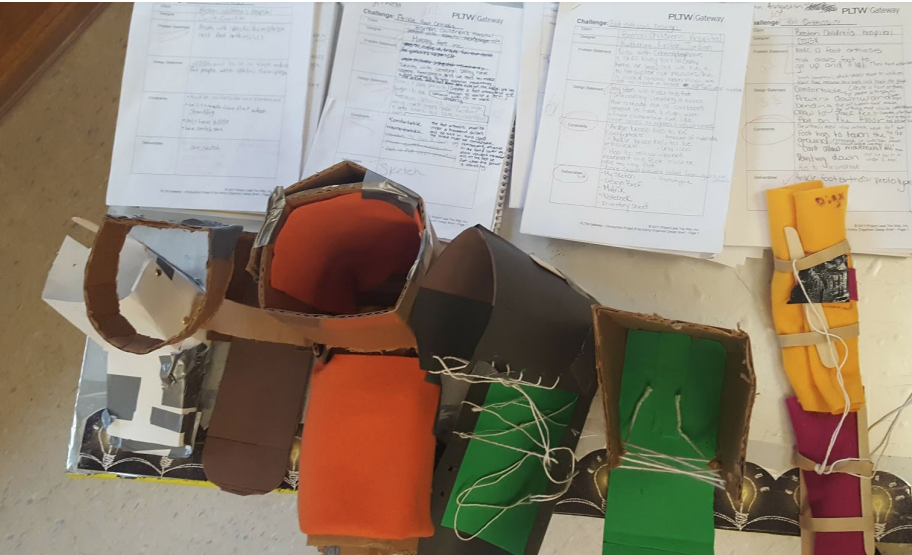
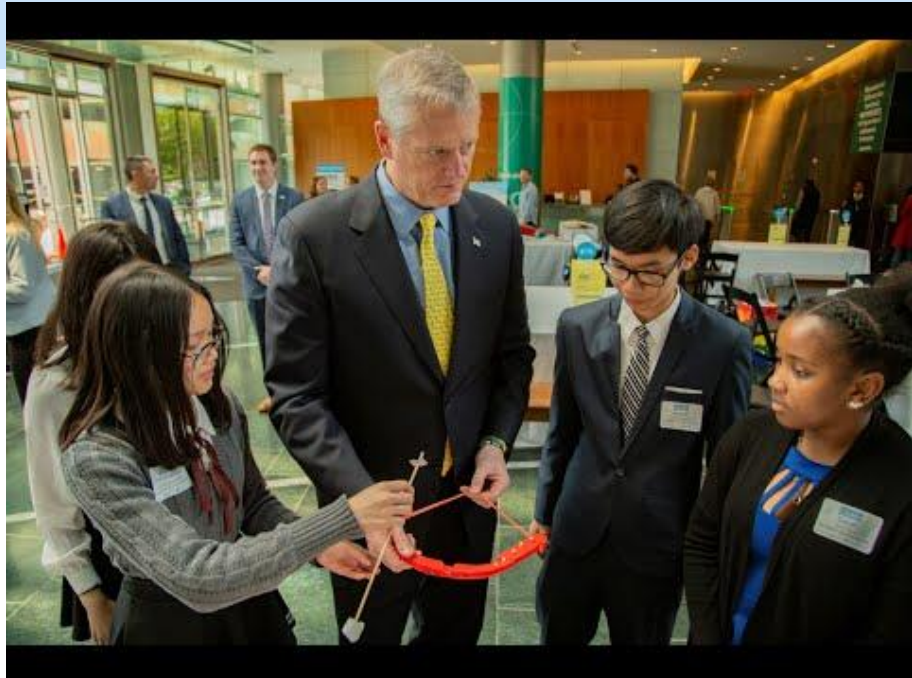
[STEM WEEK](#) Submission Ideas

[Design and Modeling Industry Connects](#)

## Artificial Foot Orthosis (AFO):

[Rubric](#) [AFO Natural Phenomena](#)

[Additional Shared Resources](#) [Share-a-Thon](#)

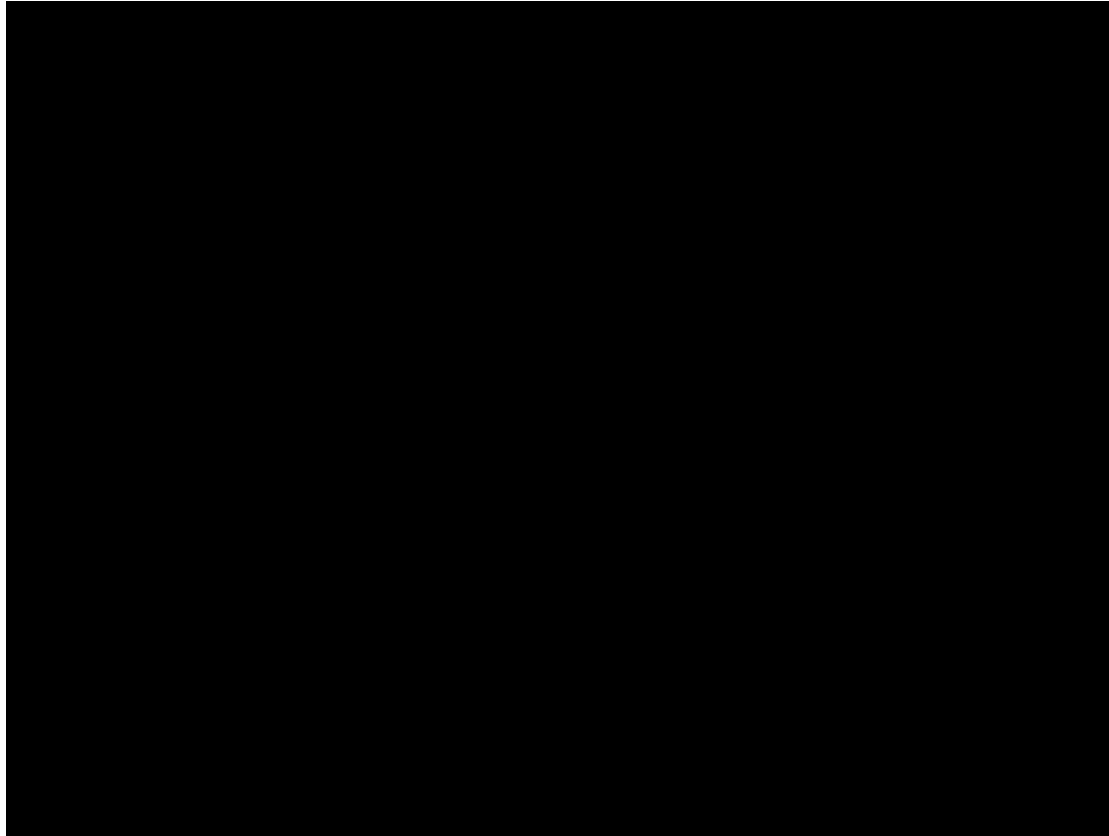


# Computer Science for Innovators & Makers

**Cristina Serradas - [cserradas@norwood.k12.ma.us](mailto:cserradas@norwood.k12.ma.us)**

# Connecting LED Lights

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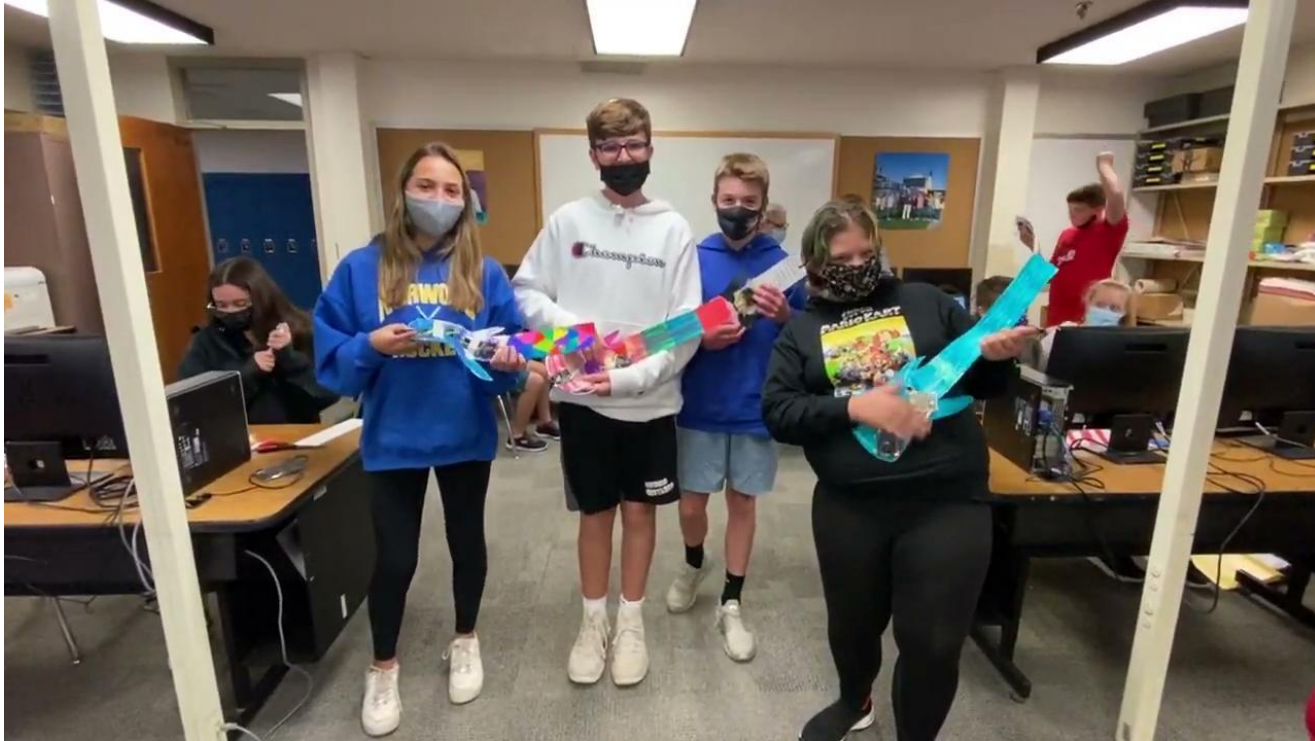


[Coding with BBC Microbits](#)  
by Fun Science

[Code - 1 LED at a time](#)  
[Code - 2 LEDs at a time](#)



# CSIM - Light Guitar



[Micro:bit for Mad Scientists](#)  
by Simon Monk

[Code](#)

[Guitar Template](#)

[Monk Speaker](#)

[Alternative](#)

# Final Project Reflection for Students



## PLTW Final Project Reflection

cserradas@norwood.k12.ma.us [Switch account](#)



Your email will be recorded when you submit this form

\* Required

What is your project? \*

Your answer

What input did you use? \*

Your answer



# Massachusetts PLTW Coaching

## Everyone deserves a coach!

WPI and Mass STEM Hub work with PLTW Master Teachers to provide personalized instructional coaching to amplify student learning.

Sign up for coaching and get:

- Course-specific guidance tailored to your needs
- Access to additional resources and materials
- Non-evaluative feedback



# Rate this session in the conference app!

