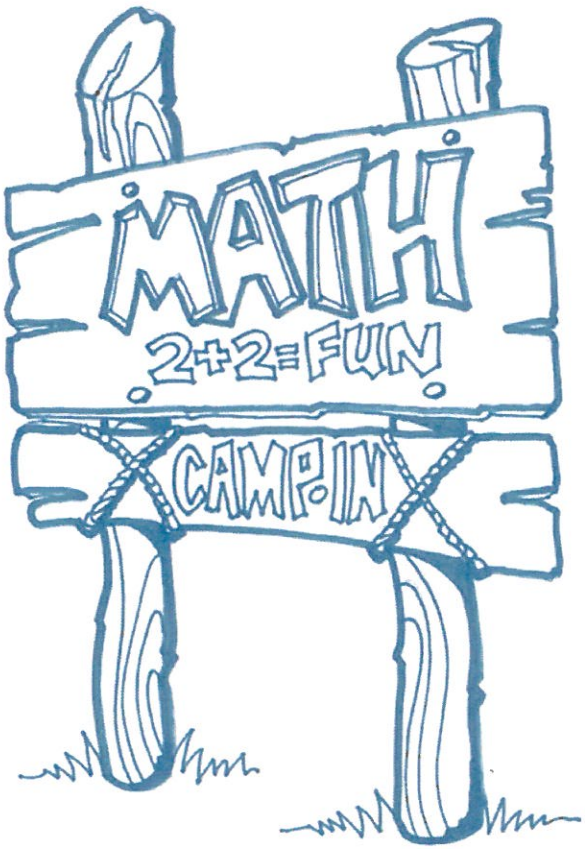


TRAIL GUIDE

Teaching & Learning Collaborative

teachinglearningcollaborative.org/math-camp-in

SHARE YOUR MATHEMATICAL ADVENTURE

We can't wait to hear your campfire stories! Below are just a few ways you can share your experiences as you hike the Mathematical Trail. We would love to see pictures of campers, solutions and even videos!

TWITTER:

Please tweet out the solutions from your Camper! You can include pictures and share your experiences with your Trail Posts.

Please be sure to tag us **@Connect2TLC** and use #MathCampIn

FACEBOOK:

You can follow us on Facebook and include us in posts.

facebook.com/tlcpage

We can't see your personal info, but if you share a post on our page or tag us, we can share it too.

EMAIL:

If you don't want to share on social media, but still want to share ideas, comments and solutions, please email us at

mathcampin@teachinglearningcollaborative.org

ABOUT TLC

The Teaching & Learning Collaborative (TLC) is a nonprofit organization focused on one goal: to ensure that all students have access to high-quality learning experiences in mathematics, science and computer science. While TLC focuses on the design and delivery of professional development programs for educators, we also create innovative resources such as Math Camp-In that can be used by teachers and families to engage students in mathematical thinking.

We are excited that you will be hiking the Math Camp-In Trail with us! Inside your Trail Guide, you will find tips and ideas that will help you implement a Math Camp-In. Information about each station included on the hike is outlined in the Trail Guide and additional information is included on our website.

Our goal is to allow students the opportunity to apply their mathematical knowledge using interesting and complex problems. We have taken that goal and combined it with an exciting theme to allow students the opportunity to experience mathematics in a fun setting!

teachinglearningcollaborative.org-math-camp-in

GETTING READY FOR CAMP!

Getting ready for Math Camp-In is easy to do! Just follow a few simple steps and you'll be having the best time ever!

Fill your backpack with great ideas! There are seven "Trail Posts" (activities) that can be used with students. Use this **Trail Guide to** give you helpful hints for tasks and questions you can ask about each activity. You can hike to a trail post each day during a week, or have a full day experience! Design your Math Camp-In to meet your needs!

Mathematical understanding will *multiply* as campers finish problems at each Trail Post and earn their **camp badges**! You may want to cut out the badges ahead of time so that students can get them as they complete the task. Students should keep all the badges together in a safe place as they will be needed to earn the final Challenge Badge.

The **Camp Journal** can be printed all at once or you can give out Trail Posts as you are ready to do the activities. Campers can collect them all and create their own camp journal or you can have it ready for them. The journal also has helpful reminders-be on the lookout for the compass...there are some *bright ideas* there for you and your campers!

THE COMPASS: When you see this icon, it usually helps give a direction or reminder about a trail post.

Our best tip? **HAVE FUN!** We believe math shouldn't be "in-tents" (get it?)! Make this an experience that lets kids feel like they're at camp! Be sure the campers *pitch in* and get ready for camp to start!

Teaching & Learning Collaborative

WHAT IS YOUR MATH CAMP-IN NAME?

(CAMPERS WILL WRITE THIS ON THEIR JOURNAL)

First Initial of First Name	First Initial of Last Name
A Adventure	A Algorithim
B Binocular	B Bar Graph
C Canteen	C Centimeter
D Day Pack	D Digit
E Evergreen	E Equivalent
F Flashlight	F Factor
G Grilling	G Gallon
H Half Moon	H Hexagon
I Itching	I Inch
J Journey	J Justify
K Kindling	K Kilometer
L Lightning Bug	L Length
M Marshmallow	M Metric
N Noseeums	N Number Grid
O Owling	O Octagon
P Porcupine	P Parallel
Q Quiet	Q Quart
R Ribbiting	R Rhombus
S Sleeping Bag	S Sphere
T Tracking	T Tessellation
U Ultralight	U Unit
V Vest	V Vertex
W Walking	W Whole Number
X Xtreme	X X-Axis
Y Yawning	Y Yard
Z Zip Line	Z Zero Facts

CAMP BADGES

As campers earn their badges, keep them together.
Below are the TWO things Campers need to do to earn the
Math Camp-In CHALLENGE BADGE!

TRAIL POST CELEBRATION:

First, have campers get out the badges from each Trail Post. In their Camp Journal, they should turn to the Camp Badges page. Share with campers that they need to use all the pieces and arrange them so that they fit into the shape.

During this time, campers could:

- share what they liked best about each Trail Post
- share attributes of the shapes they are placing
- explain what they are thinking about the arrangement and how the badges fit together.

CHALLENGE BADGE:

Once your camper(s) have all the pieces in the square, use the following prompt for the final challenge.

Campers LOVE displaying their badges in creative and unique ways. Sometimes campers like to arrange their badges to look like something they have seen at camp or their favorite animal from camp. To earn your Math Camp-In Challenge Badge, use your badge pieces to create an object from camp.

Choose your favorite one and add it to your journal and then DESIGN YOUR OWN CHALLENGE BADGE in your journal and CELEBRATE!

We would LOVE to see the objects you design and your Challenge Badge creations!
Share them on Twitter (@Connect2TLC #MathCampInChallengeBadge)
or send your design via the website:
teachinglearningcollaborative.org-math-camp-in

SUPER

Program Components

- Two week-long modules
  - *Science*
  - *Mathematics and Robotics (Computer Science)*
- Focus on Kindergarten readiness
- Flexible format
- Professional Development and support
- Detailed lessons and resources for successful implementation
- Integrated STEM focus with literature connections
- Family resource components
- Fun, interactive theme to keep students engaged
- Materials provided for each module

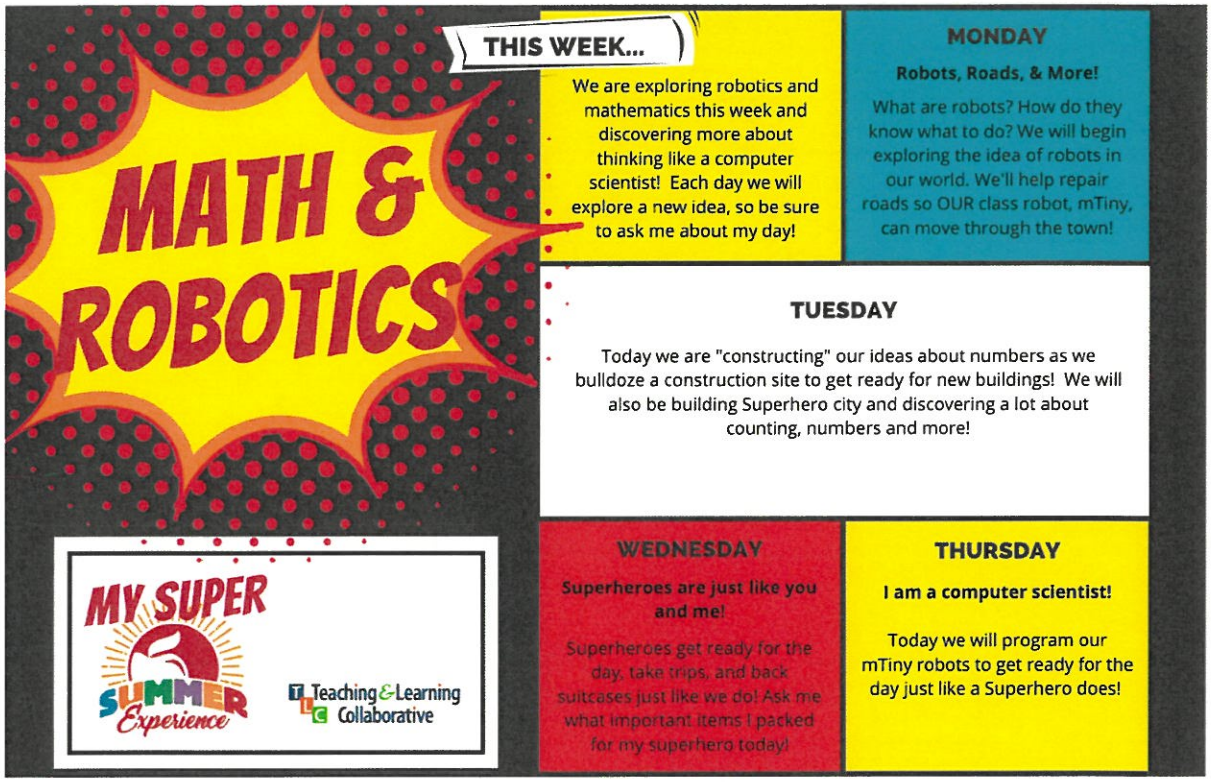
Math & Robotics

Overview of a week

	Monday	Tuesday	Wednesday	Thursday
8:00-8:30	Restroom/Hand Washing/Breakfast	Restroom/Hand Washing/Breakfast	Restroom/Hand Washing/Breakfast	Restroom/Hand Washing/Breakfast
8:30-9:00	Welcome/Music & Movement	Welcome/Music & Movement	Welcome/Music & Movement	Welcome/Music & Movement
9:00-9:30	**INTRO-R is for Robot and mTiny masks** (30 min)	**Bulldozer:** Mission 1: 30m	**Getting My Superhero Ready:** Mission 2: 25m	**Programming Superhero Ready:** Mission 2: 30m
9:30-10:00	**Road Mender:** Launch 10m Mission 1: 20m	**Bulldozer-Debrief 15m and Building Skyscrapers: Signal 15 min**	**Getting My Superhero Ready:** Debrief 15m **Superhero Suitcases Signal 15**	**Programming Superhero Ready:** Debrief: 20m
10:00-10:30	**Road Mender: Mission 2: 20 m**	**Building Skyscrapers: 30 m**	**Superhero Suitcases Mission-20 Debrief 10**	**Where's My Cape?: Signal: 20m**
10:30-11:00	Bathroom/Playground	Bathroom/Playground	Bathroom/Playground	Bathroom/Playground
11:00-11:30	**Road Mender: Mission 3: 30 m**	**Building Skyscrapers: 15 min** / **Getting My Superhero Ready:** Launch: 15m	**Programming Superhero Ready:** Signal 20	**Where's My Cape?** Mission-30m
11:30-12:00	Bathroom/Lunch	Bathroom/Lunch	Bathroom/Lunch	Bathroom/Lunch
12:00-12:30	**Road Mender: Debrief: 15 and Bulldozer Signal: 20**	**Getting My Superhero Ready:** Mission: 20m	**Programming Superhero Ready:** Mission 1-30	**Where's My Cape?** Debrief-20
12:30-1:00	Music & Movement/Playground/ Pickup	Music & Movement/Playground/ Pickup	Music & Movement/Playground/ Pickup	Music & Movement/Playground/ Pickup

Math & Robotics

Your kit will include copies of this sheet to send home with each student



There are several games that are part of the week that can be sent home with students. Copies of several games are included in your kits to send home after students experience these in the summer program.

SUPER CITIES

Creating Innovative Transformations in Early-childhood Settings

ROBOTICS MODULE

Students explore computer science through diverse literature, critical focus areas in mathematics, and computational thinking activities.

As they write algorithms for everyday routines and program a robot to test and troubleshoot these algorithms, students will begin to envision themselves as computer scientists while building early number concepts.

KEY COMPONENTS

- Content focus on critical focus areas in mathematics to support Kindergarten readiness
- Ohio Approved Professional Development (PreK) and implementation support
- Material kits

PROGRAM FORMAT

- Flexible format (week-long Summer or school-year program)
- Full-day schedule
- Detailed lessons and resources for successful implementation
- Integrated STEM focus with literature connections
- Fun, interactive theme to keep students engaged

MATHEMATICS FOCUS

- Subitizing
- Cardinality
- One-to-one Correspondence
- Unitizing
- One/two/ more/less
- Comparisons

COMPUTER SCIENCE FOCUS

- Computational Thinking
- Algorithmic Thinking
- Program Development
- Troubleshooting
- Control Structures

Teaching & Learning Collaborative

200 E. Wilson Bridge Rd. Worthington, OH 43085
614.265.9800
teachinglearningcollaborative.org

PROGRAM CONTENT

I Can be a Computer Scientist!

This activity is designed to set the stage for the experience and generates excitment about activities in the module.

Road Mender

Students work together to repair the interrupted roads, allowing their robot to journey through the town. Students will use algorithmic thinking, computational thinking, and collaboration to problem-solve as they explore this task.

Bulldozer

Students "construct" an understanding of number relationships, counting concepts, and subitizing. As students bulldoze, they will be decomposing and reasoning about the quantity of 10 in various ways. All construction workers communicate their thinking and solution strategies at the site during this lesson!

Building Skyscrapers

Students will explore different types of skyscrapers that can be created using ten blocks. Students will create and represent their thinking, look for patterns, investigate multiple solutions, and reason about their ideas.

Superhero Suitcases

Superheros aren't that different from you! Students make real-world connections as they help their superhero get ready for the day. Students will use reasoning and problem-solving skills to select and sequence activities for their superhero.

Getting my Superhero Ready

This lesson is "packed" full of fun and comparisons! Students take on the important task of helping their superhero pack for a trip. The items they will be packing: coding cards that send programming signals to their robot!

Superheroes in my World

Students think like a computer scientist and work in pairs to create an algorithm and program a robot to complete all a superheroes morning routine. To conclude the lesson, students will work together to debug a pathway.

Where's My Cape?

The Superheroes are all ready for the day except one thing...they can't find their capes! Students design a program for their robot to travel to get the cape. As students navigate the program, they will be using one-to one correspondence and the counting sequence. Students also engage in math concepts such as: decomposing, composing, more, less, and subtizing.

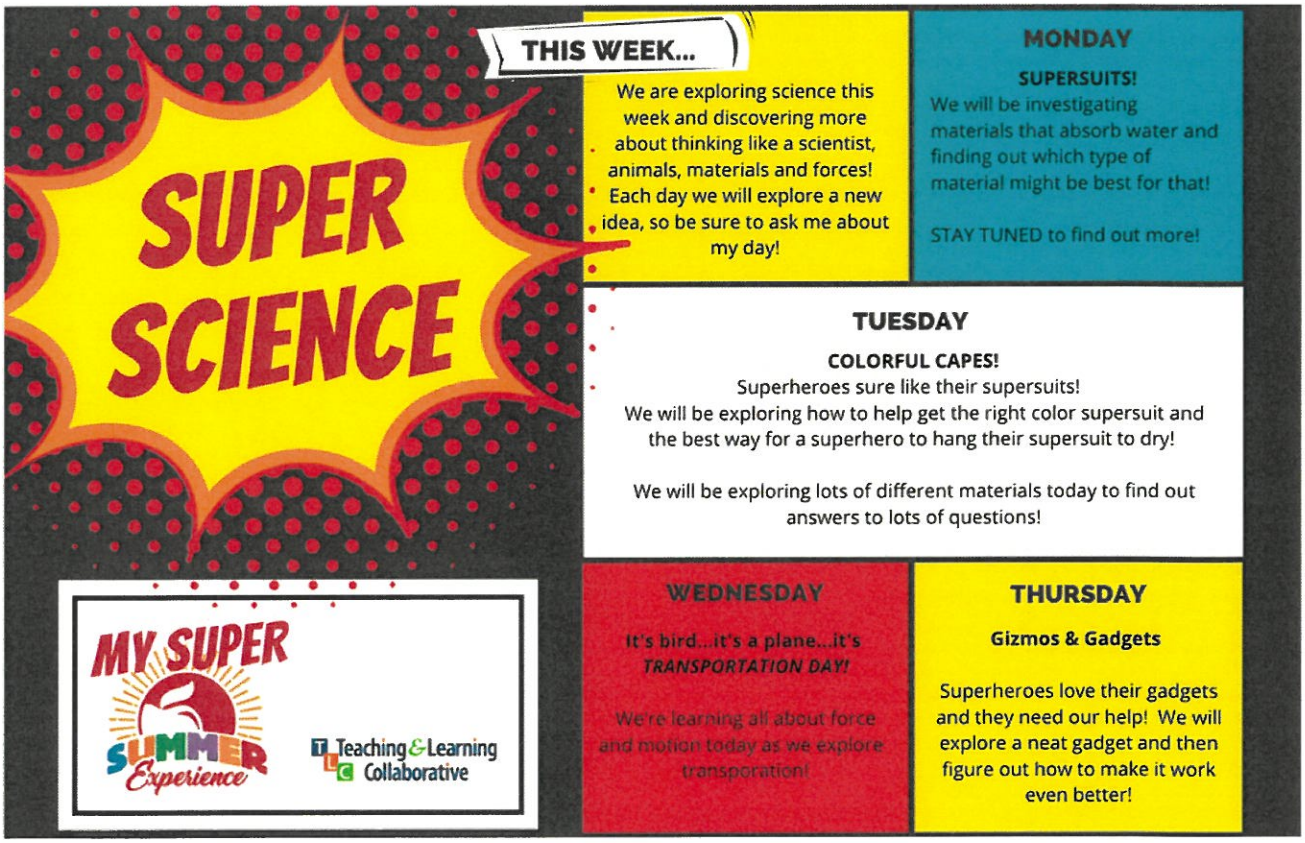
Super Science

Overview of a week

	Monday	Tuesday	Wednesday	Thursday
8:00-8:30	Restroom/Hand Washing/Breakfast	Restroom/Hand Washing/Breakfast	Restroom/Hand Washing/Breakfast	Restroom/Hand Washing/Breakfast
8:30-9:00	Welcome/Music & Movement	Welcome/Music & Movement	Welcome/Music & Movement	Welcome/Music & Movement
9:00-9:30	SUPERHERO TEAM BUILDING (15) and Supersuits-Absorb (15) The Signal	Colorful Capes-Signal 15 and The Mission Part 1 (15)	Forces: The Signal (20)	Robotic Hand-The Signal
9:30-10:00	Supersuits-Absorb Part 1 Mission (20)	Colorful Capes-The Mission Part 2 (30)	Forces: Capes & Gliding (30)	Robotic Hand-The Signal (continued)
10:00-10:30	Supersuits-Absorb Part 2 Mission (30)	Superhero Team Building (30)	Forces: Boats (30)	Robotic Hand Part 1
10:30-11:00	Bathroom/Playground	Bathroom/Playground	Bathroom/Playground	Bathroom/Playground
11:00-11:30	Supersuits-Absorb-Debrief 20 min.	Drying your Supersuit-Signal (20)	Forces-Debrief (15) and Connect back to Colorful Capes and do the debrief (15)	Robotic Hand The mission-part 2
11:30-12:00	Bathroom/Lunch	Bathroom/Lunch	Bathroom/Lunch	Bathroom/Lunch
12:00-12:30	Superhero Cutouts	Drying your Supersuit-The Mission (30)	Debrief-Drying your Supersuit and Superhero Cutouts: Colorful capes/material choices	Robotic Hand & Debrief (15) Superhero Cutout Sharing (15)
12:30-1:00	Music & Movement/Playground/ Pickup	Music & Movement/Playground/ Pickup	Music & Movement/Playground/ Pickup	Music & Movement/Playground/ Pickup

Super Science
Family Engagement

Your kit will include copies of this sheet to send home with each student



Additionally, at the end of the week, students can take home:

- **Superhero Cutout**
- **Student journal**
- **Superhero glider**
- **Foam boat**
- **Robotic hand**

For more information on professional development programs and resources designed by TLC, please contact us.

Teaching & Learning Collaborative

200 E. Wilson Bridge Rd. Worthington, OH 43085
614.265.9800
teachinglearningcollaborative.org