

TRAIL GUIDE

PreK-Kindergarten



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](https://www.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!



WHAT IS YOUR MATH CAMP-IN NAME?

(CAMPERS WILL WRITE THIS ON THEIR JOURNAL)

First Initial of First Name

A Adventure
B Binocular
C Canteen
D Day Pack
E Evergreen
F Flashlight
G Grilling
H Half Moon
I Itching
J Journey
K Kindling
L Lightning Bug
M Marshmallow
N Noseeums
O Owling
P Porcupine
Q Quiet
R Ribbiting
S Sleeping Bag
T Tracking
U Ultralight
V Vest
W Walking
X Xtreme
Y Yawning
Z Zip Line

First Initial of Last Name

A Algorithm
B Bar Graph
C Centimeter
D Digit
E Equivalent
F Factor
G Gallon
H Hexagon
I Inch
J Justify
K Kilometer
L Length
M Metric
N Number Grid
O Octagon
P Parallel
Q Quart
R Rhombus
S Sphere
T Tessellation
U Unit
V Vertex
W Whole Number
X X-Axis
Y Yard
Z Zero Facts

Math Camp-In

TRAIL POST STATION INFORMATION

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PreK &
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Trail Post 1 - Looking for Campsite Critters

Campers create a camp scene including campsite critters using the pages included in their trail guide. Have campers color the animals and cut them out. They, they can tape or glue them to create their scene. This is a great opportunity to listen to how the camper counts the animals in the scene.

Materials Needed:



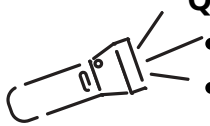
- Journal pages
- Glue or tape (optional)
- Crayons/Colored pencils (optional)
- Scissors
- Camp Badge



Helpful Hints/Things to Look For for at this Trail Post:

- Students in PreK and K begin to develop counting principles that are foundational for Grades 1-2 mathematics. It is important to notice how students count their animals. Students should begin using one-to-one correspondence to count each object- tagging and keeping track of the objects counted.
- Does the student know that the last number counted is the total or do they need to recount the objects? This concept is known as cardinality.
- Do students count all the objects together or do they count each group of animals separately? Students should begin to develop an understanding that items counted do not have to be the same.

Questions to Ask at this Trail Post:



- How many animals could there be in each place?
- How many animals are in the water?
- How many animals are in the grass?

DIG into Grade Level Content:



Pre-K: It is expected that students at this grade level are able to demonstrate one-to-one correspondence when counting objects up to 10. Students should also understand that the last number spoken tells the number of objects counted.

Kindergarten: It is expected that students at this grade level are able to demonstrate one-to-one correspondence when counting objects up to 10. Students should also understand that the last number spoken tells the number of objects counted. Additionally, students at this grade level are able to count as many as 10 things in a scattered configuration.

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Trail Post 2 - Trail Tracks

In this trail post, campers take a nature hike. While on the hike, they find various animal tracks. It's good thing they have their cameras to snap pictures of the footprints they find! Back at the campsite, they count how many tracks they found for each animal.

Materials Needed:

- Journal pages
- Camp Badge

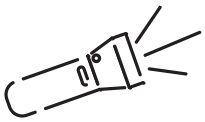


Helpful Hints/Things to Look For at this Trail Post:

- How do students count the tracks? Students should begin using one-to-one correspondence to count each object- tagging and keeping track of the objects counted. Listen for what numbers students might need support in counting (often the teen numbers)
- How do students represent the quantity? Do students draw a model or do they write a numeral?
- How do students compare the quantities? Students may begin to make another model and use the matching solution strategy to see more/less/same

Questions to Ask at this Trail Post:

- How can you keep track of the animal tracks you counted?
- Using your animal tracks, compare which animals had more tracks than _____, less tracks than _____?
- Which animals had the same amount of tracks?
- How can you represent how many tracks you counted?



DIG into Grade Level Content:

Pre-K: It is expected that students at this grade level are able to demonstrate one-to-one correspondence when counting objects up to 10, and should understand that the last number spoken tells the number of objects in the count. Additionally, students are expected to compare objects in groups of 10, by indicating whether the number of objects in one group is greater than, less than, or equal to another group of objects.



Kindergarten: In addition to the content above, it is expected that students at this grade level are able to count as many as 10 things in a scattered configuration.

Math Camp-In

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Trail Post 3 - S'more Math

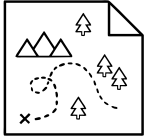
At this Trail Post, campers will do s'more counting! As they sit around the campfire, you bring them a handful of marshmallows to create their sweet treats... but how many s'mores can they make and will they have enough sticks? You'll have to find out as you explore this trail post!

Materials Needed:

- Journal pages
- Items to use for counting (see Helpful Hints below)
- Camp Badge

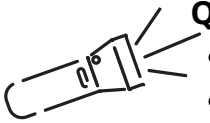


Helpful Hints/Things to Look for at this Trail Post:



- Items that can be used for counting to represent marshmallows: cotton balls, lima beans, legos, etc.
- There is no incorrect way for students to show how many sticks they will need. For example, some students may have one marshmallow on a stick, while other students may put multiple marshmallows on one stick.
- Students should begin using one-to-one correspondence to count each object-tagging and keeping track of the objects counted.
- Can students represent their count with a numeral?
- How do students determine how many pieces of chocolate are needed? Do they count and compare? Students may begin to make another model and use the matching solution strategy to see more/less/same

Questions to Ask at this Trail Post:



- How can you count the number of marshmallows?
- How might you figure out how many chocolate pieces you need?
- What if we had one less stick for roasting the marshmallows?
- How do you know if you have more/less/same as the counselor?

DIG into Grade Level Content:



Pre-K: It is expected that students at this grade level are able to demonstrate one-to-one correspondence when counting objects up to 10, and should understand that the last number spoken tells the number of objects in the count.

Additionally, students are expected to compare objects in groups of 10, by indicating whether the number of objects in one group is greater than, less than, or equal to another group of objects.

Kindergarten: In addition to the content above, it is expected that students at this grade level are able to count as many as 10 things in a scattered configuration.

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Trail Post 4- Flashing Fireflies

In this trail post, counselors will call out a number, and campers will use their flashlight to find the jar with that many fireflies.

Each camper might see and count the fireflies differently, so be sure to listen closely to their thinking.

Materials Needed:



- Journal pages
- Camp Badge
- Flashlight



Helpful Hints/Things to Look For for at this Trail Post:

- To successfully develop number relationships, students should be able to visually recognize a quantity less than 5 (subitize). Are they able to do this with the fireflies? If so, take note of how many fireflies students can recognize without counting (2, 3, 4, 5)
- Are students able to see two smaller quantities (by subitizing) and combine them? This will help students build addition and subtraction strategies in grades 1-2.
- If students don't have the number shown, ask questions to help them think about the number: Which jar shows one less than the number called? Which jar has one more? Two more? Two less?



Questions to Ask at this Trail Post:

- How do you know this jar matches the number?
- How did you count the fireflies?
- Do you see any groups of fireflies?



DIG into Grade Level Content:

Pre-K: At this grade level, students are expected to identify, without counting, small groups of up to 3 items (subitize). They are also expected to identify and name numerals 1-9. Students should also demonstrate one-to-one correspondence when counting objects up to 10, and should understand that the last number spoken tells the number of objects in the count.

Kindergarten: It is expected that students at this grade level are able to compare objects in groups of 10, by indicating whether the number of objects in one group is greater than, less than, or equal to another group of objects. Students are also expected to count as many as 10 things in a scattered configuration.

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Materials Needed:



- Journal pages
- Items to use as "fish" or print off pictures of fish to use with paperclips and magnet (see Helpful Hints)
- Pencil
- Camp Badge

Trail Post 5- Gone Fishing

Grab your rod and reel, it's time for some adventure! Campers get to go fishing at this trail post. Every time they catch a fish they add it to their bucket. How many fish will they catch? Listen closely as your camper counts the fish!

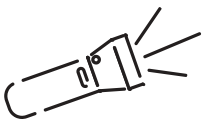


Helpful Hints/Things to Look For at this Trail Post:

- Get creative and tape a paperclip to the back of a paper fish and make a magnetic fishing pole. Count to a certain number and campers can then "catch" their fish and add it to their bucket!
- How do students count the fish? Are they tagging to keep track of all objects counted? Are they matching only one number word to each object (one-to-one correspondence)?
- Do they count all fish as one group or do they count only the fish that are alike as one group? Students are expected to understand that items to be counted do not have to be the same.
- When asked how many they caught, do they have to go back and recount (cardinality)?

Questions to Ask at this Trail Post:

- How might you count the fish you caught?
- What if you caught 2 more fish?
- What if you caught 1 less fish?



DIG into Grade Level Content:



Pre-K: It is expected that students at this grade level are able to demonstrate one-to-one correspondence when counting objects up to 10, and should understand that the last number spoken tells the number of objects in the count. Additionally, students are expected to compare objects in groups of 10, by indicating whether the number of objects in one group is greater than, less than, or equal to another group of objects.

Kindergarten: In addition to the content above, it is expected that students at this grade level are able to count as many as 10 things in a scattered configuration.

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K

Trail Post 6 - Math Rocks!

It's time for a hike! In this trail post, campers collect rocks on their nature hike in order to show other campers what they found at camp. Campers must determine how to sort the rocks for display at this trail post.

Materials Needed:

- Journal pages
- Pencil
- Various types of rocks (or cut out copies of rocks)
- Camp Badge



Helpful Hints/Things to Look For for at this Trail Post:

- How do students count the rocks?
- Can students tell you how many rocks are in each sort without counting again? (Cardinality)
- Are students able to see groups of 2, 3, 4, or 5 rocks to indicate the total without counting (subitizing)?
- Are students using a consistent attribute when sorting?
- Are students using measurable attributes (weight, length and height) when sorting? (long/short, heavy/light, fat/thin)



Questions to Ask at this Trail Post:

- How might you count how many rocks are in each jar?
- How did you sort your rocks?
- What did you think about as you sorted?
- Can you think of another way to sort your rocks?



DIG into Grade Level Content:

Pre-K: It is expected that students at this grade level are able to demonstrate one-to-one correspondence when counting objects up to 10, and should understand that the last number spoken tells the number of objects in the count. Students are also expected to sort and classify objects by one or more attributes.

Kindergarten: In addition to the content above, it is expected that students at this grade level are able to count as many as 10 things in a scattered configuration. Students should also classify objects into categories; count the numbers of objects in each category and sort the categories by count.

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Trail Post 7 - Catching Fireflies

Catching fireflies is a favorite pastime of campers and counselors alike. Color and cutout the fireflies and hide them around the room (or small area) for your camper to find!

Materials Needed:



- Journal pages
- Fireflies (cutout)
- Pencil
- Camp Badge



Helpful Hints/Things to Look For for at this Trail Post:

- When representing their count, do students recount their jar or do they understand that the last number stated is the total? (cardinality)
- Are students able to see groups of 2, 3, 4, or 5 fireflies to indicate the total without counting (subitizing)?
- Does the picture students create match their model?
- Are students able to see two smaller quantities (by subitizing) and combine them? This will help students build addition and subtraction strategies in grades 1-2.

Questions to Ask at this Trail Post:



- How can you count to see how many fireflies you caught?
- What if you had one less firefly? One more? Two less? Two more?
- How could you see if you have more, less or the same number of fireflies as _____? (have them compare with another student)
- Can you write a number to represent how many fireflies are in your jar?



DIG into Grade Level Content:

Pre-K: At this grade level, students are expected to identify, without counting, small groups of up to 3 items (subitize). Students should also demonstrate one-to-one correspondence when counting objects up to 10, and should understand that the last number spoken tells the number of objects in the count.

Kindergarten: It is expected that students at this grade level are able to compare objects in groups of 10, by indicating whether the number of objects in one group is greater than, less than, or equal to another group of objects. Students are also expected to count as many as 10 things in a scattered configuration.

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.

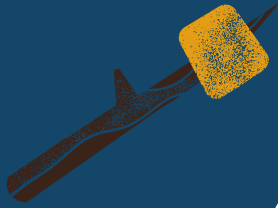
Choose your favorite one and add it to your journal and then DESIGN YOUR OWN CHALLENGE BADGE in your journal and CELEBRATE!

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

Trail Post 3

I had S'MORE fun
at Math Camp In



Trail Post 1

Look how I solved
this problem



Trail Post 4
My math
thinking is
BRIGHT!



Trail Post 6
MATH ROCKS!



Trail Post 5

I HOOKED the
answer!



I worked
it out!
STEP BY STEP!

Trail Post 2



Trail Post 7
You caught me
DOING MATH!



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



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