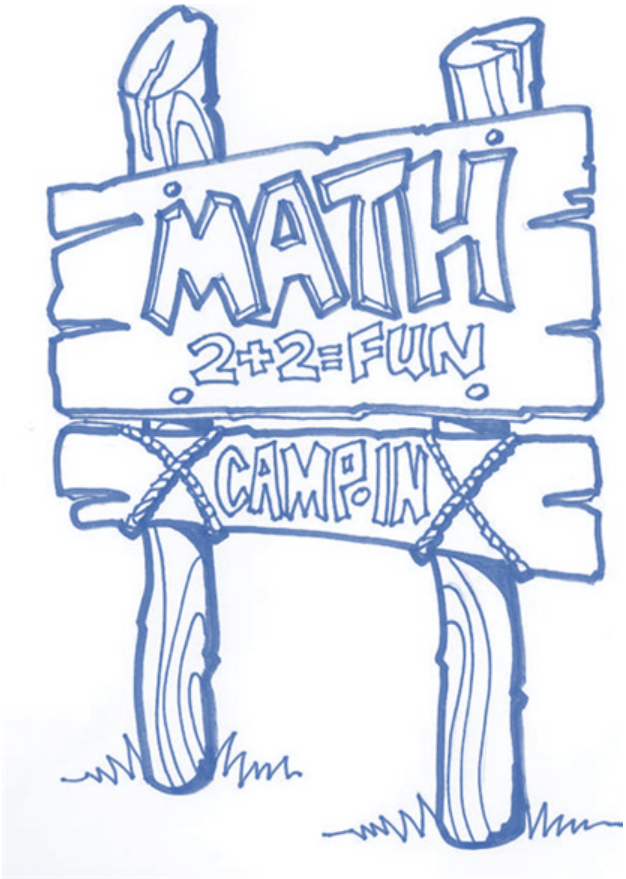

TRAIL GUIDE

Grades 1-2

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

WHAT TO EXPECT

Getting ready for Math Camp-In is easy to do! Just follow a few simple steps and you'll be Camping In: Math Style in no time!

Math Camp-In will *fill your backpack* with great ideas! There are seven "Trail Posts" (activities) that can be used with students. This **Trail Guide** gives helpful hints for tasks and questions you can ask about each one.

Mathematical understanding will *multiply* as campers finish problems and earn their **camp badges**! 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 them. 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! If you are at home, create an area that they can use for Math Camp-In and decorate it. 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

Math Camp-In

TRAIL POST STATION INFORMATION

Grades 1 & 2

Teaching & Learning Collaborative

Trail Post 1 - Camp Scene: What's the Story?

Campers create a camping scene using the images included in their journal. They can color these, cut them out and then tape or glue them to create a camp scene. Encourage campers to combine addition, subtraction, multiplication and division skills as they write/solve the problems.

Materials Needed:

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

Helpful Hints for this Trail Post:

- Campers do not have to use all the items on the page in their scene. If they don't glue them down, they can use them to create several problems with different operations (or even more than one operation).
- Encourage campers to consider strategies they could use when determining what numbers they want to use in their story problems. Strategies may include doubles, near doubles, make 10, decomposing numbers, or properties of operations.
- When completing the challenge, campers might consider that 6+2+2 is the same as 3+3+4, they may justify this by decomposing 6 to 3+3 and composing 2+2= 4. Therefore the sums are equivalent.

Questions to Ask at this Trail Post:

- What did you consider when writing your problem? What strategies did you use?
- How can you use the quantities in your picture to write a problem?
- How could you use the images to represent a subtraction problem?
- How else could you represent this quantity with different numbers?

DIG into Grade Level Content:

Grade 1: Students at this grade level are expected to be fluent with facts to 10. Students are also expected to be able to use strategies to add and subtract numbers within 20, as well as add within 100 by adding a two digit number and a one digit number.

Grade 2: Students at this grade level are expected to be fluent with facts to 20. Students are also expected to be able to use strategies to add and subtract numbers within 1000, as well as add up to four two digit numbers using strategies.

Math Camp-In

TRAIL POST STATION INFORMATION

Grades 1 & 2

Teaching & Learning Collaborative

Trail Post 2 - Just in Time!

OH NO! The camp schedule blew off the sign and is all mixed up! It's up to the campers to come to the rescue at this Trail Post! Campers order the camp events correctly and record times on the clocks at this trail post as they explore their understanding of time.

Materials Needed:

- Journal pages
- Glue or tape (optional)
- Scissors
- Camp Badge

Helpful Hints for this Trail Post:

- Ask campers to group the events by things that happen in the morning, afternoon and evening. They can even generate and sort the events into their own categories.
- If campers need support in writing times, talk about examples and have them work to complete the task. Guide them by reviewing the hands on the clock (long hand/short hand)
- Have campers make up other events and talk about where they would go on the schedule.

Questions to Ask at this Trail Post:

- Which events would occur in the morning? evening?
- How long is it between breakfast and lunch?
- If I get up at 7:30am and take an hour walk, will I make it back for breakfast?
- What patters do you notice on the clock?
- What number patterns occur when telling time?
- How does counting by fives help you to tell time?

DIG into Grade Level Content:

Grade 1: It is expected that students at this grade level are able to read and write time to the hour and half hour.

Grade 2: It is expected that students at this grade level are able to read and write time to the nearest 5 minutes. Students should also indicate if the activity and time occurs in the A.M. or P.M. on the journal page.

Math Camp-In

TRAIL POST STATION INFORMATION

Grades 1 & 2

Teaching & Learning Collaborative

Trail Post 3 - CAUGHT YOU!

At this Trail Post, campers manipulate objects to create number sentences to represent the sum of insects that have been caught in the jar. Finding combinations allows students to explore number relationships.

Materials Needed:

- Journal pages (Be sure to include the insect jar mat)
- Items to use for counting (see Helpful Hints below)
- Pencil
- Camp Badge

Helpful Hints for this Trail Post:

- Important: If your campers are in Grade 1 they should write 10 on the line in their journal. Grade 2 should write the number 20 on the line in the journal.
- When looking for items to use for counting, look for two different color items. These could be blocks, LEGO, dry beans, torn pieces of paper, etc. The two different colors represent the two different insects, but you will want to have enough to create different combinations. Have your camper decide which color is the moth and which color is the lightning bug.
- Encourage campers to find as many combinations as they can.

Questions to Ask at this Trail Post:

- What color represents the moth? lightning bug?
- How many insects should you have in your jars at all times?
- If I choose 3 lightning bugs, how many moths can I have if there are only 10 in a jar? 20 in a jar?
- What is another way you can represent 10? (or 20-see note below)
- How might your number representations change if you had three jars?
- What do you notice about the quantities in your jars? Does the order of your jars matter?

DIG into Grade Level Content:

Grade 1: Students at this grade level should be able to fluently add and subtract within 10. Students should also be familiar with the commutative property, and understand that the order in which you add the same numbers the sum will remain the same.

Grade 2: Students at this grade level should be able to fluently add and subtract within 20. Students should also be familiar with the commutative property, and understand that the order in which you add the same numbers the sum will remain the same.

Math Camp-In

TRAIL POST STATION INFORMATION

Grades 1 & 2

Teaching & Learning Collaborative

Trail Post 4- CAMP STORE

Campers get to shop at the Camp Store at this Trail Post! Spend time exploring all the different ways they could purchase materials for camp!

Materials Needed:

- Journal pages
- Pencil
- Camp Badge

Helpful Hints for this Trail Post:

- If your students/child are in Grade 1, help them to understand that $3 is the same as 3 one dollar bills. This might be a new notation for them to use and recognize. The dollar amounts used in this activity, are with a whole dollar and not cents. Students should be able to add quantities with whole number understanding. You may explain to students that "When mathematicians count and use money, they represent a dollar like this." When completing a subtraction problem, students may decide to add (or count up) to solve. This type of thinking is critical for their understanding of the relationship between these operations and is an encouraged strategy.

Questions to Ask at this Trail Post:

- What strategy did you use to determine how much you spent?
- How can you use number relationships to help you solve?
- What did you consider to determine what you could or could not purchase?

DIG into Grade Level Content:

Grade 1: In this grade level students are expected to work with money. This includes identifying and naming the values of pennies and dimes. Students are also expected to add within 100, including a two digit number by a one digit number using models and strategies.

Grade 2: Students are expected to solve problems with money. This includes solving problems by adding and subtracting within 100 dollars including dollars with dollars and cents with cents and using the $ and C symbols appropriately.

Math Camp-In

TRAIL POST STATION INFORMATION

Grades 1 & 2

Teaching & Learning Collaborative

Trail Post 5- The Great Frog Jump

Ready, Set, HOP! At this Trail Post, campers act like frogs and make their best jump! Be sure they mark where they begin their jump and end their jump with an everyday item so that they can make their measurement. They will do several jumps and graph their distance to make comparisons.

Materials Needed:

- Journal pages
- Items that can be used to measure jump
- Crayons/Colored pencils
- Pencil
- Camp Badge

Helpful Hints for this Trail Post:

- Campers should use any device to measure, but it is important that the items are the same length. See the Dig into Grade Level content below for more ideas.
- Make your own jumping frog! Instead of campers jumping, you can You can use this video from YouTube to create a jumping frog: **youtu.be/Vlb2udqPx-M** with a piece of paper. Campers can then make their frog jump and measure the distances in the same way.
- Compare how the measurement changes when measuring device changes (using a pencil vs. paperclips is a great way to explore this idea further!)

Questions to Ask at this Trail Post:

- Is there a different way to represent this data other than a graph?
- What did you notice? Wonder? when you were measuring?
- How does a different tool impact the measurement?
- What conjecture can you make about the relationship between your jumps or the measurement tools used?

DIG into Grade Level Content:

Grade 1: Nonstandard Unit of Measure. Students may use any device to measure, it is important the unit is the same length. For example, you do not want to use sharpened pencils, as they lengths may vary. Some ideas include; markers, crayons, unsharpened pencils, paperclips, post-its. When students measure it is important to encourage them to have no space, no gap, no overlap between the measuring tools.

Grade 2: Students may measure using inches, centimeters, or feet. Grade 2 students measure to the nearest whole unit, they do not need to indicate fractional parts of a unit.

Math Camp-In

TRAIL POST STATION INFORMATION

Grades 1 & 2

Teaching & Learning Collaborative

Trail Post 6 - S'MORE MATH!

Campers LOVE their s'mores! Get ready to discover some fun ways to share s'mores as you think about whether you will have enough ingredients for everyone!

Materials Needed:

- Journal pages
- Pencil
- Camp Badge

Helpful Hints for this Trail Post:

- Students in Grade 1 and Grade 2 begin to develop fraction concepts that are foundational for Grades 3-5 mathematics. As students are solving this trail post it is expected that students may use whole number concepts to make sense of problems. As students partition shapes into halves, thirds, and fourths be sure students are considering and discussing how each part of a whole is the same size. As students make sense of these problems, they may count by ones or skip count. These are acceptable strategies when trying to understand fraction concepts. It is not appropriate at this time for students to see fraction notation. However, it is critical that students are using fraction language as they explain their thinking and reasoning.

Questions to Ask at this Trail Post:

- How could you describe each part of the whole?
- What can you do to prove that your parts are equal?
- How many equal parts are in the whole?
- How might you count the equal parts?
- What counting or skip counting patterns do you notice?

DIG into Grade Level Content:

Grade 1: Students at this level should be able to partition circles and rectangles into two and four equal shares. They should be able to describe equal shares using halves and fourths language. Students should be able to describe the whole as two of or four of the shares in real-world contexts.

Grade 2: Students at this grade level should be able to partition circles and rectangles into two, three, and four equal shares. Students should be able to describe the shares as halves, thirds, fourths or half of, third of, fourth of. When counting the parts greater than a whole, it is acceptable for students to count the same equal parts without combining them to create a mixed number.

Math Camp-In

TRAIL POST STATION INFORMATION

Teaching & Learning Collaborative

Grades 1 & 2

Trail Post 7 - LIGHTS OUT!

Time to get the campers to sleep but their pillows are all mixed up! Cut out the ten pillows before you begin. Use the clues to figure out which pillow matches the sleeping bag clue! You can glue or tape the pillows to the sleeping bags to get the campers ready for LIGHTS OUT!

Materials Needed:

- Journal pages
- Scissors
- Tape or Glue
- Pencil
- Camp Badge

Helpful Hints for this Trail Post:

- Students will be using a variety of mathematical content to determine which sleeping bag best fits the description. As students solve, they may have to make changes. There is one description for each sleeping bag. These descriptions combine geometric and measurement concepts with whole number understanding. As students solve for each sleeping bag, it is important that they can verbalize their reasoning and justification used to determine how the sleeping bag meets all the constraints contained within the riddle.

Questions to Ask at this Trail Post:

- What do you notice about the pillows?
- What parts of the clues or pillows were helpful when solving?
- How did you determine that your pillow matched the sleeping bag?
- How can you organize your thinking so that you do not duplicate answers?
- What strategies did you use to determine your matches?
- Were there any pillows you needed to change as you solved? How did you know?

DIG into Grade Level Content:

Grade 1: Students should be able to determine the defining attributes for geometric shapes. This includes number of sides, vertices. As students build an understanding it is important for them to recognize shapes with the same attributes in different orientations. Students should be able to partition and discuss rectangles into equal shares. They should describe these parts as halves and fourths.

Grade 2: Students at this grade level should be able to recognize shapes with specific attributes. They should also be able to identify rectangles, triangles, quadrilaterals, hexagons, based on the number of sides and vertices. When working with geometric concepts, students should be able to partition rectangles in equal shares and describe these shares as halves, thirds, fourths. Students should also understand that equal shares of the same whole may not have the same shape. These are critical foundational concepts for Grade 3 mathematics.

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 seven pieces and arrange them so that they fit into the square.

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 ALL seven 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

You CAUGHT me doing math!

TRAIL POST 4

My ideas ADD UP!

TRAIL POST 2

I helped the campers... just in time!

Cut each badge out before you give them to campers and keep them in a safe place.

TRAIL POST 5

I hopped right to it and solved this problem!

TRAIL POST 1

I completed the camp scene & STUCK to it!

TRAIL POST 6

I had s'more fun with this problem!

LIGHTS OUT!

TRAIL POST 7

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

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