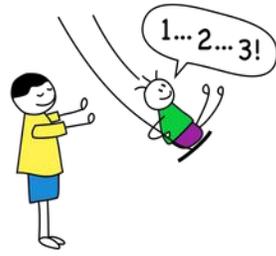


Early
Family
Math



FAMILY MATH FEST HANDBOOK



CONTENTS

EARLY FAMILY MATH MISSION	3
WHY HOLD A FAMILY MATH FEST?	4
WHAT DOES YOUR FAMILY MATH FEST LOOK LIKE?	5
HOW TO PLAN FOR YOUR FAMILY MATH FEST	6
TIMELINE IN DETAIL	7
HANDOUTS, PRINTABLES, TAKE HOMES	10
PREPARATION LIST	11
EFM FAMILY MATH FEST PARTICIPANT LIST	15
EFM FLYER	17

EARLY FAMILY MATH MISSION

Early Family Math's goals are :

- Universal Access - Our program should be available, accessible, and understandable to all.
- Fun - Our activities should be fun. Families should learn that doing math can be playful, creative, and beautiful. Wherever possible, we use games and puzzles to teach and practice math concepts. We emphasize problem solving over routine skill practice.
- Social - Math is something to be enjoyed together as a family or with friends. We believe very young children should not be doing work by themselves on electronic devices or worksheets.
- Build Confidence - Confidence in math skills early on will make a positive difference in future school and career outcomes.
- See Math Everywhere - Math is all around us. It can be seen and discussed while reading storybooks, walking around, and in doing our daily activities.
- Create Positive Attitudes - Combining the above, seeing math as a fun, sociable, natural part of our everyday world will be a significant and important change in attitude for the majority of people.

WHY HOLD A FAMILY MATH FEST?

Mathematics is central to early education, and studies show that early success with math is a strong predictor of later general success in school. At the same time, dislike and insecurity for math is strong among adults, and, unfortunately, this helps train the next generation to have similar feelings. You may have heard an adult say “that’s okay, I was never good at math either”. At Early Family Math we would like to change that!

We seek to improve math education and math attitudes for young children (and adults) during their first 8 years. Central to this is creating an environment where families and children enjoy math as a fun activity to do together.

Our Family Math Fest is filled with engaging mathematical activities that a family can do together, so that all participants develop a sense of pleasure and mastery of mathematics. It has been created with an eye toward fun, simplicity, and ease of use, so that families go home with the feeling that they can easily incorporate math activities into their daily lives. At the same time, these activities create opportunities to learn real mathematics, practice problem solving and foster a growth mindset.

You don't need an educational or math background to organize a Family Math Fest. Anyone, whether you are an educator, day care provider, home schooler, librarian, parent or a person with an interest in math, can successfully organize a Family Math Fest.

WHAT DOES YOUR FAMILY MATH FEST LOOK LIKE?

In the next chapter we will guide you through planning your Family Math Fest. But first, we would like to give you a brief idea of what a Family Math Fest looks like.

After welcoming your families and asking them to sign in, you will brief families on the set up of your math stations. Most stations focus on an overarching math topic and consist of 3 activities, in different levels (1, 2, and 3). One station focuses on how to incorporate math when reading to your child . The activities are adaptable so that children of different abilities can participate together. All the activities are designed to be done by an adult and a child together - we want families to see that math is something fun to enjoy as a group.

Families then pick a station to start at. Each activity can be completed in about 15 minutes, but we suggest a free-flowing schedule so families can spend as little or as much time as they like to fully engage with an activity. Some families might do all activities, while others might just do a few.

At the end of your Family Math Fest, take a brief moment to bring your group together and guide them on how they can continue doing math activities at home using our Early Family Math activities. You may want to create a Take Home handout to give each family - this handout might include a cover page for using EFM resources, a possible survey to learn more about them, and a way to contact you if they want more information.

HOW TO PLAN FOR YOUR FAMILY MATH FEST

This Family Math Fest is geared to children from age 3 to 7. The duration of a Family Math Fest will be around 1 ½ to 2 hours.

TIMELINE SNAPSHOT

6 WEEKS OUT:

- Select and confirm event date, time and location
- Familiarize yourself with the activities.
- Recruit (a) volunteer(s) if desirable.

4 WEEKS OUT:

- Create and send out invitations to possible participants
- Print Activity Handouts and Printables
- Gather other materials for the activities, laid out in the Preparation List
- Organize all materials by Activity

2 WEEKS OUT:

- Meet with volunteers
- Plan for collection of feedback

DAY OF EVENT:

- Set up
- Family Math Fest
- Tear Down

POST EVENT:

- Collect feedback

TIMELINE IN DETAIL

6 WEEKS OUT:

Select and confirm event date, time and location.

From start to finish you should allocate between 1 to 2 hours for our event.

Pick a space that is large enough to host your event.

Whether in an intimate setting (think around 30 participants or less) or in a larger setting (think up to 300) our Family Math Fest is easy to scale. Per 30 participants, you will need 5 stations. Each station consists of 3 activities that are grouped around a common theme. Each station requires a large table (or smaller tables grouped together) with about 6 to 8 chairs around it). If you have a larger group, you can scale accordingly: for about 60 participants, you will need 10 stations, etc.

Familiarize yourself with the activities.

Read through all the activities and make sure you have a good understanding of them. It is a good idea to practice them yourself first, as you will have to explain the activities to volunteers later on.

Recruit volunteers.

Although our activities are self explanatory, we advise to have one volunteer per station to guide families through the activities, if necessary.

4 WEEKS OUT:

Create and send out invitations to possible participants.

You can use the flyer in our packet and add the date and time for your Family Math Fest in your email to possible participants, as well as, print it out and post it.

Print Activity Handouts and Printables.

Our handouts and preparation list are made for a group of 30 participants (adults+children). If your group is larger, scale accordingly: for an event with 60 participants, print double, for 90, print triple etc.

Gather the other materials for the activities that are laid out in the Preparation List.

The same scaling applies here for larger groups.

Organize all materials by Activity.

Once you have printed out all Activity Handouts and Printables, and have gathered all materials needed for the activities, organize all materials by activity. This will make it easy to present materials to your volunteers and will get you organized for the event.

2 WEEKS OUT:

Meet with volunteers.

Set up a meeting with your volunteers and have all materials ready. Group all materials and lay them out the same way as on the day of the event. Explain to your volunteers what your Family Math Fest will look like and what is expected of each volunteer. We suggest that you assign one volunteer per station. That volunteer will be responsible for helping families with the 3 activities at that station. Have the volunteers read through the materials and make sure they understand the 3 activities they are in charge of. The activities are meant to be self-explanatory, and empower families to enjoy math together. Please make clear to volunteers that they are not “leading” an activity, rather lending a helping hand if a family needs clarification and keeping the tables neat and organized when families move on to another station.

Plan for collection of feedback.

Feedback from families will help you and us in making a Family Math Fest the best it can be. Please consider collecting the participants’ email addresses so we can send them a 5 minute survey after they have participated in a Family Math Fest. You can simply print out the “Participant List” in the back of our packet and have that ready on a table as families come in for your Family Math Fest. We appreciate you sharing the Participant List with us.

DAY OF EVENT:

Set up.

For a group of up to 30 participants, set up 5 stations with 5 large tables (or 5 groups of multiple small tables put together) with at least 6 to 8 chairs per table. For larger groups, set up multiple stations with the same activities.

Hand out name tags to volunteers so that they can be easily identified by participants.

Family Math Fest.

At the start of your Family Math Fest, welcome everyone and explain the set up of the math stations to participants. Make sure that they can roam freely between stations. Although most

activities can be done in about 15 minutes, there is no time limit per station; If families enjoy certain activities, we would like them to take the time to fully explore them. Ask families to leave the station as neatly as they found it so the next family can start their activity right away. Identify volunteers to participants and make clear that volunteers are there to assist families.

Start and enjoy your Family Math Fest!

Thank families at the end of the Family Math Fest and ask parents to leave their name and email address at the entrance table to take part of our survey if they haven't done so yet. Explain that the survey helps us tailor and tweak our Family Math Fests. Relay to parents that all activities and many more can be found on our website. It is an excellent resource to continue to do math together in a fun, engaging way.

Tear Down.

Thank all volunteers for their help. Collect materials and clean up.

POST EVENT:

Collect feedback.

Send an email to thank participants and make sure to include the link to our survey. If you are interested, we are happy to share the participants' feedback with you.

HANDOUTS, PRINTABLES, TAKE HOMES

Each Table folder (other than Storybooks) contains files associated with the activities for that table.

- Table Marker - This is a page with the name of the table on it.
- Handout - This is a description of each activity. This should be printed and put on the table to explain each activity.
- Game Boards and other Printables - This may not be needed for some tables.
- Take Home sheet - This is a brief description of the activities for this table. It can be put together with the other Take Home sheets to create a Take Home packet to give families as they leave.

The Table for Storybooks is only slightly different.

- Table Marker - This is a page with the name of the table on it.
- Handout - This is a description of each activity. This should be printed and put on the table to explain each activity.
- Storybooks - A storybooks table will have zip files containing the storybooks you may want to print out and use.



Preparation List

TABLE – ADD AND SUBTRACT 1

LEVEL 1: NIM WITH ONE AND TWO

Materials and prep:

- 10 tokens or small objects
- Pencil and paper

LEVEL 2: HIT THE TARGET

Materials and prep:

- 3 decks of playing cards with face cards removed.

LEVEL 3: MEMORY CHALLENGE

Materials and prep:

- 3 decks of playing cards with face cards removed.

TABLE – ADD AND SUBTRACT 2

LEVEL 2: SHUT THE BOX

Materials and prep:

- Two dice
- Pencil and paper

LEVEL 2: MATH TIC TAC TOE

Materials and prep:

- Tic-Tac-Toe board
- Tokens with the numbers from 1 to 9 on them

LEVEL 2: PAIRING DOWN

Materials and prep:

- Paper with number line to 20
- Pencil

LEVEL 3: SUM DIFFERENCE

Materials and prep:

- Pencil and paper if needed

TABLE - ARITHMETIC 1

LEVEL 1: WHO'S OUT

Materials and prep:

- Printed board games
- Transparent counters

LEVEL 2: NUMBER SCRAMBLE

Materials and prep:

- 3 groups of 5 dice
- Optional paper and pencil

LEVEL 3: PRODUCT GAME

Materials and prep:

- Printed game boards
- 3 sets of 40 counters (20 in one color, 20 in another)

LEVEL 3: MULTIPLICATION BINGO

Materials and prep:

- Printed multiplication bingo cards
- 3 decks of playing cards with face cards removed
- Counters

TABLE - COMPARING 1

LEVEL 1: WAR - COMPARING

Materials and prep:

- 3 decks of playing cards with face cards removed.

LEVEL 2: GOING UP

Materials and prep:

- 2 EFM number card decks from 0 to 20

Print out 2 copies of the EFM number card deck from the Printables section, preferably on thick paper. Cut them neatly to form a deck of cards.

LEVEL 3: GET OUT OF MY HOUSE - 1 MORE OR LESS

Materials and prep:

- 3 decks of playing cards with face cards removed.
- 14 small tokens, 7 in one color, 7 in another
- 3 “Get out of my House” game boards

TABLE - COUNT ADD COMPARE 1

LEVEL 1: GO FISH!

Materials and prep:

- 1 deck of playing cards with the face cards removed (ace = 1)
- If playing the game with more than 2 players, use 2 decks

LEVEL 1: I’M THINKING OF A NUMBER

Materials and prep:

- Deck of playing cards with face cards removed (ace = 1)
- Star or other flat marker that can be hidden under a card

LEVEL 2: PIG

Materials and prep:

- Two dice
- Pencil and paper

LEVEL 2: WHICH NUMBER AM I?

Materials and prep:

- Deck of playing cards with the face cards removed (ace = 1)

TABLE - COUNT ADD COMPARE 2

LEVEL 1: NUMBER HUNT

Materials and prep:

- 1 deck of number hunt cards

LEVEL 1: STRING NUMBER LINE

Materials and prep:

- Playing cards with numbers from 1 to 10 (ace is 1)
- String
- Clothespins or paperclips

LEVEL 1: IN THE OTHER HAND

Materials and prep:

- Bowl with small items (of any type)

LEVEL 2: NUMBER LINE BATTLESHIP

Materials and prep:

- Number line sheet
- Pencils

TABLE – GEOMETRY 1

LEVEL 1: PATTERNS

Materials and prep:

- Tiles, or any objects such as Lego Bricks, in 7 shapes and colors
- 7 small tubs

You can use pattern blocks or Lego Bricks.

LEVEL 2: CUTTING SYMMETRIC SHAPES

Materials and prep:

- Colored copy paper (or white if color is not available)
- Child-safe scissors
- Pencils with erasers

Fold and cut an example for both a single fold design and a double or triple fold design and put it on the table with the materials and Activity Handout. This will make it easier for parents to explain the activity to their children.

LEVEL 3: SHAPES WITH BEAUTIFUL SYMMETRY

Materials and prep:

- 7 containers with tiles in 7 different shapes and colors

You can use pattern blocks or Lego Bricks.

TABLE – GEOMETRY 2

LEVEL 1: CREATE A JIGSAW PUZZLE

Materials and prep:

- Child-safe scissors
- Cereal boxes, cardboard, magazine pages, or plain pieces of stiff paper
- Crayons, colored pencils

LEVEL 2: SHAPES ON THE FLOOR

Materials and prep:

- Papers with colored shapes
- Deck of shape cards (colored and black and white) - cut these out from the provided card pages

LEVEL 4: FILLING SQUARES WITH SQUARES PUZZLE

Materials and prep:

- Paper with graph-filled squares
- Pencils

TABLE - MIXED OPERATIONS 1

LEVEL 2: STAKE YOUR CLAIM

Materials and prep:

- Number line from 0 to 99
- Deck of playing cards, with the 10, jack and king removed. The queen serves as 0, the ace as 1
- 20 Counters in two colors

LEVEL 3: TAX COLLECTOR

Materials and prep:

- Number grid to 24
- Counters in 2 colors
- Pencil and paper (to add up numbers, if needed)

LEVEL 4: COUNTING NEIGHBORS

Materials and prep:

- Three dice
- An 8 by 8 number grid with all numbers from 1 to 64
- 20 counters of any kind
- Paper and pencil for scorekeeping

LEVEL 4: "PARENTHESES FIRST" PUZZLES

Materials and prep:

- Parentheses puzzle sheets
- Pencils

TABLE - STORYBOOKS 1

THERE IS MATH IN YOUR BOOK!

Materials and prep:

- Storybooks - You may want to select some of these books to print out

TABLE – STRATEGY 1

LEVEL 1: SHAPE SUDOKU

Materials and prep:

- Paper with Sudoku puzzles
- Sudoku shape playing pieces

LEVEL 2: FINDING SQUARES

Materials and prep:

- Grid paper (small sections of graphing paper) from Printables section
- Pencils

LEVEL 3: DOTS AND BOXES

Materials and prep:

- Pencil and paper

TABLE – STRATEGY 2

LEVEL 1: TAPATAN

Materials and prep:

- 3 Printed Tapatan boards
- 3 groups of (3 counters in each of 2 colors)

LEVEL 2: SIM TRIANGLE

Materials and prep:

- Many printed Sim Triangle boards
- Colored pencils or crayons

LEVEL 3: NINE MEN'S MORRIS

Materials and prep:

- 3 printed Nine Men's Morris boards
- 3 sets of 18 counters (9 in one color, 9 in another)

earlyfamilymath.org



EFM FAMILY MATH FEST

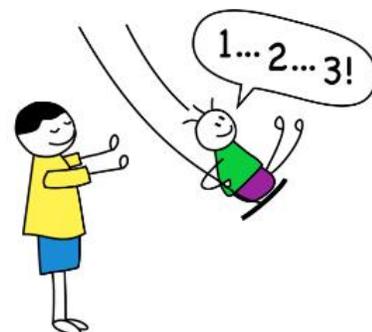
Join us for a Family Math Fest filled with fun math games, activities and puzzles !

WHERE:

WHEN:

KIDS FROM ...

TO ... YEARS



Early Family Math