



MEETING PLANS & IDEAS: MATHEMATICS

[Mathematics](#)

[Information](#)

[Troop Meetings](#)

[Main Event](#)

OBJECTIVES

This month's activities should:

- Define what is mathematics.
- Demonstrate how mathematics is used in everyday life.
- Encourage Scouts to earn the [Nova and Supernova awards](#).
- Increase understanding of and demonstrate different mathematical concepts.
- Explore the different areas of study within mathematics.
- Expose Scouts to careers that use mathematics.

LEADERSHIP PLANNING

As a leadership team, you may want to discuss the following items when choosing mathematics as your program feature during your planning meetings.

- Where will we have our main event?
- Will the main event be an overnighter?
- Are there adults in our unit who might be able to speak about how they use math in their careers?
- What videos will we show?
- Who will be able to discuss mathematical concepts and bring them to life?
- How can we involve parents?
- What mathematics-related merit badges should we focus on?
- To meet our needs, what should we change in the sample meeting plans?

Click above for fillable troop meeting planning form.

PREOPENING IDEAS

[Preopening Ideas on Troop Program Resources](#)

- As Scouts arrive, play short [videos of "mathemagic"](#).
- Play a video (such as [Disney's "Donald in Mathmagic Land"](#)) that discusses the basics of arithmetic.
- Use newspapers to create towers. See which one can hold the most weight. Try to figure out what shapes are the strongest.
- Show videos of probability tricks. Think about what game show segments you can use to demonstrate how probability can give the contestant an advantage to winning a prize.

OPENING IDEAS

[Opening Ideas on Troop Program Resources](#)

GROUP INSTRUCTION IDEAS

Introducing the Areas of Math

- Discuss the following:
 - The definition of mathematics
 - The origins of mathematics and numerical systems
 - The areas of mathematics one can study and their importance

Arithmetic

- Discuss the following:
 - The basic concepts of arithmetic.
 - Have Scouts give examples of ways they use arithmetic in their daily lives.

Going the Distance With Geometry

- Discuss the following:
 - What is geometry?
 - The concept of ratios and averages.
 - How geometry is used in the real world.

Predicting the Future With Probability and Statistics

- Do the following:
 - Explain what probability means.
 - Explain the concept of statistics.
 - Describe a few scenarios where probability and statistics can be used to predict future events.

SKILLS INSTRUCTION IDEAS



Introducing the Areas of Math

- • Arithmetic: Using the height of everyone in the unit, calculate the unit average.
- • Geometry: Go on a geometry scavenger hunt.
- • Probability and statistics: Estimate how many times heads or tails will occur when flipping a coin.

- • Arithmetic: Play a game of dominoes
- • Geometry: Create a building using simple geometric shapes.
- • Probability and statistics: Play a game of Yahtzee.

- ◆ • Arithmetic: Construct a [Caesar cipher](#) to send and decode an encoded message.
- ◆ • Geometry: Estimate the height of a building using a protractor.
- ◆ • Probability and Statistics: Construct a Galton board. What does it do? What can you learn from it?

Arithmetic

- • Create a budget for your unit's main event. Try to figure out the total cost per person.

- Play a game of dominoes and keep an accurate score.

- Calculate the value of pi by using different round objects.

Going the Distance With Geometry

- Have Scouts build paper airplanes and record the distance their planes fly.
- Have them modify their design and vary the takeoff height to see which design flies the farthest.
- Have each Scout calculate the average distance for each plane design.

- Have Scouts build paper airplanes and record both the distance their planes go (D) and the takeoff height (H).
 - Calculate the glide ratio (G) by dividing the distance by height ($G = D / H$).
- Have the Scouts change a number of variables (design, takeoff height, throwing force) to find the best glide ratio. The larger the G is, the better!

- Have each Scout use graphing paper to draw a diagram of the plane's flight path.
- Have them find an appropriate scale, and record the results from multiple trials.
- See if Scouts notice from their drawings that a larger glide ratio leads to a greater distance traveled.

Predicting the Future With Probability and Statistics

- Using two dice, have each Scout calculate the probability of each possible sum. Roll the dice 100 times, and keep a tally of how many times each sum occurs. Have the participants compare the results to their calculations.

- Create a survey about your upcoming main event. Survey your unit members and record their answers. Look to see if there are any surprises in the answers. Graph the survey results when appropriate. Determine whether the results warrant a change of plans.

- Play a game of backgammon. Discuss how probability comes into play.

BREAKOUT GROUP IDEAS

Getting Ready for the Main Event

- Menu Planning (if applicable)
- Duty Roster Planning (if applicable)
- Patrols discuss what special items they will need for the main event.

Preparation for the meeting's game or challenge

GAME AND CHALLENGE IDEAS

Library of Games and Challenges on Troop Program Resources

- [Buzz, Bing, Bang](#)

- **Time Bomb**

- **Math Bingo**

- *Materials:* A list of 24 math questions that all have different answers; a blank bingo card for each Scout (five rows and five columns with a star in the middle box); pens; projector, white-board, or easel pad

- *Method:* Display the answers to math questions and have the Scouts randomly place them on their bingo cards. Then, randomly select questions and display them for everyone to see. Have the participants solve the problems and mark the corresponding answer with an "X" on their cards. The winner gets the X's on the card to make a vertical, horizontal, or diagonal line, or to cover all four corners.



- **Sudoku Race**

- *Materials:* Copies of Sudoku puzzles and small prizes

- *Method:* Explain the rules of Sudoku and give a puzzle to each person to solve. The first one to complete the puzzle correctly receives a prize. After everyone has completed the puzzle, lead a discussion on different strategies used to solve the puzzle.

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- **Math Trivia**

- *Materials:* A list of mathematical trivia questions and answers. Find questions and answers through an Internet search or create your own.

- *Method:* There are two options: Teams take turns answering questions, or players write the answers on their own sheets of paper. The winner is the team or player with the most correct answers.

- *Variations:* 1. Create a "Jeopardy!"-style game with multiple categories and escalating

point values. 2. Let teams create and ask their own trivia questions, and award points when they stump the other teams.

CLOSING IDEAS

- [Leader's Minutes](#)
- [Ceremony](#)

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Mathematics	Information	Troop Meetings	Main Event
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[Guide to Safe Scouting](#)

[SCOUTBOOK](#)

[Scouting Forms from the National Council](#)

[ScoutCast](#)

[Scouting Magazine](#)

[ScoutStuff.org \(Retail Site\)](#)

[ScoutingWire](#)

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[The Outdoor Adventure Planning Guide](#)

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