



My Name: _____

Teacher: _____

Possible Math Journal Topics

1. How long do you think it would take you to count to a million by ones? What makes you think that?



2. How are the numbers 10 and 100 alike? How are they different?

3. What is your favorite shape? it? Why do you like it so much?

4. Write a poem or poster describing why it's so great.

5. How many measurements can you think of to describe yourself? (height, weight, shoe size, and so on)

6. Is a map a measuring device? Why or why not?

7. List five or more kinds of statistics or number facts that are used to talk about baseball and baseball players. How else are numbers used in baseball?

8. Explain how you could multiply 6×99 in your head.

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9. Estimate how many students are in the whole school. Explain how you came up with your estimate and how you might check the accuracy of the estimate.

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10. Write a story problem that cannot be solved because there is not enough information.

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11. Describe an object from your bedroom or kitchen using as many numbers and math terms as you can.

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12. How do your parents use math? Interview them about it, and then list all the things they do that involve math.

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13. What is money? Define it in your own words.

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14. Think of three activities you could do to teach the concept of decimals to another class of students.

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15. Would you rather take a test that has 10 questions worth 10 points each, or one with 20 questions worth 5 points each? Or 25 questions worth 4 points each? Or 50 questions worth 2 points each? Explain your reasoning and estimate where you would score the highest.

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16. Make up a word problem involving cooking and fractions.

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17. Write a letter to the school board to convince them that students should be able to (or not able to) use calculators in math class.

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18. If you could be any number from 1 to 100, which would you be, and why? Which numbers would you choose for friends and family members?

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19.

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20.

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SET THE STAGE FOR POSITIVE WRITING EXPERIENCES

The following strategies are some you can use to create an environment in which writing about math is a positive learning experience.

Ask good questions worth communicating about, with multiple possible approaches.

Make sure early activities are fairly easy and satisfying for all students. (We don't want to compound a possible bad attitude about math with a bad attitude about writing! We want writing to enhance the experience of learning math.)

Discuss the assignment before writing time begins. Make sure students understand why you are asking them to write.

Begin with verbal explanations as a shared class activity. As students explain orally, ask questions to help them clarify their responses.

Don't just "assign" writing -- facilitate it in many ways; guide students as they learn how to be more effective thinkers and communicators.

Provide writing prompts -- including guidelines, criteria, rubrics, and strategies.

Share models of successful student writing.

Ask students to consider a specific audience... Imagine they are explaining to a young child step by step, or write as if they are mathematicians (using proper terminology).

Provide frequent opportunities for cooperative learning: Discuss beforehand in small groups; write in pairs or small groups; respond to writing in small groups.

During writing time, circulate, ask questions, and elicit ideas

"What do you have to do?"

"What ideas do you have?"

"How will you start?"

"Tell me something you know."

"Why do you think that?"

Provide plenty of time for writing.

TYPES OF WRITING ABOUT MATH

Writing to explain how a problem was solved is a common and valuable form of mathematical writing, but it's just one of many possible forms. Writing in different genres taps different ways of thinking and keeps assignments fresh. Here's a grab bag of possibilities:

Math Autobiography

This is a good writing category for the start of the year, as you're learning about students' backgrounds and attitudes. "What has been one of your best/worst experiences in math? How did you use math over the summer?"

Learning log, journal, or blog

A math journal can be kept in a composition book or spiral notebook, or can be recorded in an online blog if students have easy access to computers. It's great when a teacher or classmates write short responses to entries in learning logs or blogs, but not every entry needs a comment if students are writing frequently. Topics can be drawn from any of the categories in this section, or might include:

- Write about what you did.
- Write about what you learned.
- Write about what you're not sure about or wondering about.
- Write/reflect at the beginning and end of a unit.
- Comment on assignments.
- Debrief: Explain the best or most important ideas or steps or new words.
- Write about the learning process.

Freewriting

Write rapidly for a short, fixed amount of time to "dump out ideas."

One-Minute Paper

To gauge understanding or reactions...

Explain mathematical ideas:

- construct meanings
- Examples: What is subtraction?
- What games involve chance, strategy, or both? Compare different procedures.
- Explain in detail how you solved a math problem
- Encourage students to write a clear, concise paragraph, citing the strategy chosen and describing the steps used to implement the strategy.

Create word problems

...or test questions.

Respond to word problems.

Venting

Write to vent (anonymously) or make suggestions.

Parking Lot

Write to ask or answer questions of another student/teacher. Questions can be shared anonymously for more candid input. They can be written on sticky notes placed in a "parking lot" on a large paper on the wall. Classmates can help categorize and answer the questions.

Creative Writing

Write creatively to explore, have fun, and look at math in fresh new ways. The ideas are endless. Consider:

- math poetry
- math-related jokes or riddles
- math-related comics
- fictional stories relating to math -- illustrations welcome!
- lively essays on a math topic
- ads for math, or math class, or a number
- math mad libs
- math "love letters" from a one number or operation to another

Real World

Write to inform or teach in the "real world."

- how to make a math craft
- step-by-step strategies
- recipes
- directions or descriptions using math vocabulary
- summary of a news article utilizing data to support the main idea

Write to Persuade

Using real-life data to support an argument helps students see the power of math in daily life. For example, a persuasive essay on "the greatest baseball hero of all time" or "why we need to be green" or even "why we need a longer lunch period" surely would use data to support the thesis.

□ Write A friendly letter

The letter can be to a real or imaginary audience, on a math topic of interest.

- Define vocabulary
- Include words from a word bank in an assignment
- Translate an equation into English
- Reword a teacher's explanation in your own words
- Formal papers, including research papers

□ Idea Box

Idea box for students' contributions to writing topics...

Writing about math can be a very positive and fruitful learning experience. Here's a look at some of the benefits; a variety of writing categories and topics; and suggestions for creating a positive environment for writing about math.

WHY WRITE IN MATH CLASS?

Writing can help students think about ideas in new ways and develop critical thinking skills, while involving students directly in the learning process. When students incorporate personal experiences into their writing, learning becomes more meaningful. Writing opens new lines of communication between student and teacher, and teachers can use students' writing to assess understanding and make instructional decisions. Informal writing can make a topic more appealing and stimulate creativity. Writing about math can be a path to understanding, as students clarify and "take ownership" of concepts and connect math to the real world.

WRITING SUPPORTS THE "PROCESSES OF MATH"

Here are some of them...

Problem Solving

- ...solve problems that arise in mathematics and in other contexts
- ...apply and adapt a variety of appropriate strategies to solve problems
- ...monitor and reflect on the process of mathematical problem solving

Reasoning

- make and investigate mathematical conjectures
- select and use various types of reasoning and methods of proof

Communication & Visualization

- organize and consolidate mathematical thinking through communication
- communicate mathematical thinking coherently and clearly to peers, teachers, and others
- analyze and evaluate the mathematical thinking and strategies of others
- use the language of mathematics to express mathematical ideas precisely
- create and use representations to organize, record, and communicate mathematical ideas

Connections

- recognize and use connections among mathematical ideas
- recognize and apply mathematics in contexts outside of mathematics