

The Mythical Mathematical Mind Reader



You all should have experienced the [Mind Reader website](https://www.transum.org/Maths/Investigation/Mind_Reader/) now. If not, here's the link:

[https://www.transum.org/Maths/Investigation/Mind Reader/](https://www.transum.org/Maths/Investigation/Mind_Reader/)

There are practice standards for using mathematics. "Construct viable arguments* and critique the reasoning of others" is one of them. In this activity we hope you will practice that standard.

In your groups, each of you will have a responsibility. Decide who will be responsible for each of these tasks:

- Reporter: takes notes, writes down important information
- Guide: leads discussions and keeps group on task
- Artist: coordinates the design of the poster and creativity
- Materials manager: procures materials and makes sure all materials are returned

Although you have a specific task, you should all work together to complete the activity. No one should be standing around waiting for someone to finish something. If there are only 3 in your group, then one person can be the Reporter/Guide.

Your Quest:

1. In your group, brainstorm on possible reasons why The Mind Reader is able to predict your symbol every time.
2. Come to a consensus on a hypothesis about how The Mind Reader works.
3. Test your hypothesis - Does your hypothesis work for any two-digit number? Try several. Are there patterns or similarities you see in the answers when you add the digits and subtract? Would this work for a 3-digit number? Hint: it's not magic!!! :-)
4. Once you determine how The Mind Reader works, construct a viable mathematical argument* to show your theory.
5. Once your team has completed steps 1- 4, believe they have found the solution, and made a strong viable argument, then create a colorful, creative poster with your explanation and mathematical argument.
6. Your poster should have at least the following components:
 1. A statement of the problem, using complete sentences
 2. Clear, step-by-step explanations of your argument, using expressions, equations, etc.
 3. Middle school quality with neat, colorful, clear lettering
 4. Something that is really "cool" and creative

*What's does it mean to construct a viable mathematical argument?

Construct means to build or develop something.

Viable means that something works, is true, or is a solution.

Mathematical means to use equations, expressions, variables, etc. in your argument.

Argument means a reason or reasons to show others why something is true or false.

Extension:

Groups can display their posters in a gallery walk. Students can "critique the reasoning of others" by making suggestions on how to clarify statements or to add details to make their arguments stronger.

Thanks to: Joe Donahue is a Google Certified middle school teacher at Santa Ynez School in Santa Ynez, CA. This lesson was inspired by an activity from a CCSS workshop given by Dr. Patrick Callahan.

When The Ghost Whisperer failed due to lack of support for Flash, John Tranter, founder of Transum Mathematics, created this great alternative, The Mystical Mathematical Mind Reader.

Brought to you by [Yummymath.com](https://www.transum.org/)

Sources: [https://www.transum.org/Maths/Investigation/Mind Reader/](https://www.transum.org/Maths/Investigation/Mind_Reader/)
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