

**Scientific
Method
Puzzle**

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Scientific Method Puzzle- Teacher's Guide

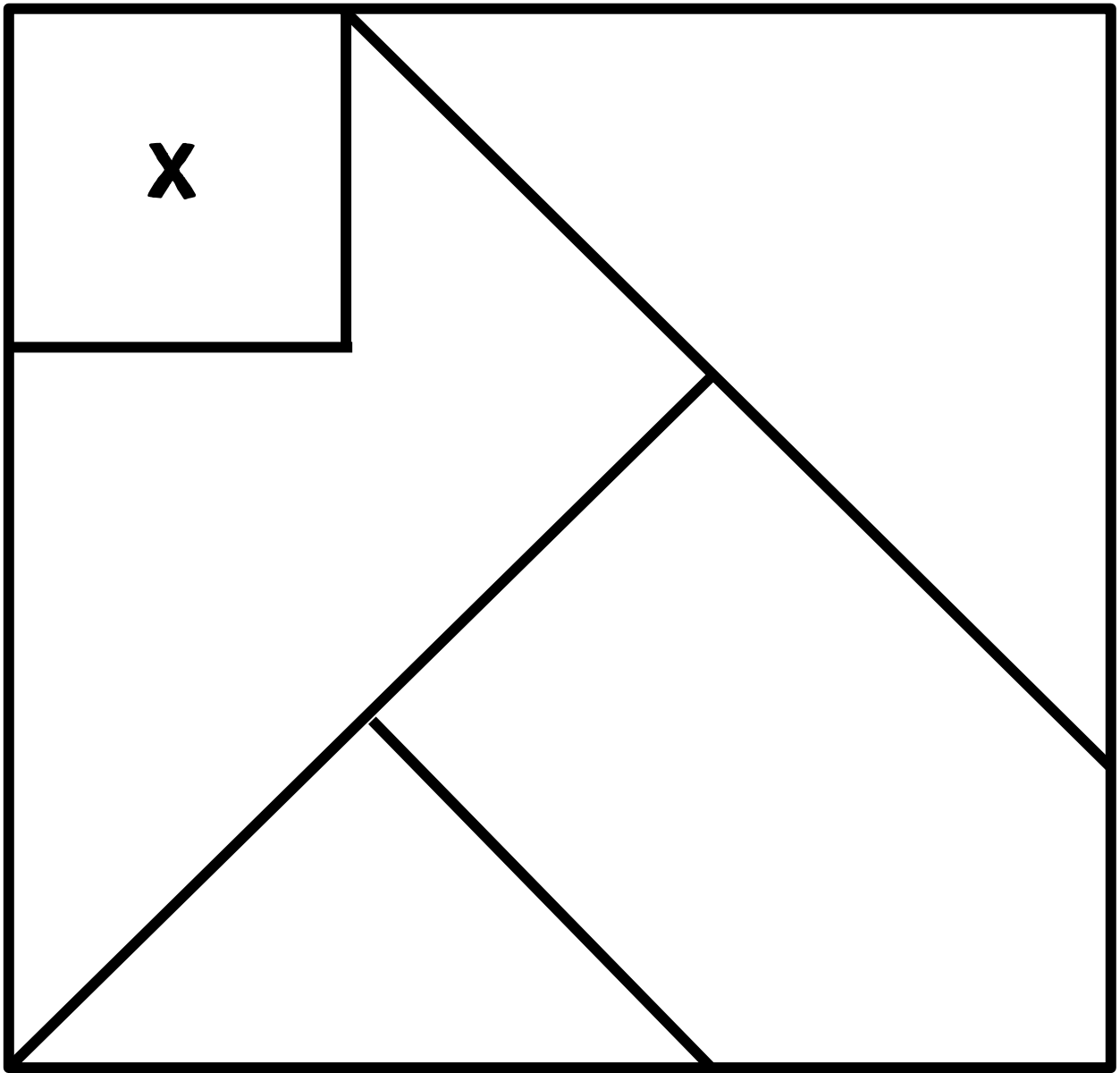
This puzzle is a simple, fun introduction to one of the most basic but most difficult parts of the scientific method– the constant revision of scientific thoughts as new knowledge is discovered. It can be hard for students to grasp how new thoughts are incorporated into existing knowledge. By taking the scientific “jargon” and examples out and turning to a simple hands-on demonstration, the lesson is simplified and students are more engaged. They may be a little confused at first, but once they’ve tackled the challenge of building the puzzle and then been told the reasoning behind it, everything will “click”.

I’ve found that the easiest way to set the puzzles up is to photocopy multiple sets on different colors of paper– a different color or pattern for each set in the class. This way, you can tell students to make sure that they have all 5 puzzle pieces without having to worry about whether they have the “right” pieces– if they have 5 green pieces, they are ready to go. I would recommend laminating the pieces for extra durability.

I usually pose this puzzle as a “brainteaser”. It is important to make sure that students try the puzzle for the first time without the small square. This is another way that photocopying onto different colors can help– when the purple group successfully builds their square, then they receive the 5th purple piece. I let them know the basic rules of the puzzle: you must create a perfectly symmetrical shape with nothing sticking out and no pieces can overlap. After that, they are on their own!

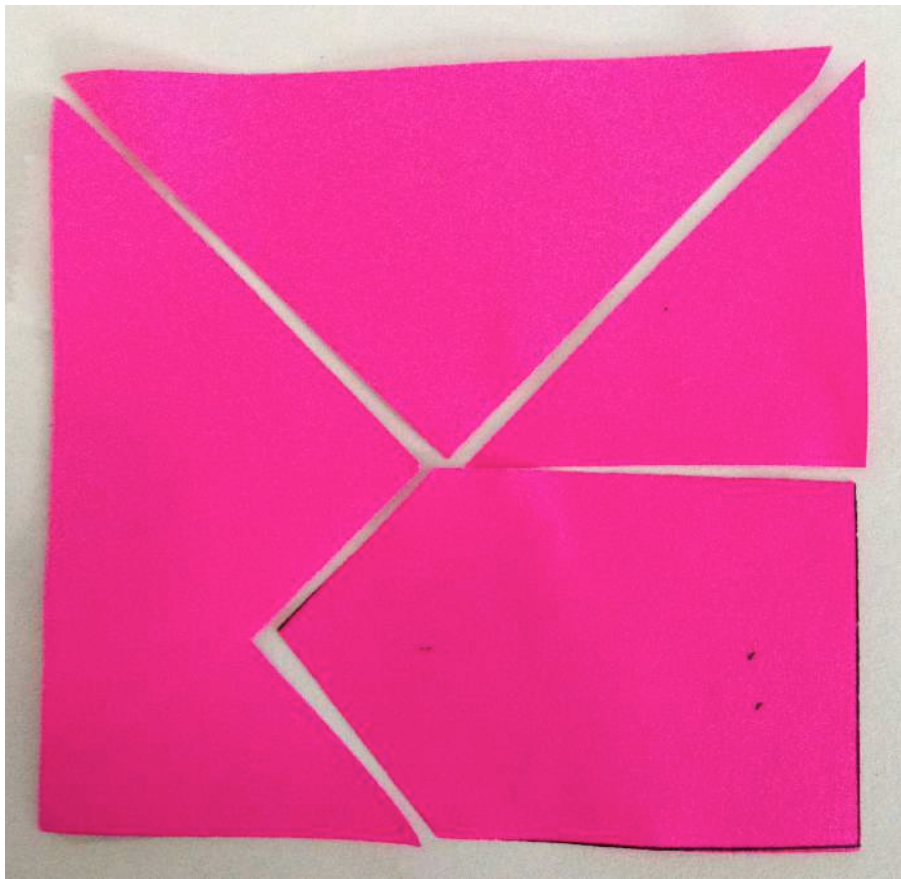
The puzzle-building portion of the lesson can take anywhere from 5–15 minutes depending on the level of your students and the size of your groups. I usually have my honors-level classes do this activity individually, while my regular-level classes work in groups. If students are really struggling, let them know that the symmetrical shape is a square– this will usually speed the process up.

I’ve included 2 versions of the worksheet, a “beginner” version with simplified instructions and questions and an “advanced” version with more analytical questions.

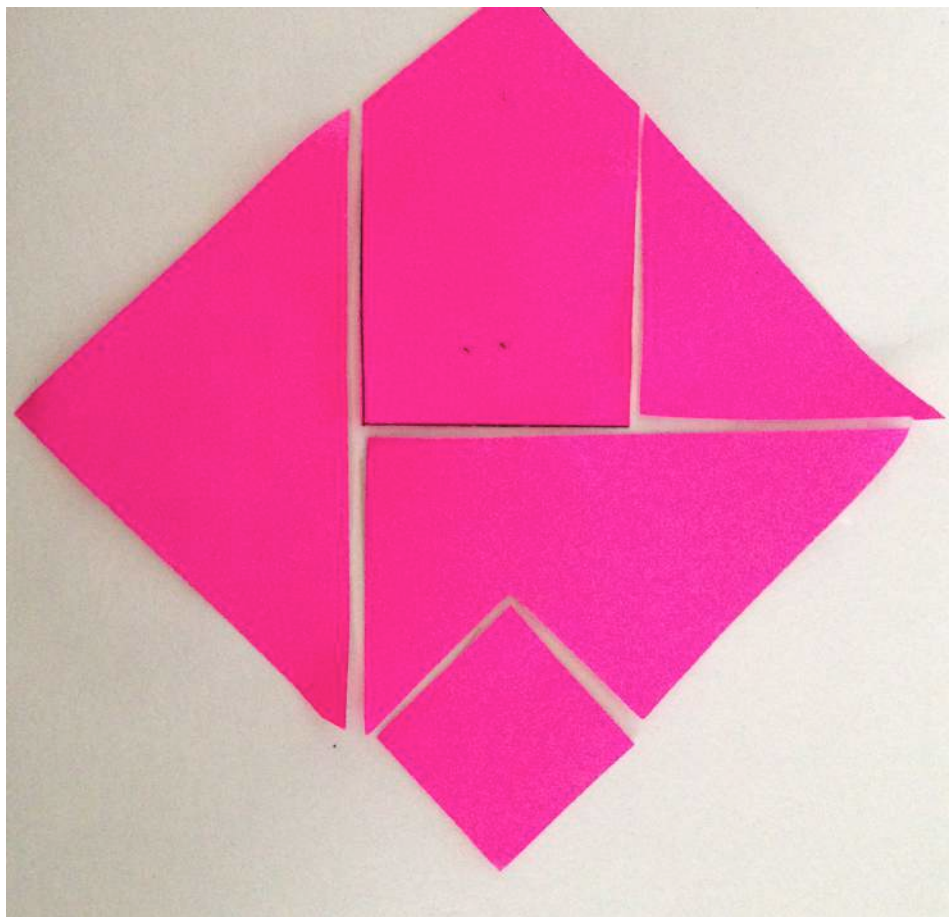


Scientific Method Puzzle Template– pieces should be cut out BEFORE students receive the puzzle. They do not receive the square until they have successfully created a shape with the first 4 pieces!

Solution 1



Solution 2



A Puzzling Look at the Scientific Method

Name: _____

1. The puzzle pieces in front of you represent scientific data points. Make a perfectly symmetrical shape using the pieces. All pieces must be touching, but not overlapping. Draw your completed puzzle below:

2. When you have completed step 1, you will receive a 5th puzzle piece from your teacher— this represents a new piece of data discovered about the same topic. Create a new perfectly symmetrical shape using all 5 pieces, where all pieces touch but do not overlap. Draw your completed puzzle below:

3. Think about trying to piece together the puzzle pieces, then having to repeat the process when new data was discovered. How does this relate to the process of “doing” science?

4. What was the most difficult part of assembling the puzzle? How do you think this relates to science in the real world?

A Puzzling Look at the Scientific Method

Name: _____

1. The puzzle pieces in front of you represent scientific data points. Make a perfectly symmetrical shape using the pieces. All pieces must be touching, but not overlapping. Sketch a diagram of your completed puzzle below:
2. When you have completed step 1, you will receive a 5th puzzle piece from your teacher– this represents a new piece of data discovered about the same topic. Create a new perfectly symmetrical shape using all 5 pieces, where all pieces touch but do not overlap. Sketch a diagram of your completed puzzle below:
3. Think about trying to piece together the puzzle pieces, then having to repeat the process when new data was discovered. How does this relate to the process of “doing” science?
4. What was the most difficult part of assembling the puzzle? How do you think this relates to science in the real world?
5. Describe an example of scientific thought that has changed over time.
6. List the steps of the scientific method you used to solve the puzzle. You probably did not use every step. Also, include any steps you may have repeated or re–visited.
7. Based on your answer to question 6, is the scientific method linear or non–linear?

Acknowledgements



Thank you for trying out this freebie from I Heart Teaching Science! Follow me at my Teachers Pay Teachers store for more lessons, activities, and a 50% off discount of the first 24 hours after new materials are posted.

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I heart Teaching Science
and I want to help you  it too!