

# Scientists and the Scientific Method

## Decoding the Scientific Method

Let's see if you can decode the words about science and the scientific method below. Each one has a clue. There are lines to write your answer on, with one line for each letter. Under the lines, there are math problems for you to do to find the right letters for the answer. Be careful and watch the signs in the math problems—some are addition and some are subtraction. When you do the math problem, look for the number in the chart at the top of the page and write the letter for that number on the line.

a	b	c	d	e	f	g	h	i	j	k	l	m
1	2	3	4	5	6	7	8	9	10	11	12	13

n	o	p	q	r	s	t	u	v	w	x	y	z
14	15	16	17	18	19	20	21	22	23	24	25	26

1. This is the study of why and how things happen.

$$\begin{array}{r} \underline{\quad} \\ 10+9 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 2+1 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 18-9 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 6-1 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 7+7 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 5-2 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 5+0 \end{array}$$

2. This is a name for a person who studies science.

$$\begin{array}{r} \underline{\quad} \\ 11+8 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 6-3 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 5+4 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 4+1 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 9+5 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 21-1 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 6+3 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 21-2 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 10+10 \end{array}$$

3. This is the first step in the scientific method. You need to have a question about how and why things work and then try to find the answers.



$$\begin{array}{r} \underline{\quad} \\ 6-5 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 18+1 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 6+5 \end{array}$$

4. This is the second step in the scientific method. You need to learn all you can about what you want to understand and learn from what other scientists have done.



$$\begin{array}{r} \underline{\quad} \\ 9+9 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 7-2 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 13+6 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 10-5 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 9-8 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 19-1 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 7-4 \end{array} \quad \begin{array}{r} \underline{\quad} \\ 4+4 \end{array}$$

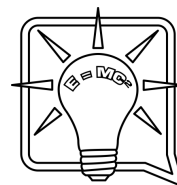
# Scientists and the Scientific Method

## Decoding the Scientific Method (continued)

a	b	c	d	e	f	g	h	i	j	k	l	m
1	2	3	4	5	6	7	8	9	10	11	12	13

n	o	p	q	r	s	t	u	v	w	x	y	z
14	15	16	17	18	19	20	21	22	23	24	25	26

5. This is the third step in the scientific method. After you ask a question and learn what you can, you need to decide what you think the answer is to your question.



$$\begin{array}{r} \hline 16-8 \\ \hline \end{array} \quad \begin{array}{r} \hline 24+1 \\ \hline \end{array} \quad \begin{array}{r} \hline 9+7 \\ \hline \end{array} \quad \begin{array}{r} \hline 8+7 \\ \hline \end{array} \quad \begin{array}{r} \hline 18+2 \\ \hline \end{array} \quad \begin{array}{r} \hline 7+1 \\ \hline \end{array} \quad \begin{array}{r} \hline 9-4 \\ \hline \end{array} \quad \begin{array}{r} \hline 17+2 \\ \hline \end{array} \quad \begin{array}{r} \hline 3+6 \\ \hline \end{array} \quad \begin{array}{r} \hline 17+2 \\ \hline \end{array}$$

6. This is the fourth step in the scientific method. You have to test your idea and opinion over and over, and there are certain rules for doing this.



$$\begin{array}{r} \hline 7-2 \\ \hline \end{array} \quad \begin{array}{r} \hline 12+12 \\ \hline \end{array} \quad \begin{array}{r} \hline 15+1 \\ \hline \end{array} \quad \begin{array}{r} \hline 11-6 \\ \hline \end{array} \quad \begin{array}{r} \hline 12+6 \\ \hline \end{array} \quad \begin{array}{r} \hline 12-3 \\ \hline \end{array} \quad \begin{array}{r} \hline 6+7 \\ \hline \end{array} \quad \begin{array}{r} \hline 8-3 \\ \hline \end{array} \quad \begin{array}{r} \hline 8+6 \\ \hline \end{array} \quad \begin{array}{r} \hline 12+8 \\ \hline \end{array}$$

7. This is the fifth step in the scientific method. After you record the information from testing your idea many times, you have to study the data and look for patterns to help you understand what happened and why.



$$\begin{array}{r} \hline 8-7 \\ \hline \end{array} \quad \begin{array}{r} \hline 10+4 \\ \hline \end{array} \quad \begin{array}{r} \hline 9-8 \\ \hline \end{array} \quad \begin{array}{r} \hline 6+6 \\ \hline \end{array} \quad \begin{array}{r} \hline 23+2 \\ \hline \end{array} \quad \begin{array}{r} \hline 25+1 \\ \hline \end{array} \quad \begin{array}{r} \hline 12-7 \\ \hline \end{array}$$

8. This is the sixth step in the scientific method. After you have studied your information, you can decide if your idea was true or false. If it made you have more questions, you will need to start all over again!



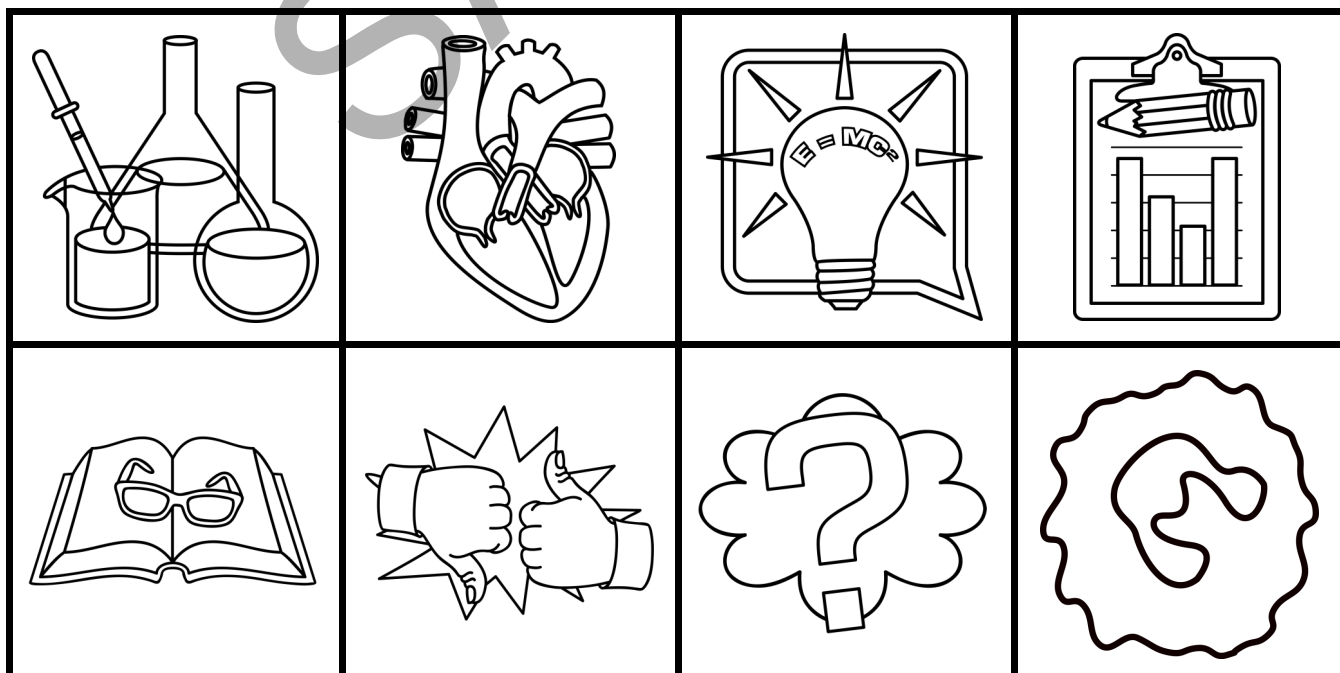
$$\begin{array}{r} \hline 3+0 \\ \hline \end{array} \quad \begin{array}{r} \hline 0+15 \\ \hline \end{array} \quad \begin{array}{r} \hline 6+8 \\ \hline \end{array} \quad \begin{array}{r} \hline 9-6 \\ \hline \end{array} \quad \begin{array}{r} \hline 6+6 \\ \hline \end{array} \quad \begin{array}{r} \hline 20+1 \\ \hline \end{array} \quad \begin{array}{r} \hline 0+19 \\ \hline \end{array} \quad \begin{array}{r} \hline 1+8 \\ \hline \end{array} \quad \begin{array}{r} \hline 12+3 \\ \hline \end{array} \quad \begin{array}{r} \hline 11+3 \\ \hline \end{array}$$

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## Steps to the Scientific Method

At the bottom of the page are eight pictures. Cut out the six that are part of the scientific method and paste them in the boxes at the top of the page.

Ask	Research	Hypothesis
Experiment	Analyze	Conclusion



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## What's Missing?

Imagine you are playing a word game. The tiles spell words about the scientific method and types of science. But, while you are playing the game, someone bumps the board, and some of the tiles fall to the floor! You have a list of the words that were used (see the word bank at the bottom of the page). Fill in the letters that are missing to finish spelling the words in the game.

The crossword puzzle grid contains the following letters:

- Row 1: A, A, Y, Z, F, S, I, E, T, S, T
- Row 2: S, I, X, R, C
- Row 3: S, I, L, E, N
- Row 4: M, A, H, M, T, I, C, L
- Row 5: L, A, M, S, L
- Row 6: C, N, S
- Row 7: H, P, T, E, S, I, O

analyze	experiment	mathematics	scientist
ask	hypothesis	physical	social
conclusion	life	research	