

# STEM Kit Project Directions

This is your STEM kit to explore science concepts. Follow these directions to use the kit and complete the attached STEM Explorations worksheet:



1. Complete the book(s) that are included in the STEM kit.
2. Complete questions 1 and 2, based on what you did with the kit. Use the book to determine the topic of the kit, instead of the title. The title is designed to be fun and attention grabbing but does not necessarily tell you the science concept you are learning about.
3. Complete question 3 by thinking about actual places you can learn more about this topic. This might be websites, if you have an Internet connection. Depending on the topic, you might be able to talk to someone who knows a lot about the topic. You might have books or videos available about the topic. List whatever you can think of to learn more about your topic. List specific places like the name of the website you found or the name of the book you found. Then choose at least one of those options and use it to learn more.
4. Complete #4 by writing things you learned about your topic. Instead of copying things from your source, read or watch your source(2 or 3 times, if necessary), then complete #4 without looking at your source. Just list 3 things that caught your attention --- that you found interesting or surprising - or three things that made you think of a question.
5. Complete #5 after using your sources to learn more about the topic. Especially think of things you may have written in #4 that made you think of questions about the topic. As an example, when people think of science projects, everyone thinks of making a volcano. This question is asking you what you could do to make your volcano different from everyone else. What do you think you might do to make your volcano erupt higher or longer than everyone else? What sort of barriers might work to stop the eruption from making a mess? These are questions about the typical volcano science project. But, don't write a question about a volcano. Instead, write a question about the topic of your science kit.
6. Try something to answer your question from #5. Then, complete questions #6-9, based on what you tried. Tell the truth. Science is about making mistakes UNTIL you find the solution that isn't a mistake. If what you tried didn't work, say that in #8. If it didn't work, now you know what does not work and you could try something else. Saying "it didn't work." is not a wrong answer. The only wrong answer is if you say it worked when it really did not.
7. In #10, think of some method that you could use to share what you did with your teacher and classmates. Could you make some sort of project to tell about what you learned? Remember, that you should share the truth - even if the truth is that what you tried did not work. As a matter of fact, there will likely be more people who tried something that didn't work than those who tried something that worked on the first try. We learn both from what works and from what doesn't work. This is science.





# STEM Explorations

Name: \_\_\_\_\_

Title of Kit: \_\_\_\_\_

1

What topic was your kit about? (example: magnets, circuits, polymers)

2

Describe what you did with your kit. Instead of copying from the instructions, describe this in your own words, so that you tell everything you did, but it still fits in this box.

3

Where could you learn more about your topic? (Think of books, websites, videos, experts, etc.) List 3 places that you found to learn more about the topic you wrote in #1.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

4

List 3 things you learned about your topic.

1.

2.

3.

5

Think about what you did with your kit. After learning a few things about the topic, what is something different that you would like to try to do with your kit? (You could change things around or use some different materials that you might have handy, etc.) Complete the question with what you would like to try.

What will happen if I \_\_\_\_\_  
\_\_\_\_\_?



6

What do you THINK will happen if you try what you asked in #5?

7

Now, we want to try what you asked in #5. BUT FIRST, ask your parent or teacher whether what you asked is unsafe. If so, go back and change #5 and #6 to something that you can actually do. Write out the steps for what you did to try your question.

8

What happened when you tried #7? What did you see or hear? Be specific.

9

Think about what you wrote in #8. Why do you think this happened? Does what happened make sense with the things you learned in #4?

10

What if you wanted to share what you discovered in #8 with your teacher and classmates? What is something that you could make to tell them about what you learned? How could you **publish** what you learned? (This could be something you make with your hands or something you make on a computer. Think about things like a poster, a video, a drawing, a PowerPoint or ANYTHING else you can think of.)