

# FAQs on SCIENCE NOTEBOOKS

A Collection of Thoughts by  
MIDDLE SCHOOL AND HIGH SCHOOL Teachers

Gr Level	Frustrations/Questions	Strategies
MS/ HS	Time! How do you find the <b>time to correct</b> them?	<p>I do some touring around the room while the students are writing. I can make comments in them then or make a note to myself that it is something I need to address - especially if I see it happening in several notebooks.</p> <p>I have self checks and partner checks. When I see something in my "drive-bys" that needs attending to, I can pull everyone together for a self check. At the end of a class period, I can ask them to pass their notebook to their partner to check for "these five things..." or to read their writing and critique to their partner how well they have done.</p> <p>I pick a group of folks each class period and invite them back to my computer where we conference about what I should be seeing and I give them a score as to whether I see it. I ask them to be prepared when they come to the computer and have their notebook open to the correct page before coming to me. This saves time, believe it or not.</p> <p>If I am having the students turn in their notebook, I have them put a post-it on the page I am to correct. This saves me quite a bit of time when trying to look for the page I have said I would correct.</p> <p>I give "timed" lesson quizzes with open book on the notebook. Selective questions that relate back to the labs are the things that form those quizzes.</p> <p>I have a rubric with expectations for their write-ups. I have students do some or all of the grading.</p>

		<p>I have students number everything like it is in the student guide for STC/MS. Then, once a week or so I tell them to copy their response to some lesson and question. For example: "Write your response to Lesson 8.1 Question 1.A" I will do this for about 5 items and just grade those.</p> <p>I use a document camera to show students other students' work or to show models of different quality of notebook entries.</p> <p>I grade one class per night every two weeks or after a test. At the high school level it works to assign certain activities that get graded thoroughly once per quarter with a checklist.</p>
MS/HS	<p>How is <b>technology incorporated</b> into the notebooks?</p>	<p>I use Palms in my Science classroom. I have instructions for downloading information from the Palms printed for students and copied for them to place them in the notebooks. This saves quite a bit of time as the students often have to stop and ask me or one of the other students how to do this step at the end of each class period. They take the data and whatever they create with that data and it all goes into their notebook. I also have printed instructions on how to do a chart in Excel.</p> <p>I received an Intel Microscope through my work with Battelle and am having fun taking pictures with the scope and putting them into the students' notebooks.</p> <p>I am considering doing a virtual notebook on the computer instead of on paper. Am I crazy?</p> <p>I use Powerpoint to give directions on the organization of the students' Table of Contents.</p> <p>A digital camera can be used for field work then sharing those images as "paste-ins."</p> <p>Some of my students use their home computers to redo the data in a table from their labs.</p>

MS/HS	<p>The entries begin to look really shotty after awhile. How do I <b>continue to keep the kids reaching a higher standard?</b></p>	<p>Share exemplars: "The Good, The Bad, and The Ugly". When I first begin (and when things go south later in the year!) I pick an example of a good, a bad, and an ugly entry to share on the overhead. Talk with the kids about why they fall into each category or let them tell you what needs to be done to bring them up into the good category. Don't say who wrote which one but you'll be surprised that they will often tell each other!</p> <p>For individual students who fall into this trap, I identify who they are and spend a little one-on-one time with them.</p> <p>Model, model, model...</p> <p>I use fake journal entries that are reflective of the types of entries I am beginning to see in their own notebooks but they are written by "Sandy Scientist". I type them on the computer in a handwriting font and make a transparency of them. The students tell me how I should score the entry and what the student could do to improve the quality of the entry using the rubric we have agreed upon.</p> <p>You can use peer editing just as you would do in a Language Arts class. Before putting the notebooks away, kids can edit each other's. Powerful way to improve their own writing.</p> <p>Have a rubric for their writing or for their lab write ups.</p> <p>By grading them regularly, I can encourage my students through modeling.</p> <p>I think having a specific focus for each entry keeps the student on track.</p> <p>I make sure that my rubric for the notebooks contains points associated with quality and for neatness.</p>
MS/HS	<p>What is the <b>standard?</b> What should they look like?</p>	<p>I am using the rubric shared with us at the beginning of YVTC. It is the one from Pasadena, CA.</p>

		<p>I use a template on how to record the activity properly. Then, this can become the rubric for their work. The lab will differ from other written data sheets or writings.</p> <p>We need to bring in copies of notebooks of real scientists' to show how they keep their notebook and hear how valuable it is for them.</p> <p>Use Rubistar to create your own rubric or one that you have tweaked with your students so they have a part in the creation of the rubric/scoring guide.</p> <p>You have a daily standard for labs and general writing but the "gateway" assignments will have additional bits and pieces.</p> <p>I use theme books and reduce the pages to 80% of original. If possible, I trim the pages before handing them out so the students don't always have to trim the pages.</p>
MS/ HS	It is so <b>hard to get to them</b> during a lesson.	<p>They are as much a part of my lesson as the lesson itself. They are the lesson... So, I don't separate them from the lesson.</p> <p>By making them an integral part of any lesson each day, there will begin to be the little "naggers" who will always remind you to get to them if you forget!</p>
MS/ HS	What do you do <b>when students are absent?</b>	<p>The student's partner is responsible for making sure all data sheets are taped into the notebooks but not written on. When the child comes back to school they work with a Teaching Assistant (or Science Specialist) to get caught up. A set of materials is left out in a station in the back of the room to facilitate this.</p> <p>When the student returns, they check with their lab partner to find out how many pages they need to save before they begin working again. Then, they can get info from their lab partner or they need to schedule a time when they can come do a make-up lab.</p> <p>I take digital photos of data tables for students who are absent.</p> <p>This is my biggest problem. I have them use a textbook instead. They skip the labwork.</p>

		<p>I have they student use an online site to catch up with the concept of the lab rather than the lab itself.</p> <p>Some teachers have additional assignments or questions to answer by asking lab partner the questions and writing down the answers.</p>
MS/ HS	The notebook itself falls apart due to poor quality. What is the <b>best quality notebook</b> to use with students?	<p>Buy themebooks/composition books especially for the middle school and high school levels. If using spirals, have them kept in a two-pocket folder to protect them from extra wear and tear.</p> <p>Mead composition books work best for me.</p>
MS/ HS	I have the worst <b>time just getting kids to write.</b>	<p>They get better over time. At the beginning of the year, they need to be taught exactly what you want and what your expectations are. Then, as you progress through the year, they get better and better at it.</p> <p>I think we need an inservice from our language arts colleagues to give us some strategies on how to get kids to write. We need to go through the stages/steps of writing through the final copy to deepen out understanding of the writing process.</p> <p>Grades help - so does candy!</p> <p>I use a three-ring binder. I print out one copy of each of the worksheets for that binder with extra lined paper. It saves a huge amount of time.</p> <p>Some of the things I have students put into their notebooks besides the usual stuff is a reflection on the hypothesis they made before the experimentation. They can compare their observations from teammate to teammate or table to table. The can also determine the source of error for their team or one of another team that got different results.</p> <p>Writing is an entry point to working in small groups - they bring individual thinking to the "group think" through the written word and it must be quality so the group can understand the thinking.</p>

MS/ HS	I have trouble staying caught up. What are some <b>strategies to keep on top of the grading?</b>	I try to stagger when I collect the notebooks. I announce to the students when I am going to collect them and what page they need to mark to make it easier for me. They add a post-it note to that page so I can quickly turn to it.  Do it on regular intervals so the kids know when the grading will happen. You will find yourself doing it as much for the kids as for yourself!
MS/ HS	<b>Who pays for them,</b> the kids, the teacher, the Science Materials Center?	I have the PTA buy mine.  The Science Materials Center has them available for us to order.  The students buy them. They are a required part of their Science materials. I require the theme notebook (black and white hard cover).  My students are expected to supply them for their classes in high school.  I buy them and the students buy them from me as a lab expense.
MS/ HS	How do I <b>assess</b> them? <b>What should be graded?</b>	I have a checklist for each of the lessons I think should be assessed - say four total throughout the unit. I use the checklist when correcting to make it easier.  Occasionally I have the labs graded by students using a scoring guide, so now they also score their notebooks as the labs are inside the notebooks.  Some teachers do and some do not have students put final draft of things into the notebook. It could be argued either way.
MS/ HS	<b>What should be included</b> in the science notebooks?	EVERYTHING including their homework, quizzes, exams, grade reports, etc. EVERYTHING goes in the notebook.  Even if I have the kids do a final presentation, the audience has a checksheet or scoring guide and a summary of that score will go into the notebook.  This really helps with loss of individual papers.  They should always leave a space in the notebook for work that they have missed and need to make up.

MS/ HS	Should I keep a <b>“master” copy</b> of the contents and the page numbers?	<p>After having done a unit more than once, I will have a “master” of what I want to see in a Table of Contents. This of course can always be added to but at least I will know how I want to change things.</p> <p>I keep an overhead copy so we can check everytime.</p> <p>I keep a notebook myself of all the things that should be there. I don't do the extensive writing but I keep the items pasted or taped into the notebook so that I at least know what is to be there.</p>
MS/ HS	My students always want to just rush through the notebook part. How can I get my <b>students to slow down</b> and really concentrate on their work?	<p>Occasionally have a notebook quiz in which they will have to use their notebook to answer some simple questions that make for a given “A” if they have managed their notebooks and kept them in good order. If not, they will give up the easy grade because of lack of attention to detail.</p> <p>Peer checks help.</p> <p>Knowing that they can use them on exams can help some students be more focused when getting down information.</p>
MS/ HS	The notebooks end up in various corners of the room. How do I <b>manage the keeping of the notebooks?</b>	<p>I have a special box (a bankers cardboard box or a milk jug crate) in which the notebooks are collected for each period. There is a “job” assigned to picking them up and passing them out. This way just one person is moving about the collection spot not the whole class.</p> <p>I have a hanging file in which the notebooks go. One representative from each table team goes to the file box and gets the notebooks for each of the team members. One hanging file is designated for each table team.</p> <p>I have a plastic file cabinet in which there are 15 qt. drawers. In those drawers are the materials they are working on, the notebooks for the table team, and the student reference books for the unit. The students also keep scissors, pencils, glue/tape.</p> <p>Every lab team has their own tub which is kept under a centralized table. When the students come into the room, they get their tub out.</p>

MS/ HS	I have the worst time getting students to remember to bring them to class each class period. What are teachers doing to make sure the <b>notebooks are available</b> for each lesson?	Students who do not bring them to class are asked to rewrite everything that was done in the class period. This must be done on their own time not during the next class.  I never let the notebooks out of class. They are for in-class work only.
MS/ HS	How do you <b>correct 150 - 180 per week?</b>	I dip in only occasionally with daily "drive-bys" to watch for things I need to harp at the kids about. When I dip in, I do only a class at a time taking home only those I can't get to during planning or afterschool.
MS/ HS	The kids don't manage their Table of Contents well. What are some strategies for making sure the <b>Table of Contents</b> is done well?	I have to be very intentional about making sure they have the Table of Contents done each and every class period. Then, there is always somebody in the class who will remind me about having forgotten to take care of this piece.  The first few times the students do their Table of Contents, I do the entry on the overhead projector or the whiteboard to make sure they understand just what it is I am hoping they will do.  You can make a certain number of points attached to the Table of Contents and when a student does not record the date or the entry or the page number, they lose points.  I keep a GIANT Table of Contents on the wall in the classroom and add to it as the students should each time we have a lab.
MS/ HS	What do I do about <b>the range of readers and writers</b> in the classroom so that it doesn't create a management problem?	I use writing prompts to get the reluctant writers to write.  Our lab write ups are practiced at all middle school and high school levels. We, as a staff, have all agreed how these should look so that students learn the drill and continue to reinforce it year after year. The rubric or the model is pasted into the notebook inside a cover or somewhere they can find it when they are new to the process.

		I make some labs rough draft and some final draft.
MS/ HS	What do I do about the <b>student who takes another's notebook</b> and writes other things in the notebooks not pertaining to Science?	I do not have this problem. I would consider it theft and come down really hard.
MS/ HS	Where do I make <b>comments?</b> Should I write on their papers or on post-it?	I use the left side of each page to jot down critical comments directly onto the page and leave space for the student to respond, if my comment requires it. I then mark the top of the page with a post-it sticking out so the students know that there is something needing their attention on that page. When they are done making any necessary corrections, they turn the notebook back into you and you can remove the post-its if they have successfully fulfilled your expectations on the missing pieces. I haven't encountered students who just take the post-it off without making corrections but since I have written directly onto their left side, I can check whether they have done the work or not.
MS/HS	What does a <b>good critical comment</b> look like?	<p>A well crafted critical comment should be of two parts. First, you need to comment on what the student has done well. What target are they hitting. If they are not hitting a target too well, what are they at least approaching. Then, you need to discuss what it is that they need to work towards.</p> <p>Some Critical Comment starters might be:</p> <p><u>PROBING FOR EXPLANATIONS:</u></p> <ul style="list-style-type: none"> <li>• “What do you mean by...?”</li> <li>• “I am not sure what this drawing is showing.”</li> <li>• “Labeling would help the reader know what your diagram is showing.”</li> </ul> <p><u>CHALLENGING A STUDENT TO GO FURTHER:</u></p> <ul style="list-style-type: none"> <li>• “Why do you think you got these results?”</li> <li>• “What is so important about this result?”</li> <li>• “How can you explain this data?”</li> </ul> <p><u>ASK FOR ELABORATIONS OF NOTEBOOK ENTRIES:</u></p> <ul style="list-style-type: none"> <li>• “What feelings do you have about this issue?”</li> <li>• “Describe <u>each</u> step of the process.”</li> </ul>

		Before a lab begins, the students need to put into their notebook the title, the hypothesis, materials and the methods with control of variables and the manipulated variable and responding variable along with the data tables they plan to use. I individually check each team before they begin, write hints, correct and recorrect before they begin their experiment.
MS/HS	What kinds of things can a <b>Science teacher and a Language Arts teacher collaborate</b> on when it comes to strengthening the writing done in Science?	Obviously communicating with each other about what is happening in Science and what could be practiced in Language Arts would be extremely helpful. Also, using the learnings in Science to write an article for a newspaper checking for all six traits of high quality writing.
MS/HS	What strategies are teachers using to assist the students in <b>marking where they leave off?</b>	Students can use a post-it to mark the last page. They can place a ribbon with a bead on it to mark like a Bible, where they have finished.  Other people have the students use a bookmark. Some folks have the kids clip off the corner of all pages that are used. They then turn to the next available full page without the snipped off corner.
High School	How can <b>data be more easily put</b> into the notebook?	Since students can download data from a palm, teachers can type out the instructions on exactly how to do this so that they always have access to how to do this. They can also have a set of directions on how to create a chart in Excel so that it is readily at hand.

## CELEBRATE OUR SUCCESSES:

- We are actually doing notebooks with our students in science!
- I find it helpful that the students can use them to share what they are confused about.
- I am perpetually optimistic with each new unit.
- They are fabulous to share with parents at conferences.
- Everything is in one place so the kids don't lose papers like they used to. I see students really liking that.
- They take such ownership in them and that ownership grows as they grow and grow.

- The notebooks really show that the students are learning something. This seems to be a great way to track a student's growth over the course of the school year.
- The notebooks show what I, as the teacher, must do to reteach what it is that is not getting across.
- The notebooks are causing me to rethink how I am teaching so that I can be intentional to meet this expectation.

## **BUT WE STILL HAVE NEEDS:**

1. We teachers need time to work the notebooks and learn more about what works for each of us but we most significantly need inservice on how to make critical comments in the notebooks and how to score them.
2. Keep adding to these types of documents to give us information that other teachers say about how to manage notebooks. This type of document is very helpful to all of us.
3. We need to print out the *Grade Level Expectations* that a unit covers and attach them to one of the upfront pages to communicate to parents and anyone else who examines the student's notebook what the unit is intending to cover.
4. We must KNOW the connections in reading, writing, and math that the notebook demonstrated.