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| **Grade 2****Unit Overview*****Lab Reports and Science Books*** |
| **Focus Teaching Points** | * Writing about science by using a lab report structure
* Writing procedures by studying mentor texts
* Generating our own experiments and trying them out using a scientific process
* Interpreting scientific results and developing conclusions
* Sharing scientific ideas and writing conclusions
* Using writing partnerships to revise
* Learning from other sources as well as experiments
* Self-assessing using writing checklists; setting goals
* Writing lab reports so that others can replicate experiments
* Using charts and tables to present data
* Studying how mentors write a “results” page
* Comparing results with the results of other scientists
* Studying results to learn, think, write and experiment more
* Using labels and titles to highlight important information, including failures
* Editing by using “technical vocabulary”
* Writing with precision and specificity
* Rehearsing and planning for information books based on our own expert topics (ice skating, snowboarding, biking, dancing) and connecting these topics to earlier science content (e.g. friction)
* Creating a Table of Contents for information books
* Drafting chapters in information books
* Including scientific information in writing
* Trying out craft strategies (writing techniques) observed in mentor texts such as using different fonts, colors, split drawings, arrows, labels
* Adding definitions
* Using comparisons to teach readers
* Including “hidden stories” with science writing
* Addressing one’s audience through introductions and conclusions
* Editing using writing checklists
* Editing (e.g. for apostrophe use, capitalization, use of commas)
* Celebrating
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| **Key CCSS Standards** | ***Writing Standards******(W)**** *2, 5, 6, 7, 8*

***Speaking and Listening Standards (SL)**** *1, 2, 3, 4, 5, 6*

***Language Standards (L)**** *1, 2, 3, 4, 6*
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| **Bends in the Road** | * Writing as scientists do
* Writing to teach others about our discoveries
* Writing about science topics within information books
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| **Recommended Professional Resource(s) to Guide Instruction** | *Lab Reports and Science Books* from the *Units of Study in Opinion, Information, and Narrative Writing, Grade 2* (2013) by Lucy Calkins, Lauren Kolbeck, and Monique Knight as well as resources in support of this unit under [heinemann.com](http://www.heinemann.com). |
| **Recommended Anchor/Mentor Texts** | * *Forces and Motion (Hands-On Science)* by John Graham and John Le Jarsor *Matter and Materials* by Jack Challoner and Maggie Hewson
* *Incredible Cross Sections* by Stephen Biesty
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| **Tips for the Unit** | * The unit, as written, addresses two important content areas: **writing and science**. As illustrated through each session, children are engaged in **both** scientific inquiry *and* the writing of informational texts (mostly in the form of procedural lab reports) as part of their Writing Workshop block. You may decide to combine the science and writing into this joint Writing Workshop/Science Workshop block as described in the unit, or if you prefer, teach the science during a separate block.
	+ If you opt to combine Writing Workshop and science, the combined workshop will “feel” different than your typical Writing Workshop. At times your minilessons and small group work will focus on writing; at other times your lessons and the practice will support teaching and learning related to science. As you move through the unit you will see that writing and science inquiry are also frequently intertwined.
* The authors of the Units of Study selected Forces and Motion as the science topic that would support the work of this unit. Given that this topic does not align with our current grade 2 science standards, the Plymouth Public Schools recommends *instead* teaching this unit alongside either one or both of the following science units: **Friction** and **Classifying Matter.** These units, aligned to the new science standards, are excellent topics for engaging children in hands-on inquiry, experimentation, and the scientific method. Some specific considerations:
	+ The **Friction** unit is a relatively quick-paced one and is an easy replacement for the topic (Forces and Motion) described in the unit. If possible, start with it first. After a few weeks of teaching content within the **Friction** unit, shift your teaching to **Classifying Matter**. Shifting to a second topic will show your students that the lessons they are learning about scientific inquiry and writing can be applied to any topic.
	+ Keep in mind that while it may be easy to pull from and rely on the activities that are suggested in the *Forces and Motion* or *Matter* and *Materials* mentor texts (e.g. the spring launcher, the windup toy, force meter), these activities are not related to your grade 2 science standards.  Instead, the mentor texts should be used to demonstrate *effective writing*, e.g. writing clear procedural steps for conducting science experiments, including the use of effective diagrams and “split screens,” using domain-specific terminology, elaborating by using comparisons (see chart on page 114).
	+ For specific learning experiences, including experiments, see the “Teaching Friction” and “Teaching Classifying Matter” documents created by Alison Riordon, PPS Science Coordinator, under this unit’s [Teaching Resources](http://ppsgrade2.weebly.com/teaching-resources10.html) page.
* To understand the trajectory of this unit, we highly recommend reading the *Welcome to the Unit* on pages vi-ix.
* Throughout this unit, children will be engaged in experiments; hypothesizing and recording findings; speculating to develop theories; organizing further experiments and writing **multiple** lab reports.
* Bend I: Students study a shared class topic.  This shared class topic relates to the science content you have chosen to study: **Friction** or **Classifying Matter**.
	+ Note about Day 1:The first day’s workshop is an intensive one-- children move through the entire scientific process--starting with asking and recording a question, then designing and finally conducting multiple trials of a simple experiment. Children jot and sketch as they go, creating a four-page lab report booklet started in the meeting area, with their hypotheses on one page, their procedures on another, their results on a third, and their conclusions on fourth.
* Bend II: As your students continue to conduct experiments and write lab reports, your goal will be to help them communicate clearly and to write precise procedures so that experiments can be replicated.  By the end of the bend, the goal is for children to be able to write these lab reports without scaffolding.
* Bend III is a turning point.  You’ll invite readers to write an information book that teaches readers all about a topic that the writer knows well (e.g. bike riding) and then--here’s the trick--relate this topic back to the research children have done on friction and/or classifying matter. The following link is a video clip from this unit at the beginning of Bend III: <https://vimeo.com/89014991>.
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| **Materials and Resources** | * Booklets of four pages to start with additional pages available as needed for “lab reports”.
* Paper should contain a space for drawings and a space for writing, with line sizes and numbers differentiated to your writers.
	+ See samples of lab reports within the units.
	+ See writing paper options at the bottom of the tab called “Latest News and Information” on [heinemann.com](http://www.heinemann.com).
* Materials for science experiments
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| **Assessment** | * Review writing samples alongside learning progressions from your last informational writing unit
* Assessment materials, including rubrics, checklists and learning progressions for information writing can be found under [Assessment](http://ppsgrade2.weebly.com/assessment5.html) for this unit
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| **Celebrations** | * This unit and the work of the children as scientists deserves to be celebrated! Use a space in your school to set up a science exhibition in which children put on display examples of some of their experiments. Guests can take part in these simple experiments with students as guides.
* Students can send invitations, hang signs and create fliers for the event.
* Lab reports and information books from the last bend can be displayed with props.
* See details under “Celebration” under Session 19, pages 133-134, of the unit.
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