

Unit 9 – Readers Can Read About Science Topics to Become Experts

This unit may seem ambitious for first grade, but it's actually critically important and tremendously joyful. Picture your young readers gathered together over books about dolphins. Imagine as they talk about dolphins' characteristics, they compare this animal to porpoises and whales, gathering this information from pictures or words in their books. Imagine them discovering how baby dolphins closely resemble their parents and other individuals in their species. Imagine them wondering how long baby dolphins stay with their moms as they search through the indexes and tables of content to find that information. In doing so, you'll have a vision of who they may be when they are graduate students! Alfred Tatum's and Dick Allington's work shows that too many children, when they are older, reject paths in science not because they are not interested (they are often tremendously interested), but because they don't have the reading skills to handle science texts. Carol Gilligan's work has also shown that a lot of girls drop science in part because the nonfiction reading isn't as appealing to them. You want your children to have as many choices as possible later in life, and that work starts now by teaching them that they can have a lifelong relationship with science. Teach them that they can be powerful readers of many kinds of texts. These early years are when children learn *how* to learn. The attitudes they develop now will be foundational in shaping their later success as readers.

Therefore, you'll want to make this unit a joyful exploration of a science topic you and your children can delve into deeply. Look to two sources in deciding what you'll study. First, look to your New York City Scope and Sequence for Science. In the New York City Scope and Sequence, for example, science includes Animal Diversity. You can make this exciting, especially if you think of including the Life Cycles of animals and the physical traits of a species. For example, show the cycle of growth as a butterfly transforms from a caterpillar to a cocoon to a butterfly. Second, look to your resources. You'll need lots of accessible books, and it would be great if there were a museum or a park or a zoo you could visit as well. Hands-on experiences and collecting really help children understand and remember what they are learning in science. You'll want them to have opportunities to gather materials and information on animals. Imagine your topic is a big umbrella with smaller categories underneath it. In thinking in this way, you'll have a way to organize concepts, as well as baskets of books, for your study. You might collect all your books for this study first, and then imagine your categories.

Organizing for Reading Workshop

First, know that your kids will still be reading their just-right books at home during this unit. You also want to give them some time during the day to read and talk with a partner about their just-right books. Try to give fifteen to twenty minutes for children to do this reading work, and you'll do your day-to-day work of assessing and coaching independent readers during this time. You'll find that some children may be ready to move up levels, while others need book introductions, and yet others need attention to their clubs.

For the science nonfiction reading workshop, you'll organize your books as you did for your first nonfiction reading unit in February. You want your classroom to have baskets of accessible books that are labeled with a special subject that is part of a whole class study. Try to imagine baskets that will be high interest and offer a range of levels – simple, just-right and more difficult books. If your class will study City Animals, for instance, you could organize baskets around these categories: Pigeons, Squirrels, Rats and Rodents, Dogs, or cats. This task is twofold – as you make baskets of books your kids will want to devour, you will give them a vision of why science matters in the world and how wonderful it is to study. Comb your school for books, go to the school and local library, ask families for any loans or donations, and possibly make some book orders. Look to our Web site: readingandwritingproject.com for recommended titles.

You have an important decision to make as you get ready. *Either* you can make these baskets ahead of time so all is ready for the unit. You might even have them labeled and off limits so the children are chomping at the bit to get to them. *Or* you can have the books simply loose on tables, and you can invite the children to organize them into categories and baskets. Of course, you'll be quietly coaching and whispering in, saying things like, "Oh, how exciting! This is the way, of course, that real scientists work – they browse the research, they come up with topics of study, then they narrow down their sources of information and look deeply at certain areas. So you may decide to invite your kids on the whole journey, knowing that it will be messy for a day or two as you organize your library. If you invite children along, know that they may come up with a course of study, or basket, such as "Funny Looking Animals," which you may have mixed feelings about, but which will thrill them.

Either way, the end goal is to have baskets of books. Remember what you practiced in your first nonfiction unit and double check that the baskets have books that are accessible for your children. It's lovely if you have some books with different kinds of structures and text features. Fortunately, there are a lot of children's books on animals and insects. Go for books that are short and focused so children can read each book from front to back. This will help them improve their stamina and volume as well as their comprehension. Unlike in your fall unit, it's possible that you will want a few books children do not read in their entirety. Instead, as scientists do, they can 'dip into' the book for research, reading only certain sections. Keep these in a special reference basket so you'll be ready to teach children how to use an index, etc. If you have a few books with helpful diagrams and entrancing pictures but text that is too dense, label these 'Look Books' so children know they don't have to try to struggle with the text.

Of course, you'll want your children to have a stable club so each day they can teach each other what they have learned. The children who gather around one basket are like a research team that will be experts on animal growth or animal species. Use words that will get your children excited, words like: researchers, scientists, investigators, lab partners, etc. Your research clubs or teams will probably work in one or possibly two baskets during this unit.

During read-alouds and minilessons, steer children to sit next to their club members so that they can practice having strong conversations and will also benefit from your scaffolding during whole class instruction. Sometimes you may want children to turn and talk as a club and other times, you may find it useful for children to turn and talk just to one other child, a partner. You can divide clubs of four into two partnerships so that kids can have a consistent person to talk to when you say “partner.”

Getting Started: Creating a Rich Learning Community

Goodman’s research on supporting ELLs has taught us a lot about how to support all children. It’s clear that children benefit from immersion studies, where there are lots of pictures, word charts, home-made glossaries, etc., in the room, and where they are all learning lots of new vocabulary in a meaningful context. Decide on a place in the room where you can make some word charts, and expect that when you do minilessons and read-alouds, you’ll be putting up visual explanations of important words. It is helpful to make annotated diagrams (drawings of different animal species, animals that live in our region, how animals adapt to their environment), so create some space for these.

You’ll start with a read-aloud of a text that you and your children can mine for new big ideas and words – one that introduces the Physical Structures of an Animal, for instance. From this read-aloud, you’ll start your vocabulary word charts. You’ll also model for your children how they can recall the nonfiction strategies they learned in their last nonfiction unit, such as previewing the text, making a reading plan, and monitoring for comprehension as they read. Think ahead to which strategies your children need reinforced, and which new ones you may introduce in this unit (there won’t be many).

Remember in your first read-aloud that you don’t have to model all the reading practices children need! You can, for instance, have a lens such as ‘engagement’ for your first read-aloud, and all your modeling will be aimed to get your children engaged with the course of study you are embarking on. The lens of engagement is a smart one to start with as it launches your unit with passion. Think about the story you’ll tell before you start the book, such as the story about animals that live near us or an animal you see every day. Your passion and seriousness will ignite your children’s passions.

Other lenses for read-aloud that you can use for your next few sessions might include monitoring for comprehension and using fix-up strategies, using all the information on a page, noticing new information and making Post-its, and having an emotional response as you read. For each of these, look at your read-aloud and think about breaking the skill into a few strategies, modeling the strategies a few times, and then prompting children in their turn-and-talk to give it a try. For instance, if you are monitoring for and fixing-up comprehension, you might demonstrate that you stop after some manageable sections or chunks and ask yourself, “What have I learned here?” You try to cover the text and put it in your own words. Show how you use your word-solving strategies to make sense of hard words. You notice when it feels confusing and you reread. You read on to see if it makes more sense. You compare what you are learning to what you already knew. You talk it through with a partner. Mark in your read-aloud text the places where you will

demonstrate these strategies, and then, at the start and end of the read-aloud, tell the kids why you did this work and when they would do so in their own reading.

As you did in the fall, choose some read-aloud books that will allow you to start with more accessible text so children will construct some knowledge and build vocabulary. Then you may read some that allow you to add on to what you know. You'll demonstrate how, as you become expert in a topic, some of the books that looked too confusing now make sense because you know words like 'habitats' or 'endangered.' Keep track of your more emergent readers, and make sure they are with you in the study – you don't want any kids falling off the train. You may also do read-aloud and shared reading in small group work with some of your children. These don't have to be reserved for large group.

Reading workshop minilessons may be organized into the following broad categories:

- Readers and Scientists Try to Understand All the Parts of Our Books
- Readers and Scientists Accumulate All of Our Thinking About a Topic and Share It with Others

Readers and Scientists Try to Understand All the Parts of Our Books

As your children launch themselves into their baskets, begin your teaching by having them talk to their clubs or a partner about what they remember about reading nonfiction. You might ask them, "What do nonfiction readers do as they think about getting started?" Listen closely to your students, and then make some charts to support their skills. Sum up their conversations, and, if needed, add to them, reminding children that the first thing they would do is browse the basket and choose a book wisely. Remind them to choose a book they think they can read easily and to save the harder ones for later when they are experts, or to use later as 'Look Books.'

Next, remind your children to have Post-its ready so they can accumulate the new information they are learning. You'll probably need to do a reminder lesson on when readers use Post-its for, including for something they learn that is new, something that surprised, excited, or dismayed them, and headings they can make for big parts of the text. Your children may not create Post-its or talk about ideas yet. Don't worry – you can teach this during the unit. At the start your goal is to teach kids to read to understand, and to use Post-its to get ready to talk to their clubs.

Teach your readers that when they are done reading they will open their book, glance at their Post-its, and point to the pages as they explain to their club members what they have learned. In this unit, you can help kids extend their club talk by explaining that scientists ponder their new information together. They think hard about whether what they are learning is exactly the same or slightly different. They compare examples. Also, they ask questions to guide their study. For instance, if one child learned that baby animals resemble their parents' characteristics and another child learned that different animal families resemble each other, coach this partnership to talk about what questions this raises and what they want to know.

You'll need to do some teaching that supports your readers in synthesizing information across a page of their text. Show them how to start with the big headings, and to start on the upper left of a page with the biggest print. Teach your readers to read the words in the big sections first and to say to themselves, "This is mostly about..." Then teach them how to go to the pictures and figure out if the picture is an example of the heading or topic, or if it is something else. If it is something else, they need to ask, "Why is this here?" Sometimes they have to keep reading, as the picture might go with something later in the text. Show kids how to use the captions. Then show them how to cover the whole page and say to themselves and their partner, "The big thing I learned here is..." You'll undoubtedly want to reinforce this teaching in shared reading, either as large group or small group instruction. You may decide, after watching your children, that some would benefit from a guided reading group or a strategy small group as well.

Teach your children, as they are reading, to pay attention to the new technical words they are learning, such as 'physical structures,' 'species,' 'adaptation,' or 'characteristics.' Children can add words to your word charts along with explanations or pictures to describe their meaning. They should certainly tell their partners about the words that seem really important to their study.

Two other strategies you can coach partners or clubs to practice are both related to engagement and understanding. One is to read aloud a small part of the text, trying to sound like their teacher. This means they would preview the hard words and practice pronouncing them. They would learn to pick a part of the text that seems surprising or important. They would try to read it fluently and with a sense of drama. They could also 'act out' the text using their hands and bodies to explain or imagine the action, so that, for instance, if a child is describing the action of an animal, he might close his hands to show how the animal begins to grow and walk. Then he might slowly open them, imagining the animal as it grows and develops. Then he might show the animal as he begins to reach maturity. This kind of dramatic interpretation helps children care about and remember their learning. It also helps them incorporate their knowledge through their bodies – they feel it. Also, it's joyful, and learning science is fascinating, challenging, and fun.

As your children move from text to text, teach them to compare what they are learning in each text. They should make Post-its about new information. They should also, at this point, begin to have ideas and to express these to their partners and clubs. You will probably have to model this a lot as it's easier to show information than to come up with an idea. Model how you say, "I notice that...and the idea I have about it is..." You can also model how readers push themselves to say, "I think this matters because..." For new teaching, you may show your students how to push themselves to say, "This reminds me of..." Then they can either give a real-life example or they can go to another book to find an example.

One nonfiction reading strategy you'll teach in this unit that will be new to your readers is how to look at a big book to see if there is *part* of it that might be helpful to their research. A big book on animals, for instance, might have one chapter that will be interesting for your children who are studying animals in their environment. Be cautious,

as these bigger, more general books may be difficult for your children to navigate on their own. Young readers really do not need to know how to do this kind of search at this point in their literacy lives. However, you will want to teach them that readers will come upon their subject in books that don't have titles that match their subject. For instance, the book might not be titled 'Animals' Physical Characteristics,' but might still have a couple of pages on how an animal develops. Choose an accessible book that you can use to demonstrate that readers sometimes read a general book to get a big picture of how their subject fits into the bigger class study. If you want to go further, you could teach kids how the table of contents or index are useful, and show them how sometimes readers realize the part of the book which will be particularly helpful to them.

Readers and Scientists Accumulate All of Our Thinking About a Topic and Share It with Others

During this unit, we want our students to have a sense that they are becoming stronger at reading and collecting information while also becoming smarter about a topic of study. You might tell them that one thing scientists and researchers do is share their learning with others.

You could tell your students that often researchers get together at least once a year for a big conference where researchers from all over the world share what they've learned about a topic. Some researchers might give lectures or talks, while others make posters, write books, create inventions, and write articles about their topics. You could set a date with your students and say, "This is the day that we'll share our information." For a few days prior to the 'conference day' you could find some time to let your students prepare for their presentations.

Depending on the time you have to devote to this, you might decide to simplify everyone's lives and provide opportunities for reading clubs to present their research findings orally to each other. In order to do this, the readers will have to look back over the artifacts of their work together, such as Post-its and other graphic organizers they may have used to record their ideas, thoughts, and discoveries. Teach them to find text evidence that confirms their findings and how to determine importance with regard to information.

If you can, make your room into a grand collection that both supports and displays the work and thinking that's going on in the reading workshop. Perhaps students will want to make information posters of the different topics they've studied, drawing, illustrating, and labeling the information in the ways that nonfiction writers do. Your children can then move back and forth between their books and these objects. They may decide to gather baskets of objects at their tables that will sit beside their baskets of books.

Word Study/Phonics

During the last months, you will probably do much of your word study work in small groups to allow children to practice phonics concepts you've taught thus far. *Phonics Lessons for 1st Grade* by Pinnell & Fountas also provides assessments which you can use to assess what you've taught up to this point. Based on these assessments, you might find

that you need to review concepts which are necessary for children to be prepared to begin 2nd grade. For about twenty minutes twice a week, you can have children work in small groups set up for phonics practice based on your assessments.

If, on the other hand, you find that your students are ready for more sophisticated work, especially if they are reading above Level I (which is the end of the year benchmark for 1st Grade) you might introduce long vowel spelling patterns.

If you decide to teach...	Suggested Lessons in <i>Words Their Way</i> 4 th Edition	Suggested Lessons in <i>Phonics Lessons 1st Grade-</i> Pinnell & Fountas
<ul style="list-style-type: none"> • Short and Long Vowels • Long Vowel Spelling Patterns VCe (Ex. -ake, -ate, -ame,) • Compound Words • High-Frequency Words 	<p>6-1, 6-2 (pgs. 188-189)</p> <p>6-4 to 6-15 (pgs. 190-198)</p> <p>7-1 (pgs. 220-221)</p> <p>Pgs. 182-183</p>	<p>LS 12 to LS 16 (pgs. 241-260)</p> <p>SP5 to SP8 (pgs. 299-314)</p> <p>WSA 13 (pg. 463)</p> <p>HF 1 to HF 8 (pgs.325-353)</p>