

# Evaluation of a Reference Work

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## 1 Abstract

SML Christian Academy should replace the existing reference source, *Everything You Need to Know About Science Homework: A Desk Reference for Students and Parents* by Anne Zeman and Kate Kelly (2005) and replace it with Scholastic's *ScienceFlix*. The aforementioned reference work, published by Scholastic, is out of date and is inaccessible to many in our student population.

## 2 Background

The reference work, *Everything You Need to Know About Science Homework: A Desk Reference for Students and Parents* by Anne Zeman and Kate Kelly is a resource published by Scholastic in 2005. The first year of publication of this particular resource was 1994 in the USA. SML Christian Academy has had and used this resource extensively since it's purchase in 2006. The original intent of the purchase of this book, according to staff, was to give students an additional, easy-to-read resource which would cover outcomes in the grades 4, 5, and 6 Science curriculum in Alberta. Up until January 2019, SML's library has been housed on the stage in the gymnasium. The majority of resource and reference materials have been circulating in classrooms for at least three years, which is the case with this reference work.

### 3 Rubric

Rubric for evaluation of a reference work, based on *Everything You Need to Know About Science Homework: A Desk Reference for Students and Parents* by Anne Zeman and Kate Kelly:

<i>Criteria</i>	<i>Exceeds Expectations</i>	<i>Acceptable</i>	<i>Below Expectations</i>
Canadian Content (distance, weight, places, spellings)	All Canadian content	Some Canadian content, some American content	<b>All American content</b>
Images (digital, photographs, diagrams, graphs, charts)	<b>Variety of images, photographs, diagrams, charts, colourful, at least two images per page</b>	Some variety of images, some images are in black and white, less than two images per page	Very little images, one or no images per page
Appendix, glossary, or index	<b>Present</b>		Not present
Ease of use	<b>Portable (usable outside of school), student-friendly usage</b>	Somewhat portable (may rely on a reliable internet connection or being downloaded for offline use), somewhat clear headings	Not portable, must be used with a regular desktop computer, relies on IE or Silverlight, confusing navigation of the site or text
Accessible to a variety of students	Variety of Lexile levels, multicultural representations, accessible for students who need help reading the text, definitions are easy to find, contents are easily located and numbered or hyperlinked	Lexile levels may be standardized to grade level, passages or readings may vary slightly, little multicultural representation, limited ability to reach many students' needs, contents may be accessible but may be harder to find	<b>Lexile leveling is standardized, one option for reading about a particular topic or idea, no multicultural representation, does not reach multiple students' needs, contents and themes are non-existent</b>
Reliability	Sources are listed, publisher is reliable, trusted in the community	Sources are listed, <b>publisher is reliable</b>	<b>Sources are not listed, publisher is unreliable</b>
Accurate information (facts, words currently in use)	Information is current and accurate according to research and new findings	Information is somewhat accurate	<b>Many pieces of information are inaccurate</b>
Currency	Less than 3 years old	Less than 5 years old	<b>More than 5 years old</b>
Purpose	Clear, student-friendly	<b>Clear, somewhat student-friendly</b>	Not clear, not student-friendly
Curricular connections	<b>Meets many curricular outcomes</b>	Meets some curricular outcomes	Meets few/no curricular outcomes
Efficient Use of Space	<b>Yes</b>		No

## 4 Evaluation

*Everything You Need to Know About Science Homework: A Desk Reference for Students and Parents* by Anne Zeman and Kate Kelly overall has served its purpose at SML Christian Academy and is overdue for replacement. With the growing needs of our student population, differentiation is required in our reference materials.

This particular text is relevant in terms of the curriculum, as almost all sections of grade 4-6 science are covered, with the exceptions of the entirety of mechanisms and levers (grade 4), wetland ecosystems (grade 5), and forestry (grade 6). This particular text is irrelevant, however, to students in our school community as the Lexile level is far too complex for many of our students (Lexile level is 970). The absolute top end for grade 4 reading is 950, and this text comes in above that level, making it inaccessible for most grade 4 students. To assume that students in grades 4-6 are at the same reading level does those students a disservice.

This text is also irrelevant to our school community as it does not contain Canadian spelling, measurements, or referents (in math). Canadian students are not typically taught imperial measurements or about American landmarks, so citing feet when discussing the height of a volcano is not something our students have as a referent. Speeds, as listed on page 18, in miles per hour do not mean the same thing to our Canadian students as American students.

The purpose of the text is to inform, but in our school's context the purpose of the text also appears to be both biased and persuasive. There are scientific understandings in the text which do not correlate with the school's belief system, so up-front scaffolding is to be done by the teacher to offer an alternative viewpoint. For example, on page 16, dinosaurs are written as "[first appearing] on earth 230

million years ago,” to be fair, finding a reference which includes other viewpoints, including our beliefs will be next to impossible.

The currency of this text is out of date, as most reference materials are kept a maximum of 5 years. This particular text is from 2005 and still lists Pluto as a planet. There are no sources listed in this reference book, which brings into question the entire accuracy of the text and how it is written. There is no “about the author” section, which brings into question the reliability of the author. It should be noted that this text was purchased for ten dollars, and given that it is used extensively within the school, it seems to have fulfilled its worth.

Since this text floats between three different classrooms throughout the school year, it is efficient in its use of space, as it is small and covers a lot of content. It would be a more efficient use of space if it were reliable and accurate.

## 5 Potential Replacement

The potential replacement I have found is *ScienceFlix* by Scholastic. *ScienceFlix* is a portal where students and teachers can log in to watch, read, explore, and be redirected to other sites about various topics in Science. Science experiments are offered, as well as career suggestions for students who may be thinking about their future. *ScienceFlix* is an annual subscription-based service, however, Alberta Education provides schools with portal access, so provided SML is able to obtain their jurisdiction code and password and activate the product through Alberta Education, it is free for anyone within the school’s walls and connected to the school’s wi-fi. There are other options available as well through the Alberta Government website on their online reference center page (Government of Alberta, 2019).

## 6 Evaluation of Replacement

To see the evaluation on the rubric at a glance, please see Appendix B. According to the rubric above, *ScienceFlix* meets the acceptable standard for Canadian content. When searching on the site for “colour” no results were returned. However, in an article about volcanoes, the measurement was taken in feet, but listed metres in brackets afterward. There are some Canadian places listed, but mostly American content is noted.

There seem to be less images on each webpage than there were in the book, which brings the image criteria into the below expectations standard, rather than the exceeding expectation standard. However, it should be noted that there are videos on the webpages as well.

There is an appendix and a glossary available on each article page as well as the top of each page, which brings the appendix, glossary, or index criteria to the acceptable standard.

In terms of the ease of use, *ScienceFlix* falls into the acceptable category, mainly due to access being limited to being used on school property and using the school’s internet connection to be used without a fee. Many of the readings on the site are sectioned in such a way that navigating the site is easy, with the table of contents and lists of sections along the left navigation pane, with tabs at the top for science experiments and other exploratory opportunities.

Accessibility to students was one of the largest shortfalls of the previous reference book, and *ScienceFlix* seems to exceed expectations in many ways. There are a variety of texts students can choose from for learning about many of the provided topics, at a variety of Lexile levels. In looking at articles related to volcanoes, I noticed the range in Lexile levels between 750 and 1200. This is much more accessible to students in terms of choice versus a hardcopy book. Built

into the site is options to have the text read aloud sentence by sentence, and as each word is read it is highlighted. There is no need for students to use or have a read-aloud extension in Chrome while using this site. Another reason this text is more accessible is that key words are written in a bold font and definitions are linked below the text. As mentioned earlier, adding videos increases the accessibility of the text as well.

In terms of reliability, the sources are listed at the bottom of each webpage, which demonstrates that the text comes from an external source. The Scholastic book company has some reliability as a source in the community, but not enough to indicate that it can fall in the exceeds expectations category.

Based on what I have read, the accuracy of the information exceeds expectations, as it offers sources for their findings and I could not find any information on the site which was inaccurate.

The currency of the text is less than three years old, which exceeds expectations for this piece of criteria. Since the reference is an online resource, adding or substituting text in favour of more current research is easier than publishing another book to make a small correction or addition.

The purpose of the text is clear and student-friendly as it provides students opportunities to “go deeper” in the left navigation pane, it provides information which is presented to students in an accessible way, and it does not show its bias outright. I would have liked to have observed this resource explain multiple perspectives in regard to dinosaurs and the timeline of the Earth, but as I mentioned earlier, it would be incredibly difficult to find a completely unbiased scientific work or one that included every alternative viewpoint.

Finally, curricular connections between the Government of Alberta and the various databases the Government provides to schools in Alberta are available through the Alberta Government website. A specialized list for Division Two (grades 4-6) is available through the ORC Support site (Online Reference Center, 2016).

## 7 Conclusion

In conclusion, the reference work, *Everything You Need to Know About Science Homework: A Desk Reference for Students and Parents* by Anne Zeman and Kate Kelly, is out of date and inaccessible to many students in grades 4-6 at SML Christian Academy. A free option for substitution, provided the school is able to obtain their jurisdiction username and password for each school year is *ScienceFlix*, which provides students opportunities to learn much of the same content, more current content at their level.

## References

Division II Science. (2016, April 10). Retrieved February 3, 2019, from

<http://www.onlinereferencecentre.ca/division-ii-science.html>

Online Reference Centre - LearnAlberta.ca. (n.d.). Retrieved February 3, 2019, from

<http://www.learnalberta.ca/OnlineReferenceCentre.aspx?lang=en>

ScienceFlix. (n.d.). Retrieved February 3, 2019, from <http://scienceflix.scholastic.com>

Zeman, A., & Kelly, K. (2005). *Everything you need to know about science homework*. New York:

Scholastic Reference.



## 8 Appendix

### Appendix A

Blank rubric

Criteria	Exceeds Expectations	Acceptable	Below Expectations
Canadian Content (distance, weight, places, spellings)	All Canadian content	Some Canadian content, some American content	All American content
Images (digital, photographs, diagrams, graphs, charts)	Variety of images, photographs, diagrams, charts, colourful, at least three images per page	Some variety of images, some images are in black and white, less than three images per page	Very little images, one or no images per page
Appendix, glossary, or index	Present		Not present
Ease of use	Portable (usable outside of school), student-friendly usage	Somewhat portable (may rely on a reliable internet connection or being downloaded for offline use), somewhat clear headings	Not portable, must be used with a regular desktop computer, relies on IE or Silverlight, confusing navigation of the site or text
Accessible to a variety of students	Variety of Lexile levels, multicultural representations, accessible for students who need help reading the text, definitions are easy to find, contents are easily located and numbered or hyperlinked	Lexile levels may be standardized to grade level, passages or readings may vary slightly, little multicultural representation, limited ability to reach many students' needs, contents may be accessible but may be harder to find	Lexile leveling is standardized, one option for reading about a particular topic or idea, no multicultural representation, does not reach multiple students' needs, contents and themes are non-existent
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Currency	Less than 3 years old	Less than 5 years old	More than 5 years old
Purpose	Clear, student-friendly	Clear, somewhat student-friendly	Not clear, not student-friendly

Appendix B

Rubric of evaluation for *ScienceFlix*.

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