Journal of Emerging Investigators
Where students become scientists

Introduction to Scientific Primary Literature

Much learning is done through reading textbooks. But where does the information in textbooks come from? This handout and accompanying paper will help you learn more about how information makes its way to your textbook.

At universities, and other research institutes, there are many scientists performing research. When an interesting discovery is made, it must be shared with other scientists working on similar research. Scientists also have a responsibility to share their findings with the public.

The primary way to share results is by publishing a paper in a research journal, similar to the paper we will be looking at today. When a paper is submitted for publication, it is sent out to several other experts in the field. These reviewers assess the rigor of the research and provide feedback to the authors. This process is called peer review. Once the authors of the manuscript address the suggestions of the reviewers, their paper is published and made available for others to read.

When an interesting discovery is made, other scientists may try to reproduce the findings and either confirm or refine the initial results. Over time, as the initial discovery is supported by further evidence (passes the "test of time"), it makes its way into your textbook!

The paper for today was published in the Journal of Emerging Investigators (JEI), with research performed by a middle or high school student. JEI accepts submissions from any middle or high school student interested in publishing a scientific manuscript. Just as in other professional journals, papers submitted to JEI go through a peer review process. Once the paper is resubmitted with the changes recommended by the reviewers, it is published to the JEI website (www.emerginginvestigators.org/) for anyone to read.

Paper overview

Every published paper, regardless of the journal in which it was published, has a few key components. These components help identify who did the research, where it was performed, and when it was performed. Try to find them in the paper you've been given:

Names of the researchers: _____

School where scientists did the work: _____

Date when article was received: _____

Date when article was published: _____

Main question being asked: _____

_____

One method that was used: _____

Page of Figure or Table #1: _____

Main conclusion of the paper: _____

_____

Names of the researchers from reference #2:

_____

Names of the sections in the article (every scientific article uses the same sections!):

_____