

Weight of a Shadow Research Paper

In a 2 - 3 page essay answer the following question:

How much does a shadow weigh?

While the effects aren't huge, light does push on the objects it hits just a little bit. If that's true, than an object outside on a sunny day should experience a *slightly* larger normal force than if it were shielded from the Sun's light. How big, exactly, is that difference?

In exploring this question, investigate the following:

How is it that light can exert a force if it is has no mass?

How would this force from the light compare if the object it pushes on is in space verses on the surface of Earth?

Layout:

Your research paper should be written in three sections. These can be organized explicitly, with sub-headings, or organized more implicitly. The sections are:

I. What I Know, Assume, or Imagine

II. The Search

II. What I Discovered

What I Know, Assume, or Imagine:

Before conducting any formal research, write a section in which you explain to the reader what you think you know, what you assume or what you imagine about the topic. What do you think the answer to the research question is and why?

The Search:

Test your knowledge, assumptions or conjectures by researching your paper topic thoroughly. Conduct first-hand activities like writing letters, making telephone calls, initiating face to face interviews, and going on field trips. Also, consult useful secondhand sources such as books, magazines, newspapers, films, tapes, electronic sources, and so on. Be sure to record all the information you gather. You might want to do some of the following: arrange an interview with an expert such as a university professor or JPL employee, as well as check out a book on the subject, read several pertinent articles, or see a film. Write your search up in a narrative form, relating the steps of the discovery process . Do not feel obligated to tell everything, but highlight the happenings and facts you uncovered that were crucial to your hunt and contributed to your understanding of information using documentation when appropriate.

What I Discovered:

After concluding your search, compare what you thought you knew, assumed, or imagined with what you actually discovered; assess your overall learning experience; and offer some personal commentary about the value of your discoveries and/or draw some conclusions. The results may surprise you.

Documentation:

Your paper must include a bibliography with at least three separate sources. No points will be awarded to essays without a bibliography. MLA format.

Format:

2 - 3 pages + bibliography, 12 pt font, Times New Roman, double-spaced, 1" margins