

The Role of Computers and the Internet in the Classroom

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April 25th, 2013

Introduction

- ① Practical Uses
- ② Research
- ③ Interactivity
- ④ Implementation

Practical Uses

- Blackboard vs Whiteboard vs Smartboard
 - useful, convenient, conducive to learning?
 - clarity of information presented to pupils.
 - PowerPoint, OHP etc.
- Projector
- Computer Suite
- Internet

Must resist the temptation to use the facilities "because they're there" and instead use them to aid learning for the students and, where applicable, ease the work of the teacher.

Research

- The internet is now commonplace in schools.
- Allows use of huge pools of knowledge, but the principles of the web must be taught before it can serve as a useful tool.

Many benefits

- individual/group research
- further study of interesting topics.

Must be treated with caution

- supervision
- locating reliable sources
- learn how to search.

Research

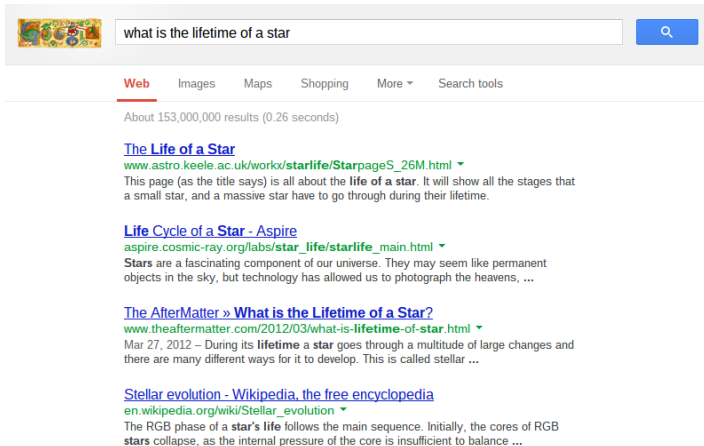
Other studies have found the same thing: High school and college students may be “digital natives”, but they’re wretched at searching.

“Why Kids Can’t Search” from Wired.com.

- Computer science added to IB Science in February
- Google SearchEducation
- Yahoo Smart Search
- Open University
- Need to learn basic search techniques.
 - don’t ask the search engine questions - terms, not why? what? etc.
 - think about the search - could it be misrepresented?
 - specific search syntax “-”, “quoted text”, “site:” etc.
- Often not taught because the teachers are not taught.

Research

- Not specifically physics, but essential part of the scientific method.



A screenshot of a Google search results page. At the top, there is a search bar with the text "what is the lifetime of a star" and a magnifying glass icon to its right. Below the search bar, there are tabs for "Web", "Images", "Maps", "Shopping", "More", and "Search tools". The "Web" tab is selected and underlined. Below the tabs, it says "About 153,000,000 results (0.26 seconds)". The first search result is titled "The Life of a Star" with a blue link to www.astro.keele.ac.uk/workx/starlife/StarpageS_26M.html. The description says: "This page (as the title says) is all about the **life of a star**. It will show all the stages that a small star, and a massive star have to go through during their lifetime." The second result is titled "Life Cycle of a Star - Aspire" with a blue link to aspire.cosmic-ray.org/labs/star_life/starlife_main.html. The description says: "Stars are a fascinating component of our universe. They may seem like permanent objects in the sky, but technology has allowed us to photograph the heavens, ...". The third result is titled "The AfterMatter » What is the Lifetime of a Star?" with a blue link to www.theaftermatter.com/2012/03/what-is-lifetime-of-star.html. The description says: "Mar 27, 2012 – During its **lifetime** a **star** goes through a multitude of large changes and there are many different ways for it to develop. This is called stellar ...". The fourth result is titled "Stellar evolution - Wikipedia, the free encyclopedia" with a blue link to en.wikipedia.org/wiki/Stellar_evolution. The description says: "The RGB phase of a **star's life** follows the main sequence. Initially, the cores of RGB **stars** collapse, as the internal pressure of the core is insufficient to balance ...". At the bottom right of the page, there are navigation icons for back, forward, and other search functions.

what is the lifetime of a star

Web Images Maps Shopping More Search tools

About 153,000,000 results (0.26 seconds)

[The Life of a Star](#)
www.astro.keele.ac.uk/workx/starlife/StarpageS_26M.html ▾
This page (as the title says) is all about the **life of a star**. It will show all the stages that a small star, and a massive star have to go through during their lifetime.

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arXiv.org > search

Search or Article-id

"schonberg chandrasekhar" AND limit

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All papers ▼

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arXiv.org Search Results

[Back to Search form](#)

The URL for this search is http://arxiv.org/find/all/1/all:+AND+EXACT+schonberg_chandrasekhar+limit/0/1/0/all/0/1

Showing results 1 through 2 (of 2 total) for all: ("schonberg chandrasekhar" AND limit)

1. [arXiv:1207.5972](#) [pdf, other]

Quasi-stars and the Schönberg-Chandrasekhar limit

[Warrick H. Ball](#)

Comments: PhD dissertation, University of Cambridge. 145 pages. Dissertation submitted 19/4, examined 17/5, corrections approved 6/6, degree approved 3/7, awarded 21/7

Subjects: **Solar and Stellar Astrophysics (astro-ph.SR)**; High Energy Astrophysical Phenomena (astro-ph.HE)

2. [arXiv:1201.5560](#) [pdf, ps, other]

Quasi-stars, giants and the Schönberg-Chandrasekhar limit

[Warrick H. Ball](#), [Christopher A. Tout](#), [Anna N. Zytkov](#)

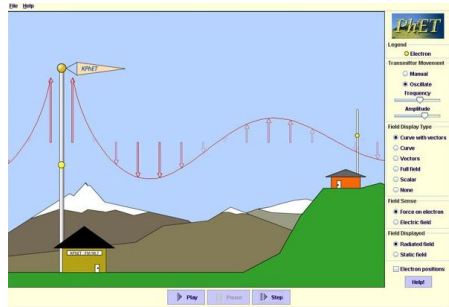
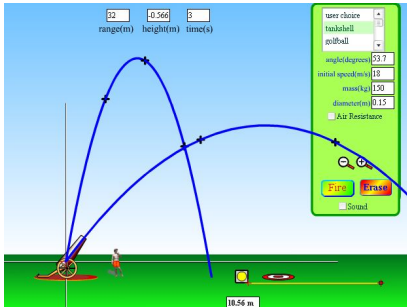
Comments: 9 pages, 7 figures, published in MNRAS. Updated to (more closely) match published version

Subjects: **Solar and Stellar Astrophysics (astro-ph.SR)**

[Back to Search form](#)

Interactivity

- Brilliant tools available for teaching
 - Videos - Youtube, Ted
 - Animations - PhET



Implementation

- Computers and the internet are excellent resources
- Must be treated with caution to begin with
- Require education of teachers where needed
- Some decisions must be made
 - is it always necessary and beneficial?
 - how to introduce skills to students?
- Why?
 - Essential skills
 - Advance beyond simple maths