

YouTube Physics: Using online movie resources

VCE Physics Conference 2010
Session A2
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Abstract

- There is a large amount of online video resources suitable for VCE Physics. Incorporating video into your lessons is a great way to engage your students. During this session I will show you some of my favourite YouTube clips as well as look at a number of physics web sites that have video demonstrations. We will also look at some video software tools that allow you to play different format videos as well as converting video clips to different formats..
- This is an updated, updated repeat of the session I gave for the last 2 years!

Wow!!



Online Movie Resources

- Different formats
 - .mov (quicktime)
 - .avi .wmv (windows media)
 - .flv (flash video)
- Require different players
 - Quicktime player
 - Real Player
 - Windows Media Player
 - Adobe Media Player

Some online Physics Videos (mpg)

- Wake Forest University
 - A number of short demonstrations
- <http://www.wfu.edu/physics/demolabs/demos/avimov/bychptr/bychptr.htm>
 - Can click to play or right click to save
 - Can embed in a presentation ☺
 - Saved in mpg format



WFU Screenshot

WFU | Physics

Academics Research People Colloquia Info

Videos By Chapter

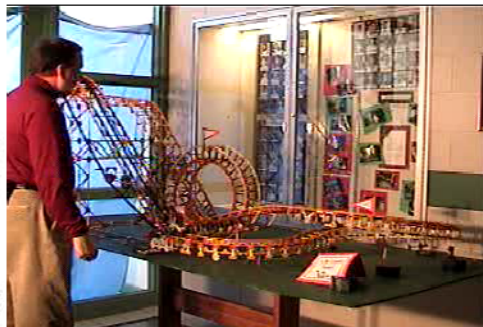
Mechanics	Newton's	Energy	Motion
Wave	Sound	Electricity	E and M
Optics	Atomic	Nuclear	Relativity

Chapter 7: Electricity

Electricity Videos

Electric Charge	Discussion	Streaming	Download	Demo Page
<p>As the charged rod is brought close to the knob, opposite charges are attracted to it and the leaf. This leaves the post and silver leaf with the same charge. Thus, the repel each other and the leaf moves out.</p>		Real	Real	Real

wfu – example – Rollercoaster



Some online Physics Videos (wmv)

- Colorado State
 - A number of high speed videos
- http://high_speed_video.colostate.edu/#Dynamics
 - Can click to play or right click to save
 - Can embed in a presentation ©
 - Saved in wmv format



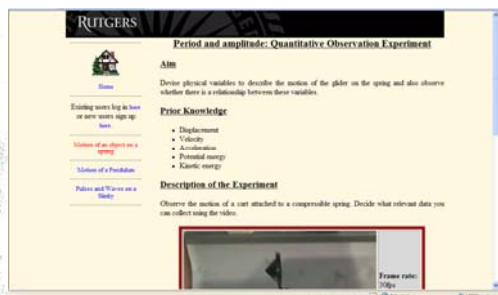
Colostate screenshot



Some online Physics Videos (mov)

- Rutgers Physics and Astronomy Education Research Group
 - Physics Teaching Resources
- <http://paer.rutgers.edu/PT3/>
 - Can click to play or right click to save
 - Needs quicktime player to view movies

Rutgers screenshot



Rutgers – Photoelectric effect



Rutgers - Bowling ball circular motion



Flash Video

- Flash Video files contain video [bit streams](#) which are a variant of the [H.263](#) video standard.
- Audio in Flash Video files is usually encoded as [MP3](#).
- More difficult to embed in presentations.
 - *Need to change format some programs and sites available*
- Flash Video Players available
 - *VLC media player*
 - *E-Z Soft Flash Player*
 - *Moyea Youtube Player*
 - *Wimpy Desktop Flash Player*

YouTube

YouTube is a free video sharing website where users can upload, view and share video clips.

YouTube began in 2005.

It uses Adobe Flash technology to display a wide variety of video content, including

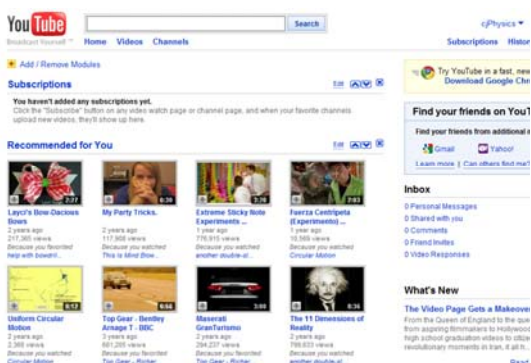
- *movie clips,*
- *TV clips*
- *music videos and*
- *Videoblogging*

Students are very familiar with the technology.

Accessing videos

- YouTube website is quite straight forward.
- Videos are given a unique identifier which is quite meaningless, but allows you to directly link to the video.
- Eg:
 - *The URL for this video is:*
<http://www.youtube.com/watch?v=ve6XGKZxYxA>

youTube - screen dump



Keeping your videos

- YouTube allows you to 'sign up' as a user to the site. This allows you to keep more permanent links to the videos
 - *Playlists*
Place a number of videos in a playlist
 - *Favourites*
Save your favourite videos
 - *History*
YouTube keeps a record of the videos you have watched.
 - *Recommended for you*

Searching for videos

- YouTube has a simple search tool for finding videos.
 - **Keyword search**
Enter a keyword eg water waves
 - **Searching by category**
Choose **Education** or **Science and Technology** down the left side of the screen
 - **Searching by Channels**
Once you have found a user who has submitted a good video, you can see what else they have submitted.
Eg **Dr Altman**

Websites that embed YouTube videos



Downloading videos

- Terms of use?
- There are many programs available that allow you to copy material from the site to your local directory. Some cost money, others are free but limited in features
- **Kickyoutube**
 - Simple website that allows you to 'kick' videos in a number of formats.
 - All you do is place the word 'kick' instead of 'www.' in the url

kickyoutube...



Uses of YouTube

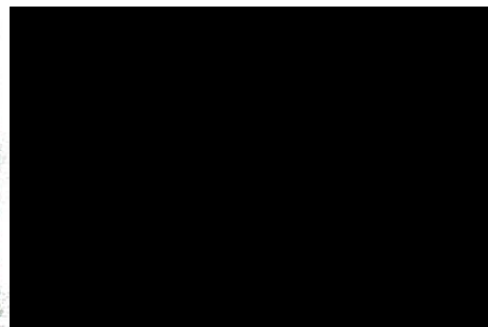
- movie clips,
- Demonstrations,
- Tutorials (guitar guy)
- Humorous
- TV clips
- music videos and
- Videoblogging

UHS Jan PD days 2010
Bruce Dixon ideas lab

Help with bow drill



Tutorial movies khanacademy.org



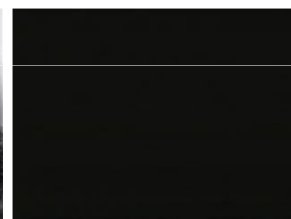
A2 YouTube Physics

SOME MORE SOURCES

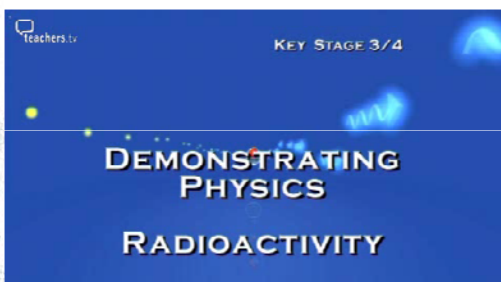
vicPhysics website

Structures

Orange juice anyone?



Teacher's TV (UK)



more examples – teacher's tv

van de graff generator support

Magnetic fields – better than I can do it!!!



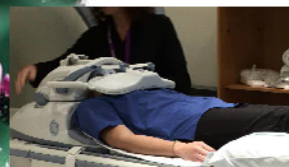
Study resources
amps website (NSW initiative)

How to Make
an Optical Fibre

Some more examples - amps

MRI images

Jumping rings demo



Different Jumping
Rings

To finish with a song

EM documentary

EM Spectrum song

*The
Electromagnetic
Spectrum*