

## Movie Recommendations

Everyone loves a good story and everyone loves some great science. Here are some picks of the best films based on real life scientists and discoveries. You won't find Jurassic Park on this list! We've looked back over the last 30 years to give you our top 5 films you might not have seen before. Great watching for a rainy day.



### **Moon (2009)**

With only three weeks left in his three year contract, Sam Bell is getting anxious to finally return to Earth. He is the only occupant of a Moon-based manufacturing facility along with his computer and assistant, GERTY. When he has an accident however, he awakens to find that he is not alone.

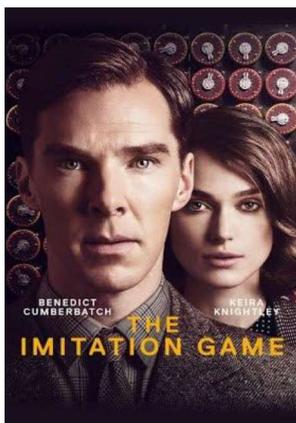


### **Gravity (2013)**

Two astronauts work together to survive after an accident which leaves them stranded in space.

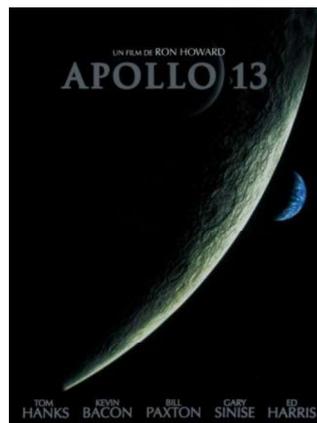
### **Interstellar (2014)**

A team of explorers travel through a wormhole in space in an attempt to ensure humanity's survival.



### **The Imitation Game (2014)**

Based on a true story. During World War II, the English mathematical genius Alan Turing tries to crack the German Enigma code with help from fellow mathematicians.



### **Apollo 13 (1995)**

Based on a true story. NASA must devise a strategy to return Apollo 13 to Earth safely after the spacecraft undergoes massive internal damage putting the lives of the three astronauts on board in jeopardy.

There are some great TV series and box sets available too! You might want to check out: Blue Planet, Planet Earth, Wonders of the Universe, Wonders of the Solar System, NASA TV and Shock & Awe – The Story of Electricity.

## Movie Recommendations

If you have 30 minutes to spare, here are some great presentations (and free!) from world leading scientists and researchers on a variety of topics. They provide some interesting answers and ask some thought-provoking questions. Use the link or scan the QR code to view:

### From mach-20 glider to hummingbird drone

Available at:

[https://www.ted.com/talks/regina\\_dugan\\_from\\_mach\\_20\\_glider\\_to\\_humming\\_bird\\_drone/up-next?language=en](https://www.ted.com/talks/regina_dugan_from_mach_20_glider_to_humming_bird_drone/up-next?language=en)

"What would you attempt to do if you knew you could not fail?" asks Regina Dugan, then director of DARPA, the Defense Advanced Research Projects Agency. In this talk, she describes some of the extraordinary projects that her agency has created.



### Is our universe the only universe?

Available at:

[https://www.ted.com/talks/brian\\_greene\\_why\\_is\\_our\\_universe\\_fine\\_tuned\\_for\\_life?language=en](https://www.ted.com/talks/brian_greene_why_is_our_universe_fine_tuned_for_life?language=en)

Brian Greene shows how the unanswered questions of physics (starting with a big one: What caused the Big Bang?) have led to the theory that our own universe is just one of many in the "multiverse."

### The fascinating physics of everyday life

Available at :

[https://www.ted.com/talks/helen\\_czerski\\_fun\\_home\\_experiments\\_that\\_teach\\_you\\_physics?language=en](https://www.ted.com/talks/helen_czerski_fun_home_experiments_that_teach_you_physics?language=en)

Physicist Helen Czerski presents various concepts in physics you can become familiar with using everyday things found in your kitchen.



### We need nuclear power to solve climate change

Available at :

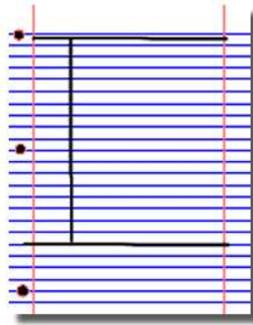
[https://www.ted.com/talks/joe\\_lassiter\\_we\\_need\\_nuclear\\_power\\_to\\_solve\\_climate\\_change?language=en](https://www.ted.com/talks/joe_lassiter_we_need_nuclear_power_to_solve_climate_change?language=en)

Joe Lassiter is focused on developing clean, secure and carbon-neutral supplies of reliable, low-cost energy. His analysis of the world's energy realities puts a powerful lens on the touchy issue of nuclear power.

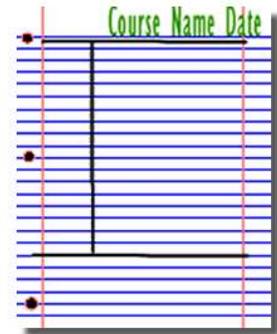
## Research Activities

Research, reading and note making are essential skills for A level Physics study. For the following task you are going to produce 'Cornell Notes' to summarise your reading.

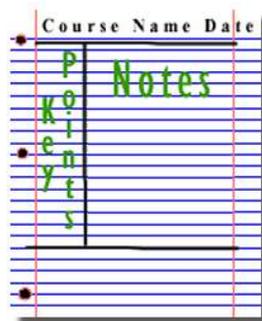
1. Divide your page into three sections like this



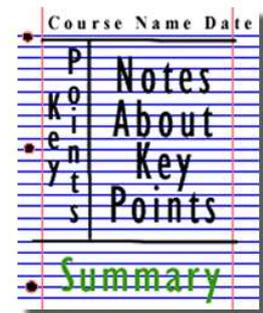
2. Write the name, date and topic at the top of the page



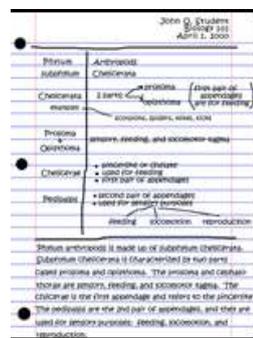
3. Use the large box to make notes. Leave a space between separate idea. Abbreviate where possible.



4. Review and identify the key points in the left hand box



5. Write a summary of the main ideas in the bottom space



Images taken from <http://coe.jmu.edu/learningtoolbox/cornellnotes.html>

## Research Activities

**Physics** provides daily online-only news and commentary about a selection of papers from the APS journal collection. The website is aimed at the reader who wants to keep up with highlights of physics research with explanations that don't rely on jargon and technical detail.



For each of the following topics, you are going to use the resources to produce one page of Cornell style notes.

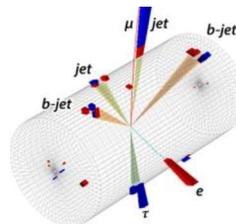
Use the links or scan the QR code to take you to the resources.

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### Topic 1: Sizing up the top quarks interaction with the Higgs

Available at: <https://physics.aps.org/articles/v11/56>

A proton collision experiment at CERN provides a new handle on the Higgs boson's interaction with the heaviest of the quarks.

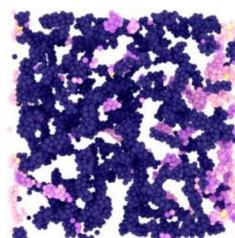


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### Topic 2: Why soft solids get softer

Available at: <https://physics.aps.org/articles/v11/50>

Soft materials like gels and creams exhibit fatigue resulting from the stretching of their constituent fibres, according to experiments and simulations.



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### Topic 3: Listening for the cosmic hum of black holes

Available at: <https://physics.aps.org/articles/v11/36>

A new analysis technique would allow the gravitational-wave "background" from distant black hole mergers to be detected in days instead of years.

