IB Physics 2 (HL & SL) Summer 2017 Assignment

Hello! Welcome to your second year of Physics! This summer you will have an assignment to help keep you connected to the world of physics. Hopefully it will be interesting without taking too much time! **There will be two parts to your summer assignment**:

A. Email the following to Mr. Tyndall at mrtyndallphysics@gmail.com by Saturday, July 15th. The information will delivered to your IB Physics teacher at the beginning of the year.

* Type 'IB Physics Year 2' in the subject line followed by your name.
* In the body of the email, tell me the following information:
    1. Will you take IB Physics 2 SL or IB Physics 2 HL?
    2. What math class are you taking in the coming year (2017 – 2018)?
    3. Tell me which two short stories and which movie you will read/watch (see below).
    4. In one sentence, give me your opinion about why a frog might play the oboe.

B. **Read** two short stories from the IB Physics Reading list, and **watch** one movie from the IB Physics Movie list. On the first day of school you will submit a short writing assignment about the stories and movie. The stories can be accessed here:

https://www.dropbox.com/sh/dx7okjiyi9849mi/AACO6aG-iPUa_XEn6EJzRfgHa

The movies are available through public libraries, Netflix/Amazon, and elsewhere. (You may want to find a copy of the movie before you commit to watching it!)

For your **writing assignment**, include the following:

a. A half-page summary of each short story and movie.
b. A half-page discussion about how each keyword relates to the short story. (You may have to look up and learn a few things about the keyword to do this!) (Also, note that you don't have to do this part for the movie!)

The writing assignment should be single-spaced in 10-12pt. font, and the whole assignment should be no longer than 4 pages total. Your assignment will be submitted digitally through Google Classroom and as a hardcopy by Tuesday, September 5. Be prepared to discuss your short stories and movie at that time. You must bring hardcopies of your short stories with you to participate in activities.

Enjoy reading and watching!

IB PHYSICS READING SELECTIONS

(These are available on the link given on the previous page.)

"Maelstrom II" by Arthur C. Clarke

A man abandons his spaceship and ends up in a deadly orbit. **Keyword(s): kinetic energy**.

"A Pail of Air" by Fritz Leiber

When the Earth is flung far from the Sun, the atmosphere freezes. **Keyword: sublimation (phase change**).

"Neutron Star" by Larry Niven

An astronaut is forced to approach a very strange star. **Keyword(s): neutron star**.

"Fermi and Frost" by Frederik Pohl

As nuclear war dawns, survivors attempt to live in Iceland. **Keyword(s): nuclear winter**.

"The Last Question" by Isaac Asimov

Over a very long period of time, a computer is asked the same question over and over. **Keyword: entropy**.

"Inconstant Moon" by Larry Niven

The Moon seems brighter, and only one person understands the implications. **Keyword: luminosity**.

IB PHYSICS MOVIE SELECTIONS

2001: A Space Odyssey

A mysterious object affects human history and evolution. (Kind of long, and not a movie for the impatient!)

The Challenger Disaster

Richard Feynman, a famous physicist, attempts to determine why the Challenger space shuttle exploded.

Contact

An astrophysicist detects a signal from an alien civilization.

Deep Impact

An asteroid is about to hit Earth, and preparations are taken to stop it.

Interstellar

A hole in space-time presents the last opportunity to save humanity from a dying Earth.

The Martian

An astronaut becomes stranded on Mars after his team assumes him dead, and he must rely on his ingenuity to find a way to signal to Earth that he is alive.

Theory of Everything

A biography of Stephen Hawking, the eminent physicist, as he copes with a neurodegenerative disease.