

Summer 2024 Assignment for IB Physics Year 2

Washington-Liberty High School

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I hope everyone has a great summer that includes plenty of rest and relaxation (and only a little physics). I look forward to seeing you in the fall.

Part 1 of our summer assignment will introduce some of the topics we will be covering this year. I expect you will be able to complete it in 30-60 minutes. It will be due in Canvas on our second class meeting (27 or 28 Aug). Please make a copy of [this Google Doc](#) to complete Part 1. Part 2 is the IA Research Design. It will be due in mid-September. Please email me if you have questions about your IA as you work on Part 2.

Part 1: Physics Videos

The two videos below touch upon topics we will be covering in Year 2 including Electricity and Magnetism, Waves, and Nuclear-Atomic Physics.

Watch the following 6-minute video and answer the questions below.

[Are MRI's Safe?](#)

1. What does MRI stand for?
2. Why are hydrogen atoms important for MRI?
3. When are the electromagnets in an MRI turned off?
4. Why was it a problem when oxygen tanks were brought near an MRI system?
5. Do you think MRI's are safe? Why or why not?

6. What is a question you have about MRIs? (It could involve physics, medicine, engineering, economics, history, etc.)

Watch the following 11-minute video and answer the questions below.

[Electromagnetic Radiation Reveals a Hidden and Violent Universe](#)

1. The electromagnetic (EM) spectrum is often divided into eight regions. One is visible light. What are the other seven?
2. What is an advantage of space-based telescopes compared to telescopes on the surface of Earth?
3. What eventually happens to stars that are more than eight times the mass of our sun?
4. What is at the heart of the crab nebula?
5. How do measurements of the spectra of light give information about the elements that are present in stars and other celestial bodies?
6. What is a question you have about the connection between the EM spectrum and astronomy?

Part 2: Internal Assessment (IA) Research Design Section Draft

You submitted an IA Proposal to Ms. Hrbacek or Dr. Bennett during the 4th quarter of IB Physics Year 1. Over the summer, students are expected to write a draft of the Research Design Section. It will be due in mid-September.

Students are encouraged to use IA resources as they write their Research Design Section. To find IA Resources, go to Canvas for 2023-24 (IB Physics 1) and select the IA Resources Module. You can also find other Physics IA resources on-line.