

YouTube Physics

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YouTube Physics

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To date, this column has presented videos to show in class. Don Mathieson from Tulsa Community College suggested that YouTube could be used in another fashion. In Don's experience, his students are not always prepared for the mathematic rigor of his course. Even at the high school level, math can be a barrier for physics students. Walid Shihabi, a colleague of Don's, decided to compile a list of YouTube videos that his students could watch to relearn basic mathematics. I thought this sounded like a fantastic idea and a great service to the students. Walid graciously agreed to share his list and I have reproduced a large portion of it below.

- 1) **Order of operations:** www.youtube.com/watch?v=hraE0zwEfEU
- 2) **Order of operations – Fractions:** www.youtube.com/watch?v=s2ikuh2WFUE
- 3) **Absolute value:** www.youtube.com/watch?v=OIVvUd1XVVg
- 4) **Linear equations – Two-step equations:** www.youtube.com/watch?v=XdKQIKjV_LY
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- 7) **Formulas – Fractions:** www.youtube.com/watch?v=PBIUulUYTpY
- 8) **Word problems – Number problems:** www.youtube.com/watch?v=dhhjLN-eq4Y
- 9) **Graphing and slope – Points and lines:** www.youtube.com/watch?v=VQXx8MXcaSA
- 10) **Graphing and slope – Slope from graph:** www.youtube.com/watch?v=AqOsf9R7JHA
- 11) **Graphing and slope – Slope from two points:** www.youtube.com/watch?v=CpmuQtDw72c

- 12) **Equations – Slope intercept equation:** www.youtube.com/watch?v=ciEcgTaHWoc
- 13) **Equations – Put in intercept form:** www.youtube.com/watch?v=J5gp6LsvrEI
- 14) **Equations – Graph:** www.youtube.com/watch?v=WJ-_dZlFmAA
- 15) **Equations – Given two points:** www.youtube.com/watch?v=7JVVrRQ-iYw
- 16) **Distance – Opposite directions:** www.youtube.com/watch?v=IYjghRe_2Ak
- 17) **Exponents – Product rule:** www.youtube.com/watch?v=HKFJ7Q4mhKY
- 18) **Exponents – Quotient rule:** www.youtube.com/watch?v=moeNHnwlaY4
- 19) **Exponents – Power rules:** www.youtube.com/watch?v=Y967TsThSGA
- 20) **Exponents – Zero:** www.youtube.com/watch?v=mA4piU8OPhg
- 21) **Exponents – Negative:** www.youtube.com/watch?v=VE8iOEoWtDg
- 22) **Scientific Notation – Convert:** www.youtube.com/watch?v=ooq4MlIVVw
- 23) **Scientific Notation – Close to scientific:** www.youtube.com/watch?v=nXjdLPrSsCE
- 24) **Scientific Notation – Multiply and divide:** www.youtube.com/watch?v=DyMZ9in2lCQ (Important)

Special thanks to Walid Shihabi for sharing his list. Thanks to Don for suggesting this list to me. If you have a YouTube video that you use in class (or a novel way like this month's column), please send the link and a short explanation to: driendeau@dist113.org.

Higgs Boson

When cool things happen in physics research, teachers must take advantage of the opportunity to get students interested in what physicists are doing. The Higgs boson is a perfect example. Check out these videos on the Higgs boson.

The article in this issue of *TPT* about the Higgs discovery was written by the same gentleman who stars in the first video.

- **What is a Higgs Boson?** www.youtube.com/watch?v=RIg1Vh7uPyw.
- **The Higgs Boson (God Particle) Explained:** www.youtube.com/watch?v=EtrOSf297sw. I like this video as it is a scientist explaining what makes high energy physics experimentation so exciting.

Special thanks to Kim Fermoye (Barrington High School) and Marianna Anthea Bannon (Mundelein High School) for recommending these videos.