

WebSights features announcements and reviews of select sites of interest to physics teachers. All sites are copyrighted by their authors. This column is available as a web page at PhysicsEd.BuffaloState.Edu/pubs/WebSights/. If you have successfully used a physics website that you feel is outstanding and appropriate for WebSights, please email me the URL and describe how you use it to teach or learn physics—macisadl@buffalostate.edu.

ASAP STEM Lesson Plan Database:

<https://stemteachers.asu.edu/stem-lesson-plans>

The Arizona STEM Acceleration Project (ASAP) brought together universities, professional development organizations, and teachers to shrink the learning gap that resulted from the COVID-19 pandemic. In exchange for generous annual support for classroom materials and supplies and access to high-quality professional development, ASAP Fellows created more than 2000 STEM Lesson Plans, which have been vetted and archived in a free database available to teachers everywhere. There are numerous lessons for use in introductory physics courses, some employing PhET simulations, Modeling Instruction, or other interactive engagement and inquiry pedagogies. Topics range from aerodynamics to trebuchets to waves and each is formatted as a slideshow for easy instructor adaptation and presentation to classes. The lessons can be filtered to search by grade level, subject, and keyword and every lesson includes detailed instructions for implementation, including teacher notes, materials, standards and objectives, daily agendas, and instructions for hands-on activities, assessment, and differentiation. Lessons can be used as stand-alone activities, part of an established curriculum, or as class projects.

Item submitted by Jeff Steinert Physics, Arizona School for the Arts steinert@goasa.org

More Japanese Physics Circles

<https://www2.hamajima.co.jp/ikiikiwakuwaku/index.htm>

<https://www2.hamajima.co.jp/~tenjin/ypc/ypcalbum.html>

In February of this year, Chris Chiaverina recommended the Aichi Physics Circle Web site (URL, click on top green box). Physics Circles are groups of Japanese physics teachers who meet regularly to share resources somewhat akin to Local Physics Alliances in the US. Circles also collect large albums of activities, and in the past have published books.

Yasuo Ogawara of the Yokohama Physics Circle recently wrote me to recommend their site, which google translator had no problem rendering in English for me. The Yokohama site also has a rich collection of links to other Circles, sites and institutes, and links to the Gifu circle records as well. Mr. Yasuo assures me that the Yokohame Circles are extraordinary fun, and I hope to go attend someday. The meeting of July 21 featured several demonstrations and equipment new to me, including a friction hot water heater (boiling water with cotton rope in 3 to 5 minutes, a burning paper rocket/

magic demo, ending in beer and food.

Submitted by Yasuo Ogawara Ogawara@hs.keio.ac.jp

Freebies and Downloads from Vernier Science Education and STEP-UP

<https://tinyurl.com/WS-VernierSep24>

<https://tinyurl.com/WS-GuidelinesSTEPUP>

Team Vernier is again providing free physics teaching and learning equipment drawings and giveaways, classroom activity and software downloads, classroom posters t-shirt designs, digital wallpapers, blogs and webinars “and more.” Here at Buff State physics we have also been widely printing and posting the outstanding “Guidelines for Conduct During Discussions” poster produced by the APS STEP-UP people promoting women in physics as well. See this excellent color .PDF poster (in English and Spanish) fostering discourse and a positive classroom climate downloadable from “Share the Poster” under “Support for this Lesson” in “Women in Physics.”

Email from support@vernier.com

Electric Vehicle Batteries and Harley-Davidson Noise and Vibration

<https://www.youtube.com/@EngineeringExplained>

<https://tinyurl.com/WS-LFPbattery>

<https://tinyurl.com/WS-NMCbattery>

<https://www.youtube.com/@fortnine>

<https://tinyurl.com/WS-HDpotato>

My new guilty pleasure is watching videos about EV batteries, since Engineering Explained just released a series on “How to Ruin Your Electric Car’s Battery” both for Lithium Iron Phosphate (LFP) and Nickel Manganese Cobalt (NMC). The videos focus on chemistry, best practices and procedures for different kinds of batteries under different kinds of regular driving and storage conditions. Quite fascinating applied chemistry and physics.

My other junk watching is the irreverent (and often classroom-inappropriate) physics and engineering analysis of motorcycles from FortNine. His analysis of the physics and mechanics behind the highly characteristic “Harley-Davidson V-twin engine sound” and apparently excessive “paint-mixer like” stationary vibration is delicious. If you teach momentum, or are around motorcycles you should watch the video.