QuarkNet Data Portfolio and Activities

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IPPOG Fall 2018 Meeting

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Data Portfolio Goals

Make current physics accessible to high school teachers and students

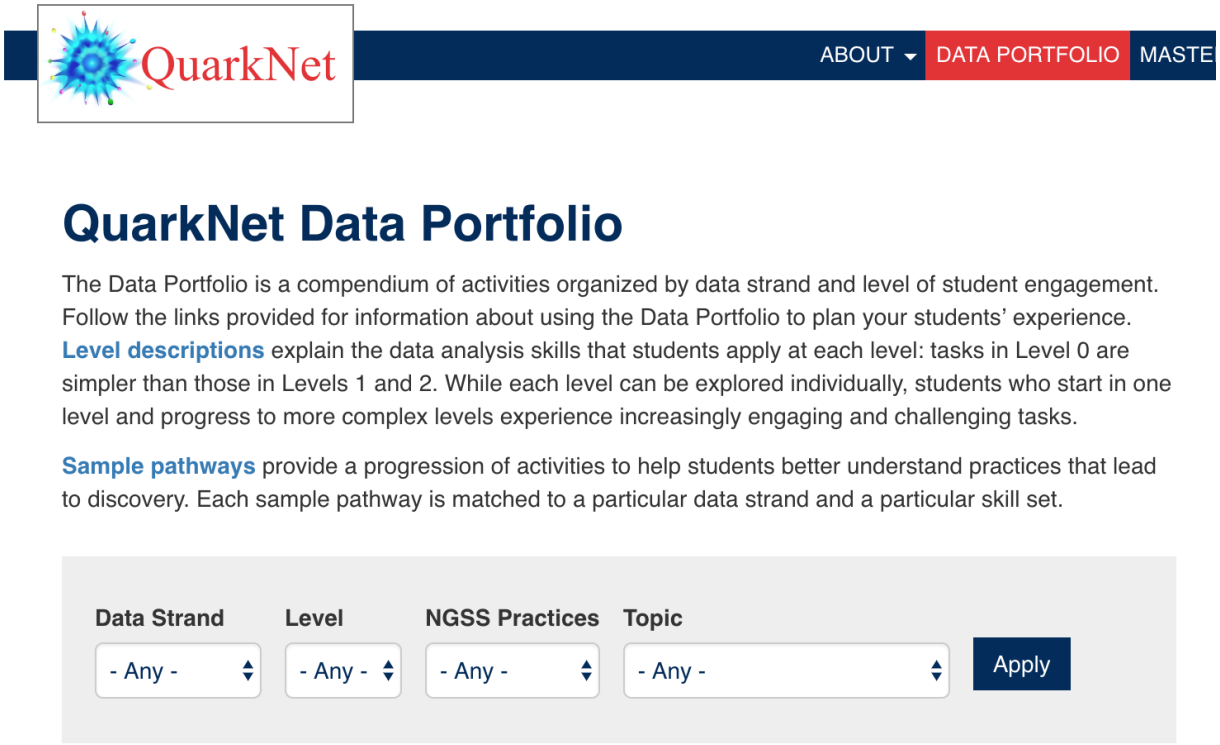
Establish a resource on the Web of tested lessons vetted against best practices in instructional design

Develop pedagogical pathways to guide teachers in selecting modern physics lessons for the classroom

Data Portfolio

The Data Portfolio is available at:

https://quarknet.org/data-portfolio



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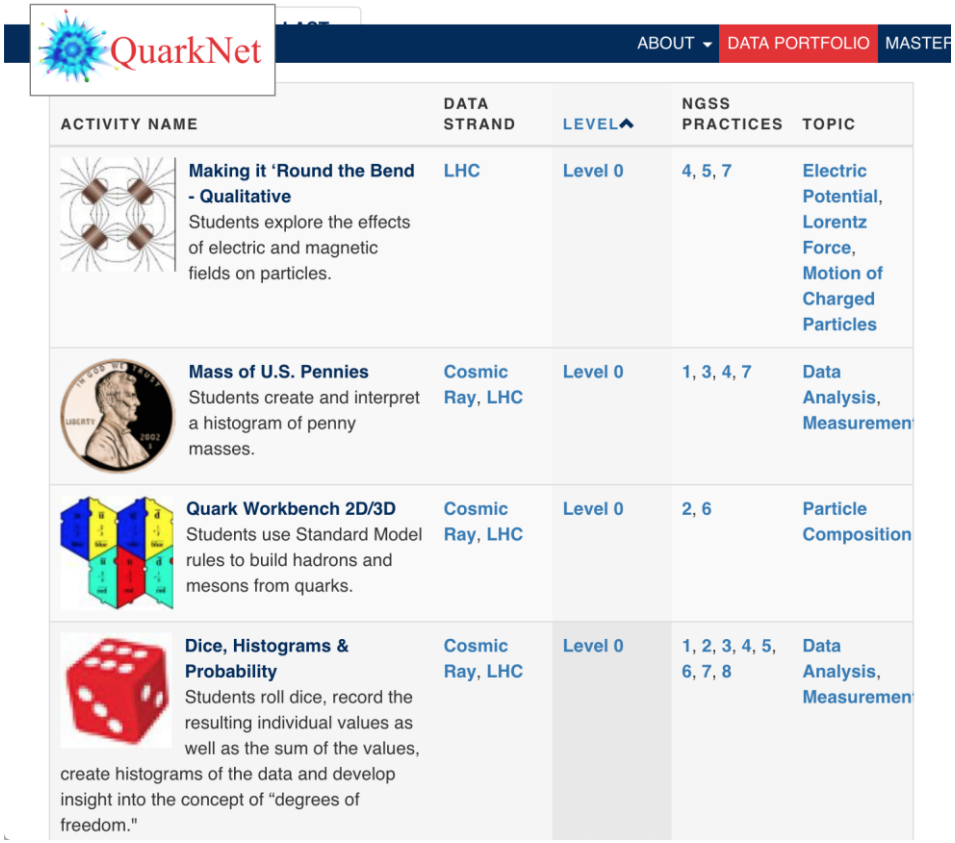
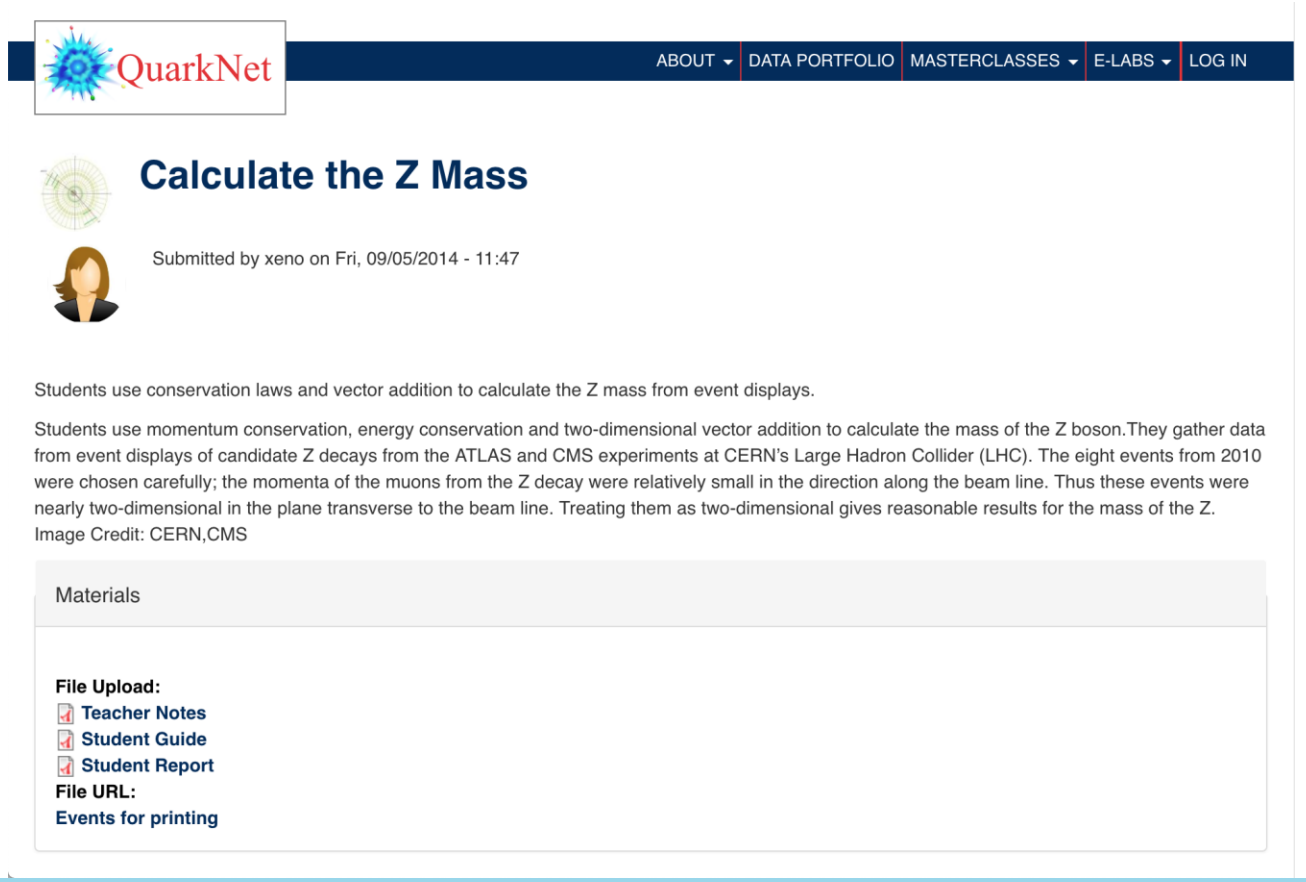
Accessing Activities

Activities are all free and available for download. Each is keyed to one or more Data Strands, a Level of complexity, Science and Engineering Practices, and one or more Topics



Inside a Lesson

When you go to a lesson page, you will see links for a student page, a teacher page, and any data files or supplemental materials you need.



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Path Structure

Level 0 lessons help build knowledge and skill base.

Complexity builds through Level 3; hoping to implement Level 4 lessons in this grant cycle.

We are also planning to expand neutrino content, which brings us to our activity for the day:

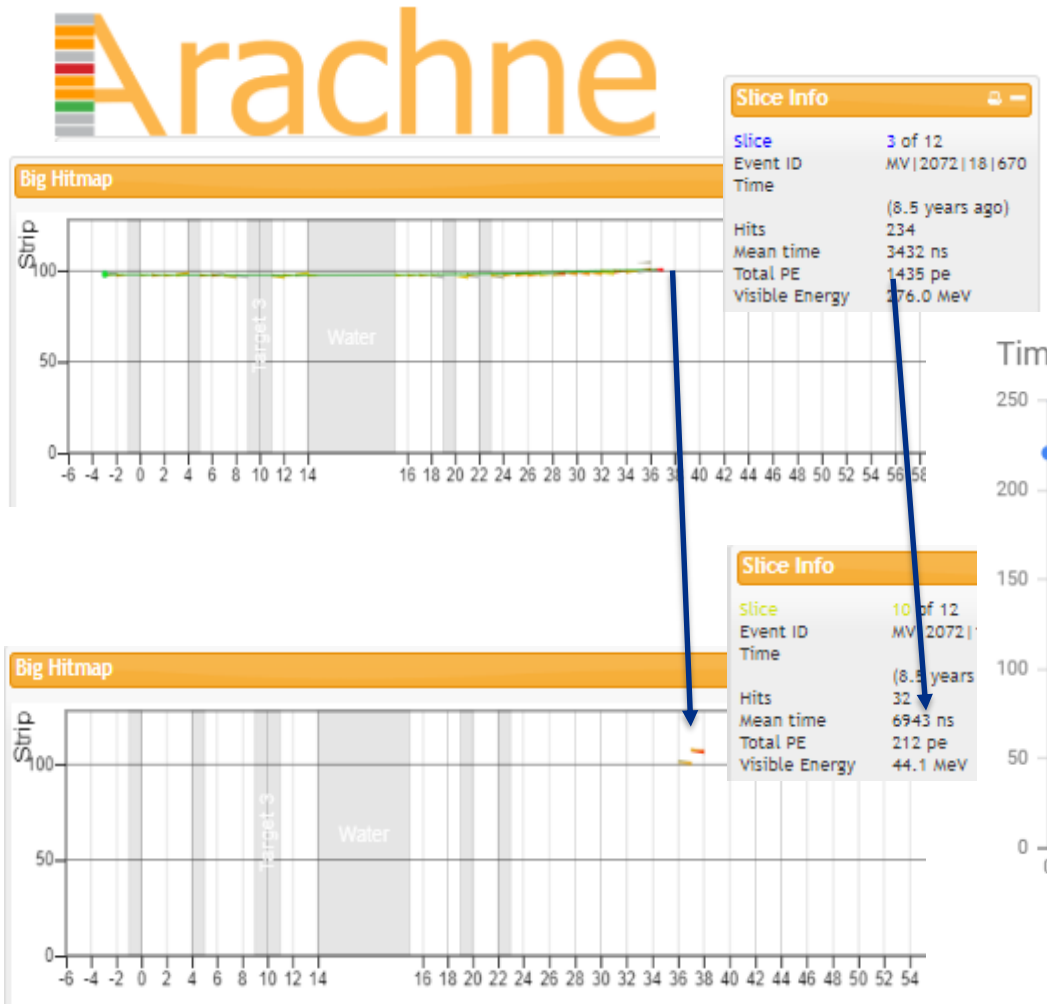
Neutrinos in the Classroom (MINERvA activity)

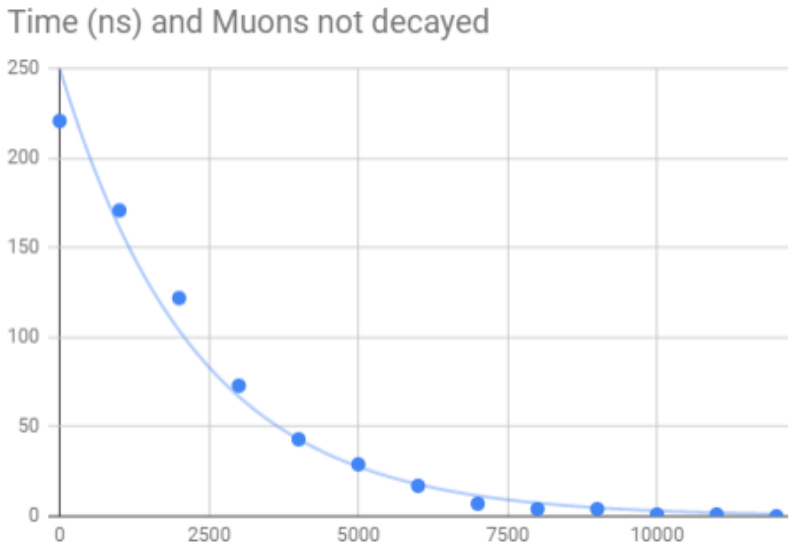
This is an activity where students can use events from the MINERvA detector to estimate the muon lifetime.

Students look for events in which a muon stops in the detector, measure how long it takes the muon to decay, and then plot that data collectively to make the measurement.

http://neutrino-classroom.org/particle_decay.html

Measurement





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Questions for you:

What are the enduring understandings that you think students should take away from this activity?

What do you think students should be able to do as a result of completing this activity?

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