An Interactive Learning Unit about PET

Positron-Emission-Tomography

Sarah Zoechling | sarah.zoechling@cern.ch

Interactive learning units are a new, virtual, and versatile format for **classroom and distance learning**

PET is an application of particle detectors in **medical diagnostics**
(e.g., to find a brain tumour)

SCHEDULE

14:00-14:20	14:30-15:20	15:30-16:15
Introduction	Virtual PET Learning Unit	1) Breakout Rooms 2) Plenary Discussion

MOTIVATION

COVID-related challenges for our visitors to come to CERN

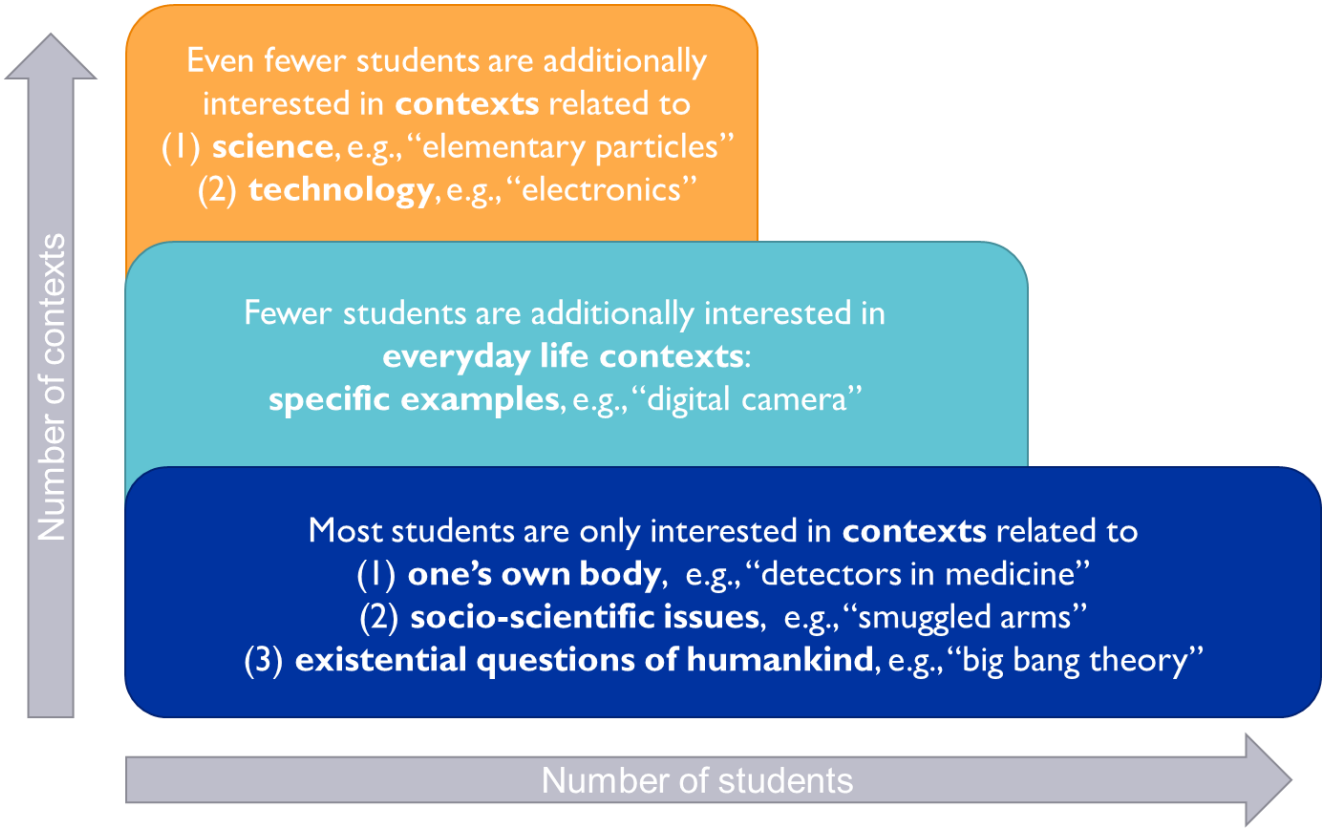
Enhancement of our online offers beyond the pandemic times

Extension of the hands-on PET workshop in our lab

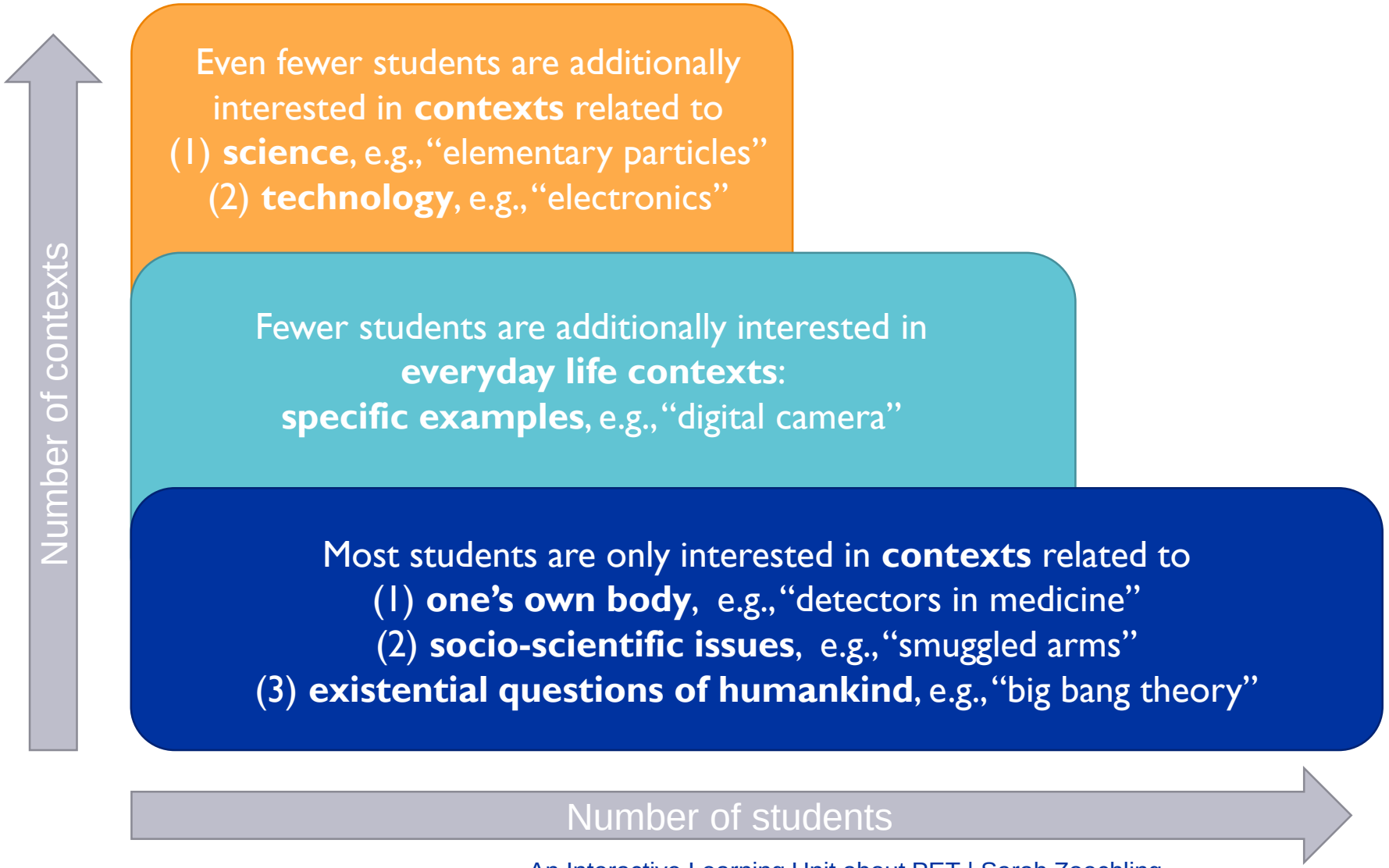
AIM #1

Foster students' interest in particle physics!

- **Past empirical studies:**
  Most students are interested in medical contexts
  OECD (2016), Levrini et al. (2017)
- **My PhD project:**
  Conceptualisation of interest in Particle Physics
  Zöchling et al. (2022)



Conceptualisation of Interest in Particle Physics



AIM #2

Easy to use for teachers in classroom and distance learning

- **Duration:** 2 school lessons
- Can be done on one's **own laptop or tablet**, in the **school IT room** or with **school tablets**
- **Target age:** 16+

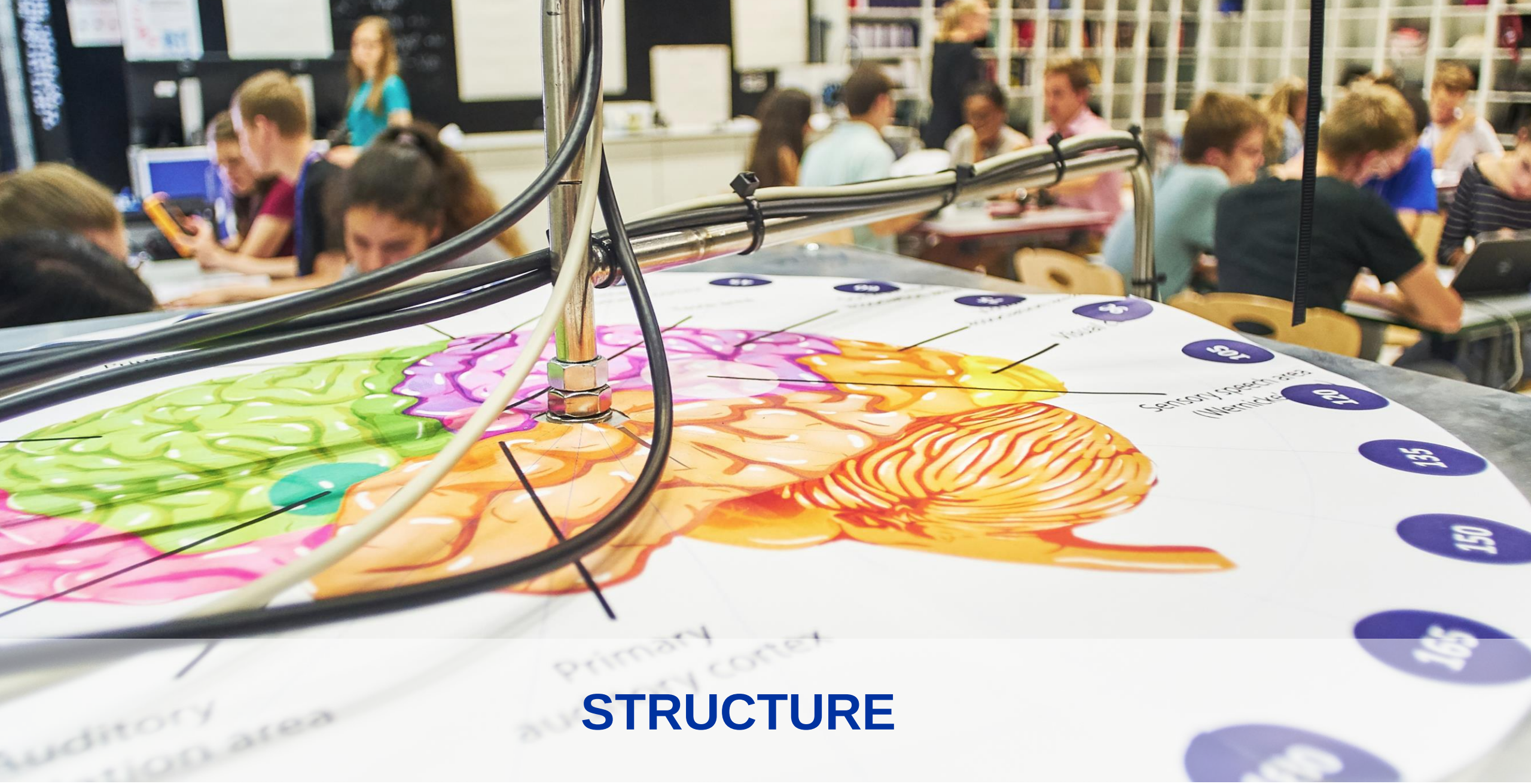
AIM #2

Easy to use for teachers in classroom and distance learning

- **Format:** H5P Module
  - ⇨ Can be easily **embedded in learning platforms** (e.g., Moodle, Blackboard, Brightspace, ...)
- **Link**: cern.ch/petworkshop

LANGUAGE

- **English**
- **Subtitles in different languages**



STRUCTURE

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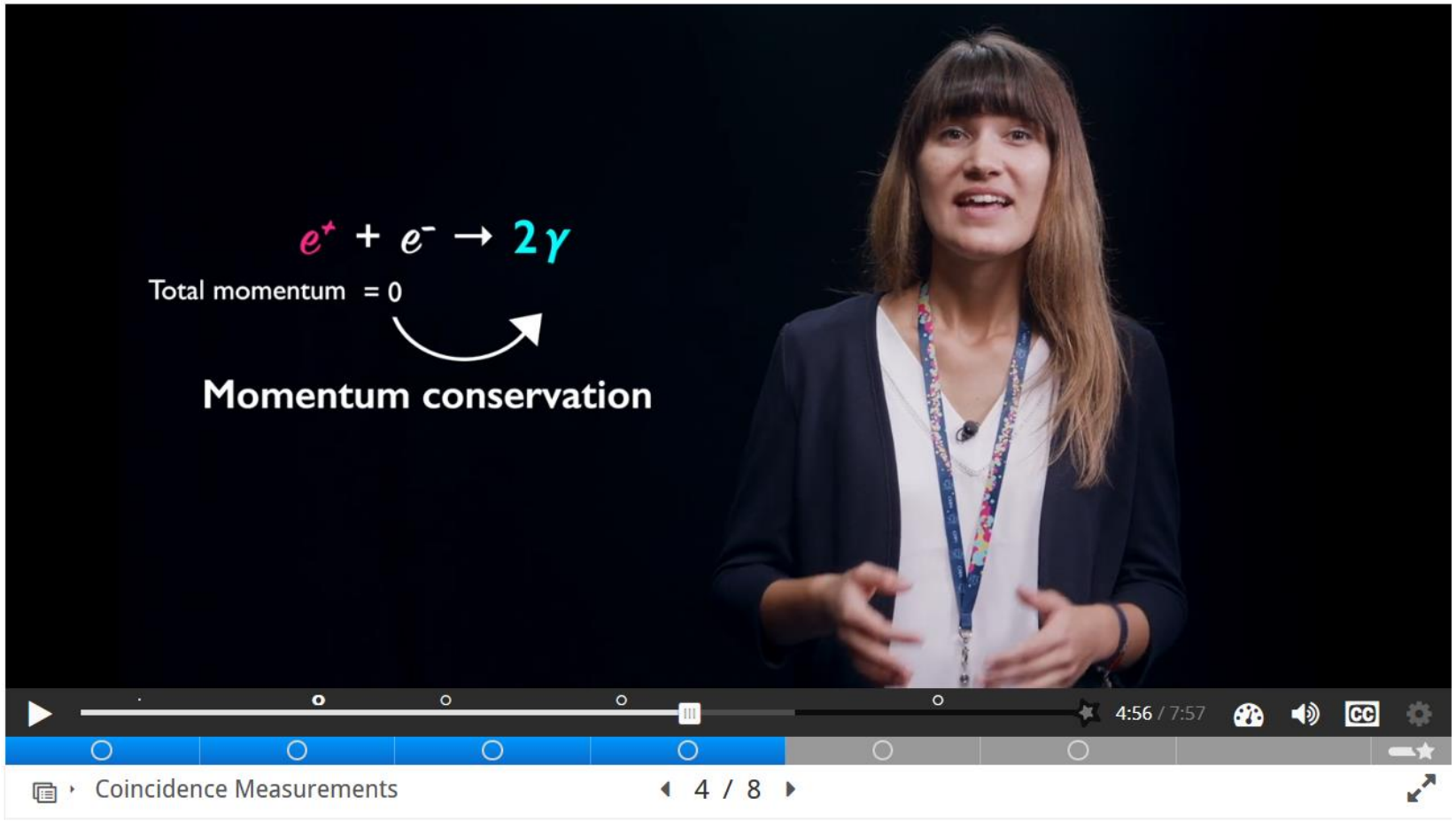
Explanatory Videos



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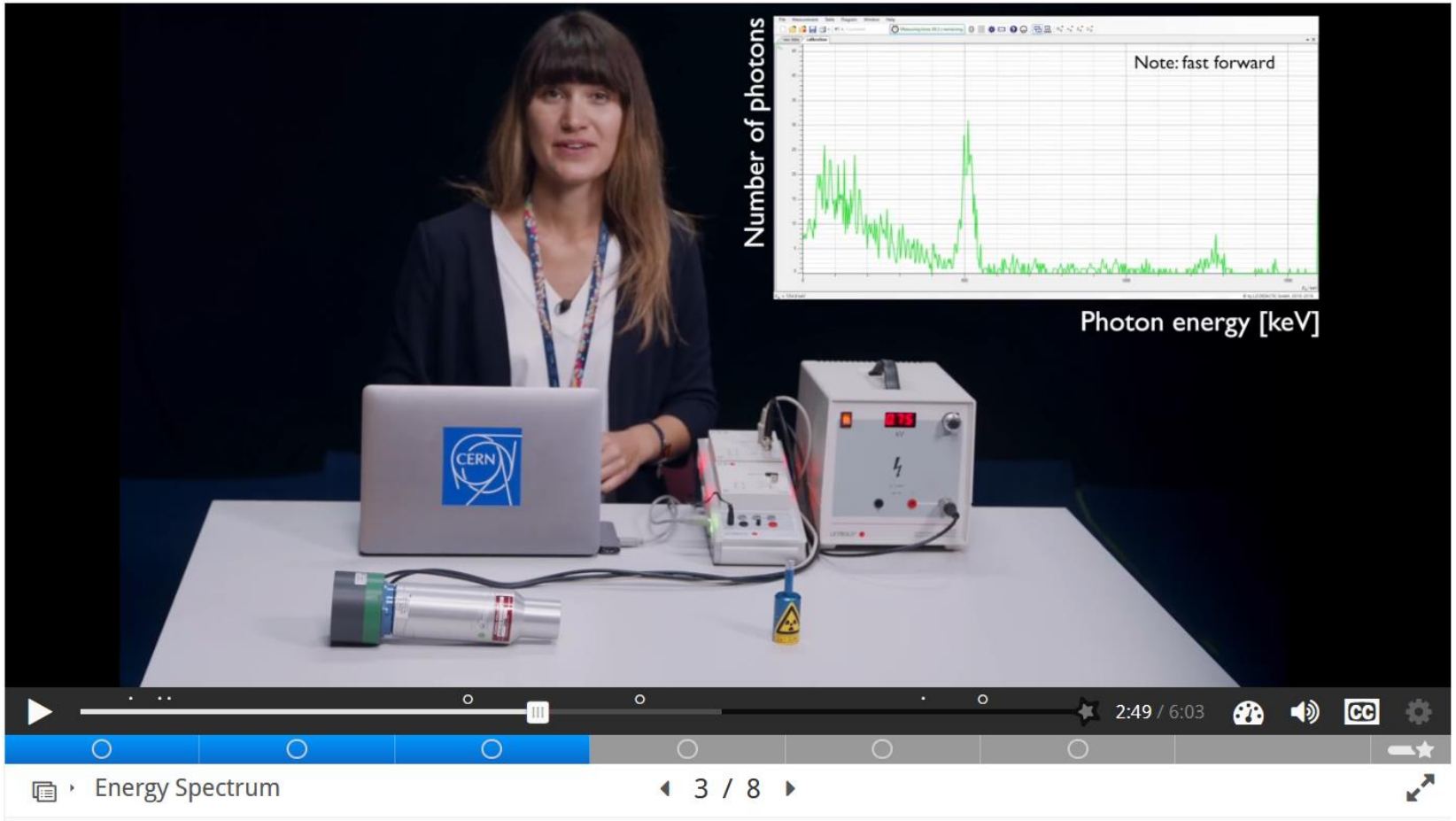
Experiment Videos



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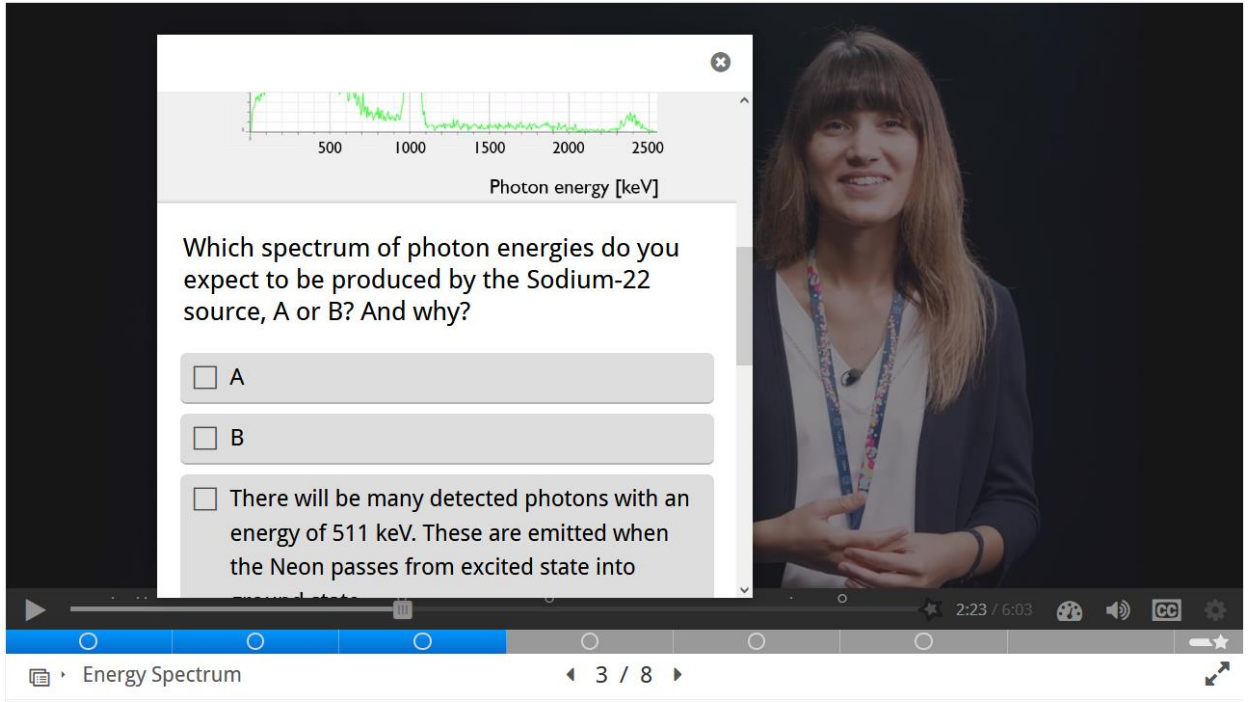
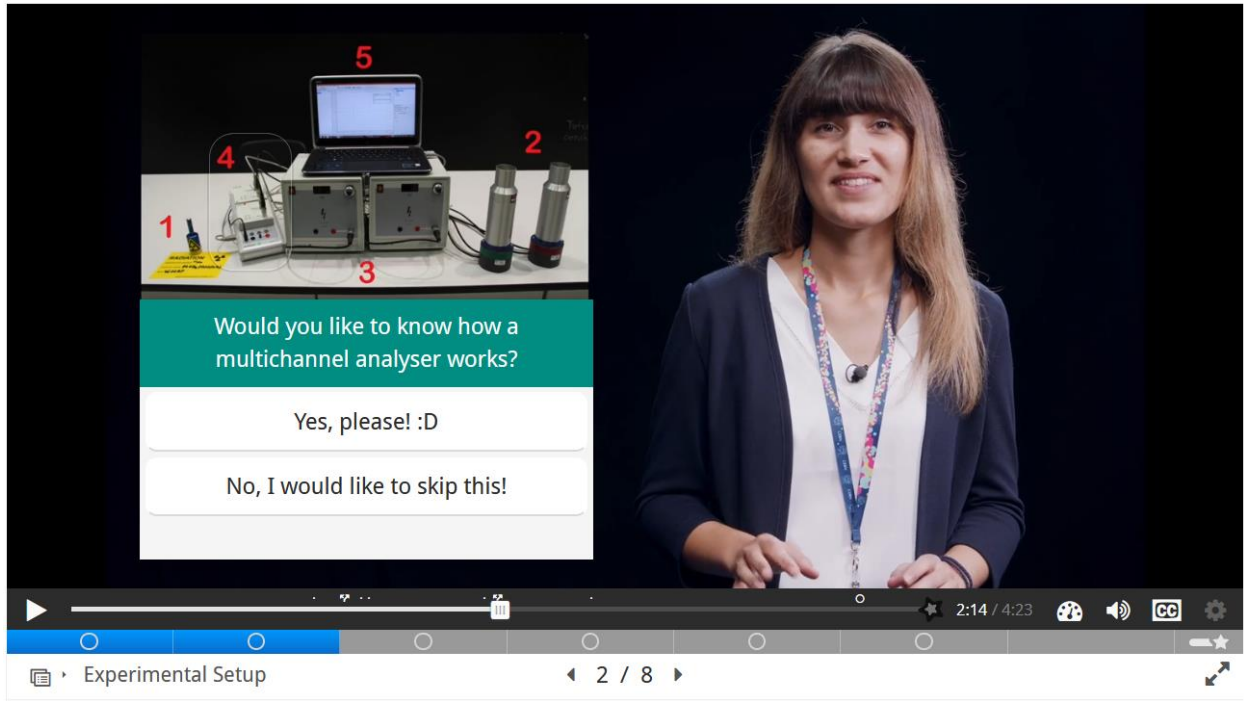
Interactive Elements



Quizzes



Shortcuts

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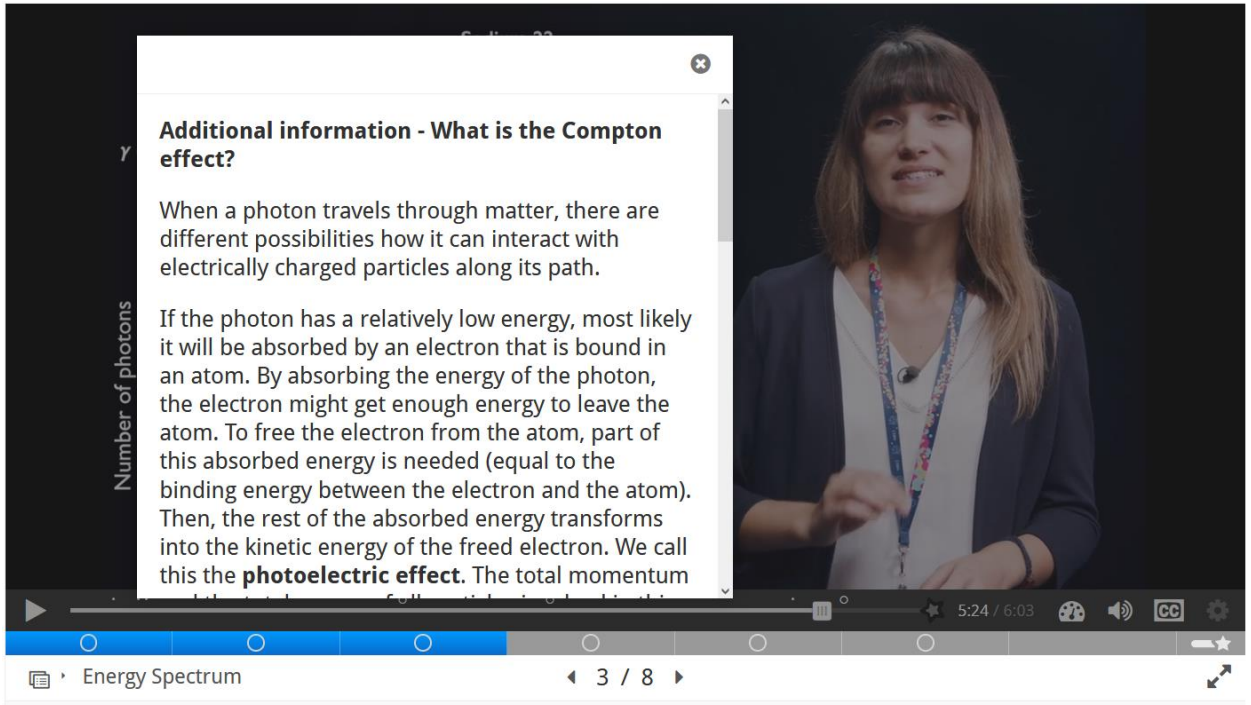
Interactive Elements



Additional Information

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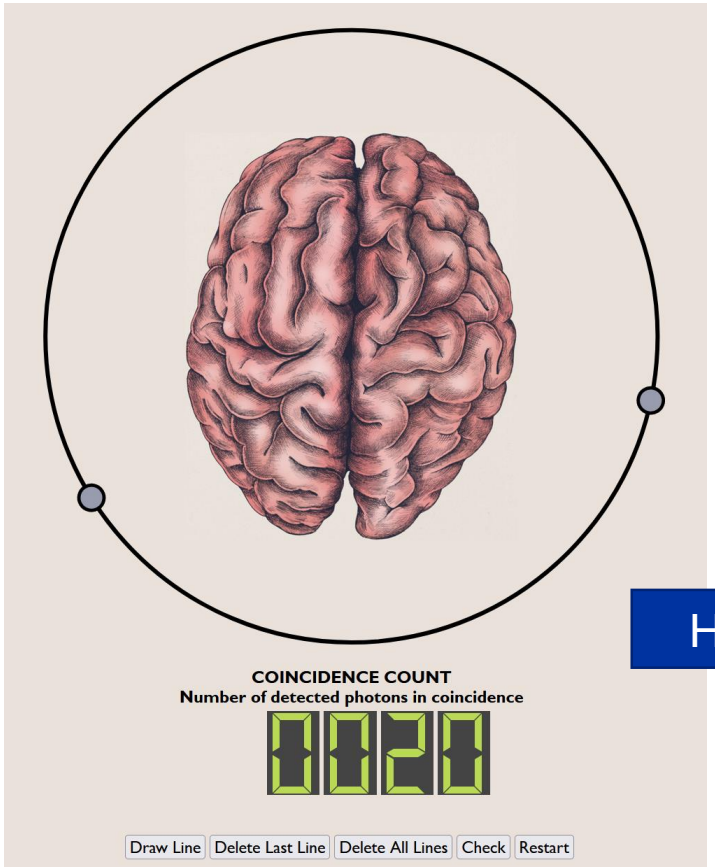
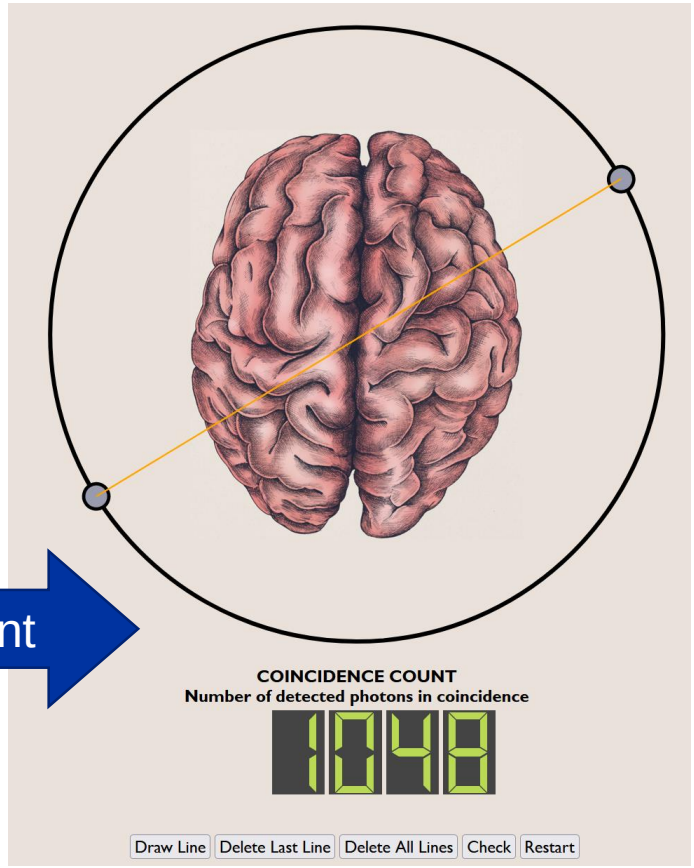
Interactive PET Experiment



High Coincidence Count



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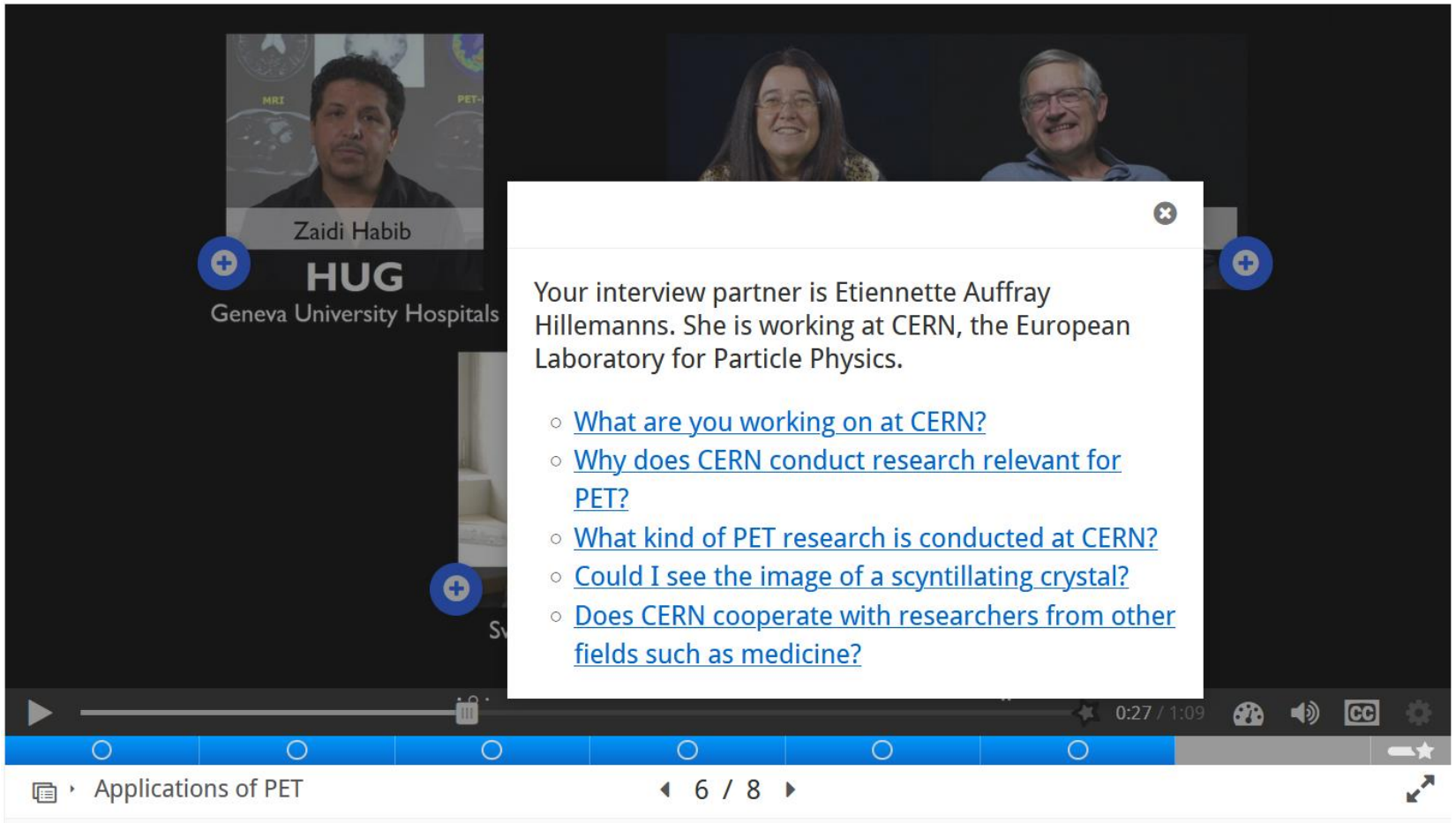
Interviews with Experts



Time for you to try out the Virtual PET Learning Unit!

ACTIVE PHASE: Virtual PET Learning Unit

Duration: 1h

Tasks:

- Try out the **Virtual PET Learning Unit** (cern.ch/petworkshop)!
- **Write down** your **feedback** to the **Virtual PET Learning Unit** in the respective categories on our Padlet (https://padlet.com/sarahzochling/PETLearningUnit)!
- Take a **break!**

⇨ *Afterwards you will have to opportunity to discuss your feedback in breakout rooms and in plenary.*

DISCUSSION: Virtual PET Learning Unit

Breakout rooms:

Discuss your comments using your notes from the Padlet in breakout rooms (duration: 10 min)!

Categories:

- Presentation of physics – appropriate?
- Context – interesting?
- Use in lessons – easy?
- Open questions
- General comments

DISCUSSION: Virtual PET Learning Unit

Plenary :

Which discussion points from the breakout rooms would you like to discuss in plenary?

Categories:

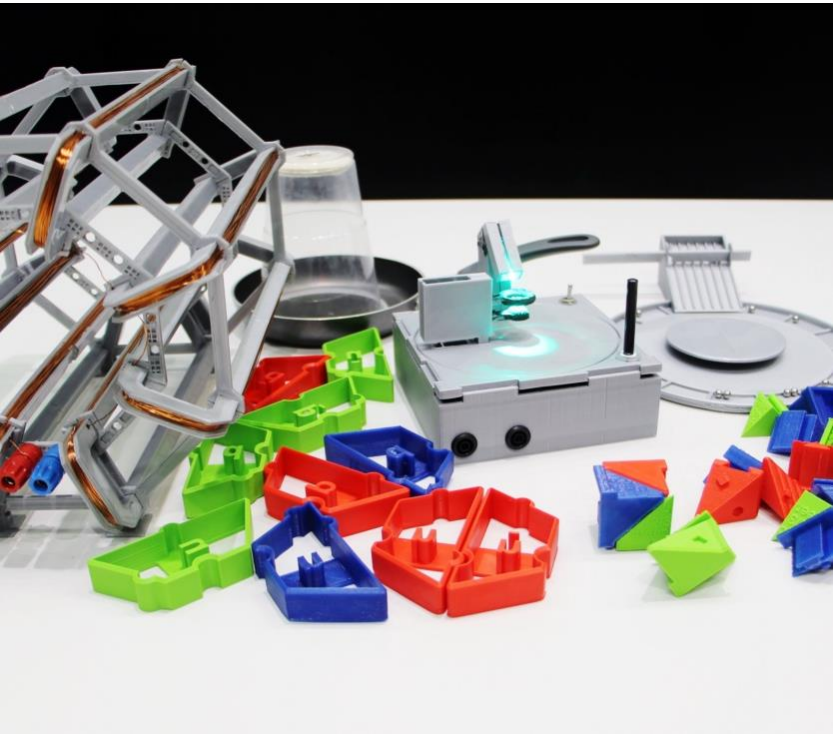
- Presentation of physics – appropriate?
- Context – interesting?
- Use in lessons – easy?
- Open questions
- General comments

Thank you for your feedback!

Will you use the Virtual PET Learning Unit in your lessons?

OTHER ACTIVITIES

cern.ch/scool cern.ch/visit cern.ch/per



(3D printable) experiment ideas and videos for your lessons

Virtual CERN visits and introduction talks

Virtual science shows

Thank you for your attention!

If you have any further comments and questions, please contact me via email!

Sarah Zoechling | sarah.zoechling@cern.ch

References

Levrini, O., De Ambrosis, A., Hemmer, S., Laherto, A., Malgieri, M., Pantano, O., & Tasquier, G. (2017). Understanding first-year students' curiosity and interest about physics—Lessons learned from the HOPE project. *European Journal of Physics*, *38*(2), 025701. https://doi.org/10.1088/1361-6404/38/2/025701

OECD (2016). *PISA 2015 results (Volume I): Excellence and equity in education*. PISA, OECD Publishing. https://doi.org/10.1787/9789264266490-en

Zöchling, S., Hopf, M., Woithe, J. & Schmeling, S. (2022). MAKE IT MATTER: How to foster interest in particle physics by setting it in meaningful contexts. *PoS (EPS-HEP2021)*, 889.