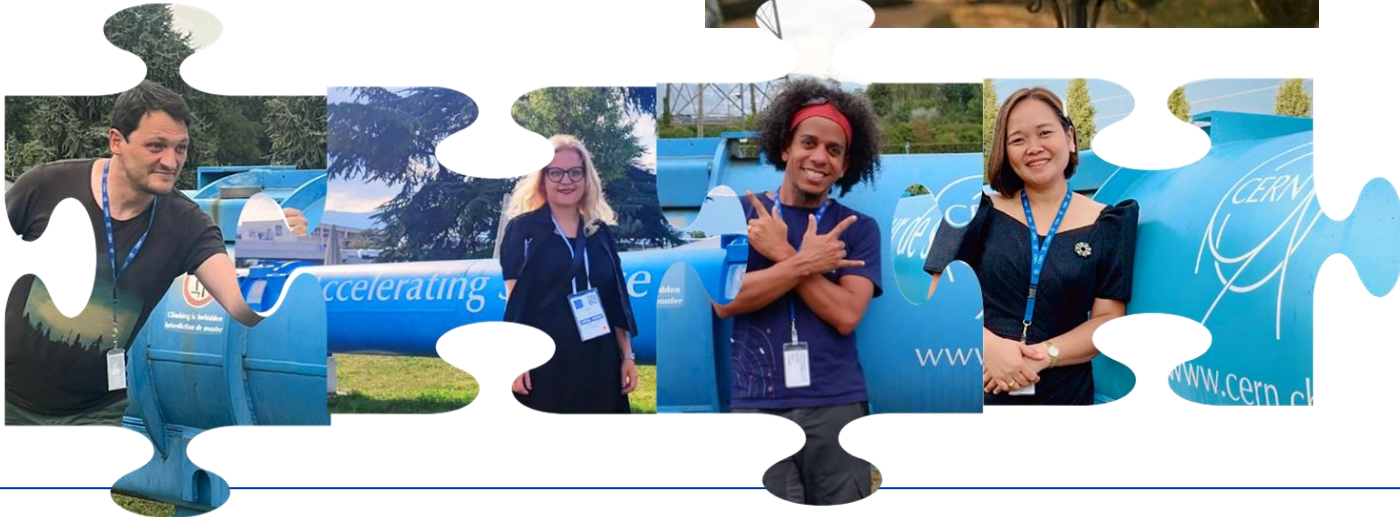
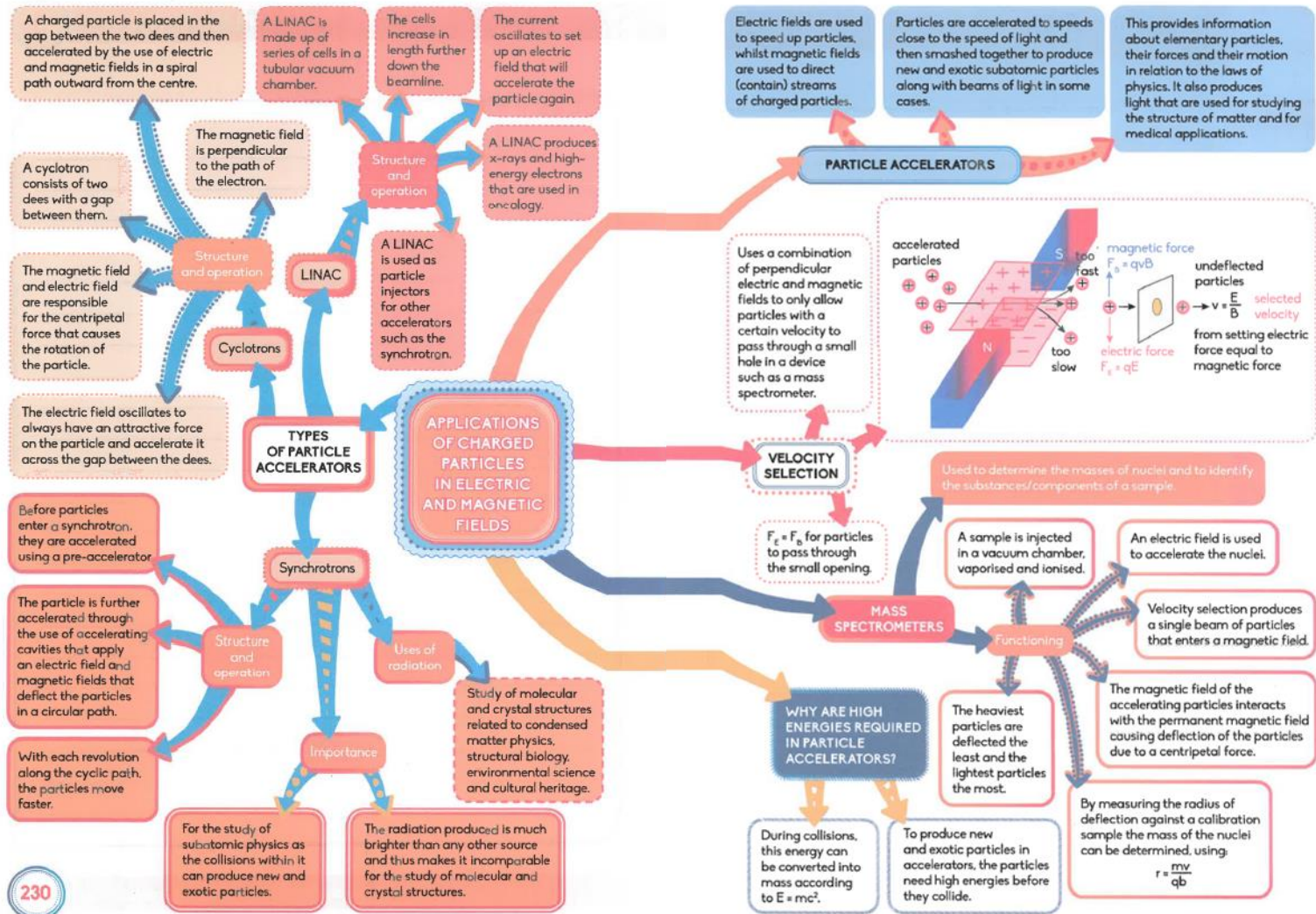


Particle Accelerators

ITW2024 Study Group 5



One fine day in a school in South Africa...



Curriculum & Classroom Connections

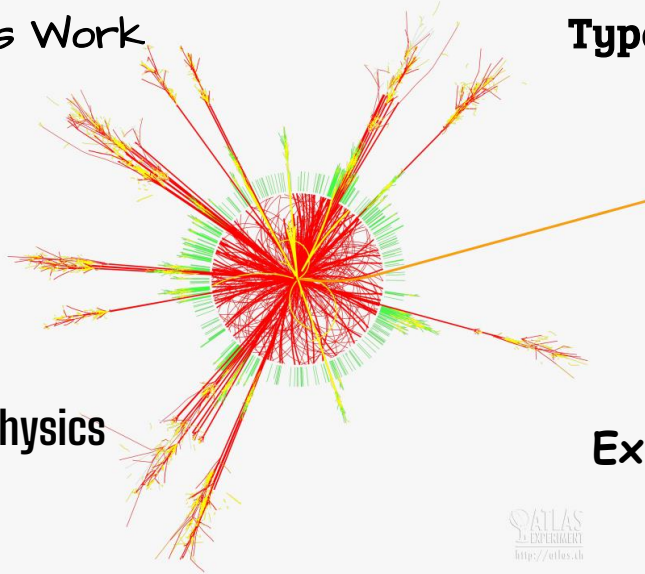
Highlight potential connections to the various curriculums and your individual teaching practises



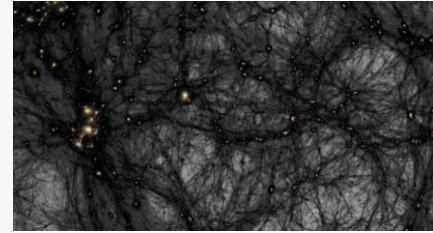
Key Ideas

Showcase the most important aspects of the topic that you consider to be key for a meaningful instruction

How Particle Accelerators Work



Types of Particle Accelerators



Role in Experimental Particle Physics

Experiments and Applications

Technological Innovation

Potential Students' Conceptions & Challenges

Illustrate elements of the topic that might obstruct a successful introduction in the classroom

Introduction to Fundamental Concepts

(What is a particle?)

Balancing Complexity with Accessibility

(What is he talking about?)

I wonder... what's for lunch?

Challenges in Teaching Advanced Topics

(Super magnets? How do magnets even work?)

Visualizing and Understanding Scale

(10^{11} ?, 10^{-9} ?)

Sparking Curiosity through

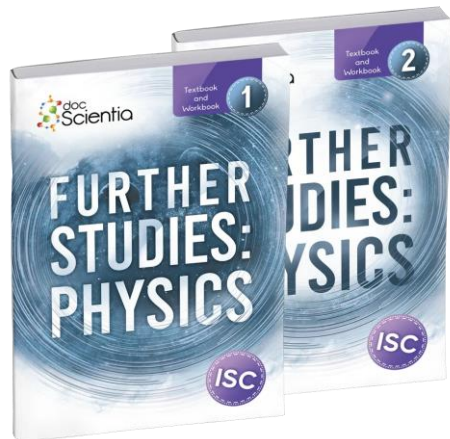
Simplified Key Ideas

(Why do I have to know that?)



Useful Material & Resources

Reference any material that you find useful for your students and/or your colleagues



Content specific textbooks

CERN Educational Resources: <https://educational-resources.web.cern.ch/>

Inside The World's Largest Particle Accelerator: <https://www.youtube.com/watch?v=328pw5Taeg0>

CERN's Open Data program: <https://opendata.cern.ch/>

Jeff Wiener:



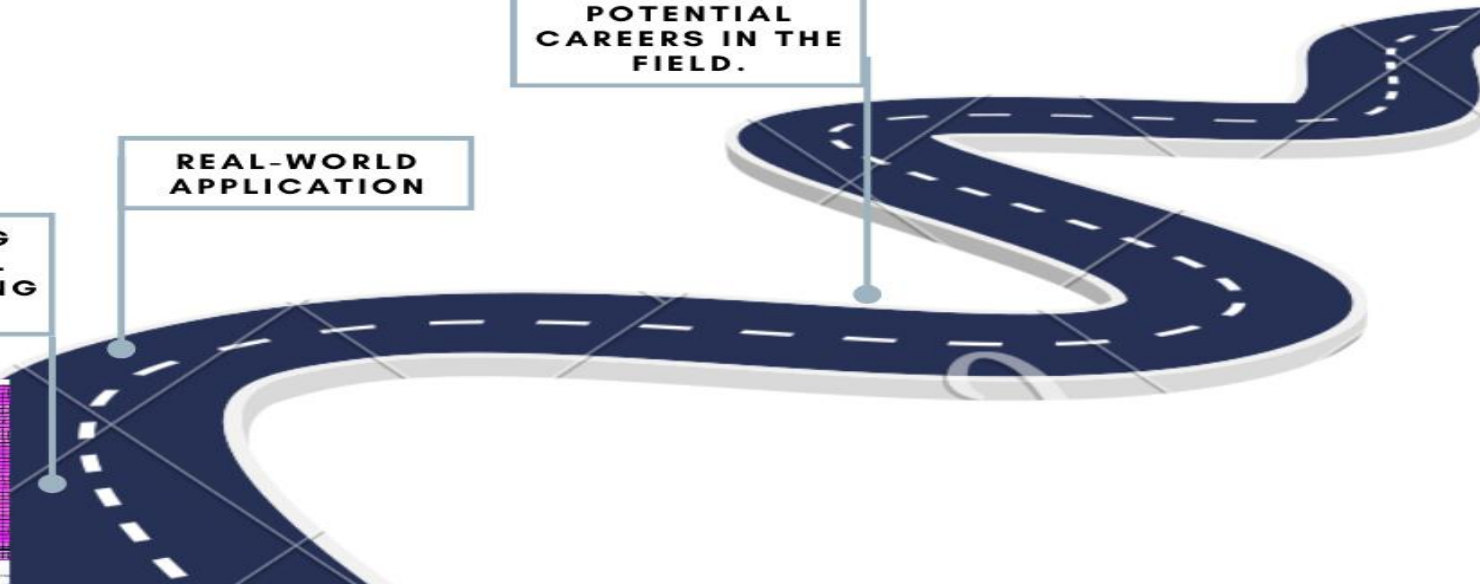
Best Practice Example



**PREPARING
STUDENTS FOR
POTENTIAL
CAREERS IN THE
FIELD.**

**REAL-WORLD
APPLICATION**

**EMPHASIZING
CONCEPTUAL
UNDERSTANDING**



ITW2024 Study Group 5

Sean Robert Morrow (South Africa), Natalija Budinski (Serbia),
André Felipe Astrogildo de Lima (Brazil), Sharon L. Palomares (Philippines)

One way in which our thinking has changed...

Inspired by CERN's values and willingness to share what they have learnt with the scientific community and anyone who is keen to learn.

CERN is Awesome!

Jeff for President!

together!

Highlights, snapshots, final words...

Networking and opportunities for future collaboration

Different learning techniques and approaches

Additional content, context and resources.

And we are ready to change the world