THE UNIVERSITY of EDINBURGH

Let's play

Quark Quest

(and friends)

Nuclear- and particle-physics board games for fun and (maybe) profit

Cheryl Patrick

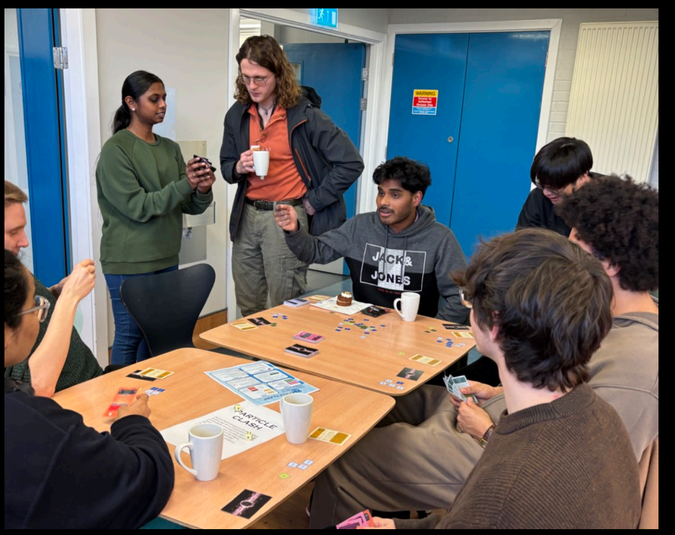
IPNP meeting, June 2025

Where the ideas happen

MSc in Particle and Nuclear Physics - Research Skills group project

Want a sneak peek next year?

Board games tea-party with the students mid-semester 2



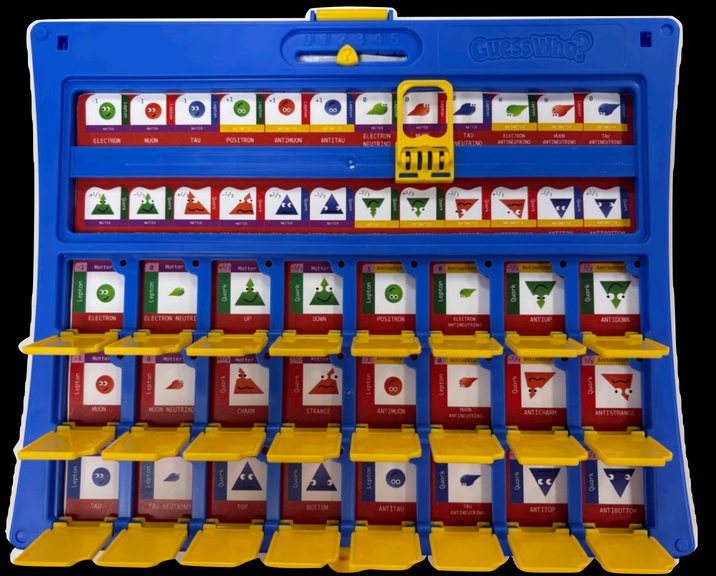
Science fair

Wide age range:
accessible gameplay

Intrigue and inspire:
no detail needed

Short visits of 5-10 mins:
immediate impact

Competing activities:
eye-catching



e.g. Particle Party
(Guess Who?)

Created by Alex Bullock, Mathai Joseph &
Elian Ruijter

Classroom

Well-understood target audience:
tailor to syllabus

Captive audience:
anything's better than school

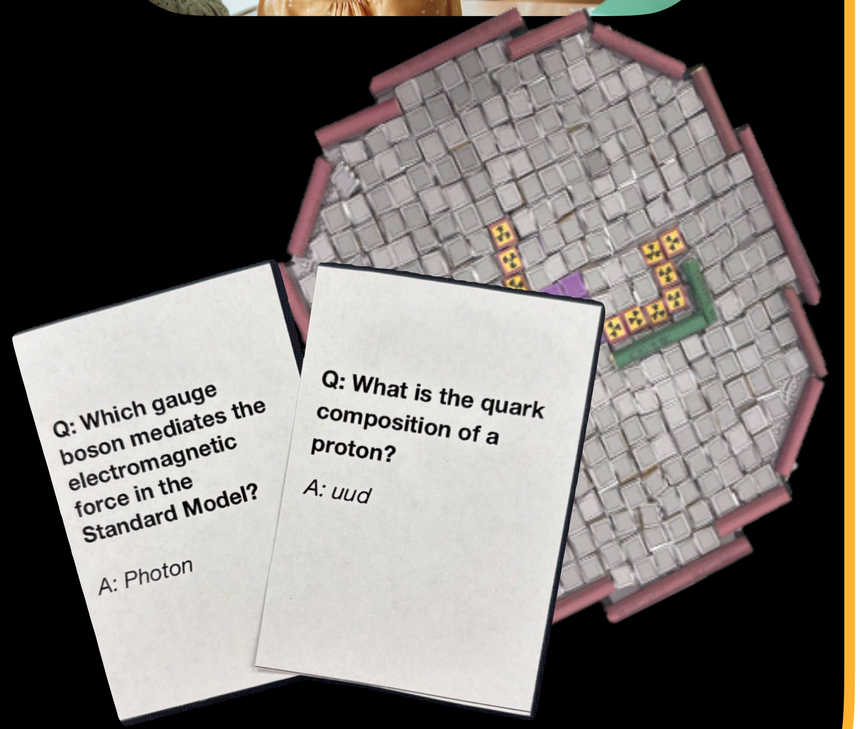
Time-limited:
~ 45 min class

No replay:
learn everything first time

~30-student classes:
scalability vs. cost

e.g. Reactor Runaway

(revision quiz)



Created by Jack Henderson, Dan Coppersthwaite-Lewis, Ailsa Evans & Chenxi Cao

Nuclear Nonsense (needs development)

- Collect isotopes from the table of nuclides
- Learn β^-, α and β^+ decays
- Experience the valley of stability
- Play as famous physicists - with superpowers!

Created by Finn Onori, Michael McGlynn,
Bastian Nijman and Jordan Wolken

At home

Mixed audience:
work at multiple levels

Lots of other options:
fun, appealing

Buy for family or as gift:
eye-catching, high-quality,

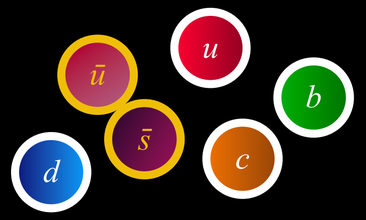
No time constraint:
complex gameplay / content OK

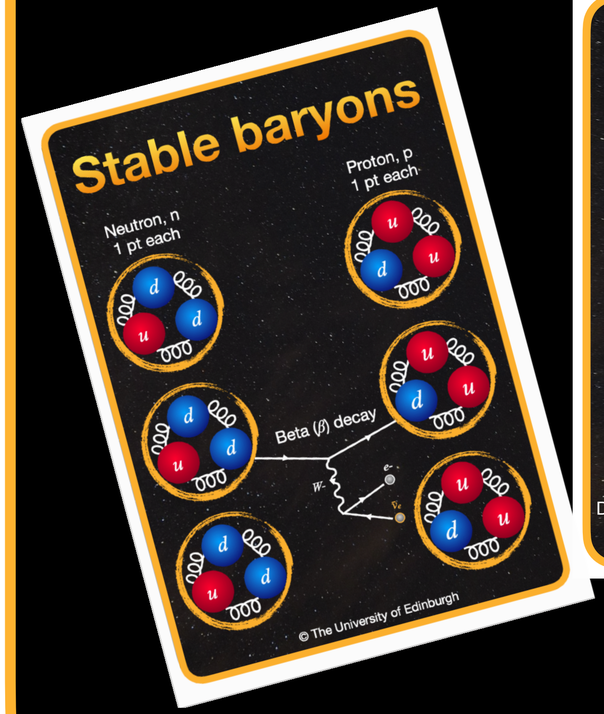
Replay value:
variety, continued learning

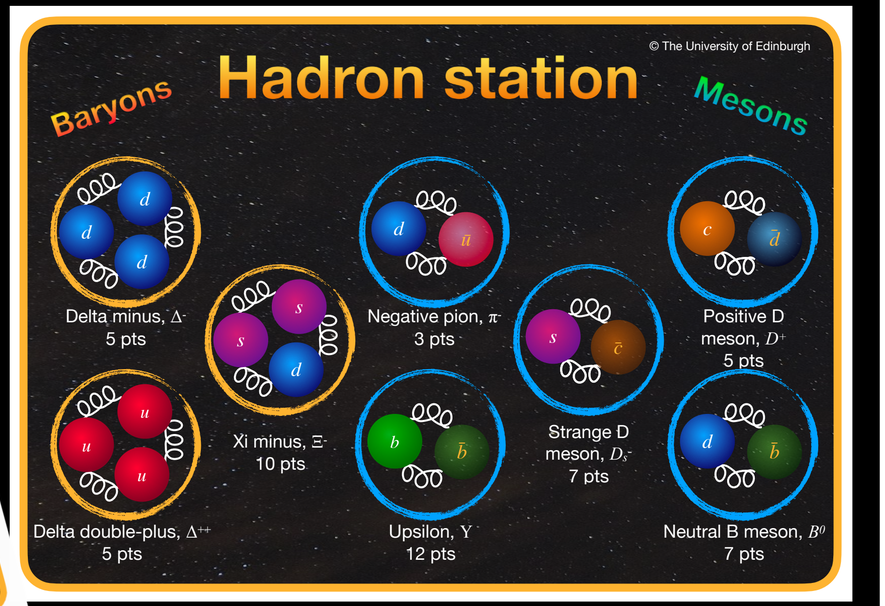
Can we do this with a physics game?

Quark Quest

Our most developed game



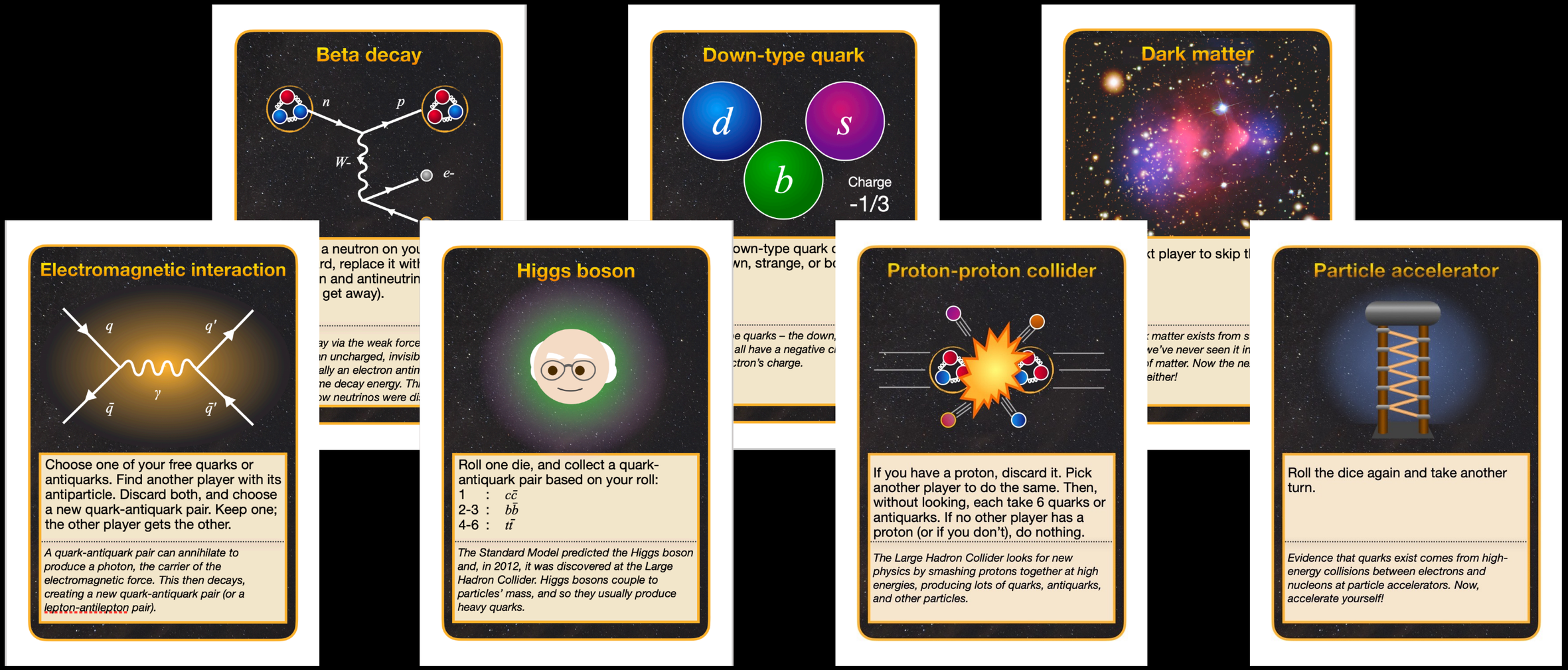




Created by Jamie Jones, Samiha Sehgal, Nicole Yaghnam & Jiacheng Shi

22 different cards with actions and physics

based on the Scottish Higher curriculum



Goal for summer - get it purchasable!

Quark Quest Classic

High-quality, replayable family edition

- Professional manufacturing
- New art ?
- Basic and advanced cards?

Quark Quest Classroom

Budget, learning-intensive schools' edition

- Highers language
- Pared-down card set
- Cheap materials, option to print PDF

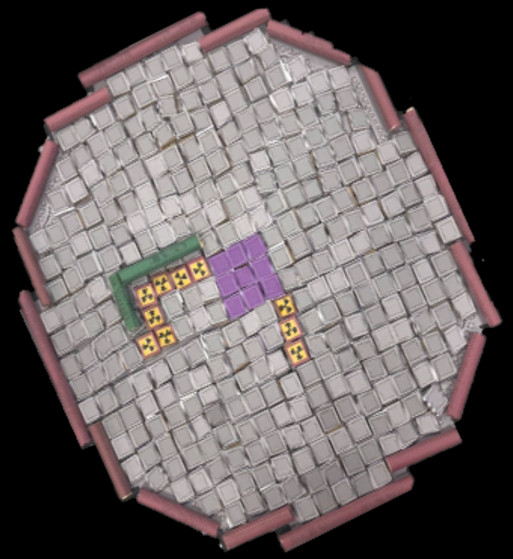
Welcome summer student Andrew Cunningham

Interested? Join the team!

Particle and nuclear-physics outreach | General | Microsoft Teams

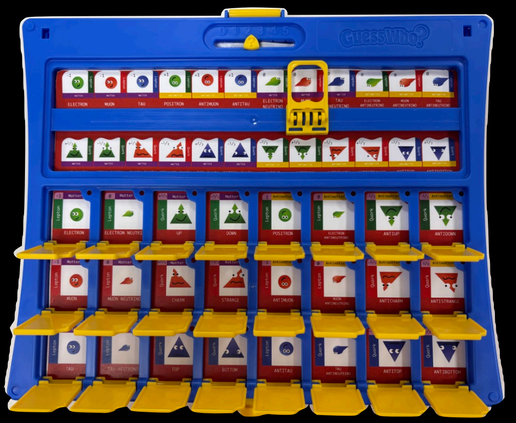
Nuclear Nonsense

Reactor Runaway



Particle Pursuit

Particle Party



Help develop games, take to schools or events - or just have a play!