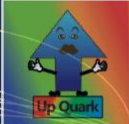

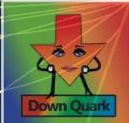

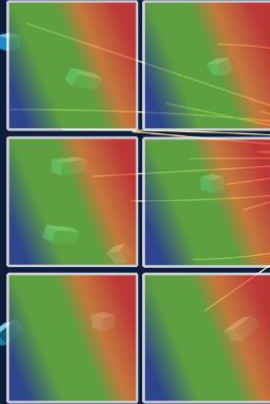



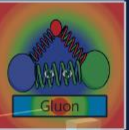




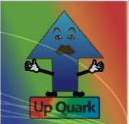
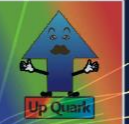
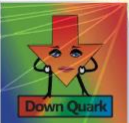

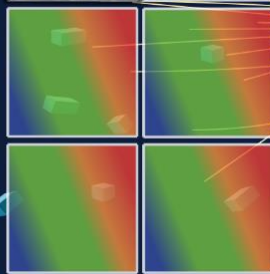


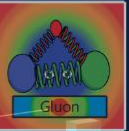



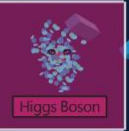



Particle Builder



<p>Hydrogen (12 points)</p>     <p>Click to learn more!</p>	<p>Quarks</p> 	  <p>Mass: <math>0.00011\text{ GeV}</math> Mean Lifetime: Stable Colour Charge: No Lepton Number: 0 1st generation (0 points)</p>	<p>Bosons</p>      
<p>Proton (10 points)</p>    <p>Click to learn more!</p>	<p>Quarks</p>  	<p>Leptons</p> 	<p>Bosons</p>      

Lachlan
Score: 3



Electric Charge: +2/3
Spin: 1/2
Mass: 2.2 MeV
Mean Lifetime: Stable

Why use Particle Builder?

Particle Builder is a good balance of both fun and learning a wide range of particle physics concepts.

If your syllabus has particle physics in it, then Particle Builder will almost definitely address content in it.

Of the students we tested it with:

- 95% said that it was more enjoyable than a normal science lesson
- 75% said that they learned more than a normal science lesson.

Online Game: <https://particle-builder.anu.edu.au/>

The screenshot displays two levels of the Particle Builder game. The top level is for building a Hydrogen atom (12 points), and the bottom level is for building a Proton (10 points). Each level features a central grid of particle slots and a set of available particles on the right.

Hydrogen (12 points) Level:

- Available Particles:** Up Quark, Down Quark, Electron, Photon, Gluon, W Boson, Z Boson, Higgs Boson.
- Grid:** A 3x2 grid of slots. The top row contains two Up Quarks. The bottom row contains one Down Quark and one Electron.
- Score:** 1
- AI:** A cockatoo icon.

Proton (10 points) Level:

- Available Particles:** Up Quark, Down Quark, Anti-Top Quark, Photon, Gluon, W Boson, Z Boson, Higgs Boson.
- Grid:** A 3x2 grid of slots. The top row contains two Up Quarks and one Anti-Top Quark.
- Score:** 3
- Player:** Lachlan, with a falcon icon.

Both levels include a "Click to learn more!" button and a "DISCARD" button. A "Particle Builder" logo is visible in the bottom right corner of each level's interface.

- Use full screen.
- Doesn't work on phones.



Physical Game is free too!

Go to Zenodo:

<https://zenodo.org/records/14210858>

