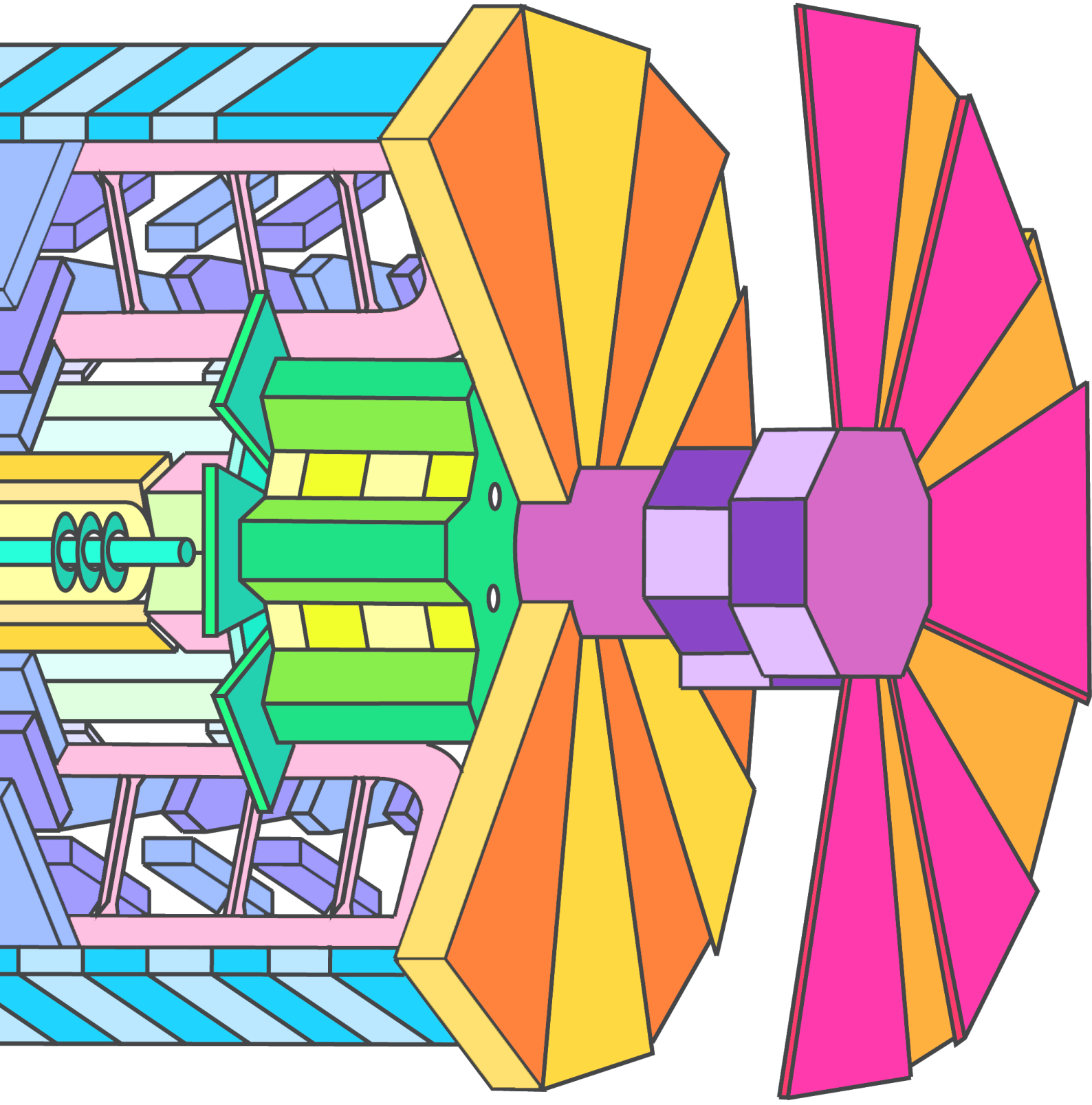
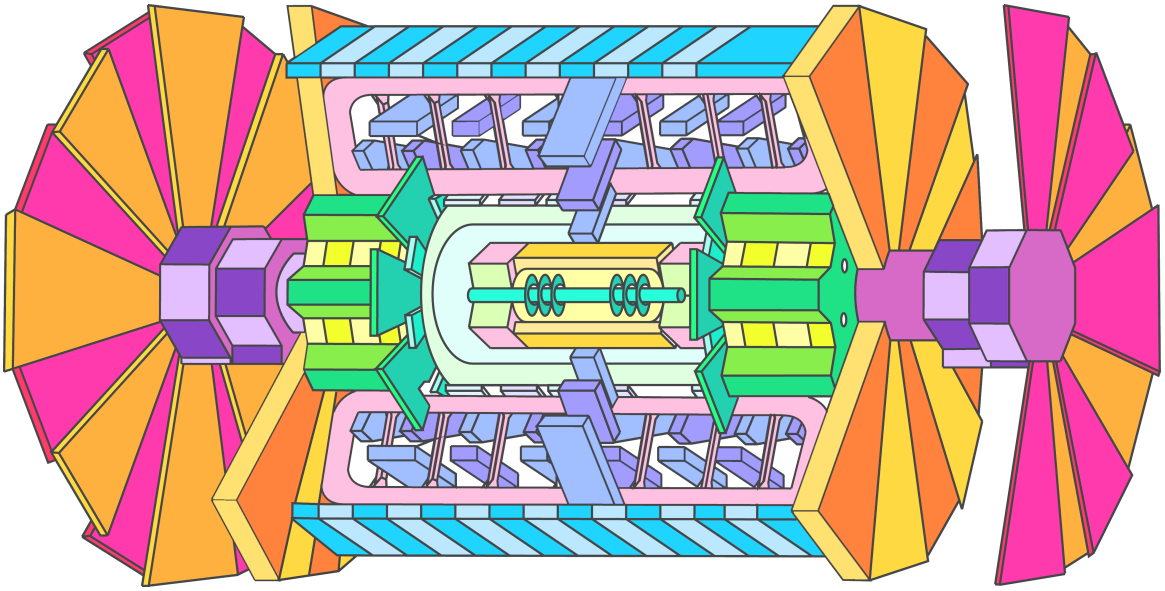


THE ATLAS EXPERIMENT COLOURING BOOK

THE ATLAS EXPERIMENT COLOURING BOOK



Illustrations by CERNland.net, Carolina De Luca and Rebecca Pitt
Text by Katarina Anthony for the ATLAS Collaboration
Project development by Veronica Ruberti and Katarina Anthony

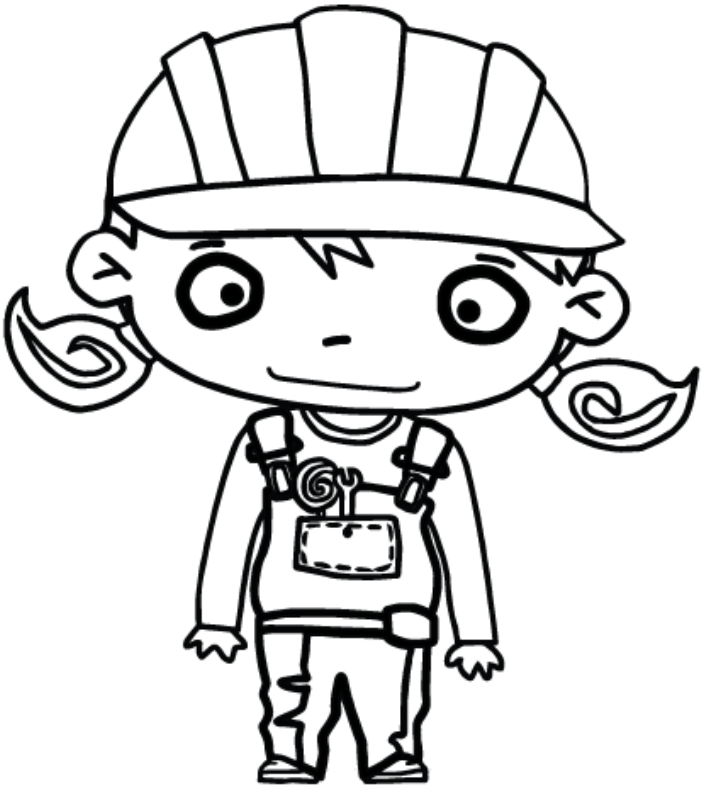
Pages 4-5; Characters of Bob and Betty: Designed by ovnii.it for CERNland.net
Pages 9-11: Designed by Carolina De Luca, carolinadeluca.com
Page 12: Designed by Rebecca Pitt, based on earlier work by Joao Pequenao for the exhibit www.the-higgs-boson-and-beyond.org

ATLAS EXPERIMENT

MEET BOB

I am a Physicist with the ATLAS Experiment. My job is to look for answers to important questions. For example: What are we made of? What happened at the beginning of the Universe?

MEET BETTY



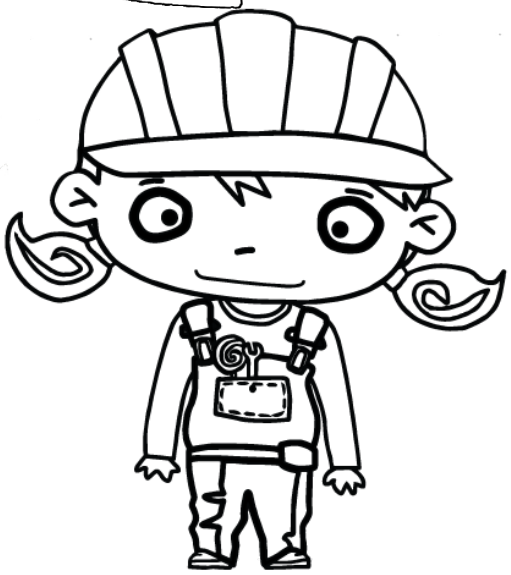
I am an Engineer with the ATLAS Experiment. My job is to build particle detectors.

ATLAS is like a giant microscope that looks for particles, the tiniest components of matter. Look around - matter makes up everything, even you!

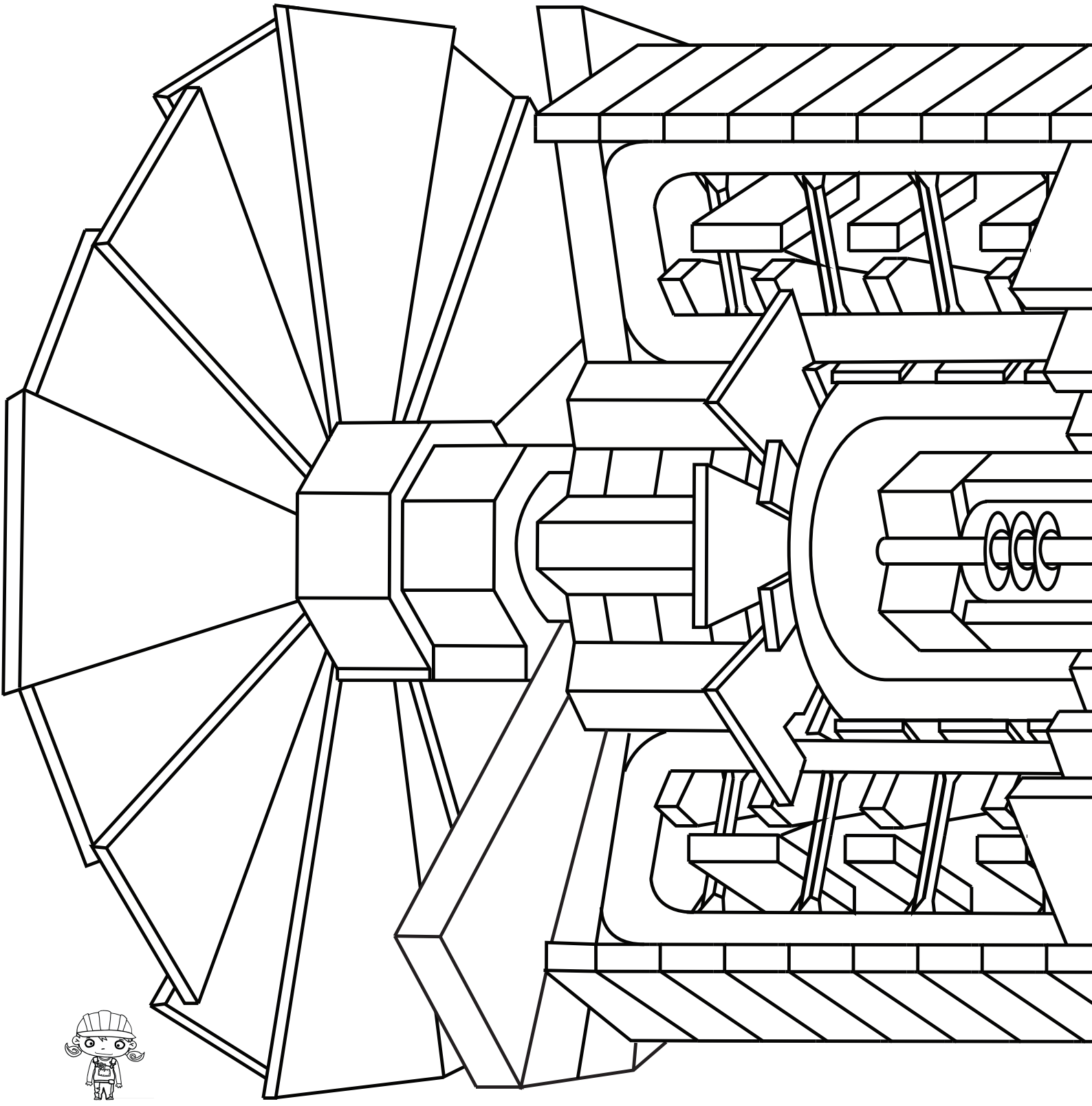

SYLVIA is studying physics at university. Her backpack is full of books.
HIKARU is an ATLAS engineer. Seems like he forgot to take off his helmet for lunch!

Over 5000 people are part of the ATLAS collaboration! They come from countries all over the world and do many different jobs.

Here are a few of my co-workers having lunch at the CERN cafeteria. Help me find a place to sit!

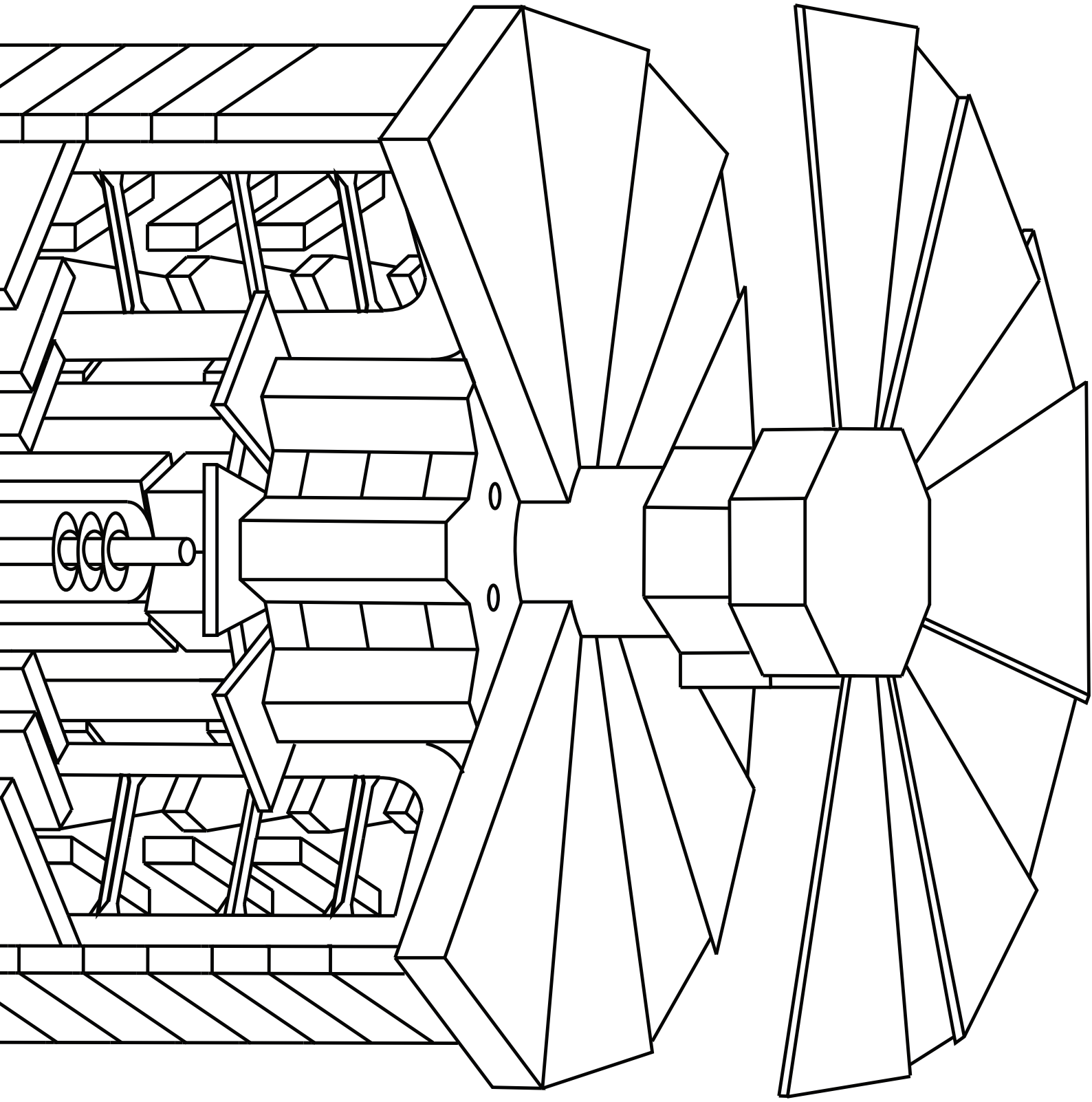


THE ATLAS



Hey! Down here! Welcome to the ATLAS Experiment – also known as my office.
It is located in an underground cavern in Switzerland.

DETECTOR



The ATLAS detector is longer than 3 school buses (46 metres), taller than 5 giraffes (25 metres) and almost as heavy as the Eiffel Tower (7,000 tonnes). It took us over 10 years to construct the ATLAS detector.

RECIPE OF THE UNIVERSE

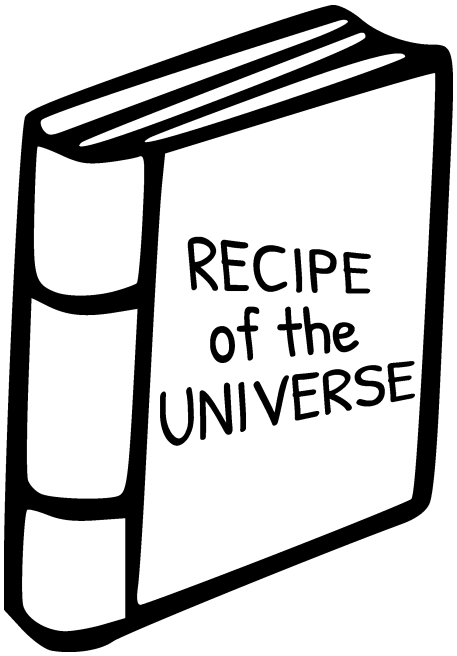
The ATLAS detector is like a giant microscope that lets us explore the world of particles.

Particles are the basic ingredients of our Universe. They mix together to create everything around us – even you and me!

Physicists have a recipe book for the Universe called the STANDARD MODEL. Whenever a new particle is discovered, it is added to the recipe book.

The Standard Model describes all of the particles we have found so far. It shows that there are two types:

- Force particles
- Matter particles called QUARKS and LEPTONS



FOR DECADES, OUR RECIPE BOOK WAS INCOMPLETE! WE STILL HAD TO FIND THE HIGGS BOSON...

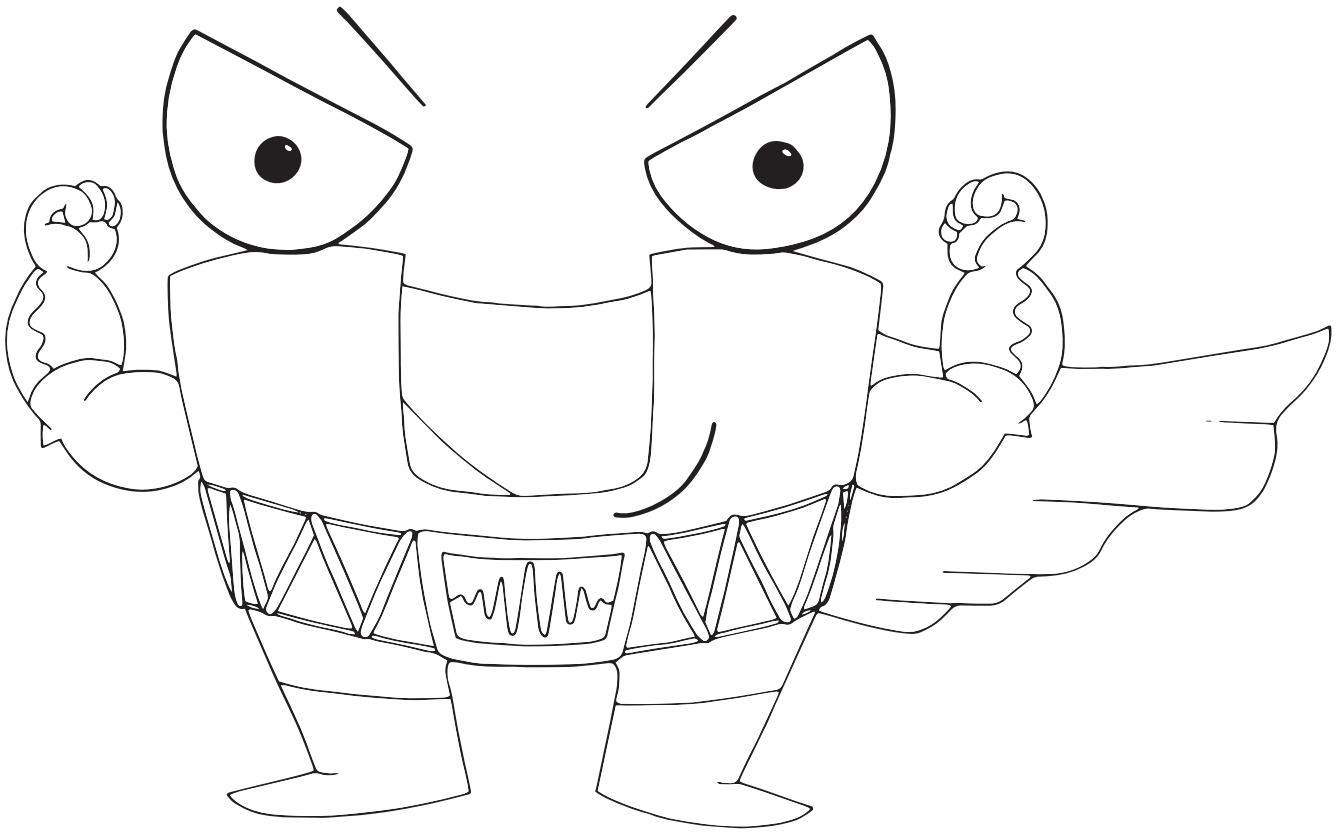
THE HIGGS BOSON

Physicists, like me, are always looking for NEW particles. I helped to discover the HIGGS BOSON in 2012!

This discovery was very exciting. For almost 60 years, scientists all over the world were searching for the Higgs Boson.

The Higgs Boson gives mass to all other particles. It is like a superhero – without it, the world would not exist!

The Higgs Boson completed the first page of our recipe book. What could be on the next pages?



HIGGS BOSON

[HIGZ BOH-SON] [NOUN]

1. *PHYSICS.* A FUNDAMENTAL PARTICLE THAT HELPS GIVE OTHER PARTICLES MASS.
2. THE ULTIMATE VIP *(VERY IMPORTANT PARTICLE).*

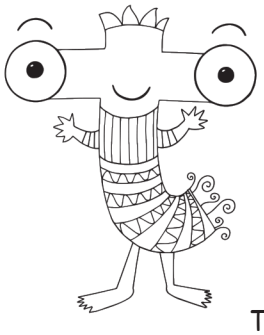
THE INGREDIENTS

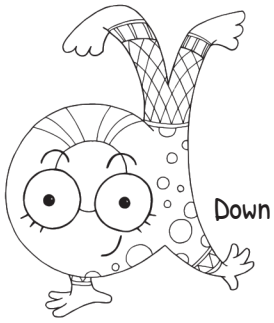
The Standard Model

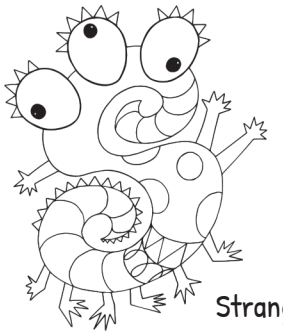
- Matter particles (quarks)

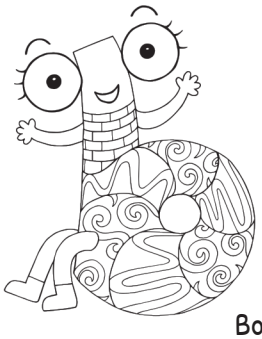

Up


Charm

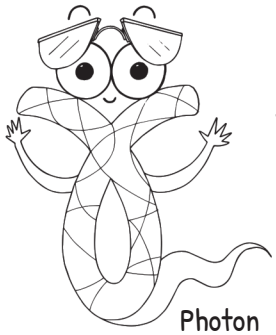

Top

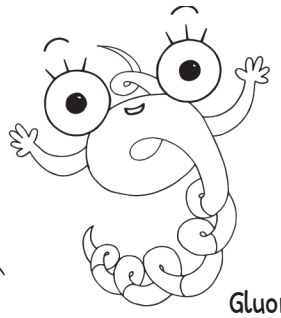

Down


Strange

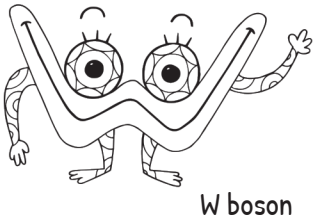

Bottom

- Force particles


Photon

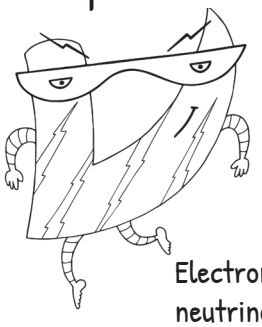

Gluon


Z boson


W boson

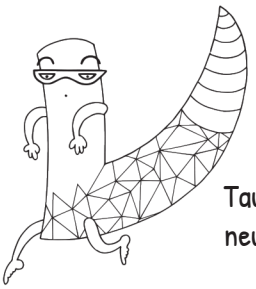
OF THE UNIVERSE

- Matter particles (Leptons)



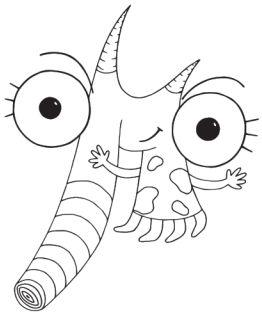
Electron neutrino

Muon neutrino

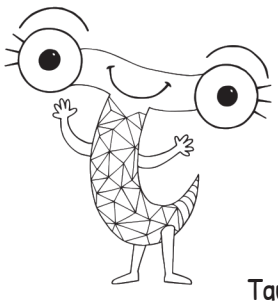


Tau neutrino

Electron



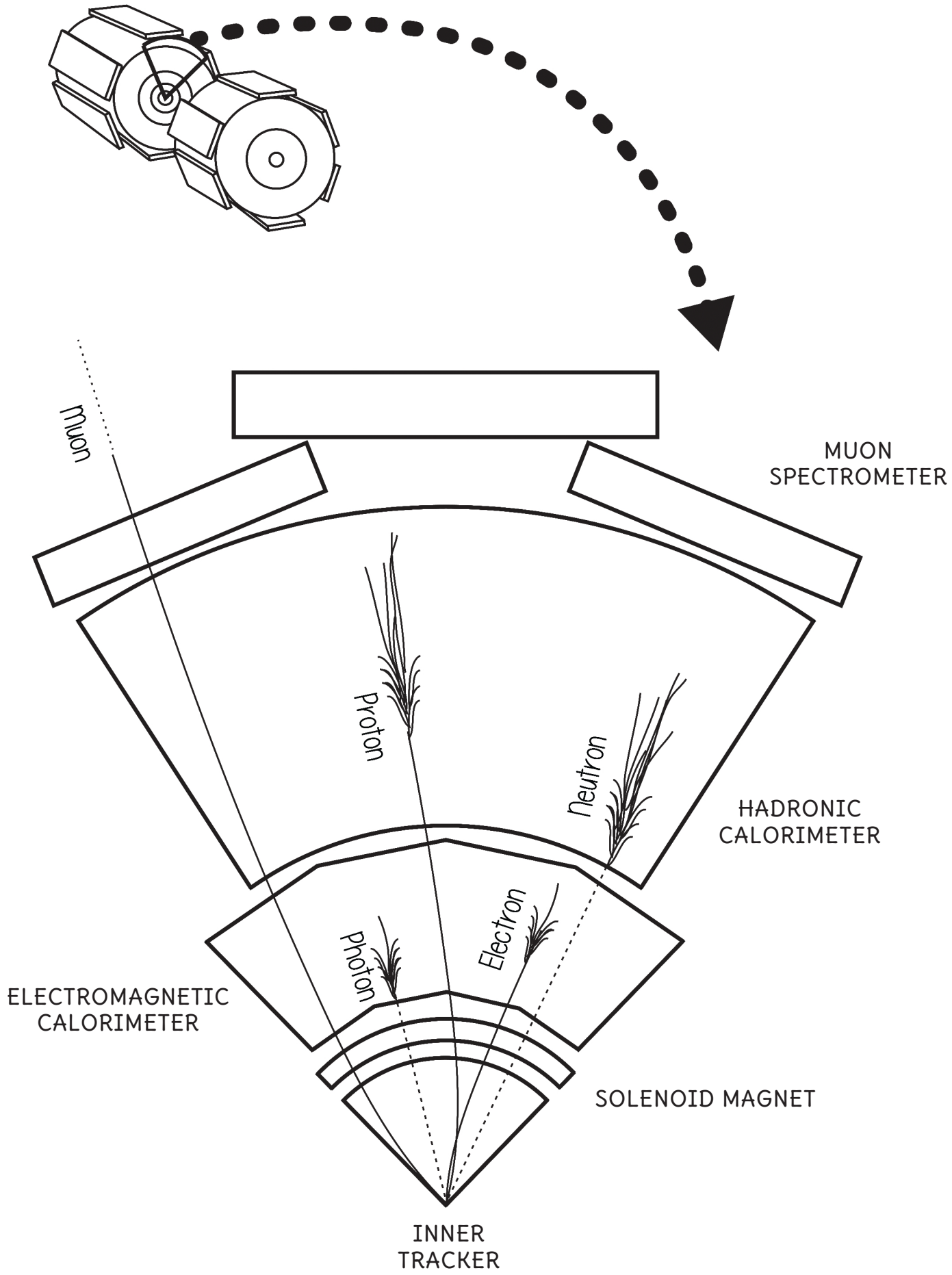
Muon



Tau

- Higgs Boson

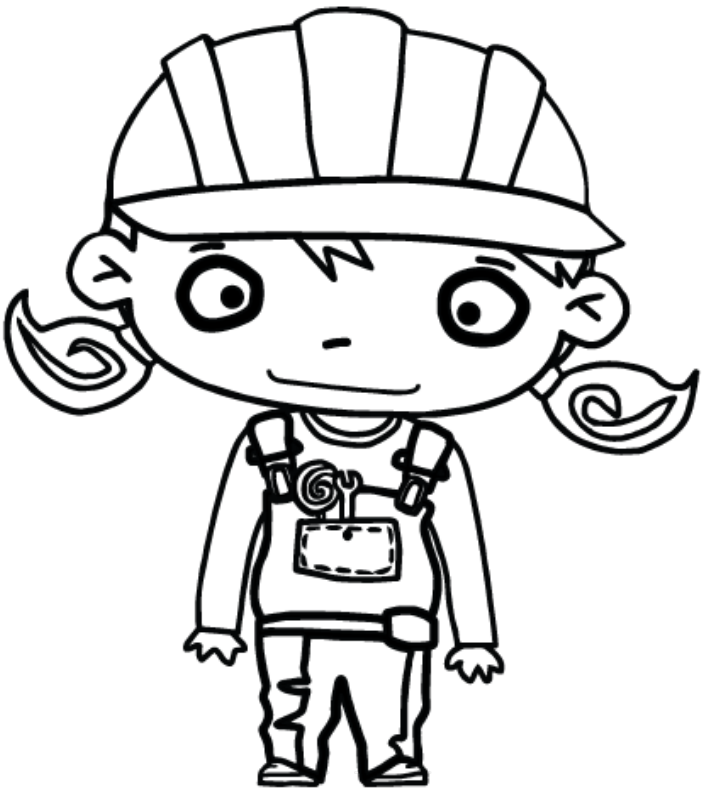
Higgs boson


Muon
MUON
SPECTROMETER
Proton
Neutron
HADRONIC
CALORIMETER
Photon
Electron
ELECTROMAGNETIC
CALORIMETER
SOLENOID MAGNET
INNER
TRACKER

PARTICLE DETECTIVES

The ATLAS detector is like an onion – it has many different layers!

Each layer has a different job. For example, the Solenoid Magnet helps detect particles with an ELECTRIC charge by making them curve!



Finding new particles is a lot like detective work! Instead of seeing the particles directly, we look at the tracks they leave behind in the detector. Using these clues, we can identify the particles!

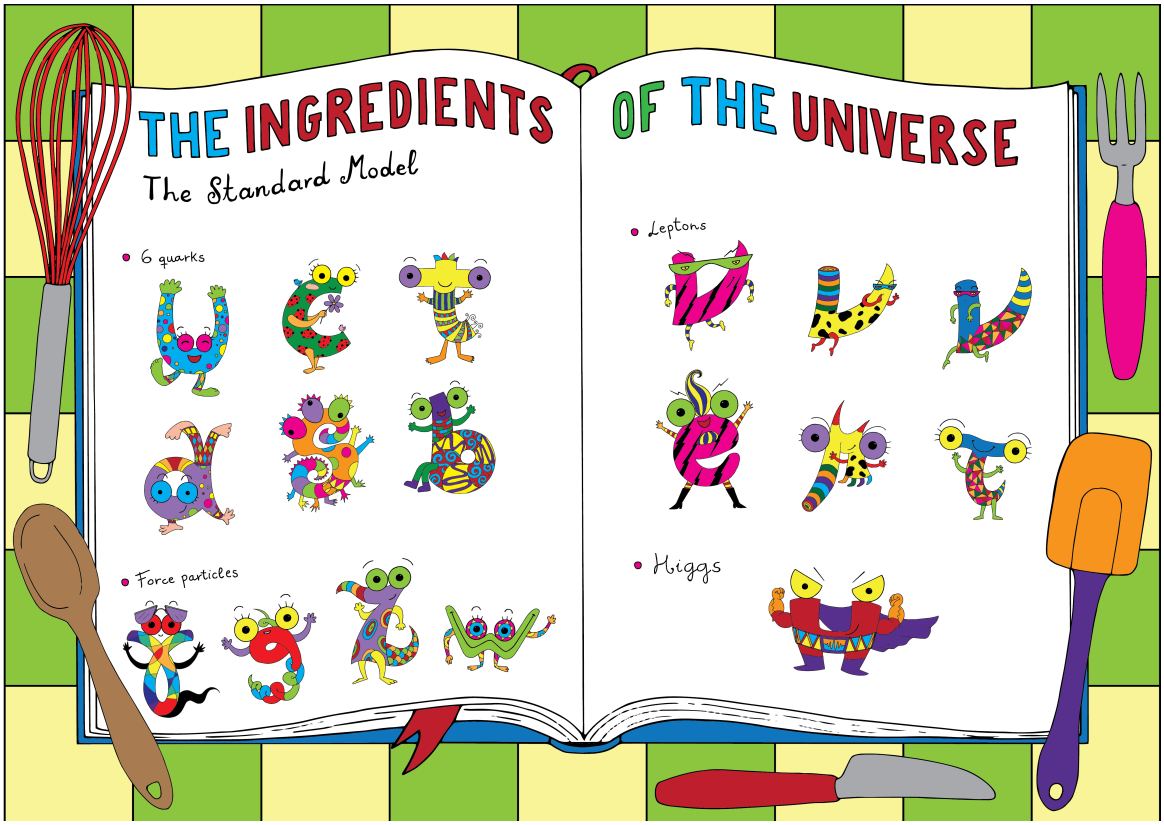
We also try to learn more about the characteristics of the different particles.

I am studying the HIGGS BOSON. There is still a lot we don't know about it! For example, how does it behave with other particles?

Future ATLAS scientist

The next important discovery could be made by the person in this portrait... Draw yourself as an ATLAS scientist!

THANKS FOR COLOURING!



Learn more about the ATLAS Experiment by visiting our website:

HTTP://ATLAS.CERN

More educational material is available at:

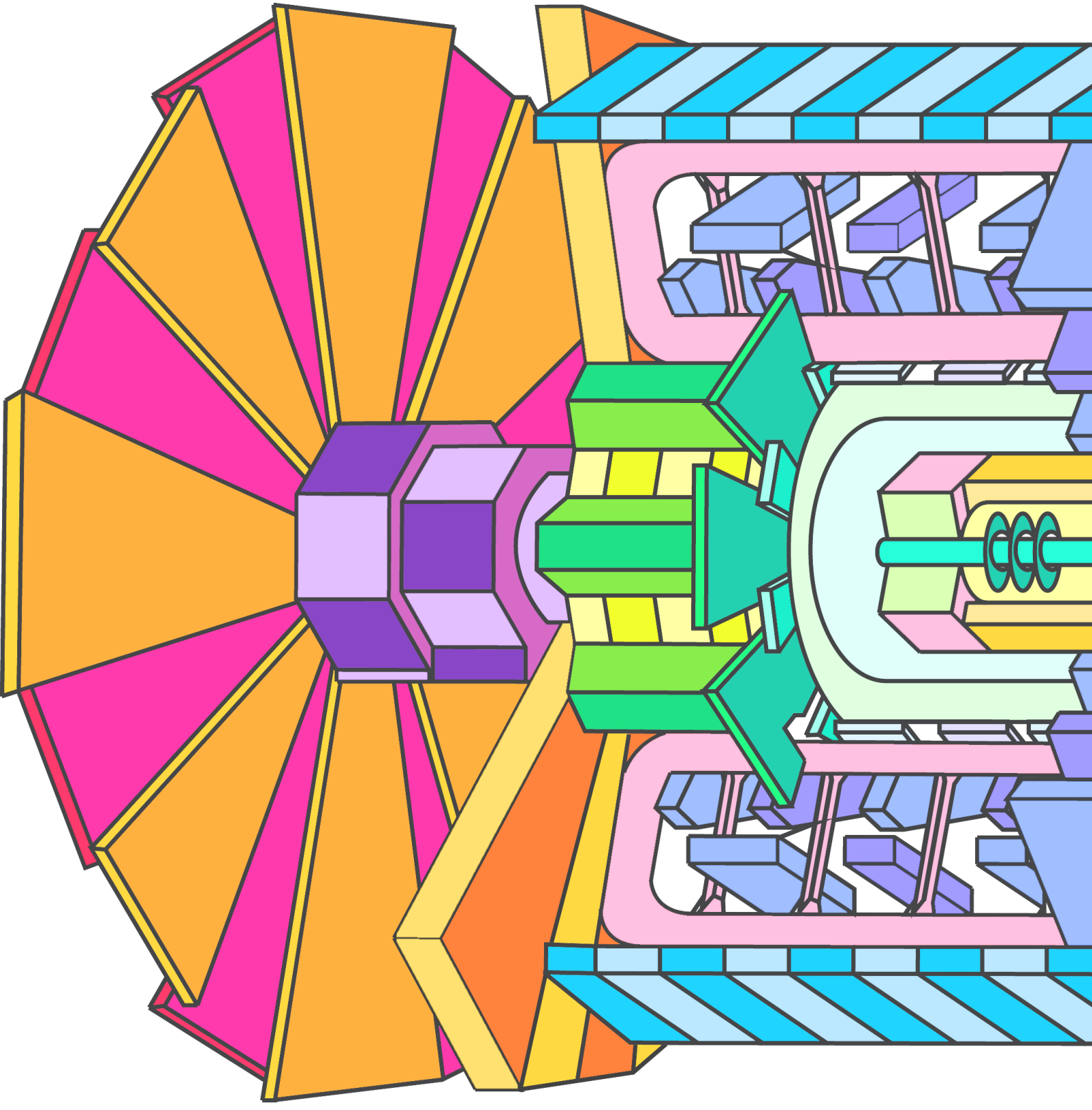
HTTP://ATLAS.CERN/RESOURCES

Or explore CERN with Betty and Bob! Visit CERNland, a virtual theme park featuring games, multimedia applications and films:

HTTP://WWW.CERNLAND.NET

ATLAS EXPERIMENT

CERNland



ATLAS
EXPERIMENT