

SCIENCE MUSEUM



INJECTING

HOPE

THE RACE FOR A
COVID-19 VACCINE

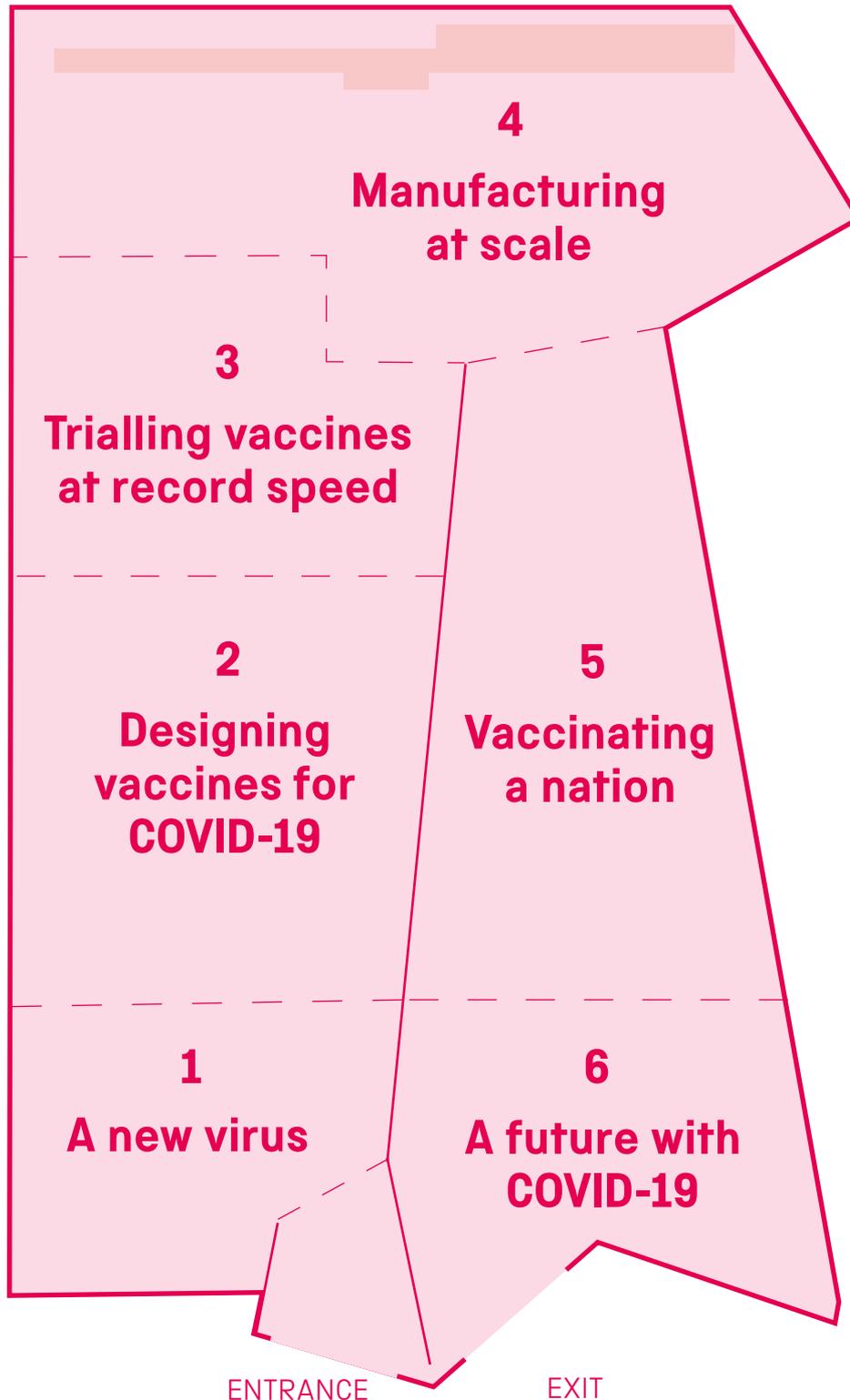
EXHIBITION GUIDE

INFORMATION i	Age 11-14, 14-16	Topic VACCINATION, HEALTH AND MEDICINE
	Location LEVEL 0, SCIENCE MUSEUM, LONDON	

***Injecting Hope: The Race for a COVID-19 Vaccine* reveals the scientific stories behind the global effort to develop vaccines at incredible speed.**

There are six sections in the exhibition, with over 100 intriguing objects, artworks and digital exhibits to explore.

Go behind the scenes in the laboratories and factories where COVID-19 vaccines were designed and made, and meet some of the people behind the extraordinary effort to contain one of the worst pandemics in recent history.



LEAD FUNDER

MAJOR FUNDER



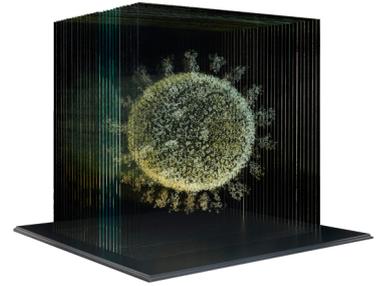
the
HUO FAMILY
FOUNDATION

1 A new virus

There are countless trillions of viruses all around us. Most don't harm us, but some can bring about serious illness. Though the virus that causes COVID-19 is new, we have known about human coronaviruses for over 50 years.

Don't miss: *2020: The Sphere That Changed the World* by Angela Palmer, 2020

This sculpture is over 8 million times the size of a coronavirus particle. Artist Angela Palmer helps us to reflect on the power contained within the virus's microscopic structure.



2 Designing vaccines for COVID-19

In terms of saving lives, vaccination is one of the most successful public health interventions in history.

Scientists have been studying and working with vaccines for years. So when COVID-19 struck, they were ready to quickly adapt existing vaccine designs and those already under development.

Don't miss: *Edward Jenner's vaccination lancets, 1790–1810*

Vaccines have a long history spanning over 200 years. These lancets were used by English physician Edward Jenner to carry out some of the earliest vaccinations against smallpox.



3 Trialling vaccines at record speed

COVID-19 vaccines went through the same careful tests and checks as all vaccines, but in record time. These trials relied on millions of volunteers coming forward across the world to ensure the vaccines' safety and that the risk of side effects was low.

Don't miss: *Chair from vaccine trial, 2020*

In this chair, on 23 April 2020, the very first volunteers in the UK both received vaccines and had blood samples taken as part of a clinical trial.



4 Manufacturing at scale

The COVID-19 pandemic meant vaccines had to be produced on a vast scale. To do so, international collaboration and huge resources were needed. And alongside massive increases in quantity, the quality of each dose had to be maintained.

Don't miss: *Small-batch wave bioreactor, 2020*

Vaccines rely upon growing and multiplying living cells inside equipment like this. This 'wave' bioreactor is named after the gentle rocking motion the device makes when in use.



5 Vaccinating a nation

Vaccination is a numbers game – the more individuals that get one, the better the population is protected. In the UK, vaccinating millions against COVID-19 at speed required setting up huge networks of people and places.

Don't miss: Vial and syringe from the first vaccination, 2020

With this syringe and vial, Margaret Keenan became the first person in the world to be given an approved vaccine for COVID-19 outside a clinical trial.



6 A future with COVID-19

Disease pandemics are part of our history, and while COVID-19 is the latest, it won't be the last.

Going forward, monitoring, vaccination and continued global collaboration remain essential to help control the disease.

Don't miss: MinION genetic sequencing device, 2020

As viruses spread, they mutate, and new variants emerge. This pocket-sized device lets scientists rapidly analyse the genetic material of a virus and see if it has changed.



Talk about...

As you explore the exhibition, or back at home or at school, think about your experiences of vaccination.

- What interests or surprises you about what you've seen in the exhibition?
- Would you consider taking part in a vaccine trial?
- If you've had a COVID-19 vaccination, where did you get it?
- How did you feel when you were invited for your COVID-19 vaccine?

Make the most of your visit

There are digital experiences throughout the exhibition. These range from films and immersive multi-screen displays to animations and interactive touch screens.

There are also hands-on experiences including a tactile 3D model of the virus that causes COVID-19.

Throughout the exhibition there are opportunities to think about and reflect on your experiences of vaccination.

Explore more...

Visit *Medicine: The Wellcome Galleries* to further your experience of how medicine affects our lives. The *Medicine and Communities* gallery explores the history of vaccination and contains an interactive vaccination game.

The Science Museum website features many different activities, films and games to continue your experience back at home or in the classroom.

For more ideas and activities visit [sciencemuseumgroup.org.uk/resources](https://www.sciencemuseumgroup.org.uk/resources)