

## **Schools Connect**

# Learning from a pandemic

Good health and well-being (UN Global Goal 3)



## WHAT YOU WILL FIND HERE

We have designed this learning unit to help pupils to readjust to classroom learning through making sense of the Covid-19 (Coronavirus) pandemic. It aims to make a contribution to a recovery curriculum in schools, and beyond this, by providing interesting, engaging and relevant content that encourages pupils to recall, discuss and process some of their thoughts, feelings and memories. It also aims to empower pupils by equipping them with well-sourced information about the pandemic in a wider context, giving them confidence to question some of the misinformation they may have received, or may encounter in the future.

Over the course of six lessons, pupils will have opportunities to develop an understanding of:

- Covid-19 in the context of some of the world's most common communicable diseases and pandemics from the past
- how communicable diseases like Covid-19 may start and spread, and how this is investigated
- relevant prevention strategies to foster positive physical and mental health and well-being.

In doing so, pupils will have the opportunity to develop core skills in critical thinking and problem solving, citizenship, student leadership, creativity and imagination and aspects of digital literacy.

This learning unit is also designed to support the United Nations' Global Goals for Sustainable Development (SDGs), in particular Goal 3: Good health and well-being. By becoming informed and engaged citizens, young people will be better able to play their part in contributing to a more healthy and positive future.



Felipe Esquivel Reed CC BY-SA 4.0

### **OVERVIEW**

The Covid-19 pandemic seemed to take most of the world by surprise. In the 21st century, how could such a tiny virus cause such devastation, so guickly, to almost the entire world? Yet, for communities in countries who have faced past pandemics, or who endure endemic communicable diseases, living with such pathogens and the infection control measures that come with them is nothing new. For people who normally take good health and well-being for granted, Covid-19 has perhaps reminded them of their own vulnerability and their interdependence with the natural and human worlds. For some, it has shown the strength and value of communities coming together to support each other. For those whose own health has been directly affected, who have lost loved ones, jobs or livelihoods, the pandemic may have been a devastating crisis. For those groups of people, and entire countries, that have been disproportionately affected, the pandemic may have reinforced wider social and global injustices and divisions. Many of those most affected have been health workers, caring for those with the illness, or other 'key workers' maintaining essential services - often not well paid, but suddenly noticed and appreciated. Those in countries that have contained the infection are forever vulnerable to having it reintroduced from those that have not.

The way that countries in Europe, parts of Asia, Australasia and north America were affected earlier than those in other parts of the world suggests that the disease was spread rapidly through high numbers of international flights – a major channel of globalisation and a big contributor to climate change. There are also indications that some dangerous, novel pathogens, like the virus that causes Covid-19, may cross from wild animal hosts to humans as they come under stress and find themselves in close contact with people, following the disruption of their habitats. Some other diseases that have crossed over from animals to people appear to have arisen from animal agriculture.

All these challenging issues closely relate to a number of UN Global Goals (some of which are addressed by other units in this series) and to the wider theme of sustainable development. They raise vital questions for learners about how people might live together more equitably and sustainably in a finite and interdependent world.

## AGE RANGE

These lesson activities are suitable for use with pupils aged 8 to 15. Where the health-related vocabulary may be unfamiliar to pupils, definitions are provided in a glossary (page 65). To help teachers increase challenge and depth as appropriate, we have suggested extension activities after some of the lessons; these reflect greater sophistication. As well as considering how best to adapt these materials to suit the needs and abilities of each learner, we encourage teachers to think about how to apply learning to best effect in the context of their particular community and the national curriculum of their country.

### **CURRICULUM ALIGNMENT**

This unit is designed to support the development of both knowledge and skills. Teachers should consider the core knowledge and vocabulary within each lesson as the starting point, then apply this to activities to develop and embed pupils' understanding.

We recommend that each teacher identifies opportunities within their school's curriculum where they can best teach the knowledge and skills in this unit. This could be in science, maths, history, personal, social and health education, English/literacy, citizenship or other subjects. You should see the unit as part of the curriculum, not an add-on.

Learning objectives are included at the start of each lesson.

## TIME AND RESOURCES

There are six lessons in total, which have been designed to take a minimum of 90 minutes each to deliver. Pupils will benefit from being allowed extra time during or after many of the lessons for their own research. You will need to allow extra time if you are delivering the unit in conjunction with partner schools.

Allow extra time to prepare sets of copied and cut-up cards for some of the lessons. It is best to complete a number of the lessons in this unit with at least some internet access via PC, laptop or smartphone. Where possible, we have provided or suggested non-digital alternatives as well, and we encourage teachers to think of other relevant alternatives within their own context. For those with good internet access, many of the cardrelated activities have online alternatives, which might help facilitate physical distancing if this is required.

## PLANNING THE UNIT AND COLLABORATING

This unit has been designed for delivery:

- independently, in your own classroom
- with a partner school online, sharing work in a nontime-dependent way

There is a wide range of opportunities for partner schools to work together on this unit, including through the sharing of materials created, online communication and even live virtual meetings.

When working with a partner on any lesson in this project, you need to take into consideration the difference in your schools' timetables, hours and holidays.

Different school communities and countries may have very different experiences of the pandemic, and teachers should be open to suggestions from their partner school colleagues as to which issues might be sensitive and how best to handle them. Activities from the learning unit can be adapted, developed or omitted according to pupil and community needs and sensitivities.



### **UNIT OVERVIEW**

#### Lesson 1 – Infectious diseases, the big picture.

The nature and origins of infections, past and present, and how quickly they spread.

#### Lesson 6 – How is life changing now and how might it change in the future?

Changes since the pandemic, different responses and different possible futures.

•

#### Lesson 5 – What are vaccines and could they help us?

The nature, history, use, benefits and (low-level) risks of vaccinations.

## Lesson 2 – Slowing the spread of a pandemic.

Hand washing, physical distancing, essential services, personal protective equipment.

Lesson 3 – Measuring the spread of a pandemic.

Testing and tracing, measuring the spread, learning from dealing with outbreaks through the ages.

## Lesson 4 – Staying safe in a pandemic.

The role of governments, NGOs and communities, the value of community resilience and positive mental health.

## LEARNING MATERIALS CREATED FOR THIS UNIT

The materials follow a chain of questions that pupils might ask about the Covid-19 pandemic:

- 1. How and why did it happen?
- 2. How do we slow the spread of it?
- 3. How do we stay safe?
- 4. How do we prevent it happening again?
- 5. How is life changing as a result?

These broadly correspond to the structure of the learning unit below (allowing for the second question being taken in two parts in the unit). The learning materials also seek to apply the questions in the context of UN Global Goal 3 and consider their relevance to outbreaks of other infectious diseases.

#### Lesson 1 – Infectious diseases, the big picture.

Learning about the commonest infectious diseases across the world today and examples of serious pandemics and outbreaks from the past. Understanding how quickly such diseases may spread and how some are more dangerous than others.

#### Lesson 2 – Slowing the spread of a pandemic.

Understanding the main reasons for hand washing, physical distancing and lockdown measures. Considering who key workers are, the essential services they provide and the personal protective equipment they need.

#### Lesson 3 – Measuring the spread of a pandemic.

Understanding the importance of testing and tracing people for an infectious disease and understanding more about how the spread of such diseases is measured. Learning from how people dealt with examples of outbreaks in the past.

#### Lesson 4 – Staying safe in a pandemic.

Understanding the role of governments, NGOs and communities in a pandemic. Learning from individual and community stories relating to resilience and response to uncertainty, lockdown and physical distancing. Considering strategies for fostering positive mental health and well-being.

## Lesson 5 – What are vaccines and could they help us?

Learning about the nature and history of vaccines, how they are developed and what determines their availability. Understanding their successes and benefits in the context of UN Global Goal 3 and the low-level risks involved in their use. Applying this learning, through a role play, to prepare for a new pandemic.

## Lesson 6 – How is life changing now and how might it change in the future?

Considering examples of images taken before and during the Covid-19 pandemic lockdowns, and the differences they represent. Articulating thoughts and feelings about the future and imagining different possible futures and long-term responses. Imagining an ideal school of the future.



## **TEACHER'S PLANNING TEMPLATE**

This can be used individually, in collaboration with colleagues in your school or with teachers teaching the same unit in another country.

Question	Notes	Your thoughts
1. What do you want pupils to learn?	<ul> <li>Read through the materials for the whole unit and consider what is most important for your pupils to learn. Use the learning objectives listed at the start of each lesson to help you do this.</li> <li>What outcomes do you want for your pupils?</li> <li>Consider the core skills developed by each lesson. What are the priorities in your context?</li> <li>Think about how this unit fits with your national curriculum. How do the learning objectives meet the requirements of your national curriculum or guidelines?</li> </ul>	
2. What would be the best way for them to learn this?	<ul> <li>Given the learning objectives you have identified, decide whether you are going to deliver all or a selection of the lessons.</li> <li>Take into account the time and resources you have available.</li> <li>How do you need to tailor the learning activities in each lesson to meet your pupils' needs?</li> <li>Will you use the suggested extension activities?</li> <li>How do the knowledge and skills in this unit link to previous learning?</li> <li>What is the best way for pupils to learn about Covid-19 in their community, country and internationally?</li> <li>How could this unit be used as an opportunity to develop core skills?</li> <li>What is the best way for them to approach working collaboratively?</li> </ul>	

## **TEACHER'S PLANNING TEMPLATE (cont.)**

Question	Notes	Your thoughts
3. How will you know what they have learned?	<ul> <li>Given the learning objectives you have decided, think about assessment.</li> <li>How will you find out what your pupils already know about infectious diseases, Covid-19 and good health and well-being before beginning this unit?</li> <li>Consider what sort of evidence you would need to see that pupils have learned the knowledge, skills and attributes you would like them to learn.</li> </ul>	
4. What resources do you need?	<ul> <li>Given the learning activities you are planning, think about the resources you will need.</li> <li>Who could you engage in the unit so that pupils learn more about Covid-19 and good health and well-being in their own and other contexts?</li> <li>What additional materials would be beneficial to your pupils' learning in this unit?</li> <li>Where do you need to do the activities? Are all the required resources available?</li> </ul>	
5. What did pupils learn during the unit?	<ul> <li>During and after the unit, think about what pupils have learned.</li> <li>To what extent did pupils achieve the learning objectives for each lesson?</li> <li>What other outcomes were achieved? What else did pupils learn?</li> <li>Were pupils confused about anything?</li> <li>Which parts of the unit needed more time or attention than expected?</li> </ul>	
6. What other reflections do you have about the unit?	<ul> <li>During and after the unit, think about what went well and what you could have done differently.</li> <li>Which learning experiences were particularly valuable?</li> <li>Were the learning activities appropriate? What worked well?</li> <li>What would you do differently next time?</li> </ul>	

# **LESSON** 1

## Infectious diseases, the big picture

#### **PUPILS WILL:**

- know facts and figures about some of the most severe communicable diseases in the world
- understand how pandemics can start when animal diseases spread to humans
- understand how quickly diseases can spread and how some are more dangerous than others

#### **NOTES ON CORE SKILLS**

The first lesson is an opportunity to share with pupils that this learning unit will be partly about critical thinking and problem solving – trying to see the bigger picture with regard to global communicable diseases and pandemics to help gain a sense of perspective on Covid-19. There are rich opportunities for enhancing communication, collaboration and digital literacy core skills.

#### Note on preparation

For the four steps of this lesson it would be helpful (though not essential) to set up an interactive display or Working Wall to visualise the learning journey as one step builds on the previous one. It would also be valuable to collect and display any questions as they arise from pupils participating in the activity.

## **STEP 1: What are the world's commonest infectious diseases?**

- Explain to pupils that they will be learning about infectious diseases in the world, how they spread and how they can be prevented and treated. Ask pupils to brainstorm what they think are the world's most common communicable diseases (explain the term if required).
- Record these initial ideas on the Working Wall. Explain that all the most common communicable diseases are 'endemic' and occur most of the time in some populations, in some parts of the world.

- Malaria is an example of a serious communicable disease found in the tropics. Pupils can find out more about malaria with this two-minute animation. It gives a history of malaria, how things are now, how people are trying to get rid of it, and the benefits this would bring. (© Malaria No More.)
- Print out and cut up the eight cards from each of the three 'World's most common communicable diseases' sheets (pages 12–14). If you want pupils to do this online, click on this link (enlarge as required). Pupils should match the cards with the correct disease under the headings provided. They can look for clues in the texts to help, or use the Kiddle search engine (scroll down to see the results below the blue shaded area at the top of the results page) to look up the diseases. When they have matched all the cards correctly, the small coloured letters in the bottom left- hand corner of each card will line up to spell words. If the diseases are ordered: Respiratory infections, HIV/AIDS, Malaria, Diarrhoeal diseases, they will make a sentence.
- Ask pupils to read the first six spreads (double pages) of the book Coronavirus: a book for children, and watch the short video on how a virus attacks a cell, infects people and makes them ill. Then, prepare cards for Covid-19 like the ones for the other diseases. You can use the Kiddle search engine to look up extra information and find images. CBBC's Newsround is another good place to visit. Display a complete set of your cards along with any questions that you have. (Coronavirus book: Nosy Crow / CC BY-NC-ND 4.0.)



Malaria-transmitting mosquito, Charles Rondeau/public domain

#### Transcript of the video:

#### How a virus attacks a cell (Vaccine Makers Project)

Look at the scene. It's like an alien landscape, but it's not another planet. This is a scene inside your body, inside of your lungs. The flying dot is a germ. This germ is called a virus. Viruses cause disease. They cause common diseases like colds. Some viruses cause deadly diseases.

This virus is looking for a cell. The pink surface is the top of a lung cell. It is huge compared with the virus. The virus needs to unlock the cell. If it does, the virus can infect the cell.

Touchdown. Now the infection can start. See the virus connect with the cell. The yellow blobs are molecules. They are the right size and shape so they can unlock the cell. The cell surface has receptors. These are also molecules. The virus uses these to unlock the cell. In this way the virus tricks the cell. The cell will now let the virus inside. The virus enters the cell. You can see it sink inside. This is how the virus starts to infect the cell.

vimeo.com/248010829 © Vaccine Makers Project

#### **STEP 2: Pandemics and outbreaks**

- Explain to pupils that some diseases seem to come from nowhere and then spread rapidly through populations. These are called 'epidemics'. Pandemics are epidemics that spread across the world.
- Print out and cut up the ten cards from each of the three 'Pandemics and outbreaks' sheets (pages 15–18). If you want pupils to do this online, click on this link. Pupils should place the picture cards in sequence under the headings provided to show how each disease epidemic started and spread. A question mark symbol appears where there is uncertainty. The three human figures indicate where the disease crossed over from being an infection of animals to becoming an infection of humans. The six cards with text on from the fourth sheet may help pupils to place the other cards. When pupils have matched all the cards correctly, the small coloured letters in the bottom right-hand corner of each card will line up to spell words. If the diseases are ordered as follows: SARS, H1N1 influenza, Smallpox, Bubonic plaque, Ebola virus disease, Covid-19, the words will make a sentence.

- Now ask pupils to write some text about Covid-19, similar to the other texts on the 'Pandemics and outbreaks' sheets. They can build on what they did on Covid-19 in Step 1.
- Display a complete set of the cards on the Working Wall, along with any further questions.
- Pupils may be wondering why bats are thought to be the cause of so many serious diseases in humans. It seems that one of the ways that bats cope with vigorous flying, which can cause tissue damage, is to have a very strong internal system. This seems to give them long lifespans and also protects them against viruses. However, to cope with the bat's strong system, bat viruses also become much more powerful than normal viruses. If these viruses spread to other animals and humans, who don't have as strong systems as bats, they can become deadly. When humans disrupt bat habitats, it appears to stress the bats and makes them shed even more virus in their saliva, which may contaminate fruit, and in droppings that can infect other animals, including farm animals. Habitat disruption could also affect the predators of bats. like owls and snakes, more than some species of bat. This could, in some cases, result in an increase in bat numbers. To find out more about bats, including how they benefit humans, visit: this website.

## STEP 3: Which disease would you most not want to catch?

- Print out and cut up the size-bubble cards and labels from the two 'Match the disease to the number of cases/deaths' sheets (pages 19–20). (Each sizebubble has a feint square frame to make cutting easier.) Ask pupils, 'Which do you think is likely to be bigger, the number of cases of a disease or the number of deaths it causes?'
- Now ask pupils to match the number of cases to each disease. If you want pupils to do this online, click on this link.
- Now ask them to match the number of deaths to each disease. If you want them to do this online, click on this link. (Note that the scale of the sizes of the bubbles is different for the number of cases and number of deaths.) The colours are the same for the cases and deaths.
- The figures for the 'endemic' diseases from Step 1 relate to the number of cases and deaths in one recent year (2018), while the number of cases and deaths for the diseases from Step 2 relate to two or more years (the length of the epidemic/pandemic). The numbers for the historic diseases are estimates.

## Match the disease to the number of cases and deaths: the answers

Disease	Cases	Deaths
Bubonic plague (1347–51)	62.5 million cases	50 million deaths
Influenza pandemic (1918–19)	500 million cases	50 million deaths
HIV/Aids (2018)	40 million cases	770 thousand deaths
SARS outbreak (2002–03)	8 thousand cases	774 deaths
Smallpox (1520–45 Americas)	23 million cases	20 million deaths
Ebola virus outbreak (2014–16)	28.6 thousand cases	11 thousand deaths
Tuberculosis (2018)	10 million cases	1.5 million deaths
Diarrhoeal diseases (2018)	2 billion cases	1.6 million deaths
Malaria (2018)	228 million cases	405 thousand deaths

 Now ask the question, 'Which disease would you most not want to catch?' To help you answer this, pupils can work out and record an estimated death rate (%) for each disease by dividing the number of deaths by the number of cases and multiplying by a hundred.

For example, the death rate in the 2014–16 Ebola virus disease outbreak was approximately: Number of deaths: 11,000 Number of cases: 29,000 Death rate: 11/29 = 0.379 0.379 x 100 = 37.9%

- The death rates for bubonic plague and smallpox are very high, but the figures are based on historic epidemics of those diseases. Smallpox was declared eradicated in 1980, following a global vaccination campaign led by the World Health Organization, and nowadays cases of the bubonic plague are rare and treatable. (© The Guardian.)
- Display a complete set of the size-bubble cards and labels on the Working Wall, along with any further questions that pupils might have.

## STEP 4: How fast can infectious diseases spread?

#### The grains of rice and the chessboard story

Many hundreds of years ago a traveller introduced the game of chess to a wealthy Indian king. The king was so pleased that he asked the traveller to name a reward. The traveller said 'All I ask for is some rice. Just one grain on the first square of the chess board, two on the second, four on the third and so on, for all the squares on the board.' The king thought this was a modest request and quickly granted it. However, the king soon realised that there was not enough rice in his entire kingdom, or even the world, to meet the agreed reward.



- Ask pupils to record the numbers of grains of rice placed on a chessboard, up to ten squares, and make a line graph (they could do this with the help of a spreadsheet). If they are unsure how to do this, they could draw a pictogram or block graph for numbers up to 16 (the rice grains on just five squares of the chess board, as in the photograph).
- Explain to pupils that one of the ways in which the spread of a disease is measured is by its reproduction number, known as 'R' (or 'R0'). If a disease has an R number of one, this means that every infected person is likely to infect one more. If a disease has an R number of two, this means that every infected person is likely to infect two more. The spread of a disease with an R of two can be compared to the increasing number of grains of rice in the story. It is also like being asked: 'Would you like a million coins now or a coin today, two tomorrow, four the next day and so on until the end of the month?' This is sometimes called exponential growth. An exponent is the number of times a number is multiplied by itself. So, two people will each infect two more, who will each infect two more and so on. If this happened seven times then  $2^7 = 128$  people would be infected.

## **EXTENSION ACTIVITIES**

Pupils could look up the R numbers of the pandemic diseases they have been learning about and add them to the display. They could draw a graph by hand (or by using the 'people graph' function in a Microsoft Excel® spreadsheet) to compare R numbers from one to four after three weeks. (This assumes that an infected person takes a week to become infectious, remains infectious for three days, and that no one has immunity to the disease.)

#### After 3 weeks

#### R1: 1 R2: 4 R3: 9 R4: 16

You might want to show pupils a short video that simulates the spread of the H1N1 influenza pandemic of 1918–19, which started towards the end of the First World War. (Ken Kahn / CC BY.)

# Potential collaboration with others

You could share with your partner school photographs of your displays, especially your Covid-19 cards and questions. You could discuss and vote on questions you exchange and this could lead to a shared project, drawing on information from both groups.



## WORLD'S MOST COMMON COMMUNICABLE DISEASES -

cards to cut out and match



## WORLD'S MOST COMMON COMMUNICABLE DISEASES -

cards to cut out and match



## WORLD'S MOST COMMON COMMUNICABLE DISEASES -

cards to cut out and match

Covid-19	<b>Respiratory infections and TB</b>
<b>::::</b>	These are major causes of death world-wide, especially for very young and older people who live in crowded conditions, and suffer from air pollution. <b>Influenza</b> (flu) seriously affects 3–5 million people each year. The viruses change, so new vaccines are needed each year. <b>TB</b> is a major killer. Deaths and cases are reducing each year but there is some drug- resistant TB. A new, more effective vaccine is also needed.
Symptoms	This is a virus that attacks the body's immune system, specifically the white blood cells. It is recommended that anyone who could have HIV should be tested so that they can take antiretroviral drugs if they test positive. These drugs help people live active lives and can reduce transmission. The number of AIDS- related deaths has gone down from 1.4 million in 2000 to about a quarter of a million in 2018.
	(WHO)
Data	Diarrhoeal diseases
	These are usually a symptom of a gut infection, which can be caused by bacteria, viruses or parasites. Infection is spread through contaminated food or drinking-water, or from person to person as a result of not handwashing. Severe diarrhoea leads to fluid loss, and may be life-threatening, particularly in young children. The number of children under five dying from these diseases (0.5 million) is about 0.7 million less than in 2000.
	(WHO)
Prevention	Malaria Malaria is a serious tropical disease spread by mosquitoes. When an infected mosquito bites a person, it passes the parasites into the bloodstream. They go to the liver and then invade red blood cells to cause the illness. Pregnant women and small children are especially at risk. Cases are reducing – down to 228 million in 2018. Sleeping under a treated net reduces risk. A few African countries are testing a vaccine.
	Covid-19  Symptoms  Data  Prevention  Treatment

# **PANDEMICS AND OUTBREAKS** – cards to put in sequence



# **PANDEMICS AND OUTBREAKS** – cards to put in sequence



# **PANDEMICS AND OUTBREAKS** – cards to put in sequence

Covid-19 Ebola virus disease KEEP Name of disease TAN s D L > 6.7 million, 2019-2023 11,300 deaths, 2014-16 Animal originally affected Α 0 Other animal/ human host CONNAUGHT HOSPITAL How it spread further Е E

## PANDEMICS AND OUTBREAKS -

cards to put in sequence

#### SARS (severe acute respiratory syndrome)

SARS was identified in 2003. It is thought to be an animal virus, perhaps from bats, that spread to other animals (civet cats) and first infected humans in southern China in 2002. An epidemic of SARS affected 26 countries and resulted in more than 8000 cases in 2003. Other countries/areas in which human-to-human transmission occurred were Toronto in Canada, Hong Kong, Taipei, Singapore, and Hanoi in Vietnam. Most cases of human-to-human transmission occurred in hospitals that didn't have good infection control. Bringing in appropriate infection control practices brought the global outbreak to an end.

(Source: WHO)

#### Smallpox

Smallpox is thought to have started as a virus of African rodents, first transmitted to humans many thousands of years ago. It was found in the Egyptian mummy of Ramses V. It is thought to have spread to Europe during the crusades 900 years ago. Around 400 years later, soon after Columbus sailed to the Caribbean, Hernán Cortés went to the mainland of Mexico. Using the enemies of the Aztecs against them, he conquered their main city and empire for Spain. This was greatly helped by his soldiers bringing smallpox, to which the Aztecs had no immunity. Most died. The Incas of South America, including their emperor, Huayna Cupac, soon suffered a similar fate, following the attacks by Francisco Pizarro, also from Spain.

#### Ebola virus disease

Ebola virus disease (EVD), is a severe, often fatal, illness that affects humans and other primates. The virus is transmitted to people from wild animals (such as fruit bats and apes) and then spreads in the human population through direct contact with blood or other bodily fluids, and through touching contaminated surfaces and materials. The first EVD outbreaks occurred in 1976 in remote villages in Central Africa, near tropical rainforests, some by the Ebola river. The 2014–16 outbreak in West Africa caused over 11,000 deaths and spread between countries, starting in Guinea then moving across land borders to Sierra Leone and Liberia. *(Source: WHO)* 

#### H1N1 influenza (flu) 1918

The 'Spanish flu' of 1918–19 was a pandemic that affected every continent except Antarctica. It killed around 50 million people. This is more than died in the whole of the First World War. The flu had appeared in the USA, France and Britain before Spain, but the Spanish were the first to report it. They were neutral in the First World War, and the other countries were afraid it would damage morale. A leading theory is that the virus spread from pigs to humans in Haskell County, Kansas, USA, and then to an army camp. The virus, found frozen in flu victims from 1918 in Alaska, was found to contain pig and bird genes. The disease was probably carried from the USA to Europe by troops on their way to fight in France.

#### **Bubonic plague**

Ring-a-ring o' roses, A pocket full of posies, A-tishoo! A-tishoo! We all fall down.

This nursery rhyme is part of folk memory in a number of cultures – something that has been passed down the generations. Many believe that it refers to the bubonic plague, spread by rats and their fleas. The plague was common in Europe, North Africa and Asia until a few centuries ago. One of the most devastating plagues spread to Europe, the Middle East and North Africa in 1347, probably in ships from the Black Sea port of Kaffa. By 1351, this plague, later known as 'The Black Death,' is estimated to have killed around 60% of people in Europe.

#### Covid-19

(For your text)

### MATCH THE DISEASE TO THE NUMBER OF CASES



## MATCH THE DISEASE TO THE NUMBER OF DEATHS





Diarrhoeal diseases (2018) Malaria (2018) HIV/AIDS (2018) Tuberculosis (2018) Influenza pandemic (1918–19)

Bubonic plague (1347–51) Smallpox (1520–45, Americas) SARS outbreak (2002–03) Ebola virus outbreak (2014–16)

1.6m	1.6 million deaths
1.5m	1.5 million deaths
	770 thousand deaths
•	405 thousand deaths
	11 thousand deaths
	774 deaths

Disease
Cases
Deaths
Death rate

# LESSON 2

## Slowing the spread of a pandemic

#### **PUPILS WILL:**

- develop their understanding of the main reasons for handwashing, physical distancing and lockdown
- learn which services are essential to keep society safe and healthy
- consider the particular challenges faced by health workers in pandemics or outbreaks
- have an awareness of the level of personal protective equipment (PPE) that health workers and other key workers need.

#### **NOTES ON CORE SKILLS**

Pupils will use their critical thinking strategies to prioritise, organise, compare and make informed judgements about ways of reducing the spread of Covid-19. They will develop their digital literacy skills by carrying out searches on the internet and further develop their skills of citizenship by forming balanced opinions about the possible ways of preventing the spread of a disease.

Explain to pupils that while waiting for a vaccine to be developed, there are several things that we can do to slow the spread of a disease like Covid-19. For example: promote handwashing, introduce physical distancing measures; impose a period of lockdown; and protect health workers and key workers with PPE.

#### STEP 1: Investigate germs and hand washing

- Remind pupils that our bodies work hard every day to keep us healthy and fight against illnesses and diseases. If microscopic germs get into our bodies, we can become sick.
- Pupils can find out more about the different types of germs here and about some of the diseases germs cause by looking at lesson 1.
- Set up this experiment to show how germs can be kept away. You will need:
  - a bowl of water
  - some soap
  - some ground peppercorns.
- Put some water into the bowl and then add one or two tablespoons of ground peppercorns. Having done this, invite a pupil to put some soap onto their

fingers and put them into the water. Ask pupils what they notice about the ground peppercorns. Did they notice that they moved away from the soap? Explain that this is similar to when they have germs on their hands; using soap helps to get rid of them.

This video shows the experiment being performed.



Video: © NephCure Kidney International, photo: Rob Unwin

#### How to wash hands thoroughly

- Explain to pupils that one of the important ways to stop Covid-19 spreading is to wash hands regularly. Countries all over the world have developed ways to educate people on how to reduce the risk of infection through thorough handwashing. Show pupils the following one-minute videos from different countries on how to wash hands properly:
  - Ndlovu Youth choir (Africa) (© www.choir.africa)
  - GHEN CÔ VY (Vietnam) (© NIOHE, Vietnam.)
- If you have trouble accessing the videos, use this poster as an alternative. (UHB NHS FT.)
- In the video from Ndlovu Youth Choir, ask pupils if they noticed that even though the performers washed their hands using buckets of water and soap, they did not share the water in the buckets but simply used it to rinse off the soap. Why it might be ineffective to wash their hands in the same bucket?
- Explain to pupils that in many countries there is no running water and this can lead to an increase in infections. However, people have come up with some solutions. Read the case study of the Veronica bucket in Ghana (page 23), which was invented nearly 30 years ago by Ghanaian health worker Veronica Bekoe and used effectively to tackle Ebola.

#### **STEP 2: Physical distancing**

- Ask pupils to share their ideas about what physical (or social) distancing means. Show them the 'Why practise physical distancing?' sheet (page 24).
- Physical distancing is a set of measures to try to reduce or prevent the spread of an infectious disease. It focuses on keeping a physical distance between people and reducing the number of times people come into close contact. There are many ways of practising physical distancing:
  - 1. Staying at home except for essential activities like food shopping, collecting medicines, or exercising.
  - 2. Working from home if it is possible to do so.
  - 3. Avoiding indoor spaces apart from your own house. If you can't avoid them, don't spend long in them and make sure they are large or well-ventilated spaces.
  - 4. Staying a prescribed distance from people and avoiding being face to face with them, or touching them, if they are from outside your household.
  - 5. Avoiding crowds and public transport.
- Ask pupils if they can think of any more physical distancing measures.
- Referring to the 'Why practise physical distancing?' sheet, ask pupils to work out for how long it might be safe to talk to someone who is in an enclosed space with you. What if the windows are all wide open? How long would it be safe to be on a bus with other people who are not talking or coughing or sneezing? What about if someone coughs? What if people are wearing face coverings or masks? Use your knowledge to create your own poster to explain how and why to maintain physical distancing.

If you have access to a computer and the internet, try this physical distancing video game:



#### STEP 3: Lockdown and essential services

• Explain to pupils that many countries responded to Covid-19 by using lockdown measures where people

are required to stay at home unless they are involved in providing essential services. The exact rules around these raise the question of what are 'essential services'. Essential services are done by essential or 'key' workers.

- Using the 'Who are key workers?' sheet (page 25), cut up the job labels and create a Venn diagram.
- Ask pupils to place the labels for the job roles in the essential services or non-essential services circles (they could use the overlap of the two circles, in the middle of the diagram, for those roles that could be considered either, depending on the context). You can make a larger diagram for a group or for the whole class by using large labels and hoops or pieces of rope. Alternatively, pupils can do the activity online by clicking on this link.
- Invite pupils to discuss which services they would keep open and which they would close during the lockdown. What would be the consequences of doing this? A list of workers and services considered as essential in England can be found here and in South Africa, here.

#### **Personal protective equipment (PPE)**

- Ask pupils to think about the different types of PPE they have seen or heard about during the pandemic and to share what they think the PPE has been used for and why.
- Now ask pupils to think about what level of PPE health workers and other key workers might need to protect themselves from the virus. They should choose three jobs from their list of key workers involved in essential services from the previous activity and write them down in the table in the 'Who needs PPE?' sheet (page 26). They should then tick what level of PPE equipment they think is needed for that job. It might help to look back at the physical distancing sheet used in step 2.
- Ask pupils what risks their chosen jobs might involve. Will the work involve a risk from contaminated surfaces? Will it involve a risk from large droplets from other staff, or members of the public, who are speaking or breathing close by, or who share an enclosed space for a long period of time? Will it involve a risk of virus particles carried in tiny droplets from a sneeze or cough, or perhaps released during an operation?
- When pupils have completed the activity, ask them to try to find out what level of PPE is actually recommended for the chosen key worker jobs in their country. Pupils can do the activity online by clicking on this link.

# Potential collaboration with others

You could share with your partner school posters created by pupils to explain how and why to maintain physical distancing. It may be interesting to compare similarities that relate to how the virus is transmitted and differences related to different geographic and cultural contexts. Pupils could also share information from their countries about examples of people's jobs which continued or stopped during lockdown.

# The Veronica bucket was invented by biological scientist, Veronica Bekoe, in Ghana in the 1990s.

#### Veronica Bekoe said:

'We normally have water problems. Some of the facilities did not have running water. And they were just using bowls to wash their hands... the bowl with the water sitting there being used even by one person is only clean the first time he or she washes their hands. If he/she does not throw that water away, they would rather be contaminating themselves. So, it just occurred to me that if we could fix a tap to any container to produce running water, that could help. I made a prototype with aluminum sheets, made it into a container and had a tap fixed to it. We used it to provide running water all over the country in the laboratories to demonstrate how to use running water to wash hands.'



© Ghanaweb

## WHY PRACTISE PHYSICAL DISTANCING?

As few as 1000 virus particles viruses may be needed for you to catch Covid-19. That could be 1000 in one breath or eye rub, or 100 inhaled over 10 breaths, or 10 over 100 breaths. The risks are always higher in enclosed spaces. Changes in air dilute the virus particles.



#### Sneezing

A sneeze can contain 200 million virus particles in about 30 thousand droplets. These can travel at 200 miles per hour (easily crossing a room) and can stay in the air for as long as 10 minutes.



#### Coughing

A cough can also contain 200 million virus particles but in about 3 thousand larger droplets that travel at 50 miles per hour. The droplets can cross a small room.



#### Speaking

An infected person speaking can send out about 200 virus particles per minute.



#### **Breathing**

Each outward breath contains 50 to 5 thousand droplets, but these travel slowly and mostly fall to the ground. Breathing only releases about 20 virus particles per minute.



#### Touching

Droplets from a sneeze or a cough, or from speaking or breathing, can end up on surfaces. Someone touching their face and then a surface can also leave behind virus particles. Viruses responsible for Covid-19 might still cause an infection after three days on a plastic surface at ordinary temperatures.

Sources: The-risks-know-them-avoid-them, © Erin Bromage; Public Health England. Icons from The Noun Project: Sneezing by Gan Khoon Lay; Cough by Andrei Yushchenko; Speaking by Azam Ishaq; Sneeze by corpus delicti; Touch by Maciej Świerczek. To investigate the risks of Covid-19 transmission through charts, interactive graphs and infographics, visit these pages: TMA, NGS and El Pais.

## WHO ARE KEY WORKERS?



Health workers	Lawyers/Judges	Plumber
Care workers	Charity workers	Book shop staff
Pharmacists	Police officers	Travel agent
Teachers	Builders	Café worker
Social workers	Refuse collectors	Bar staff
Childcare workers	Takeaway staff	Actor
Religious staff	Hairdressers	Food retailers
Post deliverers	Benefits staff	Sports shop staff
Bankers	Armed forces	Garden shop staff
University staff	Fire fighters	Gas/Oil distributors
Undertakers	Prison officers	Electricity suppliers
Journalists	Border security	Car showroom staff
Food producers	Pet store staff	Telecommunications
	Park ranger	workers

### WHO NEEDS PPE?

Write down three jobs from your list of key workers from the previous activity. Tick what personal protective equipment (PPE) you think they might need and give a reason.

Look back at the 'Why practise social distancing?' sheet and try to think about whether or not the work you have chosen will involve a risk from contaminated surfaces. Will it involve a risk from larger droplets from other staff or members of the public who are speaking or breathing less than two metres away, or who share an enclosed space for a long period of time? Will it involve a risk of virus particles carried in tiny droplets from a sneeze or cough or perhaps released during an operation?

Two examples have been completed already.

	Personal Protective Equipment (PPE)						
Job	Gloves	Apron	Gown	Mask	FFP3 mask	Eye protector	Reason
Medical staff treating Covid-19 patient	1		<b>√</b>		<b>√</b>	1	In an enclosed space, treating infectious people for a long time or doing operations that generate infectious droplets.
Pharmacist				1			In an enclosed space, socially distanced from people who may be infectious.

Source: A Visual guide to safe PPE, Public Health England

The kind of PPE that is needed is also different depending on the level of risk. So, for example, medical staff who are treating patients who definitely have Covid-19 may need to wear long-sleeve gowns and FFP3 (filtering face-piece 3) respirator masks, instead of aprons and surgical masks.

# LESSON 3

## Measuring the spread of a pandemic

#### **PUPILS WILL:**

- develop their knowledge and understanding about how and why it is important to test and trace people to control the spread of a pandemic
- build on their knowledge of how infections spread and how people have tried to control pandemics in the past.

#### **NOTES ON CORE SKILLS**

Pupils will use their critical thinking strategies to prioritise, organise, compare and make informed judgements about ways of reducing the spread of a pandemic. They will develop their digital literacy skills by carrying out searches on the internet and further develop their skills of citizenship by forming balanced opinions about the possible ways of preventing the spread of a disease. Pupils will also develop empathy for people dealing with pandemics and outbreaks at different times and in different places.

#### **STEP 1: Testing and tracing**

- Explain to pupils that the World Health Organization and most governments around the world stress the importance of testing for Covid-19 and then taking action based on this in order to slow down the spread of the virus and allow the easing of lockdown. However, obtaining the materials for the tests, implementing tests to a wider population, and then analysing the results and ensuring that the correct action is taken, is a challenge.
- Ask pupils to look at the 'Testing people for Covid-19' sheet (page 31), which shows the main types of test that were available for Covid-19 in the summer of 2020. Ask pupils to decide which test is best for the people listed, and whether or not a test is needed. Pupils can do the activity online by clicking on this link.

- Explain to pupils that tracing happens when people who have tested positive for an infectious disease like Covid-19 are asked to list all the people they have been in contact with for more than a short period of time. These people are then contacted and told that they must self-isolate at home to stop the spread of the virus. In some countries this is done digitally using a smart phone app.
- Ask pupils in pairs to try to recall the last four people that they met outside their household.
- Explain that most people are only able to get a test if they have Covid-19 symptoms (or if they have been asked to have one). The most common symptoms are:
  - a high temperature this means you feel hot to touch on your chest or back (you do not need to measure your temperature)
  - a new, continuous cough this means coughing a lot for more than an hour, or three or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual)
  - a loss or change to your sense of smell or taste

     this means you've noticed you cannot smell or
     taste anything, or things smell or taste different
     from normal.

(Source: NHS)

• Ask pupils why it might be important for someone who has been in contact with someone with Covid-19 to self-isolate at home for 14 days.



#### STEP 2: Measuring the spread of a pandemic

- Explain to pupils that scientists measure the spread of infectious disease by its reproduction number, known as the 'R' number (introduced in lesson 1, step 4). An infectious disease can be more easily contained when the R number is below 1. For example, when the R number = 1, it means that 1 person will infect 1 other person. If the R number for the start of a virus outbreak is 3, and it takes a week for a person to become infectious, then that would mean 1 person infects 3 people after 7 days. Using R = 3, calculate how many people will be infected in a 14-day period and in a 21-day period. (Ask pupils to assume that an infected person remains infectious for three days, and that no one has immunity to the disease.)
- Pupils can check their answers and also see the spread after 28 days by looking at the 'Transmission of the virus' sheet (page 32).
- Ask pupils what the results show.
- Explain that scientists believe that when the R number is below 1, the spread of a disease can be reduced. For example, if R = 0.5, every 10 people with the disease are likely to infect just five new people, and eventually the disease will stop reproducing.
- Show pupils the animations on this Washington Post webpage (click 'Free: Browse now' to access the article). Explain that the moving coloured dots indicate how quickly a disease can spread with and without different levels of physical distancing. For those unable to keep physical distance, PPE and testing and tracing have a vital role to play in reducing the spread of a disease like Covid-19. (© The Washington Post.)

#### **EXTENSION ACTIVITY**

Assist pupils in experimenting with the effect of changing the R number by using the slider at the top of this **Epidemic Calculator**. The calculator is set up with WHO data for Covid-19, including a basic reproduction number (R0) of 2.2. While the calculator is complicated, you can use it in a simple way: if you just move the slider at the top of the web page, you can adjust the actual reproduction number (R) to make it lower or higher than 1. As you do this, watch the effect on the number of cases (infectious people) and the number of deaths (fatalities). Ask pupils what they notice. (© *Gabriel Goh.*)

When you have got used to this, you can adjust the first slider at the bottom of the graph (Transmission Dynamics, Population Inputs) to the size of the population of your country and try it again with pupils. If you want to investigate things further, you can visit the 'WHO Coronavirus Disease (COVID-19) Dashboard' and look up your country to find out how many days after the first case (Day 0) a lockdown or other interventions took place. You can then move the vertical dotted line on the epidemic calculator to show this and watch the effect on the number of cases and the shape of the curves. An important curve to watch is the number of hospitalisations. If this becomes higher than the number of hospital beds, then extra hospitals and staff and equipment may be needed. Ask pupils what they would recommend to keep the R number low. (© WHO)



#### STEP 3: Dealing with outbreaks through the ages

• Ask pupils to look at this poster that appeared in a newspaper in 1918. Using their understanding of the reasons for physical distancing, ask them how relevant they think this advice is today. Is there anything in the advice that is not highlighted today for controlling respiratory infections like influenza or Covid-19?



Paul Thompson / Public Domain

- Ask pupils to look at photographs A, B and C on the 'Dealing with outbreaks through the ages' sheet (page 33) and to answer the following questions:
  - What do you see? What details stand out?
  - What do you think is going on? What makes you say that?
  - What does this make you wonder? What broader questions does this image raise for you?
  - What is similar about the three images and your responses? What is different?

A is from the Great Plague in London, 1665–66 (bodies being collected in the street)

B is from the Ebola virus disease outbreak in Liberia, 2014–15 (a doctor being disinfected)

C is from the Covid-19 outbreak in the USA, 2020 (health workers being trained to deal with an infected patient – please note that a dummy patient, not a real person, is pictured)

- Ask pupils to use the Kiddle search engine to find out more about each of these epidemics. What was similar and what was different about them? Ask them to compare how people reacted to the situation, protected themselves, and reduced the spread of the disease. Ask them to share their research with others.
- Ask pupils to look at photographs D, E and F and to draw a large picture of the person in each image.

It can be as simple as a stick figure or something more complex. Using evidence from their research,

ask them to answer the following questions.

**Head**: What is this person thinking about their society?

Eyes: What has this person seen?

Mouth: What is this person saying?

Ears: What has this person heard?

**Heart:** What is this person feeling? What do they care about?

Hands: What action has this person taken?

Stomach: What is this person worried about?

**Feet:** Has this person changed? Where might this person be going in the future?

Pupils should compare their responses to each image (and to the responses of a neighbouring pupil).

- Ask pupils the following questions:
  - How are they similar? How are they different? Which questions do you find hard to answer?
  - What have you learned about people who have to deal with such outbreaks of disease?
  - What can you learn for yourself in such situations?
  - What have you learned about how to promote health and well-being?

D is a plague doctor from Europe, 17th century

E is an Ebola doctor from the Democratic Republic of Congo, 2019

F is a Covid-19 nurse, Niger, 2020

#### **Potential collaboration with others**

You could ask pupils to find out about testing, tracing (and tracking if this is done) in their country (e.g. Who gets tested? How are people traced or tracked and what happens if someone has to go into quarantine?) then share the information with your partner school. If any pupils have carried out the extension activities, looking at their countries with the help of the Epidemic Calculator and the WHO Coronavirus Disease Dashboard website, these findings could be shared.



F: Anna.psiaki, CC BY-SA 4.0

### **TESTING PEOPLE FOR COVID-19**

Look at the main types of test available for Covid-19 in the table below. These were available in the UK in the summer of 2020. Cut out the cards at the bottom of the sheet and try to match the people listed against the type of test that you think they should have. (You might decide that some of them do not need a test.)

Name of test (and how it is done)	What it checks for	What it does	Benefits	Limitations
1. Temperature screening (thermometer).	A high body temperature.	It seeks to show if someone might be unwell.	Quick, cheap.	It does not test if someone has Covid-19. Further tests are needed.
2. Nasal swab test (long cotton bud stick inserted up nose).	Virus particles.	It seeks to show if someone has Covid-19 now.	It can indicate if a person needs to self-isolate.	The results may take a few days and, if negative, can be inaccurate or can go quickly out of date.
3. Blood test (by a medical professional).	Antibodies (from a person's reaction to virus).	It seeks to show if someone has had Covid-19 in the past.	Helps to show the spread of the disease.	If the result is positive, it is not certain that the person is immune (or unlikely to get infected again).

A health worker	A person boarding a flight
A person showing symptoms of Covid-19	A person going back to their family from hospital
A care giver who visits elderly people in their homes	A person who is self-isolating because they are vulnerable to the infection
A school child coming into class	A food deliverer

Sources: Michael Brooks, New Scientist; NHS



**Person C** maintained a 2m distance while outside in public and did not catch the virus.

While A allowed the virus to spread, persons B and C prevented it.

people infected —— line of infection

Public Health England

## **DEALING WITH OUTBREAKS THROUGH THE AGES**



A: Unknown/CC0; B: UNMEER/Martine Perret CC BY-ND 2.0;



B: UNMEER/Martine Perret CC BY-ND 2.0;



C: Centers for Disease Control and Prevention/Rawpixel.com CC 0 [NB: a dummy is being used for training purposes]



D: Unknown CC 0



E: World Bank / Vincent Tremeau CC BY-NC-ND 2.0



F: Anna.psiaki, CC BY-SA 4.0

# **LESSON 4**

## Staying safe in a pandemic

#### **PUPILS WILL:**

- develop their understanding of the role of governments, NGOs (non-governmental organisations, including charities) and communities in supporting the most vulnerable people in society during a pandemic
- investigate community resilience and how people cope in the face of uncertainty
- listen to individual and community stories relating to resilience and response to uncertainty, lockdown and social distancing
- consider strategies for fostering positive mental health and well-being.

#### **NOTES ON CORE SKILLS**

This lesson provides opportunities for pupils to develop their critical thinking skills by exploring and investigating how governments, NGOs and communities responded during the Covid-19 pandemic.

It allows for the development of digital literacy skills through pupils carrying out internet research and for pupils to consider their role within their community and the importance of being a good citizen.

#### STEP 1: There's a pandemic! Who does what?

- In an emergency situation, such as a pandemic, everyone has a part to play. It is important that roles and responsibilities are clear and that those who are least able to cope with the situation get the support they need.
- Governments, NGOs and communities all play an important part in helping vulnerable people during an emergency situation, but their roles and responsibilities are different. During this challenge, pupils can find examples of how each group has responded during a pandemic.
- Ask pupils what they already know about the role of the government, NGOs and communities in their country. The glossary may be helpful in clarifying the meaning of the words.

- The accounts of government and community responses to Covid-19 in the UK, Jordan and Sierra Leone will provide pupils with information that they can use to compare and contrast how governments, NGOs and communities in different places have responded to the Covid-19 pandemic. There are also links for further research at the end of the lesson, and pupils can find out information about the government, NGOs and communities in their country.
- Now complete the Venn diagram activity 'Who's responsible for what in a pandemic?' (page 40). As you do this, consider the impact the pandemic has had on people in communities.

#### HERE IS A PERSONAL ACCOUNT FROM A RESIDENT IN THE UK TALKING ABOUT HOW THE GOVERNMENT HAS RESPONDED TO THE COVID-19 PANDEMIC.

We were told to 'Stav home, protect the NHS. and save lives'. Schools were closed from March until June to everyone except the children of key workers and vulnerable children. People were encouraged to work from home, and shops, restaurants and many businesses were closed with little notice. Funding schemes were set up to protect jobs and businesses. Up until the middle of May we were allowed to exercise only once a day, but gradually this increased. Tennis courts re-opened and people were allowed to meet with one other person to exercise as long as they followed physical distancing. After some time, the message changed and people were encouraged to go back to work if they could not work from home. Suddenly, the roads became busier and there were more people in the streets. Lots of people are worried that there will be another peak in the virus and that we will go into lockdown again. (Alyson Meredith, Teacher, UK)

For an example of how a local community in England has supported each other, see the Gloucester community response resource sheet (page 39).

To see a 'collective portrait of the UK during lockdown' visit the National Portrait Gallery's Hold Still digital exhibition of 100 photographs, selected from over 30,000 submissions based on the emotions and experience they convey.

#### THE JORDANIAN RESPONSE

On Thursday 12 March 2020, none of us expected that it would be the last day in all schools, colleges and universities in Jordan for some time to come. Owing to the increasing number of people infected with Covid-19, the government announced a lockdown on 17 March. There was a total curfew: all institutions were closed, and everyone was prevented from leaving their homes, except in cases of extreme necessity.

All surgeries and medical appointments were suspended. Shopping centres and malls were closed, and only food shops, pharmacies and bakeries could open. People could only travel to these services on foot.

'Stay safe! Stay home!' These were the two messages the government gave us, and all of us had to follow them.

Initially, we thought we would soon return to normal life and that these measures would be short-lived, but we soon understood that lockdown would last for many weeks as the whole world was facing the Covid-19 pandemic.

Everyone believed in the importance of social distancing, but this did not prevent people from helping each other from a distance and providing the poor with basic needs.

The Ministry of Education launched a further education plan for everyone through radio and TV stations. This helped to control the virus. To enable teachers and students to work from home. communication companies co-operated with the government and supported the educational sector with free internet packages. This helped students in Jordan to follow their lessons.

The government organised economic programmes to protect the national economy and citizens, to support labourers, and help protect businesses during the exceptional circumstances of the Covid-19 pandemic.

So, what have we learned from this pandemic? This is an important question that we all need to ask each other, so that we are prepared for any future outbreak of the virus.

(Heba abu Duheir, Teacher, Jordan)

#### **SIERRA LEONE**

Here is a link to some accounts of responses from Sierra Leone in West Africa. (© New Internationalist.)

#### STEP 2: Using the questions below, consider what 'an active citizen' is

Explain to pupils that they will be thinking specifically about what problems communities face in a situation such as a pandemic and what individuals can do to make a difference. Have the needs and attitudes of some communities changed as a result of Covid-19?

#### Pupils should think about the following questions:

- 1. What do you think 'being an active citizen' means? You can check the glossary to help you.
- 2. Can you give an example of how an active citizen might contribute to their society?
- 3. What are the problems currently facing your community?
- 4. Is your community doing anything to tackle these problems?
- 5. What can you do to make a difference?
- 6. Here's an example of what one young person did to support vulnerable people in her community in the UK, drawing inspiration from community self-help in Zanzibar, Tanzania: Molly's meals. (© ICS.)

#### They should now think about these questions:

- 1. Do the problems in your community always stay the same or are there local, national or international factors that affect things?
- 2. For example, when you think about Covid-19, have the needs of your community changed as a result of this pandemic?
- 3. Have people's attitudes and willingness to be active citizens changed? Can you think of examples where people have become involved to help others in the community?
- 4. Has your attitude changed?
- 5. After the pandemic is over, will things in the community just go back to normal?

#### Finally:

- 1. Having thought about your own community, can you now think about a different community. Are the issues this other community faces the same or different from your community?
- 2. Examples of active citizenship around the world can be found on the Active Citizens - British Council facebook page.

#### STEP 3: Investigate what people have done during the Covid-19 pandemic and how they have helped their mental health and well-being

Everyone reacts in different ways when faced with problems, and it is good to think about how to respond when faced with uncertainty. All over the world, people have been affected by the Covid-19 pandemic, but that does not mean everyone is experiencing it in the same way. There are similarities and differences between countries, regions and even individuals in the way they responded. Pupils can look back at the personal accounts from step 1 to see examples of this.

Explain to pupils that it is important to understand that we all react differently in difficult situations and that sometimes friction can occur when we have different reactions to a certain situation. It can be difficult to understand why others are behaving in a particular way.

#### Ask pupils to try to answer the questions in the 'Diversity of reactions' (page 41) sheet

- 1. During the Covid-19 pandemic, physical distancing has been very important. Countries have put strict rules in place to ensure people are following physical distancing rules. Schools have been affected all across the globe.
- 2. Physical distancing is not the same as total isolation. Just because people aren't allowed to come near each other, it doesn't mean that they can't communicate with each other. Keeping communications open as much as possible helps promote physical and emotional well-being.
- 3. Sending messages to others can help to focus on the fact that, even if you can't see them, you are thinking of them. What did you do during lockdown to stay in contact with family and friends?
- 4. Watch the videos of the children from Nepal talking about their experience of lockdown, or have a look at the resource sheet telling you what children in the UK and Nepal have been doing. (Video 1[Arjun girl], video 2 [Arjun boy])
- 5. Videos of children in lockdown in other countries of the world can be found in the **Generation Lockdown** video series from DevelopmentEducation.ie (with thanks to Dorit Braun from Tide~'s Elephant Times).

## WHAT HAVE YOU BEEN DOING IN LOCKDOWN?

#### **Gloucester School Pupil, UK**

Lockdown is a bit stressy and a bit annoying as I can't see my friends. At the weekend, I go on my tablet, build some lego, play in the garden. go on our waterslide and play a lot of football. In the week, I wake up, have some breakfast, do a bit of adding money for maths and some writing of stories for English. In the afternoon I do some science or art. My high point in lockdown was my birthday. People were really kind and dropped off presents and cake. I even had a message from Tweedy the clown. Hard things are not being able to see my friends and not going to school. I actually miss school. Not many people say that, but I do. Daddy has been unwell with Covid-19. and Mummy has had to look after us. He is better now. To keep healthy, I make assault courses in the garden and have a daily walk. I have some roller-skates and I have discovered lots of new places around us.



Laura Lyons

#### Arjun School Pupil, Nepal

Good morning friends, it is the 27th day of quarantine and I hope all of you are safe at home. Every day I wake up and miss my friends, school and teachers and my normal daily routine. My breakfast is probably ready, let me wash my hands before Mum calls me. Well, it is afternoon, let me help my brother for his regular dance practise. He is a source of entertainment in this house and without him it would be too boring. I hope my dad has prepared some delicious snacks for dinner. Did you know, only some plants have flowers? It feels good to play with them. At bedtime we watch the news together with everyone. I feel sad but want to update myself.



Alyson Meredith

#### HERE ARE SOME EXAMPLES OF WORK CREATED BY TWO STUDENTS – ONE IN NEPAL AND ONE IN THE UK.

In a time of crisis let's motivate ourselves and stay positive.

Let's explore our new version of ourselves. Let's fight against the virus together. Let's again make this planet a better place to live. Stay home, stay safe.

(Pupil, Arjun School, Nepal)



Ananda Raj Devkota/ CC BY-SA 3.0

Tsolation 2020 Lost and Lonely without my strends, () One day, at a time, we must take it, Calling briends on zoom to say Hi! Kungsholm school-Imiss you! Drawing Ranbows in chalk on paviments, To make neighbours HAPPY! Out in the gorden enjoying the sun Wishing & waiting bor this Uirus to go. NHS THANK you sor helping us! Molly (6 years)

#### STEP 4: Having looked at how people across the world are dealing with lock down and physical distancing, pupils should think about similarities and differences

They should remember that the situation in different countries varies as a result of government restrictions and family circumstances.

#### Ask pupils to answer the following questions:

- What were the positive things that people were doing to help their mental health and well-being?
- Write down anything you were doing in lockdown that helped you each day. Then write down anything you did not do, but you think would have helped you to stay positive. Would you be able to fit everything into each day? What are the challenges? What could help with this?
- Have a look at the 'Coronavirus and well-being' child-led resource to help you think more about your mental health and well-being. (The Economist Foundation.)
- If you have not done so already, it may be useful to create a daily routine. You could use the 'Daily routine' resource sheet (page 42) to help. Be as creative as you can in developing your own daily routine presentation.



#### HAPPINESS

#### Ask pupils to answer the following questions:

- How would you define happiness? In the dictionary it is defined as a state of well-being, joy or contentment. What makes you happy? Is this a short-term or long-lasting happiness?
- You will not always feel happy. Think about what affects your feelings of happiness and how this can have an impact on your mental health and well-being.
- Can you come up with a list of things that make you happy and create your own 'Ten steps to happiness'? This can be done in a variety of ways, e.g. video, posters, booklet, journal. Have a look at the work of school pupils from the UK and Nepal, see above, and at 'Ten steps for happiness' designed by Action for Happiness.
- Action for Happiness suggests: Giving, relating, exercising, awareness, trying out, direction, resilience, emotions, acceptance, meaning. Look closely at the first letter of each of these words. What does it spell? Create your own poem with a phrase of your own choice relating to your mental health and well-being. Alternatively use the words from Action for Happiness to draw your own images relating to each of the words.

### **Potential collaboration with others**

You could ask pupils to share their experiences of lockdown with pupils at their partner school. This could be in the form of posters, which could be given a common title like 'When we stayed at home' or they could be diaries in an equivalent format (e.g. written, photographs like those in the Hold Still exhibition or short video diaries, like the ones made by pupils in Nepal or those from Generation Lockdown).

### Further reading for step 1

#### Government:

- Covid-19: what you need to know
- Government response to Covid-19 Kenya
- Government response to Covid-19 South Africa

#### NGOs and charities:

- Wellspring foundation Rwanda, Covid-19 response
- Role of NGOs in response to Covid-19 in Nepal

Throughout history, around the world, communities have come together to help one another in times of trouble. During the Covid-19 pandemic, many communities have done what they can to help those who need support. Here are some of the things that one local community has done in a small town in England.

The Feed5000 project brought organisations across the city of Gloucester together to provide healthy freshly cooked food to the most vulnerable in their community. In just one area of the city, they produced over 5000 meals.



One family said 'Just wanted to say a huge thank you for the amazing food today!!! It has really touched me, absolutely bowled over!!! Thank you so much.'



Gardeners grew extra vegetables to give to others, and encouraged them to grow their own food.



A group of young volunteers helped provide food hampers every week for over 60 families.



Volunteers at Denmark Road High School created much-needed protective equipment and made over 1200 visors.



Local organisations provided play packs for families struggling at home.



Online support groups were set up so that those in need could ask for help.



Supermarkets donated food for those most in need.



People young and old drew rainbows for people to spot on daily exercise walks. The rainbows reminded people of the message to stay at home and protect the NHS.

Our communities play an important part in our lives. What can you and your community do to make a difference to others? Photos: Alyson Meredith and The Long Table

### WHO'S RESPONSIBLE FOR WHAT IN A PANDEMIC?



Cut out the cards below and place them in the Venn diagram to show who is responsible for what. (Use the intersections to show joint responsibility)

Health services	News and information
Law and order	Energy supplies
Education	Social care
Controlling borders	The internet and IT
Food supplies	Public health
Transport	Emergency repairs
Entertainment	Mental well-being
Medical supplies	Water and sanitation
Paying incomes	Paying benefits
Waste disposal	Other retail items
Emergency services	The economy

Write down below which organisations you think should make sure that all the services are co-ordinated and reach all the people that need them.

### **DIVERSITY OF REACTIONS**

Think about a time when something happened and the people around you reacted differently from you.

What happened?

How did you feel?

How did other people feel?

Did you understand why people felt differently from you?

How do you feel about Covid-19? You might feel scared, excited, bored... Write your feelings in the thought bubbles below and share them with your group.



### DAILY ROUTINE

Everyone has a slightly different daily routine, but there are certain things that everyone should fit in, including:



Making sure these things are in your daily routine will really help you to stay positive. Have a go at creating your own daily routine that you realistically think you can stick to.

## Be as creative as you can in your presentation!

Time	Activity
06:00	
07:00	
08:00	
09:00	
10:00	
11:00	
12:00	
13:00	
14:00	
15:00	
16:00	
17:00	
18:00	
19:00	
20:00	
21:00	
22:00	
23:00	

## **LESSON 5**

## What are vaccines and could they help us?

#### **PUPILS WILL:**

- learn something about the history and nature of vaccines
- learn about the stages of vaccine development and understand how choices may be made about their immediate availability
- understand about the successes and benefits that vaccines can bring
- understand how herd immunity works when many people have been vaccinated
- understand the low-level risks involved in vaccination
- apply their knowledge and understanding from this and earlier lessons by considering how to prepare for a possible future pandemic.

# (© 2020 The College of Physicians of Philadelphia.) To help pupils to get a more detailed understanding of how vaccines work, go to this website and follow the instructions to set up a vaccine-related

A detailed, illustrated history timeline of vaccines can

• You can follow this by showing this video. (Oxford Vaccine Group, © University of Oxford)

simulation involving jigsaw pieces.

(© British Society for Immunology.)

be found here.



#### **NOTES ON CORE SKILLS**

Pupils will apply their learning and think critically about vaccines, their development, application, benefits and risks. They will also engage in an exercise where they can draw on student leadership and citizenship skills and apply learning in making decisions about how to best prepare for a potential future pandemic.

## STEP 1: What are vaccines and where did the idea for them come from?

• Explain to pupils that in China, more than a thousand years ago, a person seeking protection from smallpox was given material from smallpox sores from a sufferer of the disease. This usually brought on a mild form of the illness and immunised the person against future infection. This approach probably influenced an English country doctor, Edward Jenner, who noticed that milk maids who caught the mild disease, cow pox, did not catch the more serious, related disease, small pox. He injected someone with material from a cow pox pustule and then later with similar material from a small pox sufferer. The person did not get ill. Show this short video to help pupils understand more about vaccines. (YourekaScience, CC BY.)

## STEP 2: How are vaccines made and who should have them first?

- Cut up the 'Vaccine development' cards (page 47) and ask pupils to put them in order. Click here to carry out this activity online. Explain that normally the process of developing and distributing a vaccine takes 10–15 years but that, for Covid-19, governments are supporting scientists to try to create a vaccine in less than a year. Ask pupils why they think that vaccine development normally takes so long. Chinese scientists worked out and published the genetic code for the virus that causes Covid-19. Ask pupils why they think the scientists did this. There are over 100 teams around the world working on different potential vaccines. Out of many different possible vaccines, only a small number are likely to make it to clinical testing. This video provides more information about the hunt for a vaccine. (© BBC.)
- Once a vaccine has got through all the stages of development, testing and approval, it takes time to manufacture enough doses for everyone. Ask pupils to consider how they would choose who to vaccinate first. Would they start by protecting those who work with Covid-19 patients, or those at greatest risk if they caught it? To find out who might be at greatest risk, pupils can consult this Covid-19 risk assessment tool (this should be handled with sensitivity) (© BMA.) What about different countries? Should the vaccine be made available to all countries, or just those that can afford it?

#### STEP 3: What benefits can vaccines bring?

• Explain to pupils that GAVI, (the global alliance for vaccines and immunisations), WHO (the World Health Organization) and others are trying to make vaccines available across the world at affordable prices. Cut up the 'Benefits of vaccines' cards (page 48) and ask pupils to match each different benefit of vaccines to a UN Global Goal. Click here to carry out this activity online.

## STEP 4: How many people need to be vaccinated for everyone to be safe?

Explain to pupils that the number, or percentage, of people who need to be immunised in a community will depend on the reproduction number (R number) of the disease. Show pupils this simulation about how quickly measles spreads in groups of people where different percentages of people have been vaccinated. Make sure that pupils are aware that the yellow dots represent susceptible people, the blue dots, vaccinated people, and the red dots, infected people. It is worth running the simulation a number of times. As the incoming red dots strike differently each time, the results will vary, but over time only the communities with high rates of vaccination will be protected. (© The Guardian.)



The Guardian

- When enough people are vaccinated (or immune) in a community to stop a disease spreading, this is known as 'herd immunity'. Explain to pupils that the R number of measles is about 15 and that if 1 is divided by the R number, and then the figure is multiplied by 100, it tells you the maximum percentage of susceptible people that there can be in a community before the disease starts spreading.
- For measles this is 1/15 x 100 = 7%. So, to find out the percentage of the population that needs to be vaccinated for the community to be safe, the figure of 7% is taken away from 100 = 93%. Ask pupils how this compares to the results of the simulation. Ask pupils to work out how many people would need to be vaccinated in a community to protect everyone from Covid-19 (assuming that the R number is 2).
- As an extension activity, go to **this website** and print and cut out the board, token and cards for the **Juno Island Board Game**. This will help pupils gain an experiential understanding of how 'herd immunity' works as they try to escape from an island hit by an infectious virus. Pupils can also discuss the question whether it is OK for some healthy people to decide not to be vaccinated once a disease is less common (some people with certain health conditions cannot be vaccinated). (© *British Society for Immunology.*)

#### STEP 5: How safe are vaccines?

- Before embarking on this activity, check if there are pupils whose parents or carers are opposed to having them vaccinated. If so, it is important to handle the issue with sensitivity, for example not directly criticising or getting into arguments with individuals. Explain to pupils that vaccines have had a major impact on reducing diseases. For example, in the UK, here are figures for the numbers of people who suffered from different illnesses before and after vaccines against those illnesses became available. (Oxford Vaccine Group, © University of Oxford)
- Vaccines are not completely risk free, but it is a case of understanding how much the benefits outweigh the risks.
- Ask pupils to put their hands up if they have eaten food today. Tell them that for every 28 people (the size of some school classes) one person is likely to get ill from food poisoning during the year (UK figure for 2018). This figure can be as high as one in 10 in some countries. Ask them if that would scare them off eating food again. Ask them why not.



SHAHAREA / Noun Project

- Create a balance (or seesaw, see illustration), using a metre ruler, or just a length of wood, balanced on a big roll of sticky tape or some other object that can act as a pivot point. Put an equal number of books on each side so that the balance is level. Illustrate how the benefits outweigh the risks by using the food example above. Use sticky notes if you have them to label the books on one side, 'Eating food is essential for survival'; and on the other side, 'Eating food may cause food poisoning'. Ask pupils which side of the argument outweighs the other and then illustrate their answer by adding a book to the side that they choose. Explain that clearly there are ways in which the risk of food poisoning can be kept to a minimum.
- Now divide pupils into pairs. Each pair should read about a different disease to find out whether or not the benefit of being protected against the disease outweighs any possible side effects of having the vaccine, as illustrated in the 'Benefits and risks of vaccines' activity sheet (page 49). If it does, by how much does it do so? You can copy the activity sheet and cut it into strips to give out to the pairs of pupils. They should be ready to present their answers. Provide multilink cubes (or bubble wrap) to help pupils to illustrate the numbers involved.

#### **STEP 6: Preventing a future pandemic**

Explain to pupils that they will draw on their learning from this lesson, and earlier lessons, to play a game where they make choices about how to try to prevent a possible future pandemic. Cut up the Government Ministry cards (page 50), divide pupils into pairs and give each pair a government ministry card, making sure they understand what powers and responsibilities the ministry or department has (they can research this). Their task is to come up with three things that their department would do to prepare for a new pandemic (in case there should be one). The map below indicates global infectious disease outbreaks from 2016–20.



Outbreaks of disease 2016-20

Original source: Notifications by Quarantine Information Office, Ministry of Health, Labour, and Welfare Japan.

### **Potential collaboration with others**

You could ask pupils to compare with their partner school which vaccinations are given to children and young people. Classes could also share the results of the 'Preventing a future pandemic' activity – the proposals they came up with to prepare for a new pandemic.

### **VACCINE DEVELOPMENT CARDS**



Source: Icons from The Noun Project: Flask by Rajive, Mouse by Alina Oleynik, Three people by Anhar Ismail, 14 people by Adrien Coquet, Large group by Eliricon, Review by Tomi Triyana, Manufacture by GD Creativ, distribution by Gregor.

### **BENEFITS OF VACCINES CARDS**



Source: United Nations and GAVI

## **BENEFITS OF VACCINES CARDS**

Name of disease	Benefits (of protection from the disease)	Risks (from vaccination)
Measles	Avoid a 1 in 5000 risk of death (UK figure. In some countries this can be as high as a 1 in 100 risk). Avoid a 1 in 14 chance of complications such as pneumonia or an ear infection, or a 1 in 1000 chance of brain inflammation.	A 1 in 14 chance of temporary fever and rash, a 1 in 1000 chance of fits, a 1 in 1 million chance of brain inflammation. A 1 in 50 chance of temporary swollen glands and temperature. A 1 in 10 chance of temporary inflammation in joints in adults. (MMR)
Mumps	Avoid a 1 in 4 chance of inflammation of the testes in men (which can reduce fertility), or a 1 in 20 chance of inflammation of the ovaries in women. Avoid a 1 in 7 risk of viral meningitis (flu-like symptoms). Avoid a 1 in 20 risk of pancreatitis (belly pain) or temporary hearing loss.	A 1 in 14 chance of temporary fever and rash, a 1 in 1000 chance of fits, a 1 in 1 million chance of brain inflammation. A 1 in 50 chance of temporary swollen glands and temperature. A 1 in 10 chance of temporary inflammation in joints in adults. (MMR)
Rubella (German measles)	Avoid a 9 in 10 chance of a baby being born with serious disabilities (if the mother gets the disease in the first ten weeks of pregnancy).	A 1 in 14 chance of temporary fever and rash, a 1 in 1000 chance of fits, a 1 in 1 million chance of brain inflammation. A 1 in 50 chance of temporary swollen glands and temperature. A 1 in 10 chance of temporary inflammation in joints in adults. (MMR)
Diphtheria	Avoid a 1 in 10 chance of death.	A 1 in 10 chance of a raised temperature, abnormal crying, vomiting and diarrhoea in children. A 1 in 1000 chance of unusual high- pitched screaming, paleness and limpness. A 1 in 10,000 risk of fits. (6-in-1)
Tetanus	Avoid at least a 1 in 10 chance of death. This could become as high as a 9 in 10 risk in places where there is no medical care.	A 1 in 10 chance of a raised temperature, abnormal crying, vomiting and diarrhoea in children. A 1 in 1000 chance of unusual high- pitched screaming, paleness and limpness. A 1 in 10,000 risk of fits. (6-in-1)
Pertussis (Whooping cough)	Avoid a 1 in 200 chance of death in infants under six months.	A 1 in 10 chance of a raised temperature, abnormal crying, vomiting and diarrhoea in children. A 1 in 1000 chance of unusual high- pitched screaming, paleness and limpness. A 1 in 10,000 risk of fits. (6-in-1)
Polio	Avoid a 1 in 200 chance of paralysis that cannot be reversed. Of those who are paralysed, the death rate is around 1 in 5.	A 1 in 10 chance of a raised temperature, abnormal crying, vomiting and diarrhoea in children. A 1 in 1000 chance of unusual high- pitched screaming, paleness and limpness. A 1 in 10,000 risk of fits. (6-in-1)
Hib disease (Haemophilus influenzae type b)	Avoid a 6 in 10 chance of bacterial meningitis, often with blood poisoning, and then a 1 in 20 chance of death.	A 1 in 10 chance of a raised temperature, abnormal crying, vomiting and diarrhoea in children. A 1 in 1000 chance of unusual high- pitched screaming, paleness and limpness. A 1 in 10,000 risk of fits. (6-in-1)
Hepatitis B	Avoid having a long-term illness meaning you are likely to have a lower life expectancy than normal (mostly due to liver diseases such as liver cancer).	A 1 in 10 chance of a raised temperature, abnormal crying, vomiting and diarrhoea in children. A 1 in 1000 chance of unusual high- pitched screaming, paleness and limpness. A 1 in 10,000 risk of fits. (6-in-1)

(Most vaccines involve an injection, which often causes local swelling and slight pain at the site of the injection. All carry a very, very low risk [1 in 900,000 chance] of a serious allergic reaction. These common features have not been included in the table. Most diseases involve generally feeling ill with time off school or work, so this has also not been included.) Sources: Vaccine Knowledge Project (© University of Oxford, WHO, CDC.)

## **GOVERNMENT MINISTRY CARDS**

<ul> <li>Health and Social Care</li> <li>Budget: Large</li> <li>Keeping people safe, healthy and independent</li> <li>Supporting the health service</li> <li>Public health and social care</li> <li>Hospital care</li> </ul>	<ul> <li>Foreign Affairs and International Development</li> <li>Budget: Small</li> <li>Strengthening global peace, resilience (ability to recover) and response to crisis</li> <li>Tackling extreme poverty</li> <li>Helping the world's most vulnerable</li> </ul>
<ul> <li>Education</li> <li>Budget: Medium</li> <li>Striving to raise educational standards</li> <li>Ensuring that education builds character, resilience and well-being</li> </ul>	<ul> <li>Transport</li> <li>Budget: Small</li> <li>Increasing economic growth and opportunity</li> <li>Improving journeys</li> <li>Safe, secure and sustainable transport</li> </ul>
<ul> <li>Justice</li> <li>Budget: Small</li> <li>A prison and probation service</li> <li>Creating a modern courts and justice system</li> <li>Promoting the rule of law</li> <li>Making the department simpler and smarter</li> </ul>	<ul> <li>Business, Energy and Industrial Strategy</li> <li>Budget: Small <ul> <li>Delivering an industrial strategy</li> <li>Promoting competitive markets and responsible business practices</li> <li>Keeping a reliable, low-cost and clean energy system</li> </ul> </li> </ul>
<ul> <li>Defence</li> <li>Budget: Medium</li> <li>Protecting the country</li> <li>Promoting the country's prosperity</li> </ul>	<ul> <li>Digital, Culture, Media and Sport</li> <li>Budget: Small</li> <li>Connecting the country</li> <li>Encouraging participation</li> <li>Supporting the media</li> <li>Ensuring social responsibility</li> </ul>
<ul> <li>Work and Pensions</li> <li>Budget: Large</li> <li>Increasing saving for, and security in, later life</li> <li>Creating a fair and affordable welfare system</li> </ul>	<ul> <li>Environment, Food and Rural Affairs</li> <li>Budget: Small</li> <li>A cleaner, healthier environment, benefiting people and the economy</li> <li>Making a nation better protected against floods, animal and plant diseases and other hazards, with strong response and recovery capabilities</li> </ul>
<ul> <li>Treasury</li> <li>Budget: Small</li> <li>Maintains control over spending, setting the direction of economic policy and working to achieve strong and sustainable economic growth</li> </ul>	<ul> <li>Housing, Communities and Local Government</li> <li>Budget: Medium</li> <li>Aims to create great places to live and work, and to give more power to local people to shape what happens in their area</li> </ul>

## **VIDEO TRANSCRIPTS**

#### **TRANSCRIPT 'THE ORIGIN OF VACCINES'**

Historians have found that the origin of vaccines goes back to ancient Asia and Africa. Early versions of what are now called vaccines are believed to have been discovered in response to a deadly disease known as smallpox, which was widespread across many cultures and countries and affected rich and poor people equally.

Fortunately, vaccine-like treatments were developed to protect people against the sickness. In Asia a technique known as variolation was used, involving a person being purposefully infected with smallpox by placing pus from a smallpox sore under their skin. This caused a milder disease than a full smallpox infection and resulted in the person gaining lifelong immunity. While widely practised in Asia and Africa, this was viewed with scepticism by European physicians, and smallpox killed approximately 400,000 Europeans a year in the 18th century.

In 1796, Edward Jenner, an English doctor, demonstrated that cow pox virus treatment could also prevent smallpox disease. This works because the two viruses look very similar to the human immune system, though Jenner did not know that at the time. Jenner injected an eight-year-old boy with pus he had taken from a cow pox sore on the hand of a milkmaid. The little boy had a mild illness, not at all dangerous like smallpox, and he recovered quickly. When Jenner later deliberately exposed the boy to smallpox, he didn't get sick. His immune system was trained to fight off smallpox infection because of his prior exposure to cow pox. A fun fact: Jenner created the word vaccine from the Latin word *vacca*, which means cow, and *vaccinia* which is Latin for cow pox. Although injecting someone with pus caused by cow pox might sound gross, Jenner's discovery ultimately led to the development of modern smallpox vaccines and wiped out smallpox – an amazing public health achievement. It was also the beginning of more vaccination discoveries and development. Vaccine research continued to boom throughout the mid-20th century. Scientists began growing viruses in laboratories, leading to new discoveries. One huge triumph of the time was the creation of the polio vaccine. Polio is a deadly virus that infects the central nervous system and can cause paralysis. It went from being a very common dangerous disease to one that is very rare, because of the polio vaccine.

The development of vaccinations has allowed researchers to combat other common and sometimes deadly childhood diseases, such as measles, mumps and rubella. In fact, very few people in our day and age have heard of some of these diseases, since vaccines have dramatically reduced the number of cases of these and many other childhood diseases. So, at the end of the day, we owe a big thank you to the individuals who were injected with pus by doctors in Asia and Dr Jenner. You helped to solidify the idea of training the immune system for future protection, and for that we thank you. Due to the development of vaccines, diseases such as polio, measles and chickenpox are now preventable, and parents no longer have to watch their children suffer from these once-common illnesses. (YourekaScience, CC BY.)



## **VIDEO TRANSCRIPTS**

#### TRANSCRIPT 'CORONAVIRUS VACCINE: HOW CLOSE ARE WE AND WHO WILL GET IT? - BBC NEWS'

More than 140 organisations around the world are working on a vaccine and collaborating with one another, and every day we're getting closer to finding one.

'Danni, it's very promising to start with.' (Dr Elisabetta Groppelli, St Georges, University of London)

A handful of them have even reached the point where they're testing the vaccine on thousands of humans, something called a phase three trial.

'Not quite popping the prosecco just yet.' (Dr Groppelli)

A lot has to happen before we can know that a vaccine works and that it's safe.

What exactly is a vaccine? Well, it's like a training course for our body's immune systems. They harmlessly show viruses or bacteria to our bodies. Our immune systems recognise them as an invader and learn how to fight them. It means that next time, when we encounter the disease for real, our bodies already know how to handle it. There's a lot we don't understand about Covid-19, but we know its genetic code. Some scientists are lifting parts of this code and combining it with existing viruses to create something that looks like the coronavirus. This can then be given to animals or humans. Others are injecting pieces of raw genetic code, such as DNA, straight into test subjects. Whichever approach is used, when researchers think they've found something that works, it has to be tested again and again and again. And go through so many clinical trials to make sure that it's effective and that there are no unintended side effects, and even after that, it still needs to be approved by medical regulators.

The reality is that most of the vaccines being trialled right now will fail.

When can you get the vaccine? Well, most scientists seem to think it'll be the second half of 2021 at the earliest, and that might seem far away to you, but vaccines usually take years if not decades to develop, and then you've got to make this vaccine on a massive scale. Some countries such as the UK and the USA are already spending money to secure vaccines for their own populations. But the World Health Organization is also taking steps to try to ensure that all countries have equal access to a vaccine. No matter who discovers it, or how much money a country is willing to offer for it. The plan is for healthcare workers to get vaccinated first, then 20 per cent of each country's population will be given the vaccine. The idea is to have vaccinated two billion people by the end of 2021. (© *BBC.*)



## **LESSON 6**

## How is life changing now and how might it change in the future?

#### **PUPILS WILL:**

- formulate questions in response to images taken before and during the Covid-19 pandemic lockdowns
- express thoughts, feelings and fears about the future and imagine different possible futures
- explore a range of possible long-term responses to Covid-19 and consider which of these responses might be most desirable
- have the opportunity to develop a vision of an ideal school of the future.

#### **NOTES ON CORE SKILLS**

Through this lesson, pupils will

- develop critical thinking skills (to analyse, interpret, compare and contrast images)
- apply creative thought to interrogate and categorise questions
- develop skills of citizenship by considering social, environmental, economic and political aspects of sustainable development
- use critical thinking strategies to understand, compare and prioritise different views of the future and make informed judgements about different ways to live today and going forward
- practise collaborative and co-operative thinking and skills of persuasion and negotiation to reach a consensus
- develop skills of speaking and listening and co-operation
- further develop the ability to be openminded, to respect other people's views and understand multiple perspectives
- further develop active citizenship skills and explore their own role as potential agents in alternative futures.

As we get past the Covid-19 crisis, we have an important choice to make: to try to go back to how things were or to think about what needs to be changed in the world. How can we build a more equal and inclusive world that can be resilient to possible future pandemics and global challenges like climate change?

A recent YouGov **survey** in the UK showed that 85% of people want to see at least some of the personal or social changes they experienced during the pandemic continue afterwards, while just 9% want a complete return to life as it was before the pandemic. (© *The RSA, CC BY-NC-ND 3.0.*)

This section begins by looking at some of the visible changes that have been happening since the Covid-19 pandemic began, and then encourages and supports pupils to think about the future and their potential for contributing towards it. It asks pupils to consider a range of different perspectives about priorities and then gets them to think about how they would like things to change and what would need to be done to bring the changes about. Finally, the focus shifts from a societal to a school level, where, with the aid of a script that is read out loud, pupils are guided into imagining what a school of the future might be like. They are then encouraged to come up with their own designs and plans, and share and communicate these with decision makers.

#### **STEP 1: Development compass rose**

- Explain to pupils that the consequences of Covid-19 have been terrible for many people's lives and livelihoods, and the full impacts are still not known. However, we do know that pandemics of the past have sometimes led to great changes in the world and that the choices we make now, or in the near future, could have a big impact in terms of changing things for the better or worse.
- Show pupils the **Development compass rose** framework for questioning (page 59). Explain that, working in small groups, pupils will see sets of two images, one taken before and the second taken during pandemic lockdowns (page 60). They will examine the images and then come up with questions they have in response to the images, categorising their questions into four types: Natural, Economic, Social and Who decides (political), like the N,E,S,W points of a compass. If possible, give each

group a copy of the Development compass rose as a reminder, or show it on the whiteboard. Pupils can write their questions around the image on a large sheet of flipchart paper if available, or otherwise in a notebook. After plenary feedback, you may wish to use some of their questions as the basis for a broader discussion about how our societies have changed during the pandemic and what that may mean for the future.

 Give each group the first Development compass rose image – taken before the pandemic\*. Ask them to lay this in the centre of a large piece of paper and to look at the image and consider what questions they may have about it. What kind of questions are they? With a coloured pen, pupils should write their questions in the appropriate category on the paper.

\*Note – the image from China of Mean tropospheric NO2 density will need to be printed and cut into two.

- Give each group the second image taken after the pandemic. Ask pupils to overlay this image onto the first one and consider how it is different. What changes have taken place and why might this be? Using a different-coloured pen, pupils again write their questions in the appropriate category around the image.
- In a whole-class plenary, you can invite pupils to feed back some of their questions.
- You can then use the following questions for a follow-up discussion:
  - 1. Do you think this image will change back to the way it was before? Why? Why not?
  - 2. If you took a photo of your school, neighbourhood or town pre- and mid-pandemic, would you see any changes?
  - 3. Do you think these changes will stay? Why? Why not?
  - 4. In what ways do you think our world will 'go back to normality'? What might happen if we do? Encourage pupils to consider different aspects of this (Natural, Economic, Social and Who decides [political]).



#### **STEP 2: Future quotes**

- Cut up the 'Quotes about the future' (page 61) and select a few of them for each group/pair of pupils. Hand out the quotes, face-down, to each group. Ask them to take turns in picking up a quote and reading it aloud. The person who reads speaks first and explains what they understand by this quote.
- Ask them to think about what each quote might mean:
  - 1. in the context of the Covid-19 pandemic
  - 2. in a post-pandemic world (or simply a 'future world')
  - 3. on a personal level.
- They could speak about any one of these themes. If the quote means nothing to a particular pupil, ask them to put it back and choose another one. When they have shared their thoughts on it, they should invite whoever would like to comment to do so. Each group should then respond to these questions:
  - 1. Which quote means the most to you and why?
  - 2. Are there any quotes you disagree with?

Does the group as a whole have a favourite quote? If so, why?

Click here to carry out this activity online.

## ALTERNATIVE EXTENSION ACTIVITIES USING THE QUOTES

#### Resonances

- Cut up the quotes and enlarge a selection of perhaps five or six up to A4 size. For a walking-around activity (if physical distancing allows), place on tables around the room, put up on the walls of the classroom or space out in an outdoor area.
- Explain to pupils that around the location they will find different people's ideas about the future. They have a few minutes to walk around the space reading all the quotes. They should choose one that resonates with them and stand next to it. They should think about what it means to them in the context of the Covid-19 pandemic and in the context of a future, post-pandemic world. With the person standing closest to them, they should share their feelings and thoughts as a pair. They could then feed back some of their conversation to the rest of the class.

#### Values/continuum line

- Using tape or a rope, make a line across the classroom or in an outdoor space. Decide which end is 'Agree' and which is 'Disagree' (perhaps place two pieces of paper with 'Agree' and 'Disagree' at either end). Select several of the quotes about the future and read them to the class one by one.
- Explain to pupils that they will hear a series of quotes from different people about the future. They should listen to each quote and then place themselves somewhere along the continuum line on the ground according to how much they agree or disagree with the quote. Explain that they do not have to stand at either end of the line, but can choose to be anywhere along the continuum. Two people closest to either end (i.e. four pupils) should be invited to share their opinions and then two people in other positions can share theirs. Ask pupils to reflect on the following questions:
  - 1. After hearing several different opinions, has your own opinion shifted at all?
  - 2. Can you see another perspective more easily?
  - 3. Have your thoughts and feelings on this quote become more nuanced or complex?
- Finally tell them that they now have the chance to move along the continuum line, if they want to do so, to reflect their shift in thinking. One or two pupils should feed back, sharing their new perspectives with the whole group.

#### **Community of enquiry**

• If you are trained in Philosophy for Children (P4C)), conduct an enquiry using as a stimulus the quote by American scholar John Schaar: 'The future is not some place we are going, but one we are creating. The paths are not to be found, but made. And the activity of making them changes both the maker and the destination.'

#### **STEP 3: Whose ideas?**

Ask participants (in pairs) to rank the 'Whose ideas' statements (pages 62–64) in the shape of a diamond according to their importance, now and in the future. (They should put the most important idea at the top, the next two below, then the next three, the next two, and the least important one at the bottom). They should ideally try and reach a consensus, so each person will need to explain the reasons for their choices and try and persuade their partner to agree to the position of a statement in the diamond. Further information is available on each statement if required. Click here to carry out this activity online.

#### **STEP 4: Probable and preferable futures**

#### Introduction - the situation we face

'In the early 21st century we find ourselves facing a number of unprecedented challenges which will lead to futures markedly different from today, locally and globally. We know this because climate change, energy issues and the limits to growth all point towards the urgent need for a low-carbon society. The long transition to such a society will not be easy. One of the key tasks of education is to help young people meet the challenges that lie ahead with confidence and vision.' *Teaching for a Better World*, David Hicks

Wendell Bell, Emeritus Professor of Sociology at Yale University, describes the purpose of futures studies as follows: 'To discover or invent, examine and evaluate, and propose possible, probable and preferable futures. Futurists seek to know: what can or could be (the possible), what is likely to be (the probable), and what ought to be (the preferable).' (Bell 1997: 73), p. 42 of *Sustainable Schools, Sustainable Futures*, David Hicks.

Notion: 'We cannot move towards a future we prefer unless we are able to imagine it first', p. 55 of *Sustainable Schools, Sustainable Futures* (2012), David Hicks. See also p. 184 of *Teaching for a Better World,* also by David Hicks.

#### **Process**

- 1. Introduce the futures diagram and the idea of probable and preferable futures on the next page. Give pupils time to really understand the method, perhaps by giving them a brief worked example (see example on page 57 from David Hicks's *Citizenship for the Future* (2001). *Source: Cathie Holden*).
- 2. Starting with what pupils know, ask them to consider their own place (this could be their school, home, village, town or city) and how it might look and feel now and in the future if Covid-19 stays with us.
  - What factors may contribute to the good health and well-being (physical and mental/emotional) of people in your place?
  - What are the present trends and what will happen if they continue?
  - What changes have happened to it during the Covid-19 pandemic?

Ask them to make a note of their answers around the Present point of the diagram.

#### **Schools Connect**

3. Ask pupils which of these trends or changes are likely to continue in the future?

They should note their answers on the Probable line.

- How do you feel about these trends or changes?
- Which do you think are good and which are not so good?
- If you carry on down this route how might your school, community or village/town/city look and feel in the future?
- 4. Once they have explored this, they should think about what alternatives could exist.
  - What would you prefer to happen?
  - What would you like your place to look like? How would you like it to be?

They should note their thoughts on the Preferable line.

- 5. With their probable and preferable futures outlined, you should encourage pupils to consider how they might move from a probable to a preferable future.
  - What steps might be needed?
  - What part do/could you play?
  - How are you/could you be active in making such change come about?

They should write some ideas on the ladder part of the diagram.

- 6. Once pupils have finished their diagrams, they should discuss what it means to be an active citizen.
  - How do you feel about your involvement in your place and in its probable and preferable future within and beyond the pandemic?
  - How much of a part does being an active citizen play in determining the future of where we live?



Diagram adapted from Lessons for the Future (2002) by David Hicks

I shall be famous for saving the for saving the world IFA are wiped out unemployed I have army soldiers are are f dogs unemployed i will win a swim- ming championship o more starving people The Future the ozone layer will clear up of a cure will be made	v of animals will increase n the ozone layer will get larger e die from starvation and famine ollution will kill sea creatures vorld war 3 will break out because Germany joins together ule the 1 will be a vet II be told We shall all die of pollution cal rainforests will e none left
Freferable       Preferable       1 will become a lots       1 will become a successful autho       Vve shall       N       First       coin win the channes       N       First       channpion-       The hole in       1983	Berlín Wall comes down Nov 1989 The hole i People Probable Políticians will what to do be cu will k
The first man on the 1969	Planet The Berlín Pluto is Vvall is built discovered 1961 1930
The first The first Micky Mouse cartoon d war Strike Disney 4-1918 1926 1928	The 2nd world war and the dictators 1922-1953
The Elack Death 1347-1357 191	The Spanish Armada 1588

Example of the probable and preferable futures of a secondary school student writing in about 1990 adapted from p. 45 of *Citizenship for the Future* (2001) by David Hicks

#### STEP 5: My school in the future

#### **Preparation**

This works best if the activity is done with several people each having their own visions and then sharing them. You will need to read this script to your pupils (adapting as required). You may want to do a relaxation activity first and even play some calming music in the background to aid concentration.

#### Procedure

#### A: Read through the guided script

- 'In a moment I am going to ask you to close your eyes and imagine what you would like a typical day at school to be like in 2030. Imagine you are the same sort of person you are now, and the same age you are now, and image that you are still going to the same school. Imagine what you'd realistically like the future to be like – we're not after sci-fi fantasy, or what you expect or fear – it's the best you might realistically hope for.'
- 'First, please make sure you are sitting comfortably Now close your eyes.'
   (NB: It is really important that this visioning activity is carried out with eyes closed.)
- 'So: imagine you are being whisked off in a magical time capsule to your ideal school in the year 2030.
   I'd like you first to imagine you have got up, got ready and travelled to school. How did you get there?' (Pause)

(NB: Pause long enough for people to imagine an answer. Each of these pauses is only ten to thirty seconds but might feel much longer. You can judge the right length by imagining your own answer to each group of questions before moving on.)

- 'You arrive at the school entrance: What do you see? (Pause) What do the buildings look like? What do the grounds look like? (Pause) What can you hear? (Pause) How does the air smell? (Pause) What are you doing before lessons start?' (Pause)
- 'Now imagine you are going to start lessons you walk to your classroom. What do you see on the way? (Pause) You have a lesson in your classroom. What is it like? How are you learning?' (Pause)
- 'Now it's break time and you can go outside. How do you feel? (Pause) What is it like outside? Where can you go? What can you do?' (Pause)
- 'After break, it's your favourite lesson. The teacher says you are going to work outside. You go out for the lesson. What are you doing? What are other people doing?' (Pause)

- 'Now imagine it's lunchtime. Where do you go? What are you eating? Where has it come from? How was it prepared? How are lunchtimes organised?' (Pause)
- 'Now imagine that the formal school day is over and it's time for after-school activities. What are you doing? Where? With whom?' (Pause)
- 'Now your day is over, you've gone back to bed and the magic time capsule is bringing you back: you're landing with a bump back to this room in (place) on a (month, day, time) in (year). Now you can open your eyes again.'

#### **B: Sharing/discussion**

Ask pupils to note down key features of their vision of their school in the future. They can draw and label them if they wish.

Invite pupils to compare notes about their ideal future visions with each other. They should note things they have in common as well as differences (sights, sounds, smells, times of day etc.)

Ask pupils to write up key points and work towards developing a shared vision.

Suggestions for pupils to take this further:

- a) Get designing:
  - Make a drawing of your ideal school in the future.
  - Create the school out of different materials.
  - Design a three-dimensional model using a computer.
- b) Share with others
  - Get other pupils to share their designs.
  - Share the results with your school/local council/ organisations interested in sustainability/networks that want to make a better society post-Covid-19 (some are promoting the slogan Kinder – Fairer – Greener; how does your vision reflect these ideas?).
  - Start a discussion about how schools could change in the future.
  - Involve local politicians.

# Potential collaboration with others

Partner school classes could share most favoured quotes, whose ideas statements and their visions for alternative futures and future schools with each other. This could stimulate interesting discussions.

<ul> <li>storing development involves taking a variety of development involves taking a variety of a variety of as into account when understanding a situation. So into account when understanding a situation, and ther interestations and ther interestations in any place of surants. These are questions and at what cost compares us to look at - and evelopment issues in any place or situation including our own)</li> <li>Who decides? - These are questions and at what evelopment issues in any place or situation including our own)</li> <li>Sued to raise questions about preventent issues in any place or situation including our own)</li> <li>Sue and their interelationship with interelationship with interelationship with interelationship with interelationship is their relationship between the evelopment issues in a sued to help enquiry about place or situation.</li> <li>Sue and their interelationship with interelationship with interelationship with intered derivationship with intered derivationship is their relationship.</li> <li>Sue and their interelationship with intered derivationship with intered derivationship with intered derivationship with intered derivationship.</li> <li>Sue and their interelationship with intered derivationship with intered derivationship with intered derivationship intervionent intolographs representing a place or situation.</li> <li>Sue and their interelationship with intered questions about the fulferent situation.</li> <li>Sue and their interelationship with intered derivationship with intered derivationship intervionent intered to help enquired for each other interelationship with intered derivationship intervionent intered to help enquired for each other intered to help enquired for each other intered to help endurity about place or situation.</li> <li>Sue and the endurity uset or generated for each other intered to help endurity about place or situation.</li> <li>Sue and the endurity about place or situation.</li> <li>Sue and the endurity about place or situation.</li> <li>Sue and the end</li></ul>	A FRAMEWORK FOR RAISING (	<b>OUESTIONS</b>	Natural ~ These are questions
development compass rose is a tool which: ancourages us to ask a range of questions about tencommerals, social, economic and political sues and tor inter-relationship between morionmental, social, economic and political sues as well as the relationship between these dimensions sues as well as the relationship between these dimensions search and political sues as well as the relationship between these dimensions search and political sues as well as the relationship between these dimensions search and political sues as well as the relationship between these dimensions search and political sues as well as the relationship between these dimensions search and political search and political sues of the enquiry about places, issues, in the commonality between what can appear to be the four 'compass' Questions can be generated for each the four 'compass' Questions about y different situation, and the commondities ween them then explored. These are changes in the environment. Social: These are changes involving money. Who decides?: The people who make decisions about this development compass rose came out of discussions a	stioning development involves taking a variety of ors into account when understanding a situation. four 'domains' that the development compass e encourages us to look at - and explore the links ween - are: Economic, Natural, political [Who ides?] and Social/cultural.	Who decides? ~ These are questions about power, who makes choices and decides what is to happen, who benefits and loses as a result of these decisions and at what cost.	about the environment - energy, air, water, soil, living things and their relationships to each other. These questions are also about the built as well as the 'natural' envi- ronment.
<ul> <li>and their interrelationship with any topolic and political series and their interrelationship between here dimensions</li> <li>a subble different situations</li> <li>b sarticularly useful for helping us to focus on here dimensions</li> <li>b sarticularly useful for helping us to focus on here dimensions</li> <li>b sarticularly useful for helping us to focus on here different situations</li> <li>b sarticularly useful for helping us to focus on here different situations</li> <li>c commonality between what can appear to the commonalities ween them then explored. These are changes in the environment.</li> <li>c compass: Questions apout to the commonalities ween them then explored. These are changes in the environment.</li> <li>c compass: Questions apout to the commonalities ween them then explored. These questions apout to the commonalities ween them then explored. These questions apout to the commonalities ween them then explored. These questions apout to the commonalities when the environment.</li> </ul>	development compass rose is a tool which: encourages us to ask a range of questions about development issues in any place or situation		
<ul> <li><i>be commonify between what can appear to be the commonity between what can appear to be the commonity between what can appear to be used to help enquiry about places, issues, in the centre of the ow, for example, gender, race, distributed questions about the may include questions about the compass'. Questions can be generated for each he four 'compass'. Questions can be used to help enquiry about places, issues, it was and age affect social relationships.</i></li> <li><i>ity, class and age affect social relationship.</i></li> <li><i>to may prefer to use a simpler explanation:</i></li></ul>	s used to raise questions about development sues and their interrelationship with environmental, social, economic and political ssues as well as the relationship between these dimensions	Social ~ These are questions about	Sout the stress are stress about money, trading, aid,
<ul> <li>can place an image or an 'issue' in the centre of 'compass'. Questions can be generated for each to four 'compass'. Questions can be generated for each he four 'compass points'. These could then be pared with questions generated about an appar-y different situation, and the commonalities ween them then explored. These questions might be a starting point for further enquiry.</li> <li>You may prefer to use a simpler explanation: 'compass'. Questions can be generated for each the way they be a starting point for further enquiry.</li> </ul>	he commonality between what can appear to be luite different situations an be used to help enquiry about places, issues, ir photographs representing a place or situation	peoples, then relationships, then traditions, culture and the way they live. They include questions about how, for example, gender, race, dis- ity, class and age affect social relation	ownership, buying and selling. ships.
of the future and development at a global scale.	can place an image or an 'issue' in the centre of 'compass'. Questions can be generated for each he four 'compass points'. These could then be pared with questions generated about an appar- y different situation, and the commonalities veen them then explored. These questions might be a starting point for further enquiry.		You may prefer to use a simpler explanation: Natural: These are changes in the environment. Social: These are changes to people and the way they live. Economic: These are changes involving money. Who decides?: The people who make decisions about the changes. This development compass rose came out of discussions about thinking of the future and development at a global scale.

## **DEVELOPMENT COMPASS ROSE IMAGES**



Sandeep Rut / CC BY-SA 4.0



allispossible.org.uk/Flickr/CC BY 2.0



Marco Capovilla in Facebook Venezia Pulita group



NASA's Earth Observatory



Pedro Szekely/Flickr/CC BY-SA 2.0



Sarscov2020 / CC BY-SA 4.0



John Salmon



Mean Tropospheric NO, Density (µmol/m?) 0 125 250 375 a500

### **QUOTES ABOUT THE FUTURE**

'The future only arrives when things look dangerous.'

David Hicks, English Doctor of Philosophy and Freelance Educator. (1942–)

'The future belongs to those who believe in the beauty of their dreams.' Eleanor Roosevelt, American political figure, diplomat and activist. Longest-serving First Lady of the

United States. (1884–1962)

.....

*'No one saves us but ourselves. No one can and no one may. We ourselves must walk the path.'* 

Gautama Buddha, Indian philosopher, spiritual teacher and religious leader. Founder of the world religion of Buddhism. (563BC–c.483BC)

'The future is not some place we are going, but one we are creating. The paths are not to be found, but made. And the activity of making them changes both the maker and the destination.'

John Schaar, American scholar and political theorist. (1928–2011)

'The future depends on what you do today.'

Mahatma Gandhi, Indian lawyer and anti-colonial nationalist. (1869–1948)

'Without a vision for tomorrow, hope is impossible.'

Paulo Freire, Brazilian educator and philosopher. (1921–97)

.....

'What I treasure most in life is being able to dream. During my most difficult moments and complex situations, I have been able to dream of a more beautiful future.'

Rigoberta Menchú Tum, Guatemalan indigenous K'iche feminist and human rights activist. Nobel Peace Laureate. (1959–)

'How wonderful it is that nobody need wait a single moment before starting to improve the world.'

Anne Frank, German-Dutch diarist of Jewish origin. (1929–45)

\_\_\_\_\_

'While we can't guess what will become of the world, we can imagine what we would like it to become. The right to dream wasn't in the 30 rights of humans that the United Nations proclaimed at the end of 1948. But without it, without the right to dream and the waters that it gives to drink, the other rights would die of thirst.' Eduardo Galeano, Uruguayan journalist, writer and novelist. (1940–2015)

## WHOSE IDEAS STATEMENTS

Whose ideas ranking statement	Further information on statement
A Change the way we farm animals to stop future pandemics	<b>A</b> I would like to see big changes to the way we manage our farming of animals. With more and more large-scale factory farms across the globe and increased hunting in wild areas for animals for food, more viruses could arise, crossing from animals to humans. To prevent more zoonotic viruses developing we need to rethink our treatment and farming of animals.
B Tackle inequality so some people don't suffer or struggle more than others	<b>B</b> I would like to see a more equal society arise from this crisis. The pandemic has highlighted the inequalities that exist within and between countries. In the UK and the US, there have been disproportionally more deaths of people from Black, Asian and Minority Ethnic (BAME) backgrounds. In India alone, more than 400 million people risk sliding into poverty because they are forced to rely on informal work. Everyone should be able to do work that offers long-term stability. If the government gave everyone a basic income to pay for their basic needs, no children would need to go hungry.
C All countries must work together collaboratively to find solutions at a global level	<b>C</b> I would like to see countries working together co-operatively following this crisis. It is a crisis that affects the whole world and can only be tackled at a global level. Countries need to work together to make sure everyone can get a vaccine and the treatment they need. Countries need to share resources, science and finances to find solutions to global issues. Global leadership should be focused on human values. Richer countries also need to give money to countries that are struggling to cope with Covid-19 and the problems it creates. We have seen with this crisis how what happens in one part of the world can affect us all.
D Combine tackling Covid-19 with tackling the global challenge of climate change	<ul> <li>D</li> <li>I think we have a great opportunity now to combine tackling the global threat of Covid-19 with tackling the global threat of climate change. Deforestation and threats to biodiversity were likely factors in the introduction of the virus.</li> <li>We have seen how quickly action can be taken in the face of a crisis and we need to respond quickly to the challenge of climate change. The global lockdowns have seen a big reduction in pollution levels and carbon emissions, but not enough to halt the planet's warming.</li> <li>We can find ways to reduce emissions and consumption and create new green jobs in producing renewable energy without fossil fuels and using green technology.</li> </ul>

## WHOSE IDEAS STATEMENTS

Whose ideas ranking statement	Further information on statement
E Give more power and resources to local communities	<b>E</b> I would like to see us build on all the local community actions we have seen during the crisis. Communities have come together to support those who aren't able to get out at all and thousands of volunteers have signed up to help. Local communities build trust and understand their own needs better and can be supported to manage things themselves. Local community organisations can also be supported to challenge stigmatisation, racism and discrimination, which have increased in relation to the virus.
F Cancel debt to help people and countries recover	<b>F</b> I think we should rethink issues of money in the post-pandemic phase. Many people have lost their jobs, businesses are struggling, and these problems will take a long time to fix. I think debt should be cancelled. Debt can keep families and countries in a cycle of poverty. Students looking for work and student doctors have to pay off debts on their years of study. Many countries who are struggling to support their populations are in debt to richer countries or global bodies like the World Bank. Cancelling debt would aid their recovery.
G Spend money on making technology better	<b>G</b> I think we need to make the most of all the possibilities that technology can offer us, which we have seen during the crisis. Technology can change the way our schools work, as we have seen through so many children doing their home learning on computers during the lockdown. Also, we can use technology to improve our health care. We don't always need to go in to see the doctor but can talk to them online, and sometimes computers could even decide what medicine we might need. Internet use should be free for all. There are so many possibilities.

Sources: Icons from The Noun Project: Cow by Symbolon, segregation by Basti Steinhauer, cooperation by Sumit Saengthong, Climate Change by Creative Mania, local by Larea, financial debt by Delwar Hossain, Technology by Aiden Icons, campaign by Creative Mania, Health by fizae, Flag by Gregor Cresnar, economy by Sumit Saengthong.

## **WHOSE IDEAS STATEMENTS**

### Whose ideas ranking statement Further information on statement

H Focus funding and support on helping young people	<b>H</b> I think we need to make plans to help young people in the post- pandemic phase. Young people are among the most affected by the social and economic impacts of the lockdown. In 165 countries around the world, children and young people have missed out on learning at school and in university. Young people are more at risk of developing anxiety and mental-health concerns. Young women and girls are more at risk of domestic violence, which has risen during lockdown. Youth unemployment rates will increase. However, young people are also joining the global response to the challenge, running awareness-raising campaigns, and volunteering to support vulnerable people in their communities. They need funding and support to contribute as scientists, activists, innovators and entrepreneurs.
I Make sure everyone has access to healthcare and tackle preventable conditions	I I think the most important thing we can learn is that we need better healthcare systems in every country. Everybody should be able to get the healthcare they need, even if they don't have any money or work. Healthcare should help prevent the underlying health conditions that made many people vulnerable to the virus. Many countries have struggled to cope with the numbers of people needing hospital treatment, so more money needs to be spent and planning done to make sure they can deal with possible future crises. Healthcare workers should be paid more.
J Try to buy what we need from our own country and make ourselves more self-reliant	J I think the crisis has shown us that our country is too reliant on other countries. We struggled to get personal protective equipment and ventilators for hospitals when we needed them, so I think we should make sure we are self-reliant and not dependent on other countries. This will produce jobs for people in our country too, which is important for the economy.
K Get the economy up and running and save jobs	K I think we need to get the economy back on track, get our businesses and services back up and running, and get people to shop and spend to boost the economy. If we don't strengthen the economy, a lot of people will lose jobs, and they then won't be able to spend as much, so it becomes a vicious cycle. Unemployment also costs the government money that we can't afford to spend. We need to compete with other economies around the world

ł

# Glossary of terms used in lesson 2

**Essential/key worker** – a worker who provides a vital service, for example, a member of the police force, a health worker, teacher, bus driver, food-shop assistant, or post office worker

**Essential services** – these include services, such as hospitals, water works, power stations, schools, transport, and waste collection, that have been listed by a government as vital to support people in a pandemic.

**Germs** – tiny living, or non-living, things that can grow in number and cause disease.

**Health worker** – a worker who works in health care, for example, a doctor, nurse, carer, or occupational therapist.

**Lockdown measures** – measures that aim to keep people confined in their homes for much or all of the time and prevent them from moving and travelling around except for essential travel.

Physical distancing (also known as social distancing) – measures intended to prevent the spread of a contagious disease by trying to ensure people stay a certain distance away from each other, therefore reducing the number of times people come into close contact with others.

**PPE (personal protective equipment)** – this includes equipment such as face masks, aprons and gloves.

**Self-isolation** – staying at home and keeping away from other people because you have, or might have an infectious disease, and do not want to risk spreading it to others, or because you are particularly concerned about catching it.

# Glossary of terms used in lesson 3

**Immunity** – biological immunity is the body's defence against disease-causing organisms or toxins. It may be general, or specific to a particular infection; acquired by having the illness in the past, or having been vaccinated against it.

**'R' number** – scientists measure the spread of infectious disease by its reproduction number, known as the 'R' number. This is the number of individuals who are likely to be infected by one individual with the disease. (R0 refers to the initial basic reproduction number of a disease when there is no immunity in a population and no measures in place to prevent the spread. Rt refers to the actual or 'effective' reproduction number, the

number of individuals who are likely to be infected by one infectious individual at any specific time ('t'). It is affected by the number of people who have immunity to the disease and by infection control measures.

**Vaccine** – a substance used to stimulate the body to produce defence cells and substances against one or more diseases.

# Glossary of terms used in lesson 4

#### Citizenship

Citizenship has been described as being about a status (e.g. a person being a national of a country and having rights) a feeling of belonging and a practice (contributing to society to help others enjoy their rights). (Source: Osler, A. and Starkey, H. (1996), Teacher Education and Human Rights. London: David Fulton.)

#### Communities

A community is all the people living in an area or a group or groups of people who share common interests. The role of a community varies greatly across the world. In some places, communities are successful because of the way people work together and support one another. Various groups, some formal and some more informal, and a range of businesses can form part of the community.

#### Government

A government has the power to rule a country, state or province, or a city within a country or region.

There are different types of government across the world, but most need to win elections to stay in power. You can find out more about the different types of government by looking at:

#### https://wiki.kidzsearch.com/wiki/Government

As well as making and enforcing laws and collecting taxes, governments usually have control or influence over systems for health, education, transport, trading, international issues, defence, energy, water, sanitation and many other aspects of life, including the economy.

#### NGOs (non-governmental organisations)

NGOs are normally separate from government and usually have aims that are not about making a profit (many NGOs are charities). NGOs may operate nationally or internationally and often play an important part in developing society, improving communities and encouraging people to take an active role in society. They also often work to promote social or political change.

## CREDITS

## Lesson 1 – World's most common communicable diseases cards (pp 12–13)

(Images listed left to right as they appear in each row)

IMAGE	CREDIT	LICENCE
Mosquito	Photo by form PxHere	CC 0
Malaria parasite	National Institute of Allergy and Infectious Diseases, NIH	CC BY-NC 2.0
Malaria symptoms	Mikael Häggström	Public domain
Death rate from malaria, 2017	Our World in Data	CC BY 4.0
Mosquito and net	Charles Rondeau	CC0 1.0
Warning sign	Pixabay	
Mycobacterium tuberculosis	National Institute of Allergy and Infectious Diseases, NIH	Public domain
Cholera beds	Teseum/Flickr	CC BY-NC 2.0
Share of deaths from HIV/AIDS, 2017	Our World in Data	CC BY 4.0
Condoms	Photo by form PxHere	CC 0
HIV budding from lymphocyte	Centers for Disease Control	Public domain
TB patient	Myupchar.com	CC BY-SA 4.0
Death rate from diarrheal diseases, 2017	Our World in Data	CC BY 4.0
Safer siting of sanitation systems	Leif Wolf and Andrea Nick	CC BY 2.0
Rotavirus	Dr Graham Beards	CC BY 3.0
Mantoux skin test for TB	Centers for Disease Control	Public domain

## Lesson 1 – Pandemics and outbreaks cards (pp 15–17)

(Images listed left to right as they appear in each row)

IMAGE	CREDIT	LICENCE
SARS	National Institute of Allergy and Infectious Diseases, NIH	CC0 1.0
SARS Mask	3dman_eu/pixabay.com	CC0 1.0
Horseshoe bat	Aditya Joshi	CC BY-SA 3.0
Palm civet	Praveenp - Own work	CC BY-SA 3.0
Air Canada, Toronto, 2003	PeteCaz	CC BY-SA 3.0
Human symbol	Jhaight/Needpix	CC0 1.0
H1 N1 Virus 1918	National Institute of Allergy and Infectious Diseases, NIH	CC BY 2.0
Camp Funston Hospital, Kansas	Otis Historical Archives, National Museum of Health and Medicine	CC0 1.0
Pigs	National Pork Board and the Pork Checkoff. Des Moines, IA USA	CC BY-SA-ND 2.0
Connaught Hospital, Freetown, Sierra Leone	Simon Davis/DFID	CC BY 3.0
Smallpox	PhD Dre	CC BY-SA 3.0
Aztec smallpox victims	Unknown	CC0 1.0
Hammer-headed fruit bat	Stephen C Smith	CC BY-NC 2.0
Ramses V 1150–45 BCE	G. Elliot Smith	Public domain
Alitalia, Airbus Milan	Anna Zvereva	CC BY-SA 2.0
Yersinia pestis	Centers for Disease Control	CC0 1.0
Dance of death	Hartmann Schedel (1440-1514)	CC0 1.0
Malayan pangolin	Pike frog	CC BY-SA 3.0
Chimpanzee	Photo by form PxHere	CC0 1.0
Leviathan	Paul Thompson U.S. National Archives and Records Administration	Public domain
Ebola virus	National Institute of Allergy and Infectious Diseases, NIH/Flickr	CC BY 2.0
PPE in Sierra Leone	EU Civil Protection and Humanitarian Aid	CC BY-NC-ND 2.0
Bushveld Gerbil	Telegro	CC BY-SA 4.0
Human flea	Katja ZSM	CC BY-SA 3.0
The port and fleet of Genoa, early 14th century	Quinto Cenni	Public domain
SARS-CoV-2	Felipe Esquivel Reed	CC BY-SA 4.0
Covid-19 social distancing	Image by rawpixel.com	CC0 1.0
Chickens	Kashif Mardani/Flickr	CC BY 2.0
Black rat	Photo by form PxHere	CC0 1.0
Santa Maria ship	Edward H. Hart	Public domain
Huayna Cápac Inca Emperor 1493–1525	Unknown	Public domain

The authors wish to thank Dr Liz Martinez MB ChB MRCGP Honorary Lecturer at The University of Sheffield (UOS) for her advice on this learning unit and Jane Carpenter, Stephen Ellis, Ruth England, Alyson Meredith and Erika Uchiyama for their voluntary contributions.

#### Learning from a pandemic



This resource was developed through the Connecting Classrooms through Global Learning programme, which ran between 2018–2022 and was co-funded by the British Council from our grant-in-aid, and the Foreign, Commonwealth and Development Office (FCDO) using UK aid.

Find a partner school or browse more resources at **www.britishcouncil.org/school-resources** 

© British Council. All rights reserved.

