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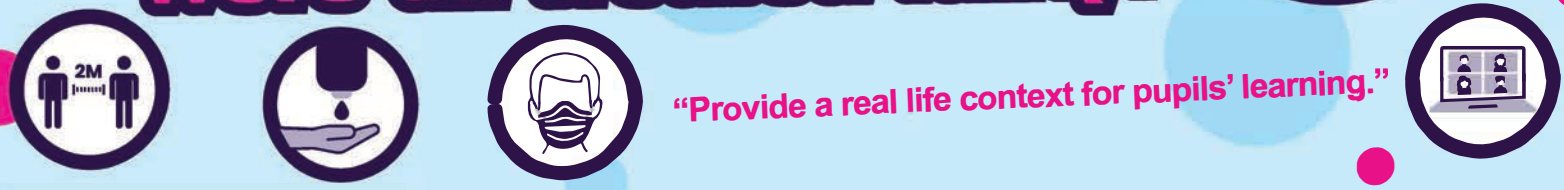
UK Research and Innovation

Reckitt Global Hygiene Institute

Kit No. 17

Science Debate Kit: Pandemic Prevention - Were all treated fairly?



"Provide a real life context for pupils' learning."

For in-depth resources go to: pandemicdk.imascientist.org.uk

Debate Kit: Pandemic Prevention
Were all groups treated fairly during the pandemic?

A structured practice debate on a controversial topic.The different 'rounds' of the debate help students think through the issues and reconsider their opinions.The structure also shows them how to build a discussion and back up their opinions with facts.

You can use all eight characters, or fewer, as you wish.

The minimum is the four essential characters **(in bold)**.

Characters

- **Dave Saunders – Secondary Teacher**
- **Leigh Jackson – Politician**
- **Andor Vajda - Social Worker**
- **Catriona Glas - GP**
- Nabila Goswami – PPE supplier
- Sadik El Safi – 16 year old
- Chloe Mornington – Nursery teacher
- Gemma James – Mother of 13 year old

Facilitation tips

- Ensure pupils know there is no right or wrong answer.
- Be observant of ones who want to speak and are not getting a chance.
- Encourage students to give a reason for their opinions.

Designed for KS4 but can be used with ages 11-18.

For groups who may need extra support you can put the following prompt sentences upon the board:
"I think ..... were treated unfairly because ..."
"I think ..... is the most important point to think about."

The issues in this debate could be sensitive for many students because of the impact of the pandemic and the measures implemented to control it. We have supplied additional notes for teachers to use alongside the kit to ensure the wellbeing of their students.

Learning notes

Learning objectives:

- To practise discussing and debating issues and expressing an opinion
- To improve key employability skills of listening and speaking

Other learning outcomes:

- Consider social, ethical and factual issues in an integrated way
- Think about different points of view
- Learn to back up opinions with facts

Curriculum points covered:

Thinking scientifically

- Evaluating the implications of technological applications of science
- Developing an argument
- Reflecting on modern developments in science

Substantive

- Consider social, economic and technical issues around public health and pandemic control.

"Particularly like the format plus the accuracy of the scientific information"

Nabila Goswami
PPE supplier

I distribute nitrile gloves to hospitals and labs where people need them to stay protected. I took this job during the pandemic because I really wanted to help. The PPE shortages scared me, especially because there are a lot of people from minoritised ethnicities in high risk frontline health jobs, and they can catch COVID more easily and worse than others. Bangladeshi people are high on the list – which upsets me because my family are Bangladeshi. These people need our gloves the most.

Fact: The UK government makes public health decisions for England. Scotland, Wales and Northern Ireland make their own decisions, including when to buy PPE and how to distribute it.

Issue: People from minoritised ethnicities are disproportionately affected by COVID-19.

Question: Why do racial differences in COVID-19 severity **almost** disappear when occupation, socioeconomic status, age, sex, and existing conditions are taken into account?

Leigh Jackson
Politician

I don't think it's helpful to point fingers now. We made hard decisions in an emergency. Italy prioritised people most likely to survive when they got to hospital and let them have the ventilators. I think we were fairer – we tried for herd immunity and keeping rates low with lockdowns. We also tried to protect the economy and working people's livelihoods. We knew it would take at least a year to develop a vaccine and that the healthcare system couldn't cope if everyone caught it at once.

Fact: Even with restrictions and vaccines, by December 2021, over 10 million people in the UK had had COVID, and 145,000 had died from it.

Issue: Slowing down the spread "flattened the curve" to stop the health service being overwhelmed and give everyone who needed it access to a ventilator.

Question: Did slowing down the spread just lengthen the pandemic restrictions impacting the economy, our mental health, and exhausting medical staff?

Andor Vajda
Social Worker

My caseload doubled with the pandemic. I don't think the effects were by age, but by income. People on lower pay were more likely to do jobs that they couldn't do from home, and be exposed to COVID at work. When schools closed, people had to give up their jobs – most of them women. Without savings, unexpected changes are very stressful. People were getting evicted. Stress also aggravates domestic violence – and, unseen behind closed doors, incidences ballooned.

Fact: 1 in 3 adults who said they couldn't afford a large unexpected expense had depressive symptoms in early 2021. That's three times higher than average.

Issue: There was a 7% recorded increase in domestic violence due to the isolation of lockdown. Those without economic freedom are more likely to be victims.

Question: Should the government have made (or paid) landlords to let people stay in their homes if they lost their income in the pandemic?

Gemma James
Mother of 13 year old

We had months of lockdowns and massive restrictions to our lives, for a year and a half, until most of the adults were vaccinated. Then all of a sudden, although children hadn't been offered vaccinations yet, it was, "Freedom Day" and children were left high and dry. Infection rates for school age children went through the roof. My 13 year old was really ill with COVID. It's terrifying to watch your child struggling to breathe. And what if he'd got long COVID?

Fact: The Pfizer vaccine was approved for use in 12-17 year olds in May 2021 and Denmark, France and Spain started vaccinating that age group immediately. The UK waited until September, when schools had already reopened.

Issue: Children suffered lockdowns, etc., but adults didn't then wait until the children were safe before opening up.

Question: Did we miss some people when we decided who was vulnerable and who wasn't?

Catriona Glas
GP

So many of my patients were vulnerable or shielding – not just the over 80s. Things that made people more at risk were heart disease, kidney disease, pregnancy, diabetes, asthma, severe obesity, neurological conditions such as multiple sclerosis, or if their immune system wasn't working. Some otherwise healthy people have gene variants that made them get very ill with COVID. And being biologically male is a risk factor, even though we're not sure why.

Fact: At the start of the pandemic, about 24% of the UK population were at risk due to at least one underlying health condition; that is 8% of school-aged children, 20% of working-aged adults, and 66% of people aged 70 years or more. That's 18.5 million people altogether.

Issue: It wasn't just one or two people at risk because of pre-existing conditions It was over a quarter of the entire UK population!

Question: Doesn't humanity mean that sometimes we make sacrifices for the good of everyone?

Sadik El Safi
16 year old

I feel really angry on behalf of children and young people. Studies show that in the main, young people were complying with all the restrictions. And yet the media and politicians still painted us as irresponsible and selfish, even if they were not complying with the rules themselves. We know now that COVID is airborne, yet we were always sanitising our hands and wiping surfaces. What was done by the government to protect students? Making masks mandatory? Improving ventilation in schools? Not enough.

Fact: In October 2020, Germany invested £452 million in improving ventilation systems in public buildings, including schools.

Issue: Many people chose not to wear a mask because they thought they didn't need it. But wearing a mask protects others from the wearer, rather than the wearer from others.

Question: If young people could vote, would the government have pointed the finger at us?

Dave Saunders
Secondary Teacher

We have no idea of the long term effects of this massive disruption to education. Nobody's done the experiment before. You can't really lock children in a cupboard for two years to see what will happen! But we can see that the attainment gap between the richest and poorest has widened. Social mobility charity, the Sutton Trust, estimate that lost learning could cost the most disadvantaged students a year in lost earnings over their lifetime.

Fact: On standardised tests in Summer 2021, secondary students on average had lost 1.8 months of learning compared to previous years. Students from less wealthy areas, though, averaged nearly 4 months learning loss.

Issue: Private schools had lots of live online lessons. Many state school students had less access to devices, data, and a private space to study.

Question: How are we going to help children and young people catch up? Especially the most disadvantaged.

Chloe Mornington
Nursery teacher

I think it has been SO HARD for children and young people. Especially the pre-school children I work with, who were too young to understand. Kids go through stages and I worry it's interrupted their development – they might struggle to recover after being cut off from other kids at a sensitive time. But it is hard working with little kids. They put EVERYTHING in their mouths. I go home coated in saliva every day, and in the pandemic that made me worry. We didn't get gloves. It was hard to know what was best to do.

Fact: Results for pre-school children haven't been analysed yet, but primary-aged children showed more learning loss, whilst secondary-aged students suffered more from anxiety because of lockdowns.

Issue: Young children could have been a vector for transmitting COVID to older and more vulnerable people.

Question: Was it better to send pre-school children to nursery or keep them at home?

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Teacher Notes

Question:

"Were all groups treated fairly during the pandemic?"

Note: Discussing the COVID-19 pandemic may be distressing for some of your students. It may be helpful to inform your class in advance that they will be discussing the pandemic the following week. You could offer them the chance to discuss any concerns with you in advance.

Please use the enclosed Support notes to help you deal with difficult issues that might come up during the session.

Lesson plan

The different 'rounds' of the debate help students think through the issues and reconsider their opinions. The structure also shows them how to build a discussion and back up their opinions with facts.

Starter: 5 minutes.

What were your experiences of the lockdowns? How did other members of your wider family cope? Parents? Grandparents? How do you think it was for other people? Did healthcare workers, office workers, supermarket staff, delivery drivers, farmers have a similar experience? Or did we all have a different experience? Some of us had to cope with difficult and distressing situations. How do you think it differed for different groups of people?

Designed for KS4. These debate kits have been used with ages 11-18.

Main Activity: 35 minutes.

1) **Split students** into as many **groups** as characters you want to cover.
2) **Give** them their **character cards** - one per group, and give them a few minutes to read them over.
3) Get one student in each group to **read out** their **first section** to the rest of the class.
   What are the class's initial thoughts? Is there one position they identify with or reject?
4) Take it in turn to **read out** their **fact**. Does it change the way they think?
5) **Read** the **issue**. Any different feelings?
6) Each team **asks** their **question to** the **character of their choice.**

Support: To help students you can put the following prompt sentences up on the board:

"I think ..... were treated unfairly because....."

"I think ..... is the most important point to think about."

Plenary: 10 minutes

Vote for which position they agree with most (if there is one). Why? Which arguments were the most persuasive?

Note – Pupils can stay in roles all the way through debate, or only for the first round if you prefer. If it's all the way through, give them a chance to express their own opinion at the end and in the plenary.

For groups who are not confident at class discussion, it might help to have them start by discussing the question and/or their character's position in pairs, and then compare notes in fours. They've then had chance to rehearse some of what they want to say before having to do it in front of the whole class. Closing: as you close the lesson, remind students that they can speak to you or their form tutor if anything has raised concern for them in this lesson or about this topic. Also signpost students to support resources.

The Italian College of Anaesthesia, Analgesia, Resuscitation and Intensive Care advised doctors to prioritise people most likely to survive when they got to hospital and let them have the ventilators. This helped more people survive overall, but some people called it sacrificial.

Who is most affected?

Biologically, the people most likely to **catch** and **suffer worse** from **COVID** are older, males, pregnant or breastfeeding people, those with high BMI, or those with a pre-existing health condition or immunodeficiency. However, social factors also present risk factors.

Long COVID is more likely in older, higher BMI, females.

Racial disparities

People who are ethnically minoritised and, especially, black, are more likely to test positive for COVID-19, and more likely to die from it. Data suggests they could be 4 times more likely, but these vary geographically, i.e. from country to country and, in America, state to state, suggesting social factors are responsible. In Switzerland, French speakers are 1.6 times more likely to die than German speakers, and Italian speakers are 2.4 times more likely to die. There have been racial disparities in other epidemics and for other health conditions. After accounting for factors like occupation, socioeconomic status, age, sex, housing, and existing conditions, most of the difference goes away. It has also been suggested minoritised ethnicities are more likely to be inadequately supplied with PPE and do high risk jobs, e.g. handling bodily fluids.

Using the debate kit in a STEM Club setting:

A debate is a great way to support an activity or project you are running or intending to run. It can help students to investigate and relate scientific facts to real world contexts and assist them in making informed decisions. Here are our top tips to make the most of the debate kit in your STEM Club.

1. Introduce the debate kit to your club members a week before you hold the debate.
2. Place the students in debate teams and assign character roles.
3. Challenge the students to research facts and data that support the debate point of their character.
4. Investigate real-world careers and roles that relate to the debate topic.
5. Involve STEM Ambassadors, ask them to attend the debate sessions and provide real world context or experience to the topic.
6. Use the debate to create a related scientific research project.
7. Utilise the debate as a method to improve key employability skills such as speaking and listening.

Background notes for teachers

Herd immunity

When enough people in a population are immune to an illness and can't catch it, the illness can't spread and cases drop off. Equally, keeping everyone at home could have this effect – and does, until they go out again.

Mathematical epidemiology

Modelling the rate a disease moves through a population is called mathematical epidemiology.

A simple starting model is to use an exponential. This means that the rate that people catch the disease depends upon the number of people who have it.

$N_t = N_0 e^{rt}$ where N_t is the number of people who have the disease at time t, N_0 is the number who had it at time = 0 (i.e. when we start the clock), t is time, and r is the reproduction number – how many people one person can infect (lower during lockdowns). More complex models will also account for the incubation period and how long a person is infectious.

Sources are available as links in the online resources at pandemicdk.imascientist.org.uk

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This kit has been researched and fact-checked at the time of printing in February 2022. Research on COVID-19 and the impact of pandemic prevention measures is on-going and being updated regularly.

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Transmission

Initially, medical advisors weren't sure how COVID was transmitted and played it safe with protective measures, but as we did more studies it came out that surface transmission was minimal in cooler climates like the UK, and only mattered much in very humid environments. COVID is primarily transmitted in airborne droplets.

PPE

Many people choose not to wear a mask and take a "risk", but masks primarily stop respiratory fluids from getting out and infecting others, not getting in. Thus wearing a mask protects others from you.

In 2020, there was an acute shortage of PPE (an estimated shortage of 89 million medical masks and 76 million pairs of gloves per month worldwide), with the WHO calling for increased manufacturing by ~40% to meet the demand created by the pandemic.

With what we now know about transmission, gloves are mostly important for people who do jobs such as handling bodily fluids.

Mental health

Developing anxiety or other mental health conditions in lockdown was more likely if you already had another mental health condition, or a parent did, if there was domestic violence at home, you lived in the countryside, or had a lower income. Older children were more likely to develop mental health conditions than younger ones. Women reported more mental health conditions than men.

Following precautions

"Compliance" to lockdown precautions was measured by looking at mask wearing, hand washing, mixing, and social distancing. Generally, people either complied with everything or nothing. Young adult men were identified as the group least likely to comply.