

Teachers Notes

Science Debate Kit: Cannabis



Should the UK legalise cannabis?

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.

Ask if students can define 'drugs'. What drugs do they know of? If not suggested, point out that alcohol and nicotine are drugs too. Drug legalisation prompts strong feelings. Often the best way to understand why is trying to assume other people's point of view.

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.

KS4: Designed for KS4. Has been used with ages 11-18.

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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 cannabis should/shouldn't be legalised 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.

Background notes for teachers

What is cannabis?

Cannabis is the most commonly used illegal drug in the world. It derives from the plant *Cannabis sativa* which is native to central Asia and grows easily in warm climates. There's evidence of it being used as a drug for at least 5,000 years, in many parts of Asia, the Middle East and even ancient Greece. It was made illegal in the UK in the 1920s.

How is it used?

The plant's flowers (and sometimes leaves) can be used. This is usually called weed, or more recently skunk. Or it can be processed to make resin, or hashish (like most drugs, there are many alternative names). The drug - either weed or resin - can be smoked (usually mixed with tobacco), or sometimes unmixed, in a pipe, or it can be eaten (e.g. in cakes).

How does it work?

It's thought the most active ingredient is tetrahydrocannabinol (THC), although there are over 60 other cannabinoids present in the plant and their effects are not fully understood. The psychoactive effects of the drug come mainly from THC activating cannabinoid receptors in the brain. These were only discovered in the late '80s and early '90s and so the pathways are not completely understood yet, but the effects include release of dopamine in the brain.

When smoked the active ingredients enter the bloodstream and go straight to the brain. When eaten, they pass through the liver first and THC is metabolised to 11-hydroxyl THC, which can have a much stronger psychoactive effect. 'Dopamine has a range of complex effects, but is involved in reward and pleasure-seeking behaviour.



What are the effects?

These can include relaxation, euphoria and heightened senses but also short term memory loss, anxiety and paranoia. Reddened eyes, a dry mouth and increased appetite ('the munchies') are also common.

Medical uses

It has potential medical uses as an anti-emetic (combats nausea), a pain reliever, appetite stimulating (e.g. for AIDS and cancer patients) and combatting glaucoma (high pressure in the eye). Some parts of the world (e.g. Belgium and Canada) have legalised cannabis for medical purposes.

Arguments about legalisation

These can cover many areas – there are the physical harms of the drug (i.e. to users), but also the social harms (e.g. of criminalising young people). Inevitably, coming to a view on legalisation means deciding which kind of harm you think is most important and what your values are – as well as considering the science. It's not a question science alone can settle (hence the debate kit!), partly because much of the research evidence is inconclusive.

For example, does decriminalisation lead to more use of the drug? Portugal has decriminalised, and has seen a small rise in use, but studies suggest this is similar to neighbouring countries which have not decriminalised. Some would argue that Portugal is therefore better off, as drug use (and therefore medical consequences) is about the same, but many of the legal and social consequences have been avoided. Others would criticise the methodology of these studies and suggest that the rise in cannabis use in Portugal has been higher than neighbouring countries.



Other contentious science

The evidence for cannabis being a 'gateway drug' is weak. Most heroin users have previously smoked cannabis, but most cannabis users don't go on to take heroin. Large social science studies have found that social factors like unemployment and stress are risk factors for harder drug use, while teenage cannabis use is not. Small-scale laboratory studies on rats (like that quoted by Stuart Kelly) are not easily generalizable to human behaviour.

The evidence that cannabis contributes to schizophrenia is robust but the effect size is small. A very large study by the University of Bristol in 2009 found that we would need to stop 2,800 young men who were heavy cannabis smokers, to prevent one extra case of schizophrenia. Mainly people with schizophrenia are **more likely** to smoke cannabis, for various reasons, **rather than people who smoke cannabis being more likely to get schizophrenia.**



Suggested homework:

Ethics: Students write a letter to the Home Secretary, arguing for or against the legalisation of cannabis and giving reasons why. They should argue *the opposite side* to their character in the classroom debate.

Biology: There are several scientific issues relevant to this debate – students do independent research into one of them and produce a poster summarising the evidence.

- Cannabis as a 'gateway drug'
- Cannabis as a cause of schizophrenia
- Medicinal uses of cannabis
- Cannabis smoking and lung cancer

Biochemistry: Find out the structure of THC and draw it. Work out the molecular weight.

For more info, supporting resources and DIY debate kit templates
<http://imascientist.org.uk/debate/>

Free I'm a Scientist mugs to all teachers who email us their DIY kits, we'll put them online for other teachers to use too.

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. For groups who may need extra support you can put the following prompt sentences upon the board:-

"I think cannabis should/shouldn't be legalised because....."

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

Learning objective:

- To practise discussing and debating issues and expressing an opinion
- Understand the arguments for and against legalising cannabis

Other learning outcomes:

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

Curriculum points covered:

- HSW**
- Using data to draw conclusions
 - Societal aspects of scientific evidence
 - Developing an argument
- Substantive**
- Why do some people use recreational drugs and what harms (both medical and social) may come from this?
 - To evaluate the claims made about the effects of cannabis on health.
 - Discuss the consequences of the legal classification of drugs.



| Yes | No |
|-----------------------------------|------------------------------|
| Damon Applegate - Cannabis smoker | Jenny Bellamy - Psychiatrist |
| Jess Baker - Probation Officer | Stuart Kelly - Father |
| Kat Kowalski - Economist | Obi Tshuma - Macmillan Nurse |
| Parminder Sethi - Doctor | Susan Overton - Lecturer |

You can use all eight characters, or fewer if you wish. The minimum is the **four essential characters (in bold)**, this gives two for and two against.

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Debate

Damon Applegate - Cannabis smoker



My Dad was an alcoholic and died from it. I choose not to drink alcohol (which is also a drug!). I don't really like the effects and I think it makes people loud and aggressive. It's also really bad for your health. I enjoy having the odd joint instead. I think cannabis is much more natural and it makes me relaxed and also think more creatively.

Fact: Cannabis has been smoked for thousands of years and there has never been a known fatal overdose.

Issue: I'm not harming anyone. I just like the feeling of getting stoned sometimes. I don't think the law has any business saying I can't.

Question: Yes, dope makes you laidback, but is that such a bad thing? All this 'progress' is destroying the planet – using up resources, causing global warming. What's wrong with people chilling out a bit?

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Debate

Jenny Bellamy - Psychiatrist



I work in a mental hospital with people who have schizophrenia. It can be very scary for them and their families and really mess their lives up. I believe using cannabis makes people more likely to get schizophrenia so I'd like less people to take it.

Fact: Cannabis use is about twice as common in people with schizophrenia, compared to people who don't.

Issue: I think if cannabis was legal it would be easier to get hold of and more people would take it, and it could harm them.

Question: It's all very well to say people are taking it anyway, and we may as well tax it. But you could say the same thing about anything! What about child porn, or hiring a hitman?

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Debate

Jess Baker - Probation Officer



I work with young people who've been released from prison. Going to prison can be a horrible experience for a young person and very destructive. It interrupts their education, brings them into contact with more serious criminals and gives them a criminal record which can make it hard to get a job.

Fact: 8.9% of 11-15 year olds say they have smoked cannabis in the last year.

Issue: Using cannabis is quite common – It breaks my heart to see so many young lives ruined for something I personally think is not that serious a crime.

Question: People say it's a 'gateway drug', but the evidence is weak that using cannabis CAUSES people to then use harder drugs. Most people drink alcohol before they try any other drugs. Is alcohol a gateway drug, or is it just widely available?

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Debate

Obi Tshuma - Macmillan Nurse



I work in a hospice, helping people who are ill with cancer to die with dignity. I think we should do everything we can to reduce the number of people getting cancer. I think smoking spliffs leads to more lung cancer, partly because people don't use filters and they hold the smoke in their lungs more.

Fact: It's difficult to study, partly because most cannabis smokers smoke cigarettes as well, but some researchers think smoking cannabis does increase your chance of getting lung cancer.

Issue: I think the laws should protect people from harm, especially young people who may not think things through themselves.

Question: If we legalised cannabis, wouldn't more people use it, because it would be easier to get hold of?

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Debate

Parminder Sethi - Doctor



I think cannabis is a harmful drug, but alcohol and cigarettes are harmful drugs too. I think cannabis being illegal makes things worse. I worry that there's no control of who cannabis gets sold to and what's in the cannabis people buy. If cannabis was legal we might be able to stop it being sold to under 18s, and control the quality, like with alcohol.

Fact: One study suggests that under 16 year olds' brains are affected more by cannabis smoking, because they are still developing, so I think we should protect them.

Issue: Drug dealers don't care about who gets harmed, they just want to make money and we can't control what they do.

Question: Don't you think if cannabis was legal we could help people take it in a less harmful way – for example not smoking it with tobacco?

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Debate

Stuart Kelly - Father



My son died of a heroin overdose a year ago. He'd been a bright boy at school, but got in with the wrong crowd. He started off smoking cannabis, dropped out of school and ended up getting into harder and harder drugs and a worse life style. He was only 25 when he died but he looked much older.

Fact: In one experiment, scientists gave cannabis to adolescent rats. When those same rats were adults, they gave them access to heroin. The cannabis rats took more heroin than the control group.

Issue: I think cannabis is a 'gateway drug'. Drug-taking is a slippery slope and we should stop people starting on it!

Question: You can say it's bad to give young people a criminal record, but shall we just get rid of all the laws then? Make murder legal so that murderers don't have a criminal record?

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Debate

Susan Overton - University Lecturer



I teach history at a university. Some of my students obviously get into smoking a lot of cannabis and I think it has a terrible effect on their studies. They miss lectures and miss handing in assignments. I think it's really harmful and we should try to stamp it out.

Fact: When cannabis users are asked if it causes them any problems, the most common complaint is it causes apathy (feeling like they can't be bothered doing anything).

Issue: I think legalising cannabis would send a message that it's not harmful, and more people would think it was OK to start smoking it.

Question: Just because cannabis is natural, does that mean it isn't harmful? Cyanide and malaria are both natural, but it doesn't mean they are good for you!

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Debate

Kat Kowalski - Economist



I work for the government, working out how we can pay for everything. There's never enough money for the things we want to do. I think people are going to smoke cannabis anyway and it's stupid not to tax it. We could spend that money on schools and hospitals!

Fact: The UN estimates that worldwide sales of illegal drugs come to \$322bn, the third biggest market in the world, after arms and oil.

Issue: At the moment criminals make all the profits, but we have to pay for all the problems drugs cause.

Question: I don't think that cannabis smoking CAUSES schizophrenia, just because many schizophrenics smoke it. Is it the other way round and they smoke it to help them cope?

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