



Strategies for Supporting student participation in the socioscientific context of vaping

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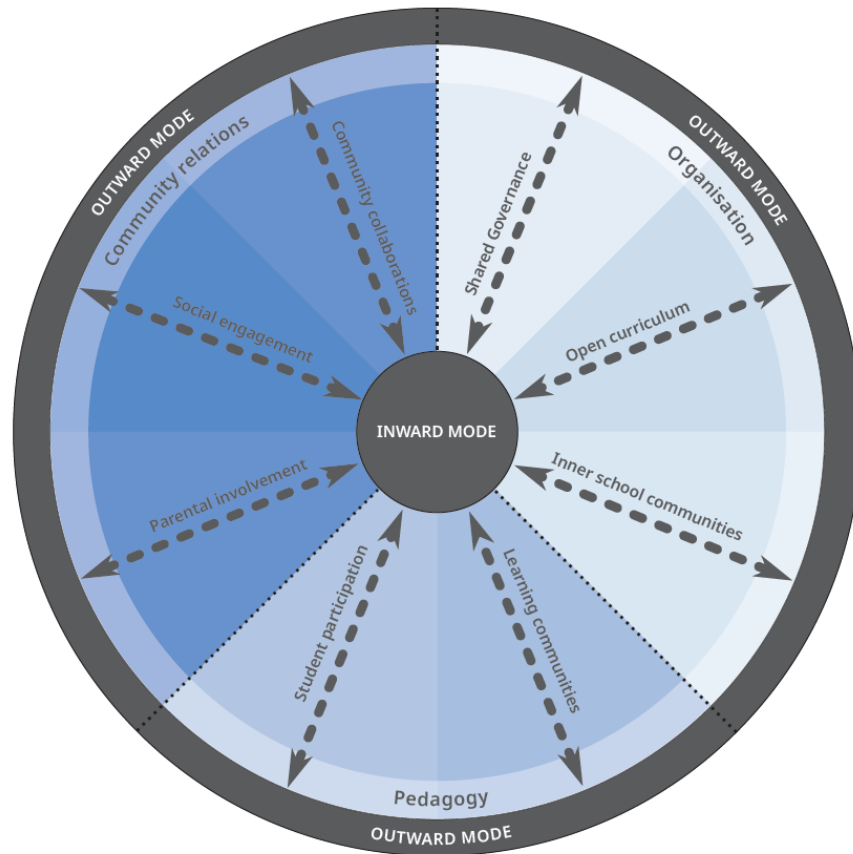


Final conference
22 November 2024



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101005982

Ecological model of school openness



A community engagement through science education project, designed to support:

- **Student participation**
- **Community Collaborations**

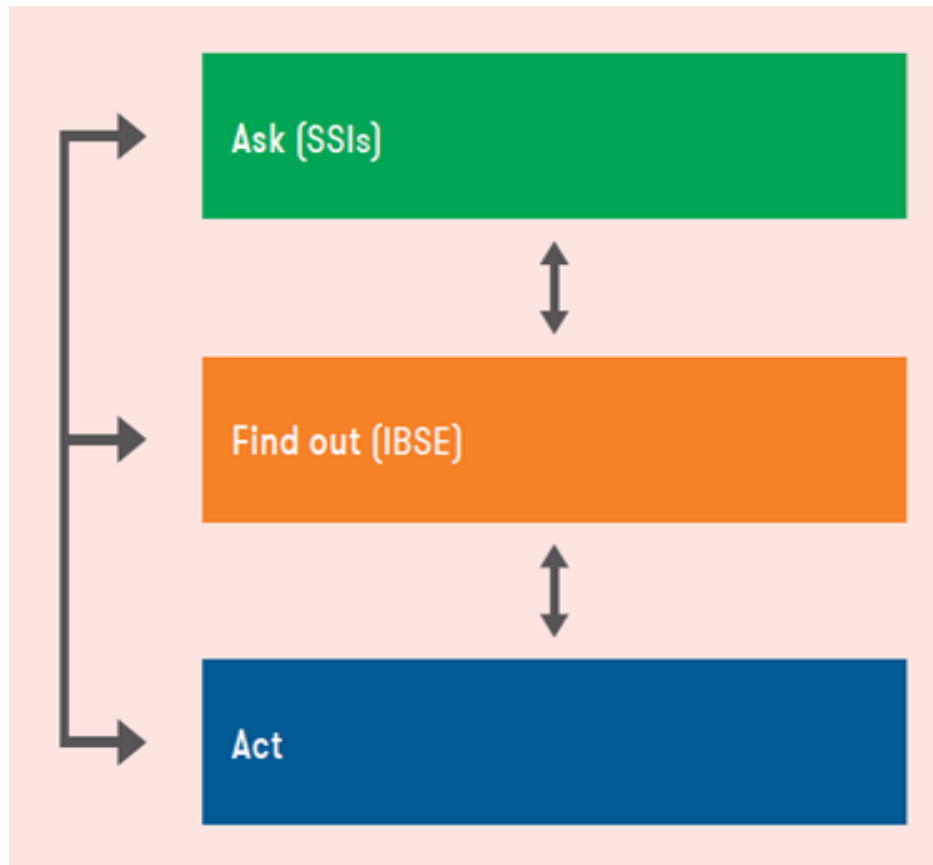
Sarid, A., Boeve-de Pauw, J., Christodoulou, A., Doms, M., Gericke, N., Goldman, D., ... Knippels, M. C. P. J. (2024). Reconceptualizing open schooling: towards a multidimensional model of school openness. *Journal of Curriculum Studies*, 1–19. <https://doi.org/10.1080/00220272.2024.2392592>



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Socioscientific inquiry-based learning (SSIBL)



ASK - Socioscientific Issues (SSIs)

science topics with implications to society (e.g., COVID-19 pandemic, climate crisis, vaping). These issues are used to make science **personally relevant** to students, who raise questions about SSIs they would like to investigate.

FIND OUT

inquiry-based science education

Students engage in **investigations** to answer their questions

ACT

Students take **appropriate action** as a result of their learning to address the issues investigated

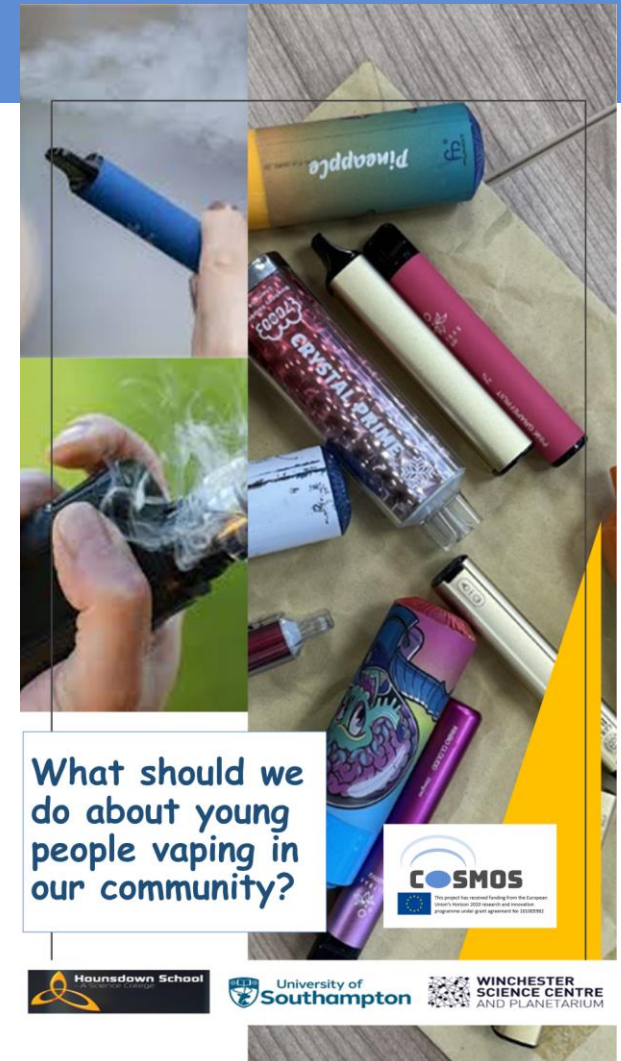


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Workshop outline

- Introductions
- Strategies for supporting student participation in the socioscientific context of vaping
 1. **Mapping controversies** – Why is vaping controversial?
 2. **What is the evidence?**
Learning from the history of smoking
 3. **Time to act** – supporting student empowerment



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Why is vaping controversial?

CANCER RESEARCH UK Together we are beating cancer

Home | About Cancer | Causes of cancer | Smoking and cancer

Is vaping harmful?

- Research so far shows that legal e-cigarettes are not risk-free. We know that people who have never smoked should not start.

You may have heard different things about e-cigarettes – ones that are registered (MHRA). Always use legal e-cigarettes.

THE LANCET Respiratory Medicine

Access provided by University of Southampton

CORRESPONDENCE | VOLUME 10, ISSUE 7, E63-E64, JULY 2022

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From smoking to vaping: a new environmental threat?

Jérémie Pourchez • Clément Mercier • Valérie...

Published: May 23, 2022 • DOI: [https://doi.org/10.1016/S2687-684X\(22\)00050-0](https://doi.org/10.1016/S2687-684X(22)00050-0)

References

Article info

Figures

Linked Articles

E-cigarettes are a reduction tool for environmental pollution. They were shown to be healthier than smoking. Historically, tobacco smoking has been shown to be a major environmental health threat. E-cigarettes are a reduction tool for environmental pollution. They were shown to be healthier than smoking. Historically, tobacco smoking has been shown to be a major environmental health threat.

MailOnline

Home | News | Royals | U.S. | Sport | TV & Showbiz | Female | Health | Science | Money | Travel | Lifestyle

Britain's vaping crisis in schools laid bare: How e-cig detectors are being set off 22 TIMES a day

- VapeGuardian sensors have been installed at schools up and down the country
- They detected children are being caught vaping at school 17 to 22 times a day
- The sensor designer said we are 'creating a new generation of nicotine addicts'

By HANNAH MCDONALD FOR MAILONLINE

PUBLISHED: 15:13, 23 March 2023 | UPDATED: 09:54, 28 March 2023

Share 17 shares 142 comments

Can vapes cause EVALI?

EVALI stands for 'e-cigarette or vaping product use-associated lung injury'. You may have heard about vaping causing an outbreak of this lung illness in 2019 in the United States. An investigation found the cases of EVALI were linked to contaminated illegal products. It was not linked to regular or long-term vaping. There was no similar outbreak of EVALI in the UK, and the chemicals of concern are banned in e-cigarettes in the UK. There is no good evidence that legal e-cigarettes in the UK cause lung disease.

Vaping

This article is more than 1 month old

Call for UK ban on single-use vapes as more than 5m discarded each week

Exclusive: Fourfold increase on 2022 sees enough vapes discarded to create 5,000 electric car batteries

Sarah Marsh Consumer affairs correspondent

@sloumarsh

Fri 8 Sep 2023 05.00 BST

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Ministers set to ban single-use vapes in UK over child addiction fears

Government understood to have concluded the disposable nicotine products are mainly aimed at under-18s

Donna Ferguson

Mon 11 Sep 2023 23:48 BST

Discarded vapes create environmental waste and pose a threat to public safety, because their lithium batteries can **become flammable when crushed**.

The potential cost of collecting and recycling vapes, according to Material Focus, is £200m, which the charity says should be paid for by vape producers, importers and retailers.

Sales of disposable vapes have soared to more than 360m annually in recent years, with the number of **young women vaping every day in the UK more than tripling** in the past year, government figures show. Paediatricians have said vaping is "fast becoming an epidemic among children", and called on the government to ban disposable vapes.



YOUNG PEOPLE UNDERSTAND THE NEGATIVE ENVIRONMENTAL IMPACT OF E-CIGARETTE WASTE

In a separate study conducted in October 2019, researchers found that young people clearly understand that e-cigarette waste is bad for the environment. The majority of respondents between 15-34 recognized that empty e-cigarettes, pods, cartridges and refills are litter (86.9%) and that e-cigarettes are not biodegradable (65.7%). They also recognized the danger of throwing e-cigarette waste in the trash (75.8%). Most respondents acknowledged that e-cigarettes and related materials contain substances that are toxic to humans (84.1%) and harmful to animals (89.8%)

...vaped threw their e-... with environmental... This all means... the major... that is now the fastest... single-use vapes."

Schools invest in vape detection systems as vaping incidences among children rise

Young respondents clearly recognized the dangers of e-cigarette waste and considered recycling e-cigarettes. Of the 544 young people who owned e-cigarettes, 86% considered recycling e-cigarettes.

SARA HARRISON | SCIENCE | NOV 14, 2019 3:35 PM

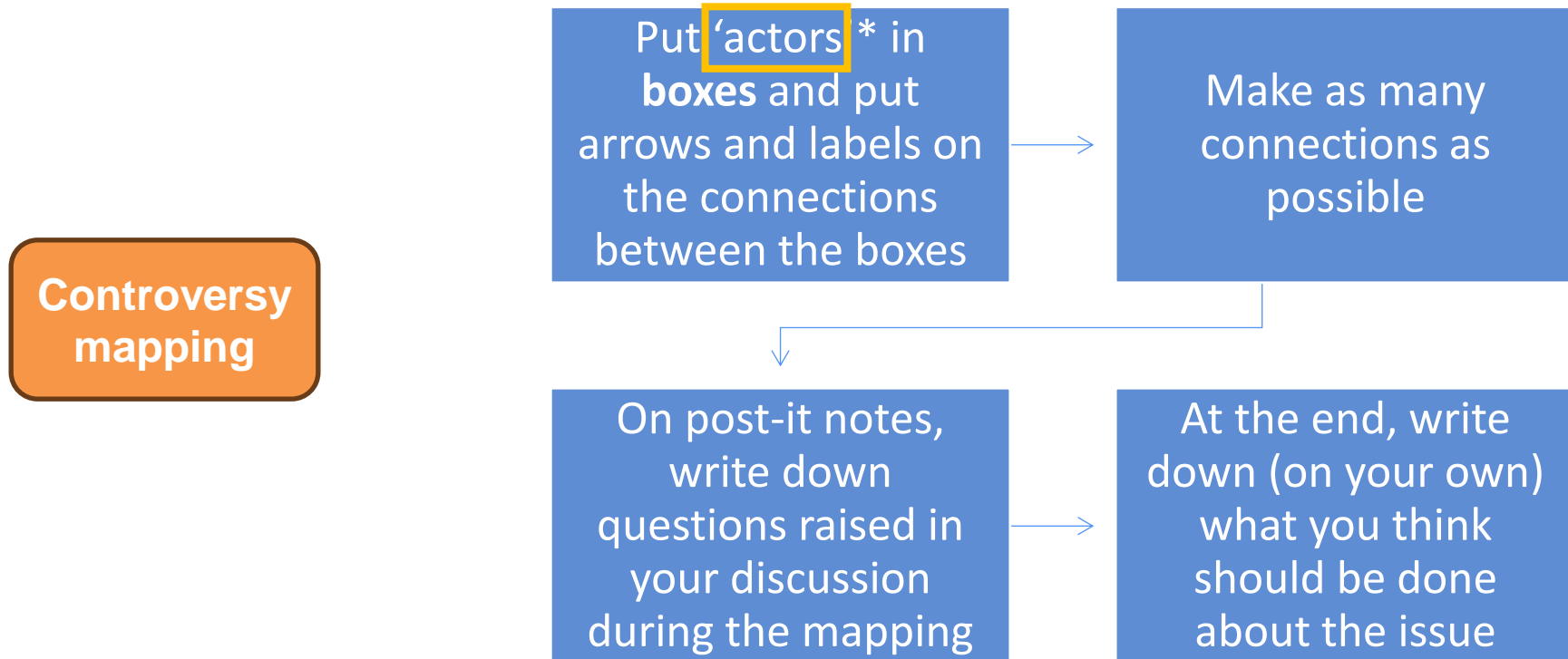
How Wily Teens Outwit Bathroom Vape Detectors

Schools are shelling out thousands for vape detectors, yet students easily circumvent them. Teen vaping solutions need an educational component as well.

Schools are turning to vape detection technology to counter the growing prevalence of illicit Alalouff reports.

Such as "vaping epidemic" and "vaping crisis" may be overblown, the incidence of vaping among teenagers is on the increase. Latest figures from Action on Smoking and Health (ASH) suggest children have tried vaping. While just under 12% of children and teenagers only vaped once or twice a year.

What should be done about vaping?



*'actors' or stakeholders in the controversy are both human (e.g. consumers, pupils) and non-human (e.g. respiration, nicotine, chemicals, plastic)

Christodoulou, A., Levinson, R., Davies, P., Grace, M., Nicholl, J., & Rietdijk, W. (2021). The use of Cartography of Controversy within socioscientific issues-based education: students' mapping of the badger-cattle controversy in England. *International Journal of Science Education*, 43(15), 2479-2500.



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Some prompt questions to support the map construction

What is the nature of the controversy? (the focus of the issue, available evidence, values, interest positions, priorities);

Who are the main stakeholders? (which individuals, campaigning groups or national/international organisations are prominent players)

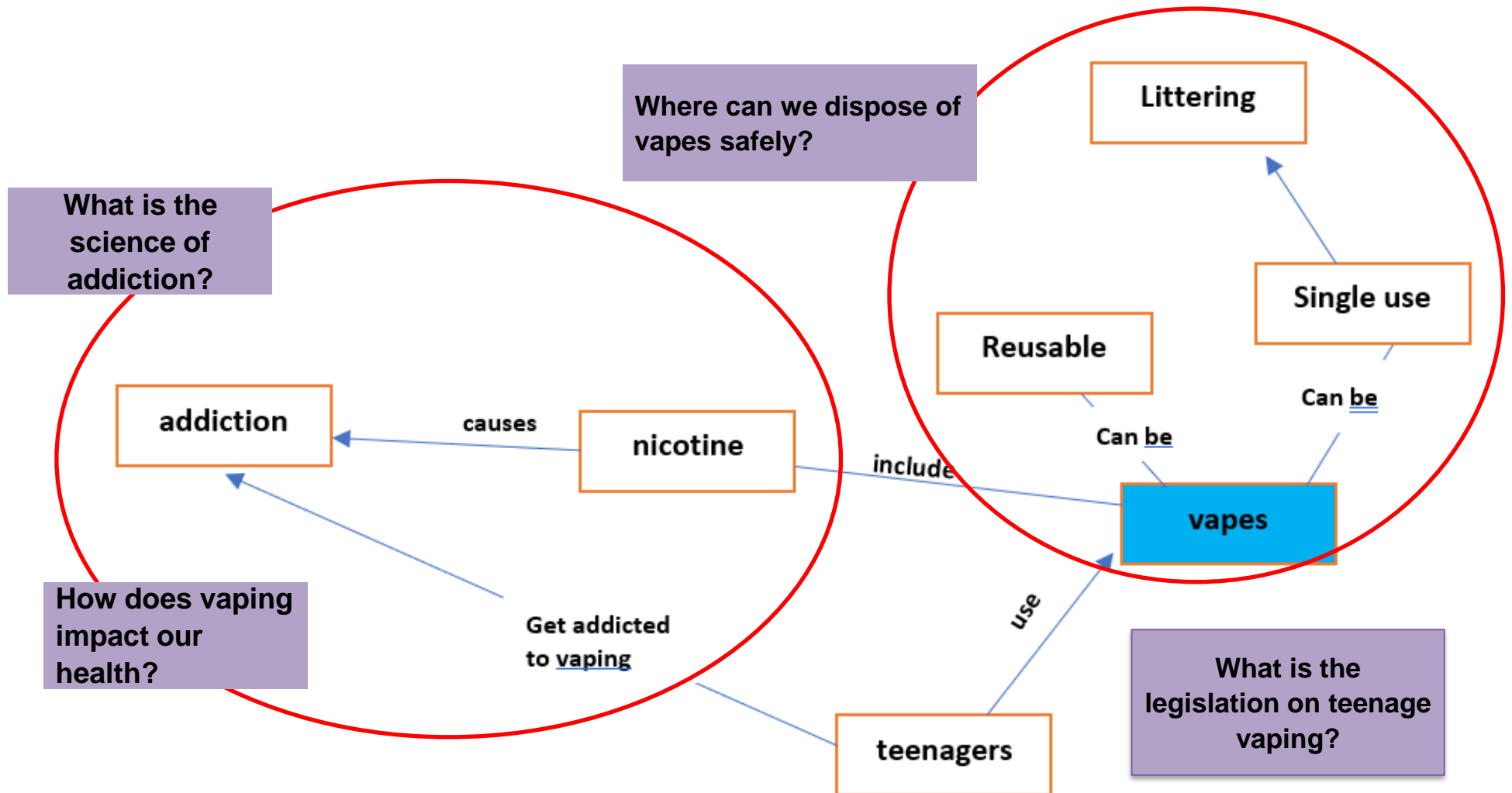
Who are the affected parties? (who or what stands to gain or lose by the outcome of the controversy)

What are the personal, social, local, global, present and future dimensions of the issue?

What types of knowledge & concepts are involved and needed?



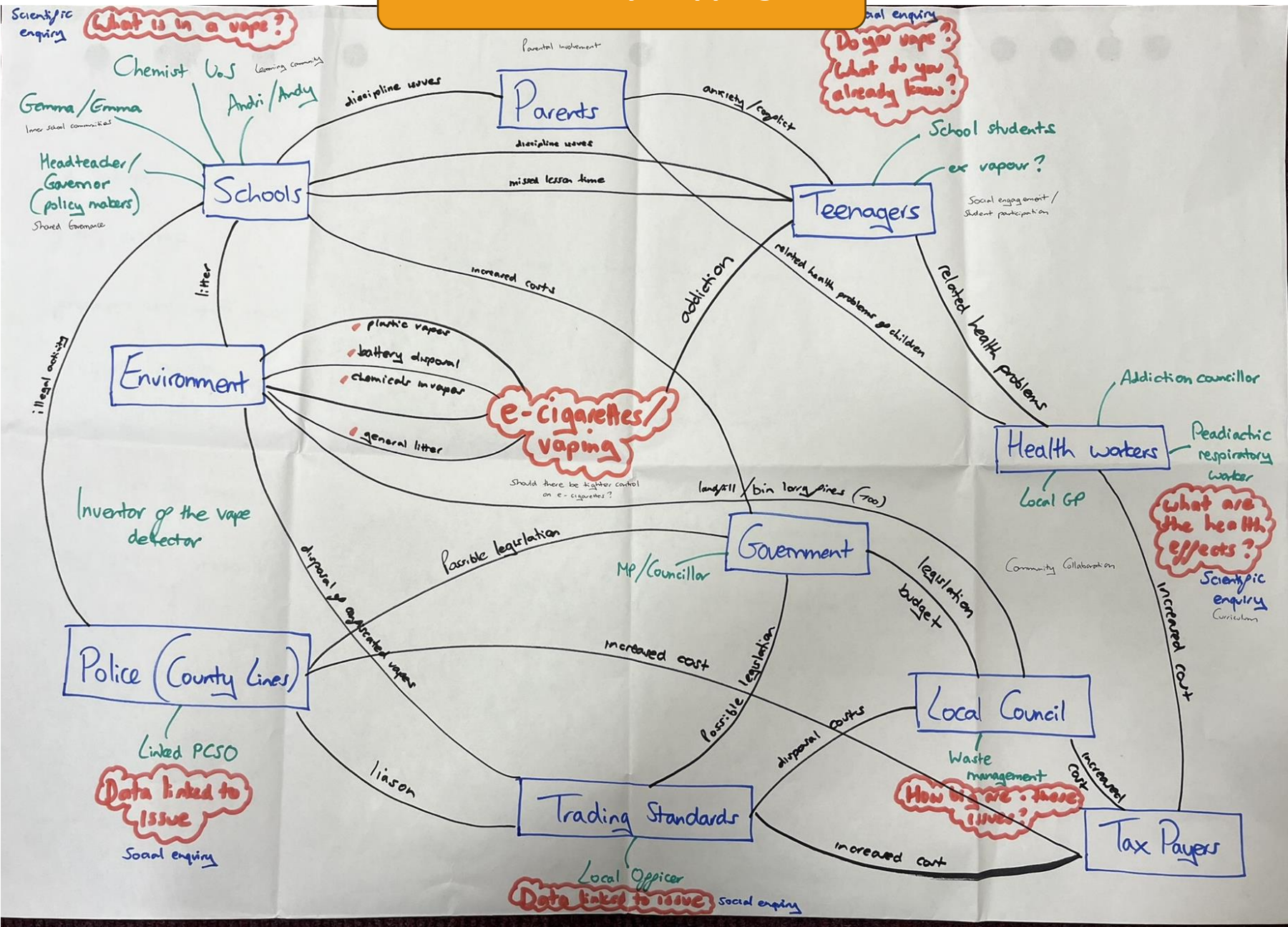
Why is vaping controversial? An example of a controversy map....



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Controversy mapping



Personal inquiry

Think about what you have found out today and either write an important point/fact we need to remember or a question you have.



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This is your home group.



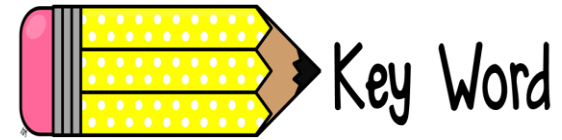
In your group
decide who is
going to take
each number.

Away groups (become an expert)

You are going to move to your number group to become an expert on one aspect of vaping.

In your **away** group you need to:

- read and **disseminate** the information provided
- Jot down some brief notes
- Be prepared to feedback to your home group



Disseminate:

To scatter or spread.



Home group: Lets map your findings

You now have the rest of the lesson to share and map your findings on the sheet of A3 paper provided.

You should try and make links between each issue and jot down important "take aways" from your away group.

2. What is the evidence? Learning from the history of smoking

Why does the following television advert seem so unbelievable today?



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<https://www.youtube.com/watch?v=gCMzjJuxQI&t=5s>



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So why do you think you were shown a cigarette advert from over 70 years ago when we are looking at possible health effects of vaping?

To best understand the risks, we need to look at the **history of smoking.**

Your first task is a **card sort** to complete the timeline of smoking cigarettes



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Doctors like Richard Doll did not understand that smoking was a risk to health until he finished his first study in 1949. In fact, 20 years before this Doctors often told patients that smoking may help their health.



According to a recent Nationwide survey:
MORE DOCTORS SMOKE CAMELS
THAN ANY OTHER CIGARETTE

DOCTORS in every branch of medicine—113,300 in all—were queried in this nationwide study of cigarette preferences. Their leading answers, our questionnaires made the survey. The gist of the query was: "What cigarette do you smoke, Doctor?" The brand named was our Camel!

The rich, full flavor and cool richness of Camel's superb blend of choice tobaccos seem to have the same appeal to the smoking tastes of doctors as to millions of other smokers. If you are a Camel smoker, this preference among doctors will hardly surprise you. If you're new to our Camels, we



CAMELS *Catlier Tobacco*



received funding from the European Union under grant agreement No 101005502

Data from the Doll and Hill research study.

You have been given a graph of one of the group of Doctors who took part in the study.

Fill in the table below the graph to compare survival rates for smokers versus non-smokers.

Be prepared to feedback your findings to the class.



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Survival age	Group 1 (1851-1899)		Group 2 (1900 -1909)		Group 3 (1910-1919)		Group 4 (1920-1929)	
	Smokers	Non	Smokers	Non	Smokers	Non	Smokers	Non
50	-	-	94	97	94	97	93	97
60	-	-	83	95	83	95	79	93
70	82	95	62	79	68	95	57	85
75	68	82	58	76	58	80		
80	50	70	30	60	42	73		
90	18	35	4	18	26	59		



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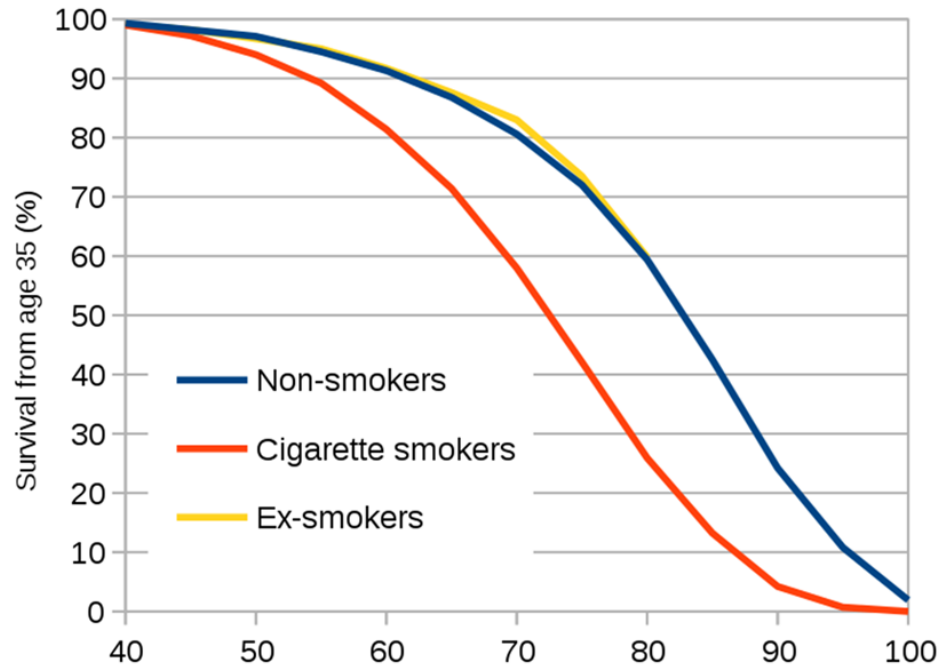
So how long does it
take for smoking
cigarettes to cause
damage to health?



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Stopping smoking at age 25-34



Survival age	% smokers	% non-smokers	% Ex-smokers
50	97	98	98
60	85	93	93
70	60	85	86
75	45	75	75

Meet Dr Thom Daniels and Dr Julian Legg



Dr Legg
President of British Paediatric Respiratory Society
Consultant doctor at Southampton Childrens Hospital



Dr Daniels
Consultant doctor in Respiratory and General Medicine at Southampton University Hospital

ing from
der grant agreement No 101005982



Both doctors have given up their time to discuss this project.

Whilst they do not have any strong evidence to prove that vaping is causing a significant rise in lung problems, they both believe that vaping will follow a similar if not identical path to that of smoking cigarettes.



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Dr Julian Legg is President of.....



BRITISH PAEDIATRIC RESPIRATORY SOCIETY

" The British Paediatric Respiratory Society (BPRS) expresses grave concern over the surge in youth vaping due to the **known and potential health hazards of e-cigarettes**, emphasising that clean air is essential for healthy lungs.

The BPRS calls for legislative and regulatory action to protect children and young people, including **equating e-cigarettes with tobacco products**, banning flavoured e-liquids, and targeting their marketing and availability.

The BPRS recognises the urgent **need to act** as the long-term consequences of e-cigarette use are unknown, but the acute risks and **potential for nicotine addiction** highlight the necessity for immediate intervention."

What do you think?
What should be
done?



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3. Time to act – supporting student empowerment



What might this section of lesson be about?





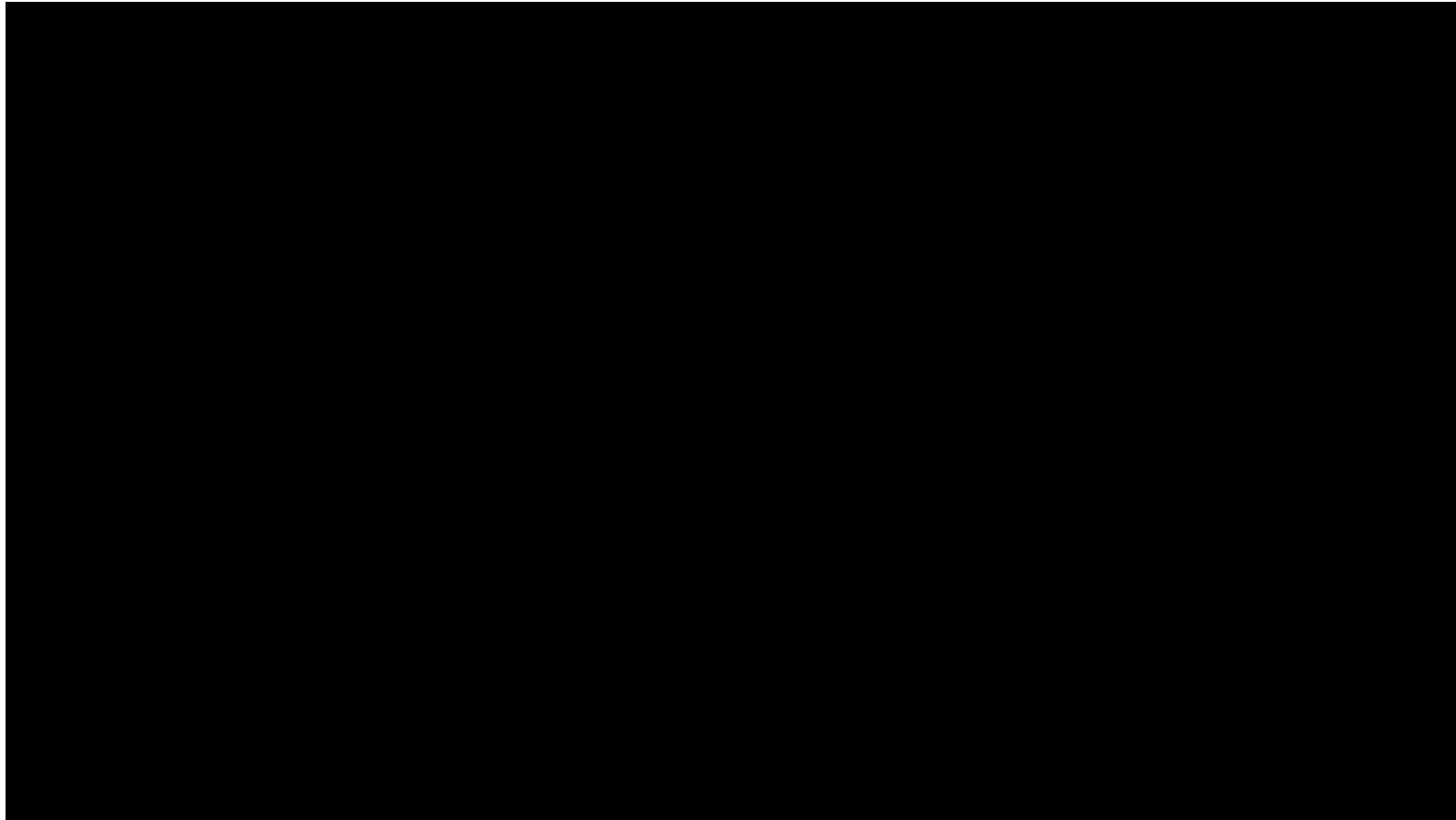
These are images of
inspiring young people
who have made a
difference, in some way,
to people's lives by
promoting a cause or
being a trailblazer.



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Watch the video and then jot down your thoughts on a post it note..



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BE
THE
Change
— YOU —
WANT TO SEE
in the
WORLD

You Got This!

*Guided Journal For Peace,
Grace & Confidence*

Copyrighted Material

Adults may run governments and make policies, but it does not mean that children do not have a voice.

You have a voice, and you can make a difference.

The change may be small, but you can be a voice for good. You can be a changemaker!



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Khloe Thompson at 9 years of age



Khloe lives in Southern California. She saw homeless women on her way to school and decided to help. She started sewing "Kare Bags" making sure they were sturdy enough to last a long time. She filled them with essential toiletries and feminine products that homeless women would simply not be able to afford.

She started a Go Fund me page to raise money to make more of these and her website stated: "The mission of Khloe Kares is to serve others no matter how old or young you are, "proving that age has nothing to do with impacting the world."



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Your task

You are going to work in a team to find out more about an inspiring person, who decided to try and make a positive difference to the World around them.

You have to produce a 2-minute presentation about your young person:

- What they did
- How they did it
- Why they did it



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Some key words to help

activist



a person who campaigns to bring about political or social change.

human rights



rights that should belong to all people.

social change



changes in the way people behave that can transform organizations.

discrimination



the unjust treatment of different people, especially on the grounds of race, age, or sex.



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Final thought

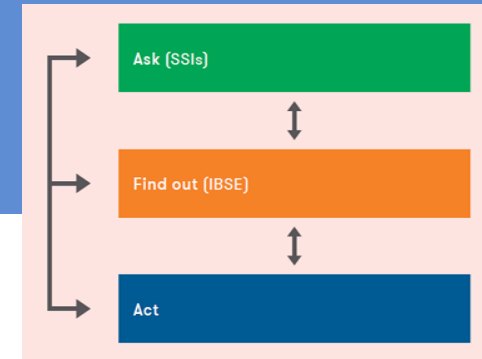
Read the quote from the one of the four people you have looked at today. Reflect on this; how could you make a change for good?



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How can you implement SSIBL in science lessons?



Emergence – need to know	Create a scenario where a socioscientific issue emerges
Raise the controversy	Map the controversy to identify key issues of contention/uncertainty (what we don't know), ask questions, and use those questions to guide science investigations
Investigate	Conduct investigations and allow opportunities to consider own opinion of the issue, and multiple perspectives
Act	Revisit the scenario and apply knowledge learned through investigations in order to make a decision or take action – what can we do? What should be done?



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Thank you

Get in touch If you'd like access to our resources!

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