



# Forensic Science Debate Kit Evaluation Report

Autumn 2024

**Distributed: From January 2023**

- We estimate that at least 483 Debate Kits have been used with around 33,000 students in around 1,500 classes.
- Kits were sent directly to 595 schools.
- 61% of teachers who reported using the Kit, had used the Kit more than once; 77% had shared the Kit with colleagues; 93% would use the Kit again.
- Feedback from teachers who have used the Kit is consistently positive. Teachers value the ability of the Kit to develop students' discussion and debating skills; and to encourage students to consider different information sources, opinions, and perspectives.

"They have been a valuable resource to help engage pupils with discussions within the classroom."

Teacher, Feedback survey

"Great kit for opening up debate and promoting critical thinking in students"

Teacher, Feedback survey

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## Background

The Forensic Science Debate Kit is produced by the *I'm a Scientist* team on behalf of the Royal Institution (Ri). Funded by the Ri's CHRISTMAS LECTURES schools outreach supporter, Agilent Technologies, along with fellow CHRISTMAS LECTURES supporters, UK Research and Innovation, and Horiba.

The Kit asks the question: ***Is DNA evidence reliable enough?***

This question sets the groundwork for discussion of social, scientific, and ethical issues surrounding this key tool in forensic science and the judicial system: DNA. The Kit provides teachers with a resource to get their students to discuss the associated issues and to help them appreciate the powers and limitations of science. The structure shows students how to build a discussion and back up their opinions with facts.

The facts in the Kit were extensively researched and teachers were provided with a list of references and additional resources relating to the topic:  
[forensics-dk.imascientist.org.uk](https://forensics-dk.imascientist.org.uk)

*Feedback data in this report looks at survey responses collected between February 2023 and August 2024.*

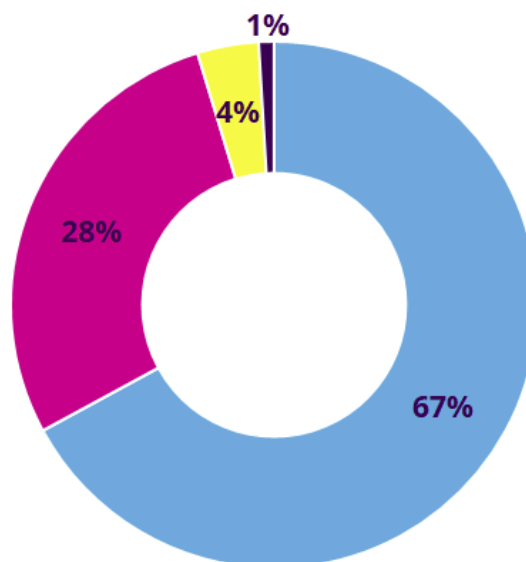


# Distribution

1,500 Forensic Science Debate Kits were printed in, and distributed from January 2023.

At time of writing 1,063 copies have been distributed. Distribution routes were as follows:

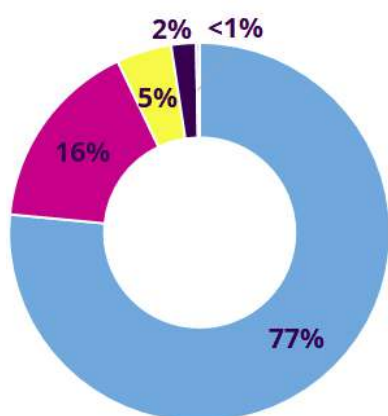
● Teachers following direct requests	713 Kits
● Funders	300 Kits
● STEM Hubs	40 Kits
● Collaborators	10 Kits



Additionally, digital versions of the Debate Kit are available to download free-of charge from the Debate Kit website.<sup>1</sup> At time of writing, the Debate Kit has been downloaded from the site 28 times.<sup>2</sup>

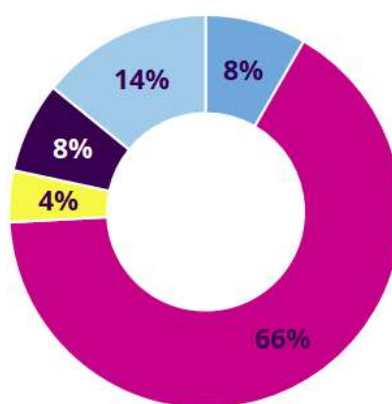
## School distribution

### Location



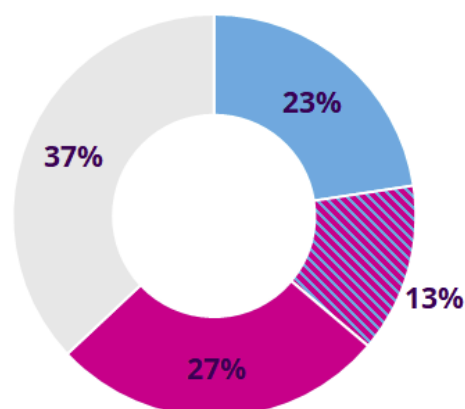
● England ● Scotland  
 ● Wales ● Northern Ireland  
 ● Other (Including Isle of Man and Guernsey)

### School phase



● Primary ● Secondary  
 ● Mixed or all through  
 ● 16 plus ● Other

### Widening participation and distant schools



● Schools with high WP quintiles  
 ● Schools distant from HEIs with high WP quintiles  
 ● Schools distant from HEIs  
 ● Non priority schools

713 Kits distributed directly following teacher requests, were sent to 595 different schools. The majority were sent to secondary schools in England. 62% were sent to priority schools.<sup>3</sup>

<sup>1</sup> [debate.imascientist.org.uk/the-kits/#forensic%20science](https://debate.imascientist.org.uk/the-kits/#forensic%20science)

<sup>2</sup> Combined downloads of the standard version and the large version of the Debate Kit PDFs to October 2024.

<sup>3</sup> More information on school prioritisation: [about.imascientist.org.uk/widening-participation-prioritising-places-for-schools/](https://about.imascientist.org.uk/widening-participation-prioritising-places-for-schools/)

# Usage

## How many Kits were used?

### Follow up emails and usage reminders

Regular, automated follow up emails were sent to teachers, acting as reminders to use the Kit. An initial email was sent on despatch of the Kit to let teachers know it was on the way. Follow up emails were then sent 1, 3, and 6 months after despatch, asking if the Kit had been used, with a friendly reminder to do so if not. Teachers who had not used the Kit, were asked whether they intended to use it in the future.

After responding to say whether or not they had used the Kit, teachers were invited to complete a short feedback survey.

97 teachers used the emails to report having used the Kit. 277 said they had not used the Kit, though 211 of these teachers reported that they intended to use it in the future.

With relatively low response rates to these emails, they are not used to evaluate the usage of the Kit; the main purpose of these follow up emails is to serve as a reminder for teachers to use their Kits, and to direct teachers who had used the Kits to a feedback survey.

For a more accurate estimation of the number of Debate Kits used, a randomised sample of teachers was used.

### Randomised sampling group

Total estimated usage of the Debate Kit was established using a random sample of 100 teachers who were sent the Kit. This sample was checked against teachers who had already told us they had used the Debate Kit and the remaining teachers were sent individual, simple emails asking for a simple “Yes” or “No” reply as to whether they had used the Kit.

- At time of writing, 46 of the randomised sample of 100 teachers had responded to let us know whether they have used the Debate Kit: **25 (54%) said they had used it**<sup>4</sup>
- By extrapolating this figure to the 713 Kits distributed directly to teachers, we estimate that **388 of these Kits have been used**.
- If we estimate that 27% of the 350 Kits sent out through other routes were used — half of the usage of the directly distributed Kits — we find a figure of **95 of these Kits being used**.

Through this broad approximation then, we have an estimate of **at least 483 Debate Kits having been used with students**.

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<sup>4</sup> Of the teachers who responded to say they had not used the Kit, only 3 (14%) said they did not intend to use the Kit at all.

## Reasons for not using the Debate Kit

Teachers who reported that they had not yet used the Kit with their students were asked the main reason for this.

The majority of teachers (74%) reported not yet having had time to use the Kit.<sup>5</sup> When asked for additional comments, many of the teachers who gave lack of time as the reason said they were planning to use the Kit in an upcoming lesson; that they were waiting for the appropriate point in the curriculum teaching.

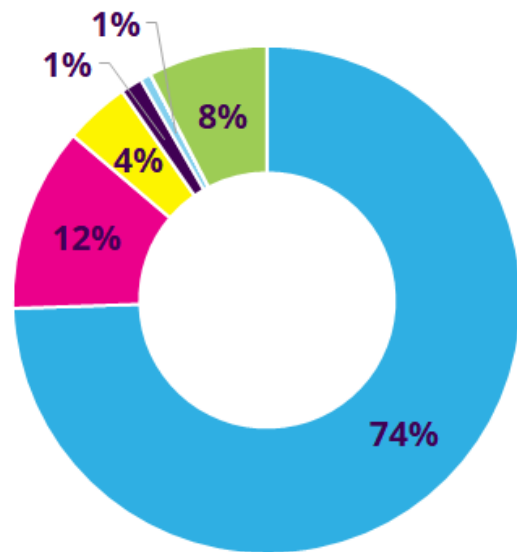
“We have not got to an appropriate point in the course yet, but I have shared it with the teacher teaching criminology this year”

Teacher, Feedback survey

Two teachers reported having used other activities in place of the Kit; with one having taken part in an *I'm a Scientist* chat<sup>6</sup>, and another having invited forensic scientists into the school.

“We had an ex-forensic scientist visit our school to run workshops for all our upper pupils over three days this year, so it was decided that using this Kit would be overkill. It would be a great resource to make use of to review/reinforce the messages next academic year.”

Teacher, Feedback survey



- Not yet had opportunity
- Forgot about Kit
- Didn't receive Kit
- Head of department refused
- Received at wrong time
- Other reason

*Additional options not shown (0 responses): Didn't see value of Kit; Didn't order Kit; and Theme wasn't interesting*

Notably, this is the first debate kit since 2020 where no teachers have reported ongoing impacts of COVID-19 as a reason for not having had the opportunity to use the Kit.

Of those responding to the survey to give reasons for not having used the Kit, 95% reported that they have “not yet used the Kit”; only 5% reported that they do not intend to use the Kit at-all.

<sup>5</sup> Teachers who selected “Other reason” on the survey, but then described a lack of time in the additional information, were grouped together with those who selected the lack of time option.

<sup>6</sup> [imascientist.org.uk](https://www.imascientist.org.uk)

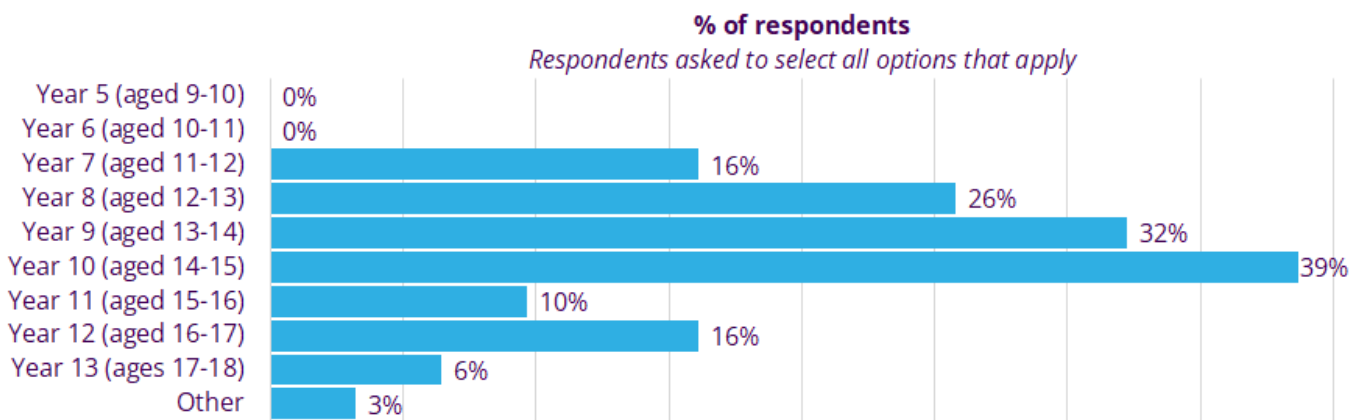
# How Kits were used

Teachers who reported that they had used the Kit were asked to complete a short feedback survey including questions on how the Kit had been used, as well as their thoughts and impressions of the Kit.<sup>7</sup>

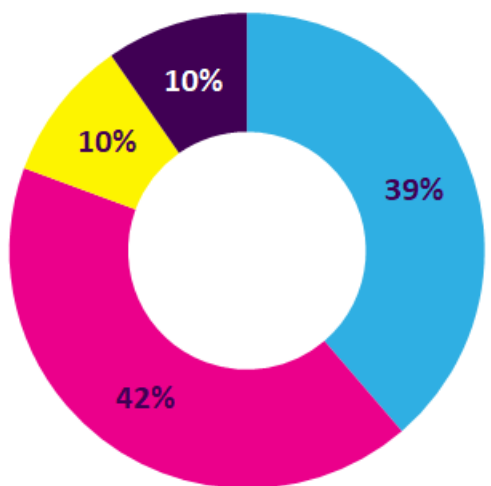
## Usage of the Debate Kit

Teachers were asked with which age groups they had used the Kit. Most commonly, Kits were used with students aged 14 to 15. When asked to specify 'other' groups, one teacher reported using the Kit with a STEM club.

### Which age group(s) have you used the Forensic Science Debate Kit with?

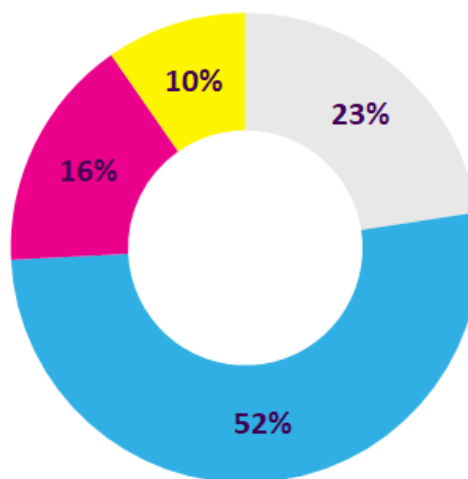


### How many classes or groups have you used the Forensic Science Debate Kit with?



● 1 ● 2 ● 3 ● More than 3 classes

### How many colleagues have you lent the Forensic Science Debate Kit to?



● 0 ● 1 ● 2 ● More than 2 colleagues

<sup>7</sup> See also: *Aims and achievements*

61% of respondents had used the Kit with more than 1 class, 31% with more than 2, and 22% with more than 3. 77% of respondents reported having shared the Kit with other colleagues.

## Class usage estimate

Based on the estimated usage of at least 483 Debate Kits<sup>8</sup>, and the feedback survey responses for number of classes used with each Kit, and number of colleagues the Kit was lent to; we can estimate the number of student classes which have used the Forensic Science Debate Kit.

- Mean classes with which each Kit was used: **1.9**<sup>9</sup>
  - 483 Kits were used **919 times**
- Mean colleagues to whom each Kit was lent: **1.1**<sup>10</sup>
  - 483 Kits were lent to colleagues **545 times**

From these figures — assuming each colleague who was lent the Kit used it at least once — we estimate that the Forensic Science Debate Kit has been used with at least **1,463 student groups**.

Assuming a typical class having 22.5 students — based on average class sizes for primary and secondary<sup>11</sup>, and the proportion of primary and secondary schools to which Kits were sent<sup>12</sup> — we have a broad approximation of the Kits having been used with at least **32,986 students**.

## Usage of additional resources

A website was created to accompany the Kit and provide teachers with references and additional resources for running the lesson: [forensics-dk.imascientist.org.uk](https://forensics-dk.imascientist.org.uk)

At time of writing, this site has been viewed 276 times.<sup>13</sup>

Teachers were asked how they had used this resource:

- 77% of respondents reported having used the site in general to display character paragraphs, facts, issues, and questions.
- 32% of respondents had used the additional resources including the news articles, videos, and further reading.

## Future use of the Kit

When asked about using the Kit again in the future, 93% reported that they would.

# 93%

of respondents would use the Kit again

<sup>8</sup> See: *Usage; How many Kits were used?; Randomised sampling group*

<sup>9</sup> Assuming 4, for those who responded 'More than 3 classes'

<sup>10</sup> Assuming 3, for those who responded 'More than 2 colleagues'

<sup>11</sup> [explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics](https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics)

<sup>12</sup> See: *Distribution; School distribution*

<sup>13</sup> Page views to October 2024.

# Aims and achievements

## Value of the Debate Kit

After reporting that they had used the Debate Kit, teachers were asked to complete a feedback survey. Teachers were asked what they felt was the value of the Forensic Science Debate Kit in terms of curriculum outcomes or other benefits to students.

Most commonly, teachers mentioned the value of the Kit in developing students' discussion and debating skill; and emphasising with different points of view.

"Pupils get to retrieve prior knowledge, correct misconceptions and most importantly agree to disagree in a relaxed setting, enhancing and consolidating social skills that my pupils can sometimes struggle with as they all have ASD."

Lauretta Nwaka, Teacher, Feedback survey

"Students learn to empathise with different viewpoints and also think about the evidence and how to present it in a way to persuade a diverse group."

Teacher, Feedback survey

"Great kit for opening up debate and promoting critical thinking in students, allowing them to experience real-world debates. Also helps with reasoning skills."

Teacher, Feedback survey

Teachers commented on the Kit's ability to encourage students to think about information sources, and differing opinions and perspectives.

"Excellent for getting them to question the reliability of sources of information and to be more critical of information provided."

L. Hufton, Teacher, Feedback survey

"Open up thoughts around different perspectives and the options that future technological advances may provide."

Teacher, Feedback survey

"Exploring ideas about ethics and learning that not everything is black and white — opinions matter."

Teacher, Feedback survey



A number of teachers commented on the value of the Kit's links to, and ability to develop ideas around curriculum teaching.

"Helps build group discussion skills in a low stakes way. Particularly good for preparing for the ethics component of T level core A and the group discussion in the employer set project exam."

Alison Ackroyd, Teacher, Feedback survey

"We use it for our BTEC Forensic Science unit to introduce the topic. It enables the students to gain an understanding of the different roles and issues facing [forensic science]."

Teacher, Feedback survey

"Good link to syllabus and helps improve students ability to make coherent arguments."

Teacher, Feedback survey

"I teach forensic science at level 3. It's good for students to see what others may think of what they study. Self awareness is important."

Mrs Carwithen, Teacher, Feedback survey

"It really encouraged discussion about the uses of DNA, and I discovered that there was a huge difference in background knowledge among the two groups that I used it with. I loved that the session was based upon discussion, and students were allowed to access their phones to find out further information to feed the debate."

Pam Stokell, Teacher, Feedback survey

Likewise, other teachers found the Kit valuable for covering topics not directly related to the curriculum:

"Helped us cover topics outside the [national curriculum]."

Teacher, Feedback survey

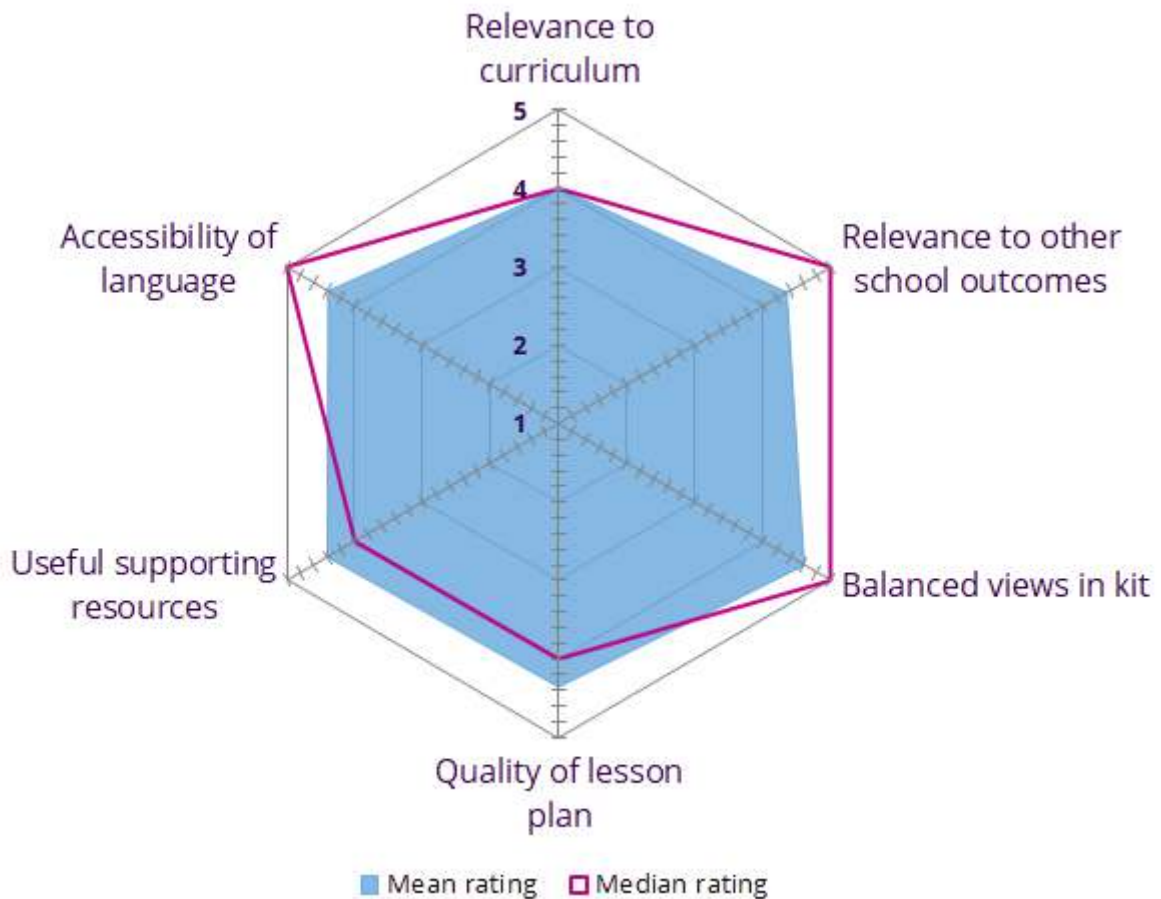
"Allowing [students] to develop their ideas around science not specifically 'on the exam!'"

Claire Pegg, Teacher, Feedback survey

# Ratings

Teachers were asked to give a rating (from 1 to 5 stars) for different aspects of the Kit: Relevance to the curriculum, relevance to other school outcomes, balance of the views in the Kit, quality of the lesson plan, usefulness of the supporting resources, and accessibility of language.

***How would you rate the Forensic Science Debate Kit for the following?***



The Forensic Science Debate Kit was highly rated across all aspects. The chart above shows mean and median scores in each category.

# Additional feedback

Teachers were asked what they liked about the Kit, how they thought the Kit could be better, as well as for any additional comments or feedback that they would like to share.

## Positives

Teachers appreciated the convenience, accessibility, and ease of use of the Kit.

**“Loved everything about it.”**

Teacher, Feedback survey

**“Visually clear and very easy to use.”**

Pam Stokell, Teacher, Feedback survey

**“Enjoyed by staff and students”**

Teacher, Feedback survey

**“Well resourced and easy to use”**

Teacher, Feedback survey

**“I like the template it comes in. It is easy to use and engage with.”**

Lauretta Nwaka, Teacher, Feedback survey

**“Low stakes. Helps to give students a voice if they question a character's viewpoints. Scaffolds question development.”**

Alison Ackroyd, Teacher, Feedback survey

**“I like the range of roles, allowed students to consider from different perspectives without making it personal.”**

Teacher, Feedback survey

**“It gave students more info around the use and what people think about forensic evidence.”**

Teacher, Feedback survey

**“It complemented our work on the RI Christmas lectures and the live chat very well.”**

Teacher, Feedback survey

## Opportunities for improvement

“I altered the lesson plan to make it more interactive - the debate in the lesson plan was a bit too structured. We did end up with a very noisy classroom, but it was good noise.”

Teacher, Feedback survey

“Need a background lesson prior to the debate to give key knowledge to allow a successful debate.”

Teacher, Feedback survey

Additional suggested improvements included updating the Debate Kit as technologies change, to keep the Kit relevant; adding career links on the cards; and including meanings of large keywords on the cards, *“so students can take ownership of their own learning.”*

# Contact

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