**Sixth-Form:
Debating the Ethics of Healthy Ageing Research -
Priorities**

Approximate timing: 45 minutes

Required resources: PowerPoint presentation, fact sheet, lesson plan, BI research cards

Summary: This lesson will introduce students to the principles of healthy ageing research, and the corresponding ethical consequences, such as those on the economy, and retirement age, that are currently being addressed. Students will discuss the areas of healthy ageing research carried out at the Babraham Institute and decide which areas they think are most relevant and important.

Key stage 3

*Science - Applications and implications of science*

Examining the ethical and moral implications of using and applying science. The way scientific developments are achieved can raise ethical and moral issues, for example experiments on animals to produce drugs that may prolong human life.

Key stage 4

*How Science Works: Applications and implications of science*

Pupils should be taught to consider how and why decisions about science and technology are made, including those that raise ethical issues, and about the social, economic and environmental effects of such decisions

All pupils should develop their ability to relate their understanding of science to their own and others' decisions about lifestyles, and to scientific and technological developments in society.

Links to Babraham Institute research themes:

<https://www.babraham.ac.uk/our-research/healthy-ageing>

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| **Learning outcomes** |
| All students will: | Describe the difference between health-span and life span.  |
| Most students will: | Engage in group discussion about some positives and negatives of research altering how healthy we are when we’re older |
| Some students will: | Be able to debate which area of research is most important and why |
| Key word/s | Health-span, healthy ageing, lifespan, group discussion, opinion |

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| **Teaching notes** | **Student learning activities**  |
| **Starter or ice-breaker activity** (10 mins)Would work best if there was some free space in the room, teacher to ask students to read the statement and line up from one side of the room (deemed as ‘strongly agree’) to the other (‘strongly disagree’).* Per statement: 1 minute to arrange themselves, 2 minutes to ask students why they’ve places themselves where they have.

Try and ask students in the middle (neutral) as well as those with strong opinions. | Slide(s) 3-6Student actions* Read each statement and decide whether you agree, disagree, or feel indifferent about it. Place yourself accordingly on the scale and be prepared to explain why you are placed there.
* Is there a particular word that you like/dislike about the statement?

What could be changed about the statement to allow you to change your mind? |
| **Development** (10 mins) Presentation designed in question / answer format: ask questions before showing the answer to help with engagement.* Slide 7: Ask student’s to give examples of signs of ageing – what does it mean to be old?
* Slide 8: Ask whether anyone knows the difference between lifespan and healthspan (fact sheet has answers).
* Slide 9 & 10:
	+ Use factsheet and slides to explain why healthy ageing research is a government priority
* Slides 11-13:

Run through examples of the current research Babraham Institute is doing around healthy ageing, to provide current context. | Slide(s) 7-13Student actionsListen & answer questions where appropriate |
| **Principal Activity** (20 mins)* Print out researcher cards
* Split students into groups
* Provide a set of cards for each group
* Each group works together to order the cards according to what they consider to be the most important research to least important **(10 minutes)**
* A spokesperson from each group reveals three examples, and explains why they’ve made those decisions **(10 minutes)**:
	+ Most important research
	+ Least important research
	+ Another example somewhere in the middle
* The class then has an opportunity to agree/disagree with those points, as well as add anything else

Keep the cards in their decided order, send this information back to us to help us directly understand where our priorities should lie!  | Slide(s) 14-17Student actions* Work in groups to think about the implications of each piece of research, and order them by importance or relevance
* Think about :
	+ Who would this affect the most and why?
	+ Would this be important for ageing?
	+ What did you base your decision on?

Discuss with class |
| Plenary (5 mins)Ask students questions | Slide 18* What are some signs of ageing?
* What is the difference between lifespan and health-span?
* Why is it important, particularly now, that the Government wants to promote healthy ageing?
* What are three of your favourite examples of research at The Babraham Institute?
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| **Extension work**Suggested area of research or follow-up activity for further understanding of what researchers are doing currently to understand and improve healthy ageing.* Healthy Ageing Research Ethics – lesson 2 ‘Debating the Ethics of Healthy Ageing Research’
* Healthy Ageing Research Web Quest

The ethics of the use of animals in research | **Healthy Ageing Web Quest:**Start at: https://www.babraham.ac.uk/our-research/healthy-ageing and follow links to research pages, science services and other content on our website to inform your answers. For each question, keep a record of the web-pages you have visited. 1. What is the definition of healthy ageing research?
2. What do you think is the most important discovery the Babraham Institute has made relating to healthy ageing? Explain your reasons.
3. Which of our key discoveries could have controversial outcomes? Explain your reasons.
4. Which of the four examples of ongoing research do you think is the most important and/or relevant to you? Explain your reasons.
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