

# Subject Spotlight Lesson Plan

<b>Title of Session</b>	<b>Subject Spotlight: Biology – Microbes and The Mind</b>
<b>Description:</b>	Have you ever felt the sensation of butterflies in your stomach before doing something scary, or told someone you have a “gut feeling” about something? There’s a good reason for these sayings, and the explanation may surprise you. The gut-brain axis is a term we use to describe how the brain communicates with the gut, and vice versa. This workshop will explore the microbes that live in our guts and the surprising effects they can have on mental health and brain function.

<b>Duration of session:</b>	~30 mins	<b>Target Audience:</b>	Y12/13
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<b>Regional Progression Framework - Learning Outcomes:</b>
LO1 - Awareness of HE and the different opportunities available. Be able to challenge any myths relating to HE.
LO2 - Identify the link between GCSE attainment and progression opportunities and how these can support life or career goals
LO5 - Learner knows how to research different routes into HE and how to make an application
<b>Gatsby Benchmarks:</b>
7. Encounters with Further and Higher Education - All students should understand the full range of learning opportunities that are available to them. This includes both academic and vocational routes and learning in schools, colleges, universities and in the workplace.

Timings:	Activity/Task/Information:	Instructions for teacher:	Resources needed:
0.00 – 3.01	Introduction <ul style="list-style-type: none"> <li>• My pathway in Higher Education</li> </ul> What's in the workshop? <ul style="list-style-type: none"> <li>• What are microbes?</li> <li>• What is the microbiome?</li> <li>• How can the microbiome affect our brain?</li> </ul>	Play video.	Video
3.01 – 3.52	Activity 1: What are microbes? <ul style="list-style-type: none"> <li>• Word association - In 60 seconds, students need to come up with as many words associated with the word "Microbes" as they can.</li> </ul>	Pause the video when prompted – start the 60s timer. Students can write down answers individually, or contribute as a class with the teacher/nominated learner recording the words on the board.	Paper/class whiteboard & pens 60s timer (online/stopwatch)
3.52 – 4.30	<ul style="list-style-type: none"> <li>• What are microbes?</li> </ul>	Play video	
4.30 – 5.44	Activity 2: This or That? <ul style="list-style-type: none"> <li>• This is a quick activity where I show two locations and ask which one has more bacteria.</li> </ul>	The timings for this activity are built into the video – students have about 5s to consider which answer to pick before I reveal and explain the answer. If desired you can pause the video after each question and ask students to vote by show of hands.	
5.44 – 11.47	<ul style="list-style-type: none"> <li>• What is the microbiome?</li> <li>• Bacteria: The good, the bad and the commensals</li> <li>• Microbes and the Brain</li> <li>• How do microbes talk to the brain?</li> </ul>	The timings for this activity are built into the video – a prize/reward can be given to the learner who solves them the quickest if desired.	
11.47 – 12.32	Activity 3: Anagrams <ul style="list-style-type: none"> <li>• Learners have 30s to try and solve 3 anagrams before the answers are revealed. This serves as a quick break before the final part of the</li> </ul>		Paper (if they want to write them down)

	workshop, and helps to consolidate some key terms.		
12.32 – 19.52	<ul style="list-style-type: none"> <li>• Case Study: Parkinson’s Disease</li> <li>• How can we change our microbiome?</li> <li>• Why is the gut microbiome important?</li> <li>• If you want to learn more...</li> </ul>		
19.52 – end	<p>Activity 4: Quiz</p> <ul style="list-style-type: none"> <li>• Learners can complete the quiz to consolidate what they’ve learned in the workshop.</li> </ul>	Hand out quiz. Can be done individually or in pairs/small groups. Should take no more than 5 minutes to complete.	Quiz sheet / Answer sheet

<b>Overview of all resources:</b>	
Video	
Quiz Sheet /Answer sheet	
Extra resources to be shared:	<ul style="list-style-type: none"> <li>• Gut: the inside story of our body’s most underrated organ – Giulia Enders</li> <li>• The Psychobiotic Revolution – Scott C. Anderson</li> <li>• Have you Heard podcast - <a href="https://haveyouhearduk.com/">https://haveyouhearduk.com/</a></li> <li>• What can I do with a Biology degree? - <a href="https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/biology">https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/biology</a></li> <li>• UCAS – Biological Sciences page - <a href="https://www.ucas.com/explore/subjects/biological-sciences">https://www.ucas.com/explore/subjects/biological-sciences</a></li> </ul>