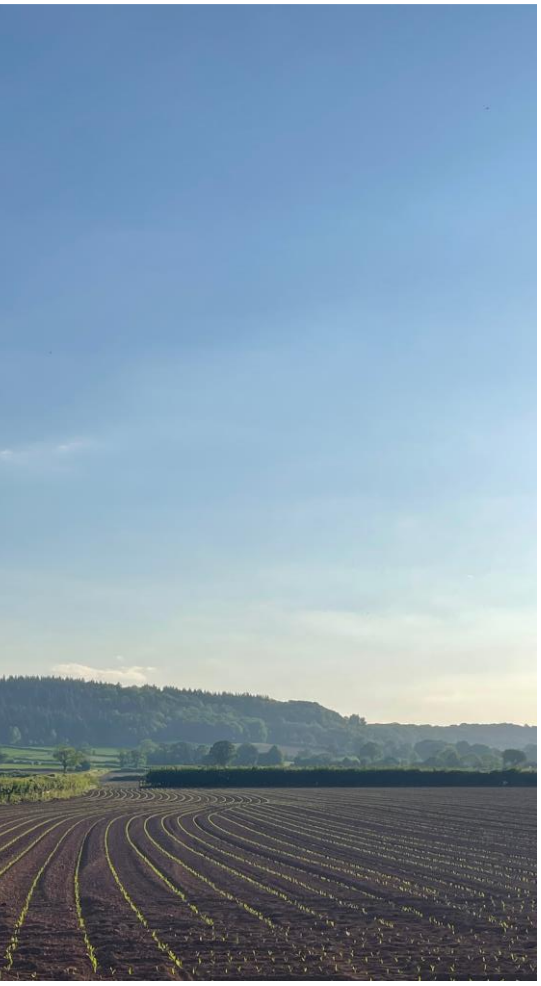


JITRATE NODULE

NIGEL THE NITRATE NODULE

Short story about a nitrate nodule called Nigel, and his journey as a fertiliser ion from being applied to agricultural land, to ending up in a river and being a contributor to eutrophication. Based off peer reviewed article by Singh and Craswell, 2021.

Non-traditional communication: Storytelling

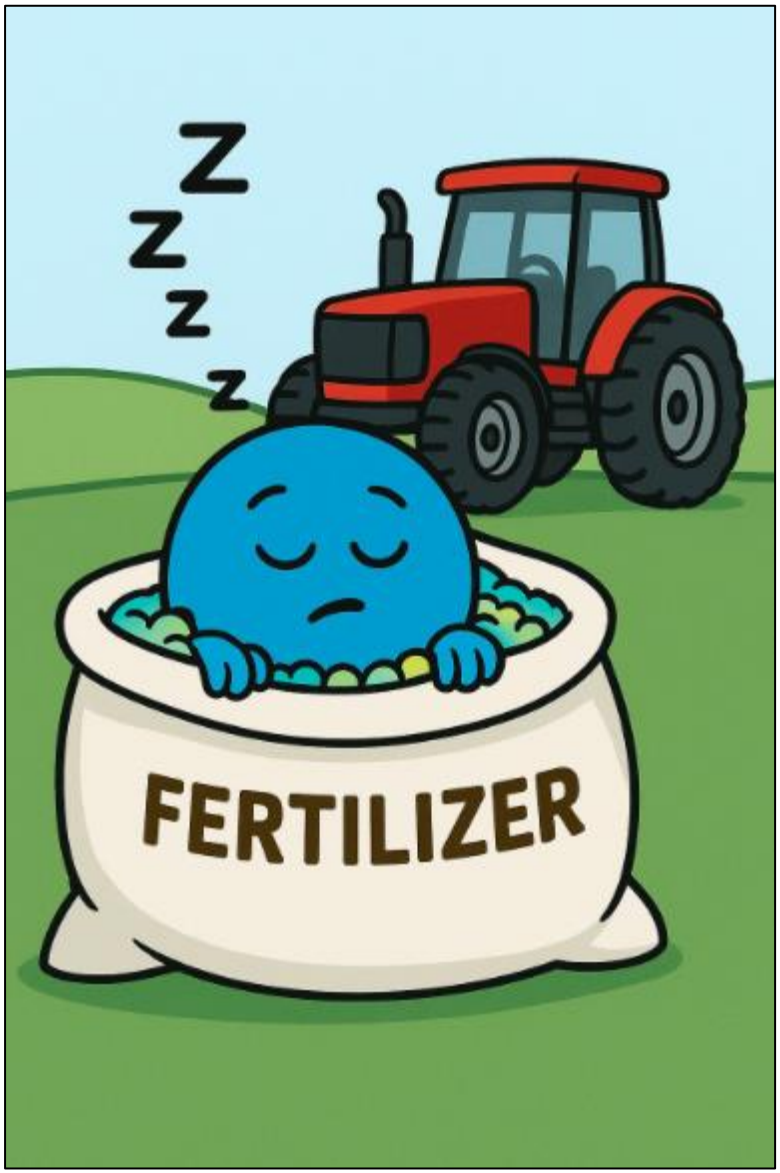


Image- (Chatgpt,2025)

Nigel the nitrate nodule

As the first rays of sunlight and crisp warm air crept into Nigel's sleeping quarters, he knew today was the day.
He and his friends were ready to prove themselves, all they wanted was to find their new homes.
"Race day is here" his friend says, "let's make these crops the tallest around!" But Nigel is not as excited. As he looks around, he realises there are millions just like him and not enough crop homes for everyone. The Nutrient Race is about to begin, will he make it in time?

In a hope to be applied to the field first, Nigel wiggles his way through the crowd and towards the warmth and light. He could hear the rumbling of the tractor across the crops, the spreader loaded, and ready to go.

With that, a loud clank, the tractor hatch had opened; fertiliser spreading had begun. Light dazzled the nimble nitrates and phosphates as they tumbled towards the soil. Nigel landed softly, eager to find a home first. But it was hectic and competitive, no fertiliser noticed the dark, heavy rainclouds gathering above, not giving long before they descend their raindrops. Nigel's adventure had just begun, but what will happen to him if he strikes unlucky…



Image- (Chatgpt,2025)

The grumble of thunder grew louder, but Nigel was still on his way to find some roots who wanted him on board. The first few drops of rain had hit. “A bit of rain will help me get to the roots faster!” thought Nigel, but he wasn’t moving quickly enough. The rain became harsher and only half of the applied nitrate fertilisers had made it to their new crop homes, but nearly all the phosphates had Due to them being less mobile than nitrates, they remain in the soil.

Suddenly, Nigel was being swept down the field in a cascade of water, mud and other nitrates. The field became a shrinking blur behind him as he was approaching the river. His worst fears were becoming reality; he was being LEACHED!! The rain had fallen too fast in a short space of time, not leaving time for absorption of nitrates like Nigel by the crops.

Nigel found himself with hundreds of nitrate fertilisers just like him. But the longer he was in the water, floating downstream, it became cloudier, crowded and greener. Algae had grown so rapidly Nigel didn’t notice his fellow nitrates slowly disappearing and finding unexpected homes. The water grew colder and darker, the sunlight couldn’t break through the thick flourishing algal blooms. Selfishly, they were taking all the oxygen left in the river to help themselves expand and to grow tall. The remaining fish surrounding Nigel were gasping for air, but he was unsure why this had happened.

As Nigel was left sitting at the bottom of the algae-filled river, feeling cold and useless, he realised there were too many nitrate fertilisers like him applied to the crops, he was too slow to find a home, and now there were too many nutrients in the water… this

problem he had partly to blame for is known as eutrophication. “I only wanted to help the crops grow” said Nigel sadly.
But Nigel is not to blame, it was the way and time he had been applied by the farmer. The race day could have been so much different with some smarter choices made. If Nigel was applied in dry conditions when there was no storm approaching, he would have had more time to find his dream home and would have less distance to travel if put on directly where he is needed. He would not have been washed away in the river “if everyone worked together, we could grow healthy crops and protect our nearby rivers. Maybe next spreading season I’ll get my chance.”

References for story:

Singh, Bijay, and Eric Craswell. “Fertilizers and Nitrate Pollution of Surface and Ground Water: An Increasingly Pervasive Global Problem.” *SN Applied Sciences*, vol. 3, no. 4, 31 Mar. 2021, https://doi.org/10.1007/s42452-021-04521-8.

“ChatGPT.” *ChatGPT*, 2025, chatgpt.com/c/693048d3-9b74-832c-8b70-b2445660ca92. Accessed 3 Dec. 2025. Used for Image creation ONLY.

References for summary:

Lawson, Danielle F., et al. “Children Can Foster Climate Change Concern among Their Parents.” *Nature Climate Change*, vol. 9, no. 6, 6 May 2019, pp. 458–462, www.nature.com/articles/s41558-019-0463-3, https://doi.org/10.1038/s41558-019-0463-3.

McGellin, Rockwell Tomson Lyon, et al. “Stop Avoiding the Inevitable: The Effects of Anthropomorphism in Science Writing for Non-Experts.” *Public Understanding of Science*, vol. 30, no. 5, 11 Feb. 2021, pp. 621–640, https://doi.org/10.1177/0963662521991732.

Wan, Echo Wen, and Rocky Peng Chen. “Anthropomorphism and Object Attachment.” *Current Opinion in Psychology*, vol. 39, no. 2352-250X, 1 June 2021, pp. 88–93, www.sciencedirect.com/science/article/pii/S2352250X20301548, https://doi.org/10.1016/j.copsyc.2020.08.009.

Singh, Bijay, and Eric Craswell. “Fertilizers and Nitrate Pollution of Surface and Ground Water: An Increasingly Pervasive Global Problem.” *SN Applied Sciences*, vol. 3, no. 4, 31 Mar. 2021, https://doi.org/10.1007/s42452-021-04521-8.

Wesenberg, Lukas, et al. “The Influence of Seductive Details in Learning Environments with Low and High Extrinsic Motivation.” *Learning and Instruction*, vol. 96, 26 Nov. 2024, p. 102054, www.sciencedirect.com/science/article/pii/S0959475224001816, https://doi.org/10.1016/j.learninstruc.2024.102054.