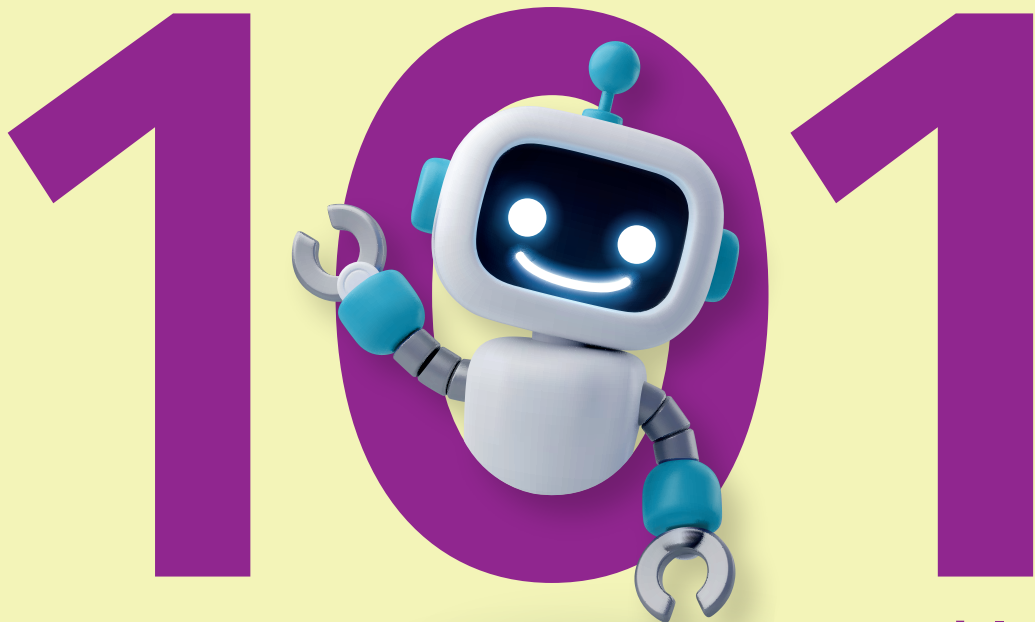




Gemma Clark

Artificial Intelligence in the Primary Classroom



ways to save time, cut your workload
and enhance your creativity

Praise for Artificial Intelligence in the Primary Classroom

This text provides a plethora of activities and insights into how artificial intelligence can be utilised positively to support learning, reduce teacher workload, and inspire pupils in our primary classrooms.

It will be especially useful for educators who are feeling anxious about adopting artificial intelligence into their teaching, as Gemma Clark helps explain how to use AI in an accessible and purposeful way, thereby removing the fear of this new technology and instead fostering excitement and inspiration.

All primary curriculum subject areas are covered, as well as a wide range of extracurricular areas where AI can be employed, such as in outdoor learning spaces, in assemblies, and even in after-school clubs.

An inclusive approach is carefully considered in this text, with specific chapters exploring how AI can support pupil well-being, staff well-being, and learners, including those who are neurodivergent.

If you haven't considered how AI can reduce your teacher workload, aid personalised learning, and help you to restore a more comfortable work-life balance, then this is the book for you!

**Dr Poppy Gibson, Course Lead and Senior Lecturer in Primary Education,
Anglia Ruskin University**

Gemma's insightful book on AI has played a crucial role in helping me overcome the initial uncertainty and confusion surrounding the topic. It has not only provided me with valuable guidance and ideas, but has also instilled in me the much-needed confidence to delve into the world of AI. Thanks to Gemma's book, I now understand the practicality and potential impact of AI, demonstrated by my use of AI to compose this response.

**Toria Bono, teacher, leader, and author of
*Tiny Voices Talk: Education, Engagement, Empowerment***

In a landscape where education constantly evolves to meet the demands of the digital age, Gemma's latest book stands out as a beacon of innovation and inspiration for teachers and school leaders, venturing as it does into the realm of artificial intelligence in the primary classroom. Important to state at the outset, this is not a book full of lesson plans; rather, it is an extremely helpful tool to help you start to visualise how to constructively incorporate AI into your daily teaching and planning.

The great strength of this book is the sheer diversity of topics and issues it covers in a simple format. From how to incorporate AI into curricular areas such as literacy, maths, science and art, to how to develop schoolwide policies on mobile phone usage or implementing effective behaviour management strategies. This book is a must-use guide to bring your classroom and school in line with 21st century technology and thrive using it.

There is currently a feeling among educators and others that using AI to help in the planning of teaching is somehow cheating or challenging our professionalism. This is a viewpoint that needs to change, and this guide is an ideal tool to help make that shift in our mindset to one that embraces innovation.

As a primary teacher herself, Gemma writes with humour and a full understanding of what your day-to-day job entails, helping to provide practical tips on every page to address the challenges of teaching today. What is hugely commendable is her embedding of inclusive practice throughout the book – especially for EAL learners, neurodiverse learners, and teachers – and decolonising practices. All current and important issues.

Gemma also highlights how using AI in the classroom can be a way to model its use in a positive way for learners. AI is not going anywhere, but incorporating it into pupil research, for instance, will help learners to understand that it is not about trying to find the answers, but is about helping them to ask critical questions and delve deeper into their learning.

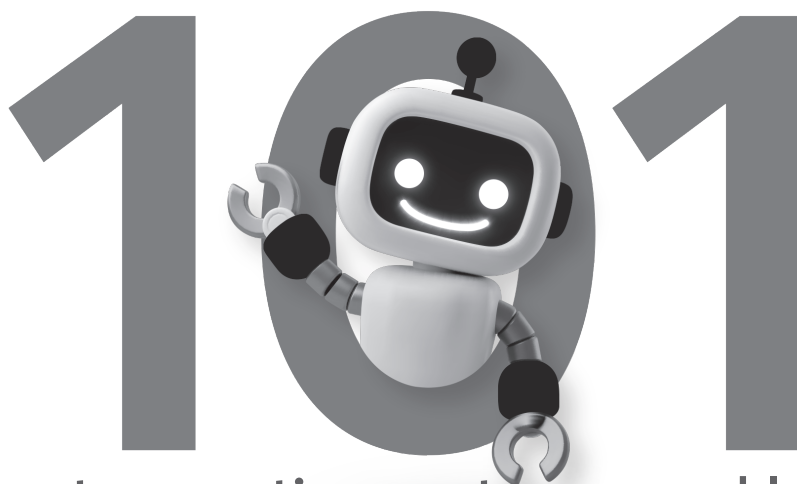
As Gemma states, 'We stand at the threshold of a new technological revolution'. We therefore simply must embrace the advancements in technology and I recommend starting with this book as an excellent step forward.

**Nuzhat Uthmani, Lecturer in Primary Education at the University of Stirling,
Founder of Global Citizenship Education in Scotland Ltd**



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Foreword

Artificial intelligence is not going to change the world; it's already changing it. Right now, someone is using AI to analyse X-rays and speed up diagnoses. Someone else is using an AI chatbot to activate a credit card. Phones are being unlocked using AI algorithms. AI is being used to prevent fraud and deployed to sift through military data. Whether you're directly aware of it or not, AI is everywhere.

All technological developments can be daunting, and shifts on the scale that we're about to witness sometimes produce particularly acute anxieties. These fears are not unfounded, and it's entirely possible that the introduction of AI to education – if driven by the wrong people or pursued for the wrong purposes – could be hugely damaging.

It's not difficult to imagine a spreadsheet-worshipping bureaucrat in a council office deploying AI for the purposes of tracking and monitoring, or decreeing that all teachers must produce lessons plans aligned to an AI-generated template. Someone, somewhere, is calculating how much money they can save by having AI calculate how much money they can save. The risks are real.

Like any technology, there's enormous potential for misuse, and the sheer scale of AI's possibilities means that concerns over its inevitable creep into education are entirely reasonable. Teachers are, sadly, well used to being told that they just need to make things work while being given little if any support.

There will be some who think the best approach is to resist – as far and for as long as possible – the adoption of this new, immensely powerful but potentially destructive technology. That's an entirely understandable response, but ignorance isn't bliss, progress can't be halted, and there's nothing to be gained from pretending that schools can be isolated from broader societal shifts.

The tide is rising no matter what we do, and planting our feet in the same point in the sand only ends one way. If teachers – or any number of other professionals – try to ignore AI, they will, in the end, find themselves overwhelmed by it when their makeshift levees inevitably break.

But that is where books like this one might come in. For Gemma Clark, AI is not the enemy – it is a potential ally. Specifically, she believes that it might be a tool to help address the workload crisis that has been engulfing the profession for years. That is, of course, a problem that can't be solved by teacher innovation alone, and it's always important not to let politicians and other decision-makers off the hook. However, if we

can make machines do at least some of the bureaucratic and organisational leg-work involved in teaching, maybe that could free up teachers to spend more time doing what they want to be doing, and what we need them to be doing? Maybe if AI is applied well, teachers could get on with teaching?

This book feels like a potentially important step in that direction. Some of the suggestions, like the use of AI to generate lists of spelling words, are relatively simple; others, such as deploying this new technology to summarise lengthy documents full of government guidance, speak to more fundamental changes in behaviour. As a former English teacher, ideas like using an AI image generator to develop students' writing skills are particularly intriguing. Crucially, all are presented with a view to freeing up teachers to spend more time on the stuff that a computer, no matter how much artificial intelligence is poured into it, cannot do.

James McEnaney, journalist and author

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Introduction

Artificial intelligence (AI) undoubtedly sparks debate among teachers. Questions arise about the trajectory of this new technology: where will it take us? How will we differentiate between pupil-authored work and AI-generated content? What impact will it have on the dynamics of learning and teaching within schools? Will it lead to a loss of creativity and critical thinking skills? These are all crucial topics for discussion. Yet, AI has already become part of our reality, and I firmly believe that embracing its potential is in our best interests.

I understand first hand the challenges posed by our bureaucracy-heavy profession and its demanding workload. While I may not possess an inherent aptitude for technology or the ability to effortlessly implement technological solutions, I have identified 101 ways through which AI can alleviate this burden. There is a plethora of accessible AI mobile apps and free online platforms to choose from, such as Adobe Firefly and ChatGPT; even Snapchat has added a decent AI bot to the app, My AI.

These approaches not only restore a semblance of work–life balance by streamlining routine tasks and providing simple solutions that save time, AI also enables us to redirect our focus towards the important job of nurturing young minds, targeting our energy and resources into higher impact activities, such as creating tailored learning experiences, giving children personalised feedback, and improving engagement. It can also help us to tap into our creative reserves and make full use of the resources we already have available. Beware of Americanised spelling; however, you can always ask it to use English spelling.

AI has the capacity to revolutionise the teaching profession. We don't need to meet this paradigm shift with trepidation; rather, we should welcome it as a long-awaited remedy to our workload conundrum.

1. Spelling Lessons

AI can streamline your spelling lesson planning process, ultimately saving you valuable time. For instance, by inputting a simple query such as, 'Provide me with eight lengthy words containing "oi",' an AI bot can produce a list within seconds, which you can easily copy and paste into your materials.

You could then enter the instruction, 'Generate eight moderately simpler words' and, just like that, differentiation becomes an effortless task. In a matter of moments, AI can create three tailored word lists, each suited to a different level of difficulty. I typed 'Offer me eight four-letter words with "oi"' and the AI app provided the following graded examples:

1	coincidence	soil	coin
2	moisturiser	oil	boil
3	exploiters	foil	soil
4	recoiling	toil	join
5	embroidery	coil	moil
6	turquoise	spoil	roil
7	poisoning	broil	toil
8	rejoicing	recoil	void

So, what if you find yourself in a situation where you are a new teacher or at a school without a specific spelling programme, and the teachers are essentially self-navigating through the challenges (we have all been there)? Not to worry! Just turn to AI and request a list of phonemes or 'sounds suitable for teaching young children', and watch as the app promptly devises a comprehensive list for you.

2. Writing resources

As a teacher who is passionate about teaching writing, I have found AI to be an exciting resource. It can save considerable time in the process of differentiated planning, affording me more time to create imaginative writing prompts. For instance, if I want to dedicate time to painting eggs with gold paint to simulate the presence of a magical dragon visiting the classroom overnight, I have that flexibility because I have had to spend less time on more mundane tasks!

AI apps can be harnessed to rapidly generate useful writing resources like sentence openers and vocabulary. Typing 'Give me 10 adjectives to describe a magic dragon' returns:

- 1 Majestic
- 2 Enchanting
- 3 Radiant
- 4 Mysterious
- 5 Fierce
- 6 Resplendent
- 7 Bewitching
- 8 Awe-inspiring
- 9 Ethereal
- 10 Legendary

Or, for different kinds of writing, AI can quickly give you eight persuasive sentence openers – for example:

- 1 Imagine a world where ...
- 2 Did you know that ...?
- 3 Picture this ...
- 4 Have you ever considered ...?
- 5 It's time to take action and ...

- 6 Are you ready to ...?
- 7 In today's fast-paced world, it is crucial to ...
- 8 You deserve to experience ...

You can even request very specific sentence openers such as 'ly' openers:

- 1 Interestingly, ...
- 2 Clearly, ...
- 3 Surprisingly, ...
- 4 Fortunately, ...
- 5 Interestingly enough, ...
- 6 Undoubtedly, ...
- 7 Strikingly, ...
- 8 Importantly, ...

All of this gives you more time to spend on the fun stuff.

3. AI Images for Story Prompts and Creativity

Using AI-generated images as a creative tool for story writing prompts can be fun for the children. For instance, you could request an image of 'a haunted house with bats flying around' or 'a depiction of an enchanted forest'. This approach offers excellent opportunities to provide pupils with choices and individualisation during their writing lessons. If the children have access to tablets, the initial step of their writing task could involve generating an image of a setting on which they would like to base their writing. This exercise enables them to observe how particular words evoke distinct mental images, encouraging them to consider how language can enhance their descriptions.

This activity is not only engaging and enjoyable for children, but it also challenges them to develop a vocabulary that effectively conjures the imagery they imagine. Moreover, if the image produced doesn't align with their vision, it can prompt them to consider how to communicate their preferences better to the AI app.

We have all encountered some amusing and/or peculiar AI-generated images, so we know this experience can be effective in sparking the children's imagination. For instance, an image of a frog on a flying submarine might just be the catalyst for igniting a creative storytelling spark! As the teacher, you might use ICT time to get the children creating their own images or you may want to produce a specific image that fits your writing lesson objectives and display it to the whole class.

4. Reading Comprehension

As a child with undiagnosed dyslexia, I enjoyed reading, but I detested comprehension exercises. (I now realise this was due to the considerable amount of mental effort it demanded.) As a teacher, I observe that many pupils aren't enthusiastic about reading comprehension either. Nevertheless, it is a crucial skill and necessary for their educational advancement.

Since piquing the children's interest constitutes a significant portion of the challenge in most classrooms, imagine the possibility of orienting reading comprehension exercises towards subjects that resonate with a class or even with individual children. Thanks to AI, this has become an effortlessly achievable reality!

I recall a pupil with whom I struggled to foster engagement unless the content was customised to revolve around his interests in dinosaurs or minibeasts. AI could have swiftly provided me with a reading passage on centipedes, complete with accompanying questions and answers. Consequently, I could have presented this child with a reading task that he would have gladly embraced, and which would have spared me from dedicating hours to locating or crafting such materials myself.

Here is an example. 'Give me a passage about centipedes for a 7-year-old' generates:

Centipedes: Lots of Legs and Little Hunters

Centipedes are small creatures with lots and lots of legs! They are like mini superheroes in the bug world. Imagine having so many legs to walk with – it must be like wearing many pairs of shoes all at once!

These tiny creatures live in dark and damp places, like under rocks and leaves. They like to hide because they are a bit shy. When the sun goes down and it gets dark, they come out to explore and find their dinner.

Guess what they like to eat? Other bugs! Centipedes are great hunters. They use their special curved jaws to catch spiders, worms, and insects, even ants. They are like sneaky ninjas of the bug world, silently creeping up on their prey.

But don't worry, most centipedes won't bother humans. They are more interested in finding their bug-sized snacks. So, if you ever spot a centipede,

remember to give them some space – they are just busy looking for their next meal!

The input, 'Give me five comprehension questions based on the above' suggests:

- 1 What is it like for centipedes to move with so many legs?
- 2 Where do centipedes like to live?
- 3 When do centipedes come out to explore?
- 4 What do centipedes like to eat?
- 5 Should you be afraid of most centipedes? Why or why not?

This list can be further individualised if you wish to focus on literal questions or inferential questions. It would take me less than a minute to copy and paste the above text and questions into a document, ready for my pupil who would benefit from individualised tasks.

A comprehensive guide that presents 101 innovative ways to integrate artificial intelligence into primary education effectively, enhancing learning experiences, and streamlining administrative tasks for teachers.

Artificial intelligence (AI) is sparking a huge debate among teachers and school leaders. Many questions arise about the trajectory of this new technology and where it will take us. How will we differentiate between pupil-authored work and AI-generated content? Will it lead to a loss of creativity and critical thinking skills? These are crucial topics for discussion, yet AI has already become part of our reality, and Gemma Clark firmly believes that embracing its potential is in our best interests.

In an era defined by technological advancements, *Artificial Intelligence in the Primary Classroom* stands as an indispensable resource that holds the key to transforming teaching and learning. For educators burdened by bureaucratic tasks that divert precious time from actual teaching, this book offers a lifeline. It showcases how AI-powered tools can alleviate administrative burdens, enabling teachers to focus on the important job of nurturing young minds and target their energy and resources into higher-impact activities, such as crafting tailored learning experiences, giving children personalised feedback, and improving engagement. From lesson planning and automating report-writing processes to facilitating content creation, the book details tangible ways in which AI can streamline workflows, improve teaching, and restore work-life balance.

Suitable for primary school teachers of all levels of experience.

This book provides a plethora of activities and insights into how artificial intelligence can be utilised positively to support learning, reduce teacher workload, and inspire pupils in our primary classrooms. If you haven't considered how AI can reduce your teacher workload, aid personalised learning, and help you to restore a more comfortable work-life balance, then this is the book for you!

Dr Poppy Gibson, Course Lead and Senior Lecturer in Primary Education, Anglia Ruskin University

As Gemma states, 'We stand at the threshold of a new technological revolution'. We therefore simply must embrace the advancements in technology and I recommend starting with this book as an excellent step forward.

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Toria Bono, teacher, leader, and author of *Tiny Voices Talk: Education, Engagement, Empowerment*



Gemma Clark is an experienced primary teacher based in Scotland. She is dedicated to student and teacher well-being and creating innovative ways to inspire a love for learning. Gemma also holds a degree in psychology, teaches yoga, mindfulness, and meditation, and manages a teacher well-being group. [@Gemma_clark14](https://twitter.com/Gemma_clark14)



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