

## One of many opinions of a teacher ...

Adam Little: National Professional Development Lead (STEM Learning) and *potential* co-writer for Kylie Minogue!

ChatGPT is an artificial intelligence chat bot which was first developed in November 2022. However, it has really started to grab attention within the last couple of months and has sparked a race among many tech companies to develop their own, better versions. More people are starting to use ChatGPT as they discover the extent to which it can be used, this has ranged from writing a joke to solving a maths equation. This forms the basis of a debate around whether ChatGPT is useful or not, and the challenges that it raises within education especially as young people could start to use it to solve homework. In this blog, Adam Little (Physics subject expert lead at Stem Learning) discusses the uses of ChatGPT as well as it's effectiveness.

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Artificial Intelligence! As a person of a certain age, my main experience of this was linked to, often very scary things that Hollywood pushed on us. Skynet in Terminator 2, Johnny 5 in Short Circuit, Ash the Android in Alien, Robocop or even the agents The Matrix.

Will the robots rise up and take over? I'm not entirely sure that will happen just yet, but we'll see. I know STEM Learning has taken delivery of some AI rabbits...they might nibble our toes or take out the local living and breathing bunnies but once again that seems doubtful.

Instead, my recent foray into the land of AI involved being told about Chat GPT online from a colleague. When I asked "What does it do?" they replied "You can literally ask any question and it will answer it, or do a task for you such as write an essay, a song or even a lesson plan!".

"Write a song about dark matter in style of Kylie Minogue" might not be the first request that most people would try, but I wanted to see how it coped combining my two loves (physics and Kylie). Twenty seconds later it returned with:

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write a song about dark matter in the style of kylie minogue



(Verse 1)

In the depths of space, something's out of sight  
Mysterious force that eludes the light  
It's hard to see, but we know it's there  
A cosmic enigma beyond compare

(Chorus)

Dark matter, oh, dark matter  
The universe's greatest chatter  
It's invisible, but we can feel its pull  
A secret force that makes the cosmos full

(Verse 2)

Scientists have searched, but still, we find  
No evidence to prove it's in our mind  
A missing piece of the cosmic jigsaw  
It's not a planet or a wandering star

(Chorus)

Dark matter, oh, dark matter  
The universe's greatest chatter  
It's invisible, but we can feel its pull  
A secret force that makes the cosmos full

Well, if it can do that...what else can it do? If I can't live off the royalties for this smash hit...actually where does the copyright lie? This is a good point. Could I have got it to write my final year dissertation at university? Now places are getting software in place to detect this, and others are embracing it saying using AI is a good thing, as long as you quote it as source, like you would with any others. There is a short story [here](#) in the Guardian about that!

How will schools cope? Will tech savvy students outsmart their teachers? There was this tweet showing what a concern it might be.



BCS, The Chartered Institute for IT @bcs · Feb 23



Schools are unprepared for the impact of ChatGPT on teaching and learning !

62% of surveyed @CompAtSch teachers said chatbots like #ChatGPT will make it harder to mark students' work fairly 🗨️ [hubs.ly/Q01DbSF60](https://hubs.ly/Q01DbSF60)

#AI



On the flip side, could AI help frazzled teachers plan their lessons? I know there were, and please whisper this, times when I hadn't planned a lesson fully and going on to TES or STEM Learning to find a useful resource was frantically undertaken during the break before the lesson. Could I ask AI to plan something for me, especially if it's outside my specialism? Here's a snapshot of a section of lesson plan for 11 year olds on electricity.

Introduction:

1. Begin the lesson by asking students if they know what electricity is and where it comes from.
2. Allow them to share their thoughts and ideas, and then explain that electricity is a form of energy that comes from the movement of electrons.
3. Briefly discuss the different sources of electricity (coal, hydro, solar, wind, etc.)

Body:

1. Show pictures of different electrical appliances (such as a toaster, hairdryer, computer, and TV) and ask students to identify which ones they use on a daily basis.
2. Explain that electricity is used to power these appliances and ask students to share some other ways they use electricity in their daily lives.
3. Demonstrate how electricity can be generated by connecting battery cells and light bulbs with wires and bulb holders.
4. Have students work in pairs or small groups to create their own simple circuits using battery cells, wires, switches, and bulb holders.
5. If available, use a multimeter to measure the voltage and current in the circuits.
6. Discuss how electricity can be dangerous if not used properly and review some basic safety tips (such as not touching electrical appliances with wet hands, not overloading electrical sockets, and not playing with electrical cords).

Conclusion:

1. Review the main points covered in the lesson.
2. Distribute worksheets that ask students to label the different parts of a circuit and draw their own simple circuit.
3. Allow time for questions and further discussion.

I know there will be teachers out there who have pretty much taught this lesson from a purchased scheme of work, or even come up with these ideas themselves. It's an impressive piece of software in my eyes with lots of potential if used effectively. Personally I doubt I would get it to write me a scheme of work due to the variance of the students in front of me, and being able to adapt and change to their needs is a skill you learn as you gain experience in the classroom. I think it is useful for teachers as they begin their career, if just to ask questions like what misconceptions do students have about energy, or for help when students ask the ever present question of "Why do I need to know this, how will it help me in life?". When I asked it "What careers use specific heat capacity?" it came back with this:



The field of thermodynamics and heat transfer uses specific heat capacity as a fundamental concept. Professionals in this field may include:

1. **Mechanical Engineers:** Mechanical engineers use specific heat capacity to design and analyze the performance of various systems that involve heat transfer. This can include designing HVAC systems, engines, turbines, and other devices that use or generate heat.
2. **Chemical Engineers:** Chemical engineers also use specific heat capacity in the design and analysis of various processes that involve heat transfer. This can include designing reactors, distillation columns, and other equipment used in chemical manufacturing.
3. **Materials Scientists:** Materials scientists use specific heat capacity to study the thermal properties of materials, including how they respond to changes in temperature. This information is used to develop new materials with improved thermal properties, such as thermal insulation materials and high-temperature superconductors.
4. **Energy Analysts:** Energy analysts use specific heat capacity to model and analyze the performance of various energy systems, such as power plants and renewable energy systems. This information is used to optimize the efficiency of these systems and reduce energy waste.

Overall, professionals in various fields of engineering, physics, and materials science use specific heat capacity as a fundamental concept in their work.

So, whilst Chat GPT won't necessarily end the world with a nuclear dawn (thankfully), it's use in education going forward will be interesting to see. I look forward to seeing the developments in this field.