

TEACHER RESOURCE PACK

AI ACADEMY

LIVE & LIVESTREAM IN SCHOOLS



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LIVE-IN-SCHOOL PERFORMANCE TEACHER STEP-BY-STEP GUIDE

BEFORE THE PERFORMANCE:

TEACHER PREPARATION VIDEO: Watch the Teacher Preparation video, and share with all your teaching staff the link <https://vimeo.com/820365978>

TEACHER RESOURCE PACK: Please copy or email and distribute this pack to all relevant teachers PRIOR to the date of your incursion.

STUDENT NUMBERS: Please prepare IN ADVANCE the number of students attending so you can inform our Team Leader at the conclusion of the performance.

ON THE DAY OF THE PERFORMANCE:

SAFETY: Please ensure your school venue is clean and clear for the safety and wellbeing of both your students and the performers. To ensure we provide a COVIDsafe incursion to your school, our performers have been trained with appropriate procedures, and they are ready and able to attend to any school specific procedures you may require.

TABLE REQUEST: The performance will require one table of medium size. Please pre-set a table in the performance venue at least 40 minutes before the scheduled performance start time.

PERFORMER ARRIVAL TIME: Performers will arrive approximately 30 minutes before the scheduled performance start time. Please make sure the venue is clear to ensure we can setup and start on time.

START TIME: Please ensure students are lined up outside the performance venue 5 minutes before the commencement of the show to guarantee a prompt start. We are not able to work within your school bell times if the performance cannot start on time.

PERFORMANCE SPACE REQUIREMENTS: Access to power is required in the room so we can operate sound for the presentation.

ON THE DAY OF THE PERFORMANCE: (cont)

The performers require an area of approx. 5m x 5m for the staging area. Students should be seated in front of this stage area and can be on seats or sitting on the floor as long as a good view of the performers.

Please note: a small or medium sized room such as a multipurpose room or small hall is more effective acoustically and atmospherically than a large space such as a gym. Please make the performance area available at least 30 minutes prior to the commencement of the show so that the performers can prepare the space to start on time.

TEACHER PRESENCE: We request teacher presence and support for the performers at all times during the performance.

AFTER THE PERFORMANCE:

STUDENT NUMBERS: Please provide the total number of students that have attended the performance to our Team Leader before they depart your school.

EVALUATION: Go to PerformTeachers.com and click on the name of this program to evaluate and be in the draw to WIN \$200!

CLASSROOM ACTIVITIES: Share with teachers any of the classroom activities in this pack and use in your own follow up lessons.

STUDENT DIGITAL ACTIVITIES: Direct students onto our website **RESOURCES** page where they can access the digital games, videos, and downloadable student activities.

RESERVE A DISCOUNT & DATE FOR NEXT YEAR: Contact us and reserve a date NOW for National Science Week 2024 to lock in the **early bird special!**

PAYMENT: A tax invoice for the balance of payment will be forwarded to your school the day after the incursion. We have instructed our performers not to handle any money or financial issues. These should all be directed to our office. Please refer to your Booking Confirmation for details on pricing terms and conditions. If you require a copy, call our office on 1300 652 470.

MANY THANKS FOR YOUR ASSISTANCE AND SUPPORT!

LIVESTREAM PERFORMANCE TEACHER STEP-BY STEP GUIDE

BEFORE THE LIVESTREAM:

TEACHER PREPARATION VIDEO: Watch the Teacher Preparation video, and share with all your teaching staff the link <https://vimeo.com/730882080>

TEACHER RESOURCE PACK: Please copy or email and distribute this pack to all relevant teachers PRIOR to the date of your incursion.

PREPARE YOUR STUDENTS: Discuss the program with your students and explain to them about the upcoming Livestream program and content.

LIVESTREAM LINK: We will send you in advance an email with instructions and your private school login password to access your Livestream Event. Make sure to share with all staff and any students/parents who may be remote learning at home.

Before the day of your Livestream, review the Livestream **FAQ** and make sure to **TEST** your school connection in advance by visiting <https://performlivestream.com/troubleshoot>

ON THE DAY OF THE LIVESTREAM:

LIVESTREAM ACCESS: Your school contact teacher will have been emailed in advance your private school login password to access your Livestream Event. This will include all instructions how to access the Livestream. Make sure to share with all staff and students/parents who may be remote learning at home.

ON THE DAY OF THE LIVESTREAM cont:

START TIME: Ten minutes before your scheduled start time, go to PerformLivestream.com and enter your private school password which will take you directly to your Livestream performance.

AFTER THE LIVESTREAM:

EVALUATION: Go to PerformTeachers.com and click on the name of this program to evaluate and be in the draw to **WIN \$200!**

CLASSROOM ACTIVITIES: Share with teachers any of the classroom activities in this pack and use in your own follow up lessons.

STUDENT DIGITAL ACTIVITIES: Direct students onto our website **RESOURCES** page where they can access the digital games, videos, music and downloadable student activities.

ON-DEMAND RECORDING: You will receive an On-Demand recording of the Livestream Event. Share staff and students to re-watch and review year-round.

RESERVE A DISCOUNT & DATE FOR NEXT YEAR: Contact us and reserve a date NOW for National Science Week 2024 to lock in the **early bird special!**

PAYMENT: A tax invoice for the balance of payment will be forwarded to your school the day after the incursion. We have instructed our performers not to handle any money or financial issues. These should all be directed to our office. Please refer to your Booking Confirmation for details on pricing terms and conditions. If you require a copy, call our office on 1300 652 470.

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ABOUT THE COMPANY

Perform! Education is a multi award-winning educational production company and part of the largest global educational producers operating across Australia, New Zealand and the USA.

The company specialises in touring curriculum aligned, educational musicals, theatre and sketch comedy into schools and has been operating in Australia for twenty-two years. Each year we tour to over 300,000 students and in all, the company and its writers have toured our specialty educational programs to **over four million students** across the world.

In Australia, we tour an annual **Science Week In Schools** educational sketch comedy program in conjunction with National Science Week. Our **Science Week in Schools** program inspires students with the limitless fun and possibilities offered by **Science, Technology, Engineering & Maths** – while promoting how science impacts our everyday lives and future careers.

The **Science Week in School** performances, whether LIVE or LIVESTREAM, are **highly interactive** and feature comedic sketches, appealing and identifiable characters, loads of **comedy**, fun scientific facts and student interaction that captivates and engages all audiences from ages 10 to 15 years old (as well as their teachers!).

Question/Discussion is included which reinforces the learning outcomes, and this specially designed **Teacher Resource Pack** along with the **Digital Teacher Toolkit and Student Resources** offer a comprehensive selection of classroom exercises for both before and after the performance.

To find out more about **Perform! Education** or to contact the company, please log onto our website at **www.PerformEducation.com**

If you or any of your students would like to find out more details about our company please visit our website: **www.PerformEducation.com**



ABOUT THE PROGRAM

AI is the future of STEM!

It's never been more important to be knowledgeable on what makes AI accessible from coding to innovation to technology.

AI Academy celebrates the **2023 National Science Week** school theme ***Innovation: Powering Future Industries!***

The more we know about how powerful AI can be, the more we can solve problems in everyday life. Becoming familiar with AI innovation in industry and science, as well as its (sometimes unintended) consequences, will make students better prepared for the advances in technology, and the ways in which STEM is leading our future study and career pathways.

The first goal is to explore:

- **Coding is useful and powerful**
- **Innovation drives technology**
- **Technology advances our lives**
- **How AI impacts our future**

The second goal is to make your students laugh so hard that they forget they're learning!

LEARNING AREAS: Science, Design & Technologies, English and The Arts

GENERAL CAPABILITIES: Critical and Creative Thinking, Ethical Understanding, Personal & Social Capability, ICT Capability, Literacy

CROSS CURRICULUM PRIORITIES: Sustainability

THEMES: Innovation, Sustainability

The show consists of **comedic and interactive science sketches**, introducing crazy characters and relatable situations, delivered by our **Actor/Educators**. Student audience and volunteers become part of the action, and are encouraged to offer suggestions that the actor will incorporate. The result is that students get to have input in the show, while watching and learning!



SCENE BREAKDOWN - LIVE

SKETCH 1 – CODING IS USEFULL AND POWERFULL

Gigi and student volunteer enter the DeltaTECH boardroom to pitch their groundbreaking app, boasting artificial intelligence that takes coolness to the next level. Will their presentation on AI, machine learning, coding, and algorithms win over high-powered exec Royce and establish them as the rising stars of app development?

SKETCH 2 – INNOVATION DRIVES TECHNOLOGY

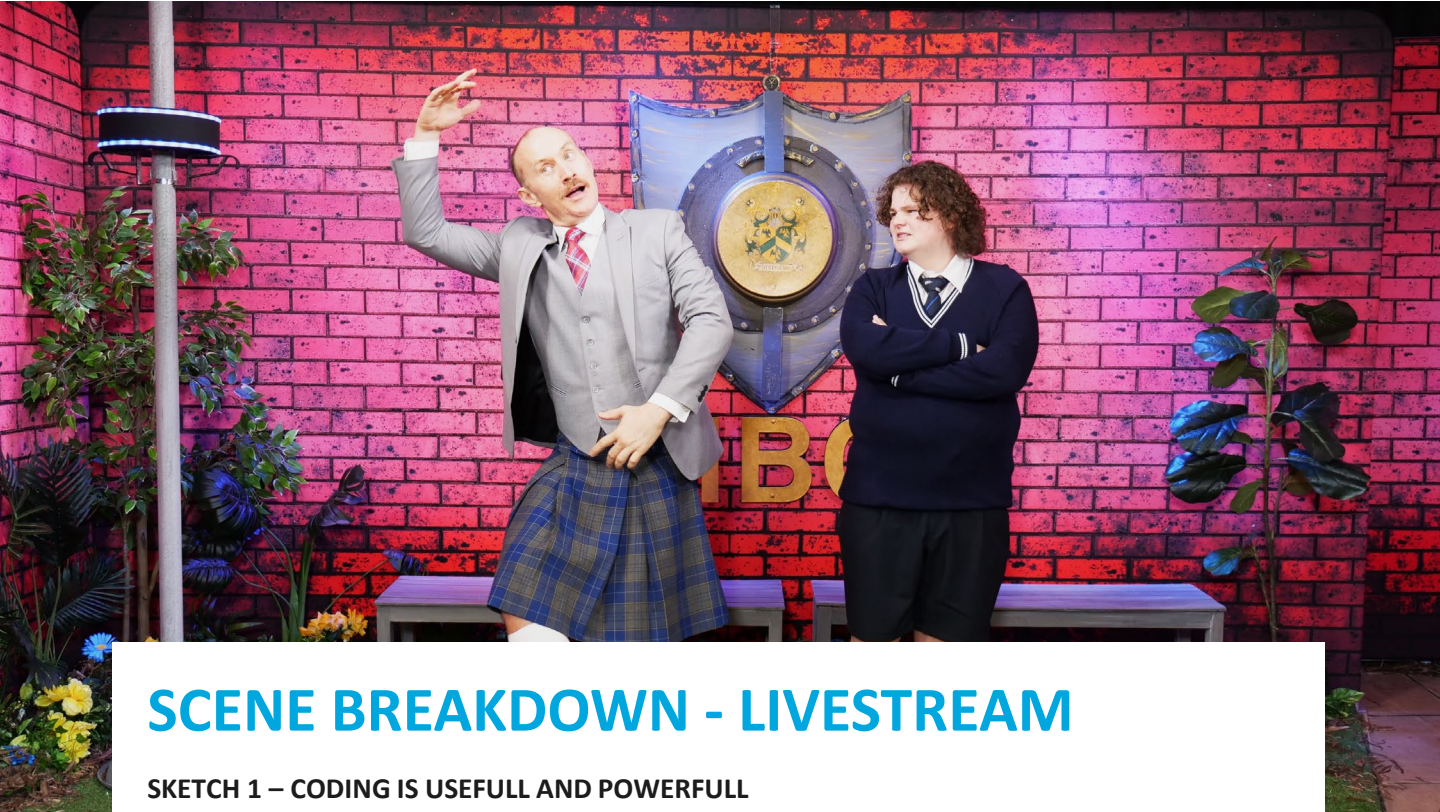
It's the school science fair and the competition is running hot! Kirby thinks his AI food robot played by a student volunteer is going wow the judges, but Val isn't so sure. Kirby must convince Val that his robot is the real deal and together they explore how technological innovation like Artificial Intelligence is driving technology towards a bright future.

SKETCH 3 – TECHNOLOGY ADVANCING OUR LIVES

Get ready for the ultimate showdown on Australia's favorite game show, Future Earth! Watch as a student volunteer goes head-to-head with carry-over champ Sheryl to prove who knows the most about Artificial Intelligence. From predictive text and virtual assistants to biometric security and AI robots revolutionizing the workplace, this captivating sketch explores how Artificial Intelligence is propelling our lives forward.

SKETCH 3 – HOW AI IMPACTS OUR FUTURE

Year 9 student Nicholas is bewildered by his Saturday morning detention with Principal McShoulderpads. When he learns that Principal McShoulderpads' AI assistants Malcolm, Dougall and Wee Jock, have mistakenly assigned detention to anyone not wearing tartan, Nicholas sheds light on the unintended consequences of AI exploring the critical issues of bias and discrimination that emerge when AI systems mirror the cultural biases of their creators.



SCENE BREAKDOWN - LIVESTREAM

SKETCH 1 – CODING IS USEFULL AND POWERFULL

In a DELTA-TECH corporate boardroom, high powered execs Royce and Lisa are interrupted by the arrival of 14-year-old Gigi. She is there to pitch her innovative app, 'Quip', which uses artificial intelligence that 'helps make you more cool'. Can her presentation about AI, machine learning, and coding win over the tech giants and establish her as the next up-and-coming app developer?

SKETCH 2 – INNOVATION DRIVES TECHNOLOGY

In the not-too-distant future, technophobe Andrea is late for her weekly book club at the library. Reluctantly hopping into a driverless rideshare car, her worst nightmare comes true as she finds herself a passenger in an autonomous self-driving car called Artie. But through lively conversation, the cheeky Artie is able to challenge Andrea's fears and biases, forcing her to reconsider the benefits of innovation and AI for our future.

SKETCH 3 – TECHNOLOGY ADVANCING OUR LIVES

Presented by our live actor/educator host, students will participate in real real-time quiz as they learn how AI is propelling our lives forward from predictive text and virtual assistants to biometric security and AI robots revolutionizing the workplace.

SKETCH 4 – HOW AI IMPACTS OUR FUTURE

Year 9 student Nicholas is bewildered by his Saturday morning detention with Principal McShoulderpads. To his surprise, he learns that Principal McShoulderpads has recently engaged an AI assistant named WeeJock, who has mistakenly assigned detention to anyone at the school who is not wearing tartan! Seizing the moment, Nicholas sheds light on the unintended consequences of AI exploring the critical issues of bias and discrimination that emerge when AI systems like WeeJock mirror the cultural biases of their creators.

LIVE QUESTION TIME & POST- PERFORMANCE VIDEOS

Here the actors will recap the major points in the performance and quiz the audience on some facts about **Artificial Intelligence** and **STEM**. It's also an opportunity, if time permits, for the students to ask questions of the actors and open up discussion to be taken back to the classroom. The post show question time, in conjunction with this Resource Pack and the Digital Activities, is designed to extend the theme by encouraging students to investigate further and make **STEM** something they see in everything they do each day.

POST INCURSION

FURTHER CLASSROOM ACTIVITIES

Visit our website resources at:

TEACHER TOOLKIT:

<https://www.performeducation.com/sw-aus-teacher-toolkit>

STUDENT RESOURCES:

<https://www.performeducation.com/sw-aus-student-activities>

To find further resources and find:

- [Post-Performance Student Quiz to 'show what they know'](#)
- [Digital games](#)
- [Additional educational videos with Actors, Writer and Director](#)
- [Printable downloads](#)

THE NATIONAL SCIENCE WEEK RESOURCE BOOK

Download the **National Science Week Teacher Resource** on our website at:

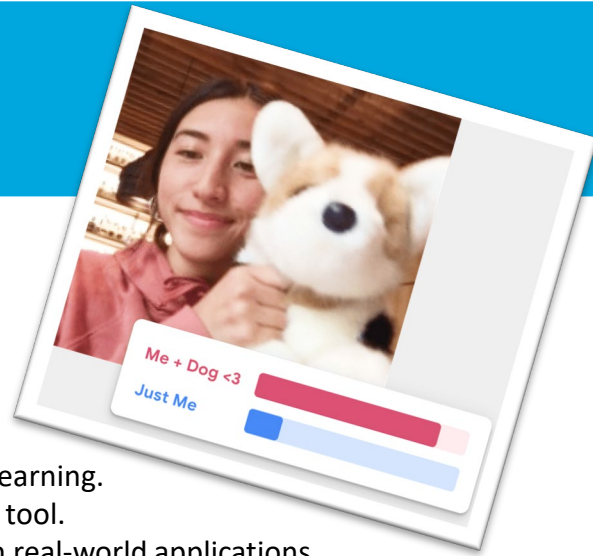
<https://www.performeducation.com/sw-aus-teacher-toolkit>



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LESSON PLAN #1

TEACHABLE MACHINE



Years: 5 to 9

Learning Intentions:

- Understand the basic concepts of AI and machine learning.
- Gain hands-on experience with a machine learning tool.
- Develop an understanding of how AI can be used in real-world applications.

Time required: 2 hours

Teachable Machine:

<https://teachablemachine.withgoogle.com/>

Teachable Machine is a free web-based tool created by Google that allows anyone to build machine learning models without coding. Teachable Machine is a great educational tool for learning and teaching the basics of machine learning in a fun, hands-on way. Both students and teachers can use it to gain experience with training and applying machine learning models. It is safe to use and when you train the model no data is shared with any servers.

Introduction (20 minutes)

- Explain the concepts of AI and machine learning in simple terms.
- Review the applications of AI featured in AI ACADEMY.

Teachable Machine (20 minutes)

- Introduce Teachable Machine as a tool that allows us to create machine learning models.
- Show a demo of how Teachable Machine works. How to:
 - **Gather samples** <https://youtu.be/DFBbSTvtpy4>
 - **Train your model** <https://youtu.be/CO67EQ0ZWgA>
 - **Export your model** <https://youtu.be/n-zeeRLBgd0>

Hands-On Activity: Creating a Machine Learning Model (60 minutes)

- Guide students to create their own machine learning models using Teachable Machine.
- They can choose to create an image, sound, or pose project.
- Encourage them to experiment with different inputs and outputs.

Sharing and Discussion (20 minutes)

- Ask students to share their projects with the class.
- Discuss the potential uses of their machine learning models in real-world applications.

Curriculum Links:

Digital Technologies: Processes and Production Skills

Science: Science as a Human Endeavour: Use and influence of science

General Capabilities: Literacy, Critical and Creative Thinking, ICT Capability

LESSON PLAN #2

AI & SUSTAINABILITY

Years: 5-9

Time required: 120 mins or multiple lessons.

Learning intentions:

- Understand the role of AI in solving real-world sustainability problems.
- Apply creative thinking to design an AI solution for a given sustainability problem.

Introduction (5 minutes)

- Review the concepts of Artificial Intelligence (AI) and Machine Learning (ML)

Explore (15 mins)

- Explore how AI and ML are being used to solve real world problems. Introduce SPARK and discuss the problem, solution and the impact it has on sustainability.

SPARK is a computer application developed by the CSIRO which uses AI to simulate and predict the path and extent of Bushfires. Spark uses weather and geographical data to predict the rate and direction at which a fire spreads, providing emergency management authorities with vital information to reduce risk, and protect people and the environment. Review the CSIRO article and watch their video on SPARK. <https://blog.csiro.au/spark-of-hope-in-australias-bushfire-crisis/>

Problem-Solving (60 minutes more)

- Divide students into groups and present them with a unique sustainability problem:
 - **Water Conservation:** Australia is the driest inhabited continent on earth, how can we use AI to manage and conserve water more effectively?
 - **Waste Management:** Australia generates approximately 67 million tonnes of waste per year. How can AI help in reducing, managing, and recycling waste?
 - **Biodiversity Loss:** Habitat loss, pollution, and climate change are causing a rapid decline in biodiversity. How can AI help protect and restore Australia's biodiversity?
- Students brainstorm and design an AI machine to solve one of the given problems. They should consider machine functionality, how it uses AI, and how it addresses the sustainability problem.

Presentation (30 minutes)

- Each group presents their AI machine design to the class

Conclusion (10 minutes)

- Summarise the lesson, highlighting the potential of AI in addressing sustainability issues. Students are encouraged to think about other ways AI could be used to solve real-world problems.

Curriculum Links:

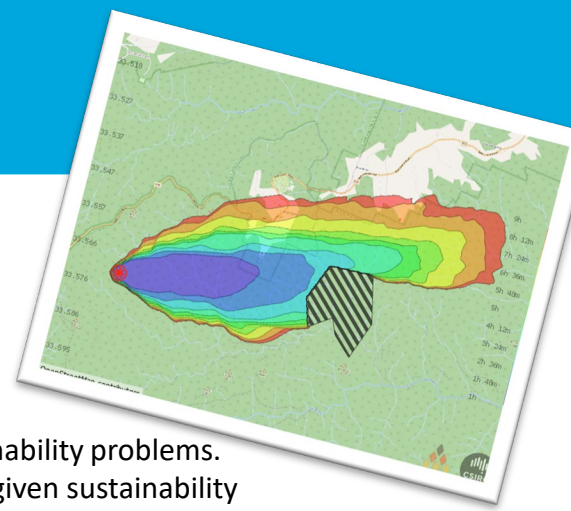
Digital Technologies: Processes and Production Skills

Science: Science as a Human Endeavour: Use and influence of science

Geography: Geographical Knowledge and Understanding

General Capabilities: Literacy, Critical and Creative Thinking, ICT Capability

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LESSON PLAN #3

EVALUATE ChatGPT 3.5

Years: 5 to 9

Topic: Physics, Technology, Innovation

Learning Intentions:

- Understand the capabilities and limitations of ChatGPT.
- Analyse reliability, biases, inaccuracies, and ethical concerns associated with AI-generated content.
- Reflect on the impact of AI language models on communication, information access, and critical thinking.

Introduction (10 minutes)

- Introduce ChatGPT as an AI language model that uses machine learning to generate text and facilitate conversations.
- Explain that ChatGPT has certain limitations and potential drawbacks that need to be critically examined.

Exploring ChatGPT (15 minutes)

- Allow students to engage with ChatGPT individually or in pairs, generating responses and evaluating them while taking notes on any limitations and concerns they observe.

Evaluating Credibility (10 minutes)

- Examine the credibility and reliability of information generated by ChatGPT.
- Introduce the concept of fact-checking and critical evaluation of AI-generated content.
- Discuss topics where AI language models could provide misleading or inaccurate information: Historical Information, News and Current Events, Legal Advice.
- Discuss the importance of cross-referencing information, seeking multiple sources, and verifying claims.

Analysing Limitations (15 mins)

- Students choose a topic to explore through ChatGPT.
- Instruct students to take notes on their interactions, then fact check these interactions using the internet.

Reflection and Discussion (15 minutes)

- Ask students to reflect on their discoveries with ChatGPT
- Encourage students to share their thoughts and insights regarding the limitations and ethical considerations associated with AI-generated content.

Conclusion (5 minutes)

- Review the key points discussed during the lesson, highlighting the limitations and implications of ChatGPT and similar AI language models.
- Emphasise the importance of critical thinking, fact-checking, and human judgment when interacting with AI-generated content.

Curriculum Links:

Science: Science as a Human Endeavour: Use and influence of Science
Technologies: Design and Technologies: Knowledge and Understanding
General Capabilities: Literacy, Critical and Creative Thinking, ICT Capability,
Personal and Social Capability



GLOSSARY

- **Artificial Intelligence:** When machines use human-like thinking to do something.
- **Code:** A language we use to communicate with machines.
- **Coding:** Writing instructions (code) for a program.
- **Algorithm:** instructions in code – like a recipe -that tells machines how to perform a specific task.
- **Program:** A group of instructions that tell a machine what to do.
- **Data:** Digital information.
- **Machine Learning:** When machines learn and improve from examples and experiences.
- **Innovation:** Making a connection between two objects or ideas. A new way of doing something.
- **Invention:** Creating something that has not existed before
- **CSIRO:** Commonwealth Scientific and Industrial Research Agency – the Australian government agency responsible for scientific research.
- **Technology:** The tools, skills and methods used to make things or get things done, to make our lives easier.
- **STEM** Science, Technology, Engineering and Maths
- **Bias** A tendency to prefer one person or thing to another.
- **Misinformation** False information that gets shared, often through ignorance.
- **Disinformation** False information shared in a calculated and knowing way.

USEFUL WEBLINKS

- **National Science Week Schools**

<https://www.scienceweek.net.au/schools/>

- **National Science Week Resource Book of Ideas**

https://www.scienceweek.net.au/wp-content/uploads/2023/07/Innovation_Resource_Book_Web.pdf

- **CSIRO Education and Outreach**

<https://www.csiro.au/en/education>

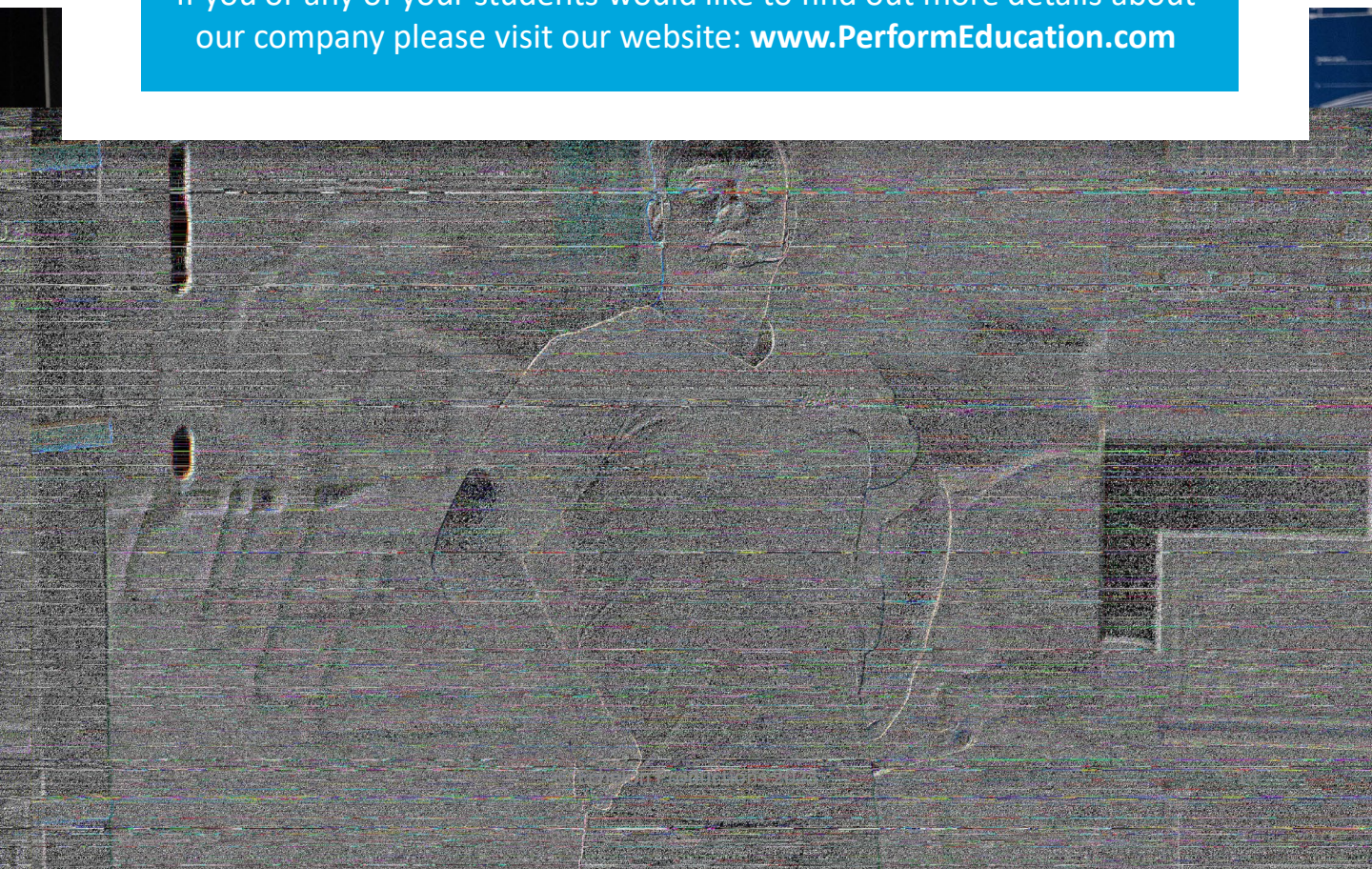
- **AI at CSIRO**

<https://www.csiro.au/en/research/technology-space/ai/>

- **Digital Technologies Hub – Artificial Intelligence** - access additional FREE resources:

<https://www.digitaltechnologieshub.edu.au/teach-and-assess/classroom-resources/topics/artificial-intelligence/>

If you or any of your students would like to find out more details about our company please visit our website: www.PerformEducation.com



PUZZLE SOLUTIONS

Primary Word Find Solution:

S G D U V T Z T S R P N B G T V K J Y R
V I M M K O M W J O I M Z H B W L F Q H
Z W Y E A C L C W N X L I L X D U T F K
N M H I K X M X G W L G Q J J T H K N T
X J R M T G E I S C A H G G L C Y S R D
C A T Y Y Q T H M A K V Z **C O D E** J F P
F G U I H Z W F **C** N S D E Z B R O G P V
Z I S Z A K O F **S** R R G A V F Y Q D F C
H F O R Y C **D** **I** I J O Y C Y Z D J F Z Z
E A C W L W **A** **N** R P V K Z K Y V J M T O
K M C W L H **T** **V** **O** V W J B M V I **T** Z V Q
M B E O W D **A** **E** G Q P G F I U F **E** H A S
C P M S I B Q **N** M E J U K K B I **C** Z C Q
C D C D X B Q **T** K P S A X J J I **H** M T K
X N U L L A H **I** **N** **N** **O** **V** **A** **T** **I** **O** **N** Z Y V
H O O B K Q G **O** M A T S Q D B K **O** M E E
H G P E K N X **N** V F J I G I I P **L** G M U
K P L L X Q N N B E W J R D V W **O** D U E
L N N A H X F U J H S A V U Z A **G** N O I
I W C N G C Q S O I I Y A X S K **Y** L D X

CODE
INNOVATION

CSIRO
INVENTION

DATA
TECHNOLOGY

Primary Crossword Solution:

Across

- _____ is making a connection between two objects or ideas. (**Innovation**)
- _____ intelligence is when machines use human-like thinking to do something. (**artificial**)

Down

- Australia's national science agency known for its scientific research and innovation. (**csiro**)
- Science, Technology, Engineering and _____. (**mathematics**)
- Language that a machine can understand. (**code**)

PUZZLE SOLUTIONS

Secondary Word Find Solution:

H	M	H	V	E	O	D	S	Z	L	O	A	Z	X	K	E	L	A	Y	E
M	E	H	O	U	N	O	I	T	N	E	V	N	I	F	N	U	C	R	Q
D	U	B	G	U	B	I	A	L	G	O	R	I	T	H	M	S	H	F	G
C	Y	P	C	S	T	V	P	L	P	K	P	R	W	H	Q	P	Q	F	T
W	E	O	Q	E	E	A	A	H	F	T	I	H	L	O	N	J	O	Q	E
S	Q	T	R	J	X	B	P	C	H	N	I	D	Q	R	J	T	H	T	C
I	D	I	Y	T	M	W	O	G	V	T	F	D	I	U	V	B	Q	I	H
B	N	W	O	V	I	N	P	Q	J	P	L	H	A	Y	F	X	B	O	N
Q	E	T	R	P	B	I	U	M	X	T	L	S	C	E	M	C	B	O	O
R	J	H	R	W	R	V	W	W	A	Y	S	S	T	D	U	N	L	O	L
N	O	I	T	A	V	O	N	N	I	F	M	J	T	K	M	E	M	C	O
P	K	N	A	X	B	R	G	K	M	G	E	F	F	F	Z	U	Q	B	G
V	E	K	G	A	A	B	B	R	A	T	A	D	E	D	I	P	X	T	Y
C	B	B	Z	S	H	D	K	J	A	H	S	I	O	R	I	S	C	D	T
M	D	Z	K	A	X	Q	B	B	Y	M	B	J	O	C	R	Y	Z	H	G
L	T	M	V	C	I	M	Q	T	T	J	S	L	J	P	V	M	D	F	Q
A	Q	W	P	Z	M	A	C	H	I	N	E	L	E	A	R	N	I	N	G
A	U	C	U	Q	H	C	E	B	L	L	Q	Z	C	C	N	S	D	H	Q
U	N	P	Y	R	X	U	N	H	X	L	R	Q	L	O	P	C	J	U	O
N	P	J	R	Q	L	F	Z	J	D	S	O	Q	V	L	G	M	R	I	Z

ALGORITHM CODE CSIRO
 DATA INNOVATION INVENTION
 MACHINELEARNING PROGRAM TECHNOLOGY

Secondary Crossword Solution:

Horizontal

3. Programming language that a machine can understand. (**code**)
5. _____ is making a connection between two objects or ideas. (**innovation**)
7. _____ intelligence is when machines use human-like thinking to do something. (**artificial**)
8. _____ means creating something that has not existed before. (**invention**)
10. An algorithm is a set of _____ in code. (**instructions**)

Vertical

1. The tools, skills and methods used to make things or get things done, to make our lives easier. (**technology**)
2. Australia's national science agency known for its scientific research and innovation. (**csiro**)
4. When machines learn and improve on their own. (**machinelearning**)
6. Science, Technology, Engineering and _____. (**mathematics**)
9. A _____ is a group of instructions in code that tell a machine what to do. (**program**)