APPENDIX 2   MOD. Peace Machines Schools Project CURRICULUM LINKS

Suggestions for implementation in schools

The question "What could a machine for peace look like?" engages students in imaginative problem-solving and provides wonderful opportunities to hone skills around project-based learning and self-regulated learning, within **a range of subject areas** such as Arts, Design & Technology, Digital Technologies, English, HASS, Science, and others.

Peace Machines invites collaboration between students and the open-ended nature of the problem offers many possibilities for cross-disciplinary learning. It could, for example:

- work as a theme study in Year 6;
- bring together two learning areas such as HASS and Design;
- form the basis for a student's SACE Research Project, or serve as a pathway project at lower years;
- be run within an extra-curricular program (e.g. Tournament of Minds, STEM club).

Themes that could be explored in curriculum

Scarce resources	water, energy from the sun and other renewable resources, human-powered machines (bicycles)
Financial systems	universal basic income, crypto-currencies, inequity, slavery, global peace index vs GDP
Mindsets	light, sound/music, triggers, meditation, ethics, languages, worldviews, visualisation, hope, the Charter for Compassion.
Society	well-being, community, medicine, information and media
Security	jobs, personal safety, state safety, cybersecurity, surveillance, big data, stability, defence, healthy futures

Motivators	rewards, peace funds, positive news, mirror neurons, treat-based training
Science of peace	peace and conflict studies, peace scientists
Machines / Technologies	drones, surveillance technologies (submarines, CCTV), communication technologies, programming, peace robots, innovation

Peace Machines provides an excellent opportunity to address ACARA's cross-curriculum priorities and for students to develop general capabilities, including critical and creative thinking, personal and social competency, intercultural understanding, ethical understanding and literacy.

Possibilities in the curriculum – these just a start!

Design and Technology

	How *Peace Machines* could be incorporated	ACARA link
All year levels	Students engage in a design process, develop skills as designers and producers of a created design solution to the question: "What could a peace machine look like?" Involves various process and production skills, which can be explored across specialisations: e.g. materials and technology, food and hospitality, engineering and electronics.	*e.g.* *Years 3 & 4: Generate, develop and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (ACTDEP014)* *Plan a sequence of production steps when making designed solutions individually and collaboratively (ACTDEP018)* *Years 9 & 10: Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas (ACTDEP048)* *Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication (ACTDEP049)*

Digital Technologies

	How *Peace Machines* could be incorporated	ACARA link
Years 5 & 6	Investigate how data networks and transmission can be used to create peace. E.g. creation of a global filter to stop bullying online	*Examine the main components of common digital systems and how they may connect together to form networks to transmit data (ACTDIK014)*

English

	How *Peace Machines* could be incorporated	ACARA link
Year 4	Students write a procedure on how to build or operate their peace machine	*Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing test structures, language features, images and sound appropriate to purpose and audience (ACELY1704)*
Year 9	Create an interactive audio-visual presentation / video to explore and examine others' perspectives through created texts such as poetry, narrative, play scripts, etc.	*Use interaction skills to present and discuss an idea and to influence and engage an audience by selecting persuasive language, varying voice tone, pitch, and pace, and using elements such as music and sound effects (ACELY1811)*
All years	**Write a design statement (up to 150 words)** that informs the museum audience (age 15-25) about various features of the machine and how it functions to bring about peace.	Addresses requirements in the Creating Texts substrand of the Literacy strand of the *Australian Curriculum: English*.

HASS

	How *Peace Machines* could be incorporated	ACARA link
Year 3, Year 5 HASS	Encourage students to engage in inclusive decision-making throughout the process of building their Peace Machine. E.g. in suggestion of ideas, casting votes on various features of the machine: what powers the machine, it's colour, it's name.	Year 3: *The importance of making decisions democratically (ACHASSK070)* Year 5: *Work in groups to generate responses to issues and challenges (ACHASSI102)* *Use criteria to make decisions and judgements and consider advantages and disadvantages of preferring one decision over others (ACHASSI103)*
Year 7 Geography	Water scarcity is recognised as one of the major threats to regional peace in the future. https://www.theguardian.com/environment/2018/mar/19/water-shortages-could-affect-5bn-people-by-2050-un-report-warns How could a system or machine be put in place to manage this resource, to foster positive relations between nations, while taking into consideration environment, economic and social factors? (See also Year 7 Science)	*The nature of water scarcity and ways of overcoming it, including studies drawn from Australia and West Asia and/or North Africa (ACHGK040)*
Year 10 History	Explore the effectiveness of peace and security initiatives and explore how these could be improved upon or modified to create peace.	*Overview content for the Modern World and Australia includes the following: continuing efforts post-World War II to achieve lasting peace and security in the world, including Australia's involvement in UN peacekeeping (ACOKFH021)*

Science

	How *Peace Machines* could be incorporated	ACARA link
Year 4 or Year 7	Students design/construct a prototype for a peace machine using simple machines (levers, pulleys etc) or more complex combinations of these.	*Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)* *Changes to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object (ACSSU117)*
Year 6	Designs and ideas for Peace Machines can be communicated using techniques such as labelled diagrams, cross-sectional representations.	*Communicate ideas, explanations, and processes using scientific representations in a variety of ways, including multimodal texts (ACSIS093)*
Year 7 or Year 10	Water scarcity is recognised as one of the major threats to regional peace in the future. https://www.theguardian.com/environment/2018/mar/19/water-shortages-could-affect-5bn-people-by-2050-un-report-warns How can scientific understanding be used to develop a machine to help mitigate these tensions?	*Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable (ACSSU116)* *Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)*
Year 9	Explore the neurological and hormonal influences on emotions like attachment or empathy and design a machine to "train" or manipulate these internal systems to enhance peace.	*Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment (ACSSU175)*
Years 9 & 10	Design a micro-Peace Machine, drawing on advances in nanotechnology. This could be presented as a 2-D design or an upscaled 3-D model.	*People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (ACSHE194)* *Values and needs of contemporary society can influence the focus of scientific research (ACSHE230)*

	Adapt innovative energy transfer devices such as those used in transportation and communication to create a device for peace.	