MINORS & MISSILES
WEAPONS COMPANIES IN SCHOOLS
ISSUES FOR EDUCATORS
2021
MAPW.ORG.AU
LOCAL SUBSIDIARIES OF THE WORLD’S BIGGEST WEAPONS COMPANIES ARE USING STEM EDUCATION PROGRAMS TO INFLUENCE AUSTRALIAN CHILDREN’S ATTITUDES TO WEAPONS AND WAR

Weapons companies are sponsoring and directly delivering STEM (Science, Technology, Engineering, and Maths) education programs to primary school children, with the explicit intention of creating positive attitudes to careers in weapons development and production.

The proliferation of weapons is one of the greatest threats to peace in today’s world. The development, trade, and use of armaments undermines human security across the globe; nuclear weapons pose a grave existential threat to all humanity. The global weapons industry profits from war and insecurity, and is associated with corruption and human rights violations.

Our research shows major weapons companies seek to build positive brand recognition amongst Australian primary and secondary students, and attract the 'best and brightest' young people into a comprehensive talent pipeline.

The Australian defence industry - which includes the Australian Department of Defence as well as private weapons companies - seeks to shape the science, technology, engineering and mathematics eco-system in order to develop a workforce socialised to accept the development and deployment of war hardware and software as an essential, exciting, and rewarding career.

Many weapons company STEM programs promote and gamify skills that will be central to the next generation of offensive, intelligent, and autonomous weaponry - weaponry whose moral and legal implications are profound.

The intrusion of weapons companies into education is an issue for educators and young people, and for Australian society. Accepting a role for the weapons industry in schools contributes to the militarisation of our society - the belief that our political, ideological, economic, and social issues can and should be resolved with military solutions.
RESEARCH SUMMARY

Companies identified for this research are wholly-owned or local subsidiaries of weapons companies listed on the Stockholm International Peace Research Institute top 100 weapons companies global list; some are involved in the production of nuclear weapons.

Information about their participation in STEM education in Australia was gathered from public sources, such as defence news publications, company publications, education resources and STEM educational programs listed by the Australian Office of the Chief Scientist.

Links between the industry and schools exist in most states and territories. They are in the form of sponsorships, events, competitions, tours of industry premises, exhibitions at careers fairs and direct personal engagement between industry personnel and students and teachers. Engineers and other company representatives go into classrooms to engage with students. Northrop Grumman sponsors trips to the US for students and teachers.

Weapons companies did not respond to direct requests for information about their STEM education programs.

There are no national data or common metrics applied to industry interventions in STEM.

See page 06 for weapons company profiles and the complete list of sponsored programs.

THE FOLLOWING STEM PROGRAMS WERE AMONGST THOSE IDENTIFIED AS BEING DELIVERED OR WHOLLY OR PARTLY SPONSORED BY WEAPONS COMPANIES (SEE PAGE 6 FOR THE COMPLETE LIST):

2019 STEM DAY OUT
ABOVE AND BEYOND (QUESTACON)
ADVANCED MANUFACTURING INDUSTRY SCHOOLS PROGRAM
CODE QUEST
CONCEPT 2 CREATION
CREATIVITY IN RESEARCH, ENGINEERING, SCIENCE AND TECHNOLOGY (CREST)
CYBER TAIPAN
ENGINEERING IS ELEMENTARY
ENGINEERS IN THE CLASSROOM
FIRST LEGO LEAGUE
FIRST ROBOTICS COMPETITION
ME PROGRAM
NATIONAL ENGINEERING AND SCIENCE CHALLENGE
NATIONAL YOUTH SCIENCE FORUM
PORT ADELAIDE FOOTBALL CLUB COMMUNITY YOUTH PROGRAM
PORT ADELAIDE FOOTBALL CLUB POWER OF STEM PROGRAM
QUESTACON
ROBO CATS
ROBO GALS
SCIENCE ALIVE
SCIENCE ASSIST
SPACE CAMP (USA)
SPACE SQUAD
STEM CAMP (QLD)
SUBS IN SCHOOLS
VEX ROBOTICS CHALLENGE
VICTORIAN SPACE SCIENCE EDUCATION CENTRE

Northrop Grumman Space Camp SAAB Subs in Schools
Influencing young people to have a positive view of careers in the defence industry is consistently framed as a national security imperative. Without a secure ‘talent pipeline’ of young people skilled to develop and produce lethal hardware and software, the defence industry argues, Australia’s economy and sovereignty are at risk.

Weapons companies acknowledge they have an image problem amongst young people. To ensure a pipeline of employees, weapons companies are strategically creating positive brand association and influencing career choice through a continuum of student engagement and incentives from primary school through to university.

Lockheed Martin, Northrop Grumman, Boeing, Thales, Raytheon, and BAE systems are all engaged in partnerships with various leading Australian universities in research, scholarships, industry placements, and other career opportunities.

Many of these partnerships focus on the development of next-generation weapons like hypersonics, long-range and smart munitions, artificial intelligence, and autonomous systems. These weapons – characterised by their harm to noncombatants, distance from actual killing, abstraction of human targets, and automation of life-and-death decisions – have profound moral and legal implications.

Private defence industry companies benefit from a bespoke national skills and training strategy funded from $200 billion committed to defence over the decade to 2028-29.

In April 2019, the government announced as part of its budget a raft of measures to support defence industry, including the implementation of the Defence Industry Skilling and Science, Technology, Engineering and Mathematics (STEM) Strategy, “to meet anticipated workforce and skills demand over the next decade”. School engagement and career pathways programs are key to the strategy.
There are no equivalent strategies to support STEM skilling or career pathways in fields critical to our survival and well-being – such as renewable energy, water and food security, or public health.

The defence industry is also the winner in Research and Development. Investment in R&D, as a percentage of GDP, has been in decline in Australia since 2012. “Defence and security”, using the term in its most narrow military sense, receives the lion’s share of the dwindling pool of public R&D investment.

Little scrutiny is applied to the defence industry’s claims to provide the best employment opportunities for young people, and to bear the greatest risk of a decline in student engagement with STEM. There is scant evidence that public investment in military industries generates significant domestic employment opportunities. Indeed, there are other industries that can generate more jobs – and greater social benefits – with lower public investment.

The weapons industry requires young people to be not only skilled in STEM but socialised to regard wars as inevitable, and the industry as a force for good.

Many weapons companies supply children with images of exciting cutting-edge research, whilst obscuring the human cost of its uses. BAE Systems UK STEM Roadshows distributes educational resources asking children as young as four to consider “battlefield advantages” of tanks and other hardware. French company Thales sponsors UK science fairs, providing a missile simulator for children’s entertainment.

The inurement of children to war and its consequences is not just a moral and social issue – it is counter to core educational values.
A positive future for young Australians can be established and maintained through peace and cooperation between and within nations; STEM skills can help us tackle our greatest societal challenges. Adequate funding and promotion of STEM careers in human health, climate change mitigation and environmental protection generally are far more crucial to our future security than development of weapons systems.

The intrusion of weapons companies into children’s lives is a moral and social issue that undermines educational values, distracts from the real problems the world faces, promotes militarism, and inures children to war and the human cost of the development, trade, and use of weapons.

ABOUT MAPW

Medical Association for Prevention of War – Australia Inc (MAPW) is a national association of medical professionals working to prevent the harms of war.

We educate and advocate for peace and disarmament. Addressing militarism as an enabler of war is one of our key missions. We also work for the abolition of nuclear weapons and are the founders of the 2017 Nobel Peace Prize Laureate, the International Campaign to Abolish Nuclear Weapons.

MAPW is a charity registered with the ACNC.

For more information about MAPW go to mapw.org.au
Sixth biggest weapons maker in the world
95% of total sales are arms
Arms sales in 2018 were $US21.2 billion
Charged with fraud in the UK
BAE Systems Australia pays no tax in Australia

BAE was listed in a submission to the International Criminal Court on 11 Dec 2019, spearheaded by the European Centre for Constitutional and Human Rights, seeking an investigation into possible aiding and abetting of war crimes by the Saudi-led coalition in Yemen.
Supplier of missile systems for delivery of nuclear weapons for USA, UK and France

Biggest weapons maker in the world
88% of total sales are arms
Arms sales in 2018 were $47.3 billion

In August 2018, a bomb made by Lockheed Martin struck a school bus in Yemen, killing 51 people, mostly children. Involved in nuclear weapons development, manufacture and delivery systems since the 1960s.

Lockheed Martin is a prime partner of the National Youth Science Forum (NYSF) and its flagship activity, a residential course in January each year for students entering Year 12.

Second biggest weapons maker in the world
29% of total sales are arms
Arms sales in 2018 were $29.1 billion
Products include fighter jets, cybersecurity products, surveillance suites, advanced weapons and missile defence.

Boeing sells F-15 fighter jets that are used for the bombing of Yemen, Apache attack helicopters and a wide range of other military gear to Saudi Arabia, but disclaims any responsibility for the consequences. Involved in manufacture of components for new B61 nuclear weapons to be deployed in five European countries by the USA.

BAE SYSTEMS

ME PROGRAM
2019 STEM DAY OUT
ADVANCED MANUFACTURING INDUSTRY SCHOOLS PATHWAY PROGRAM
FIRST LEGO LEAGUE
FIRST ROBOTICS COMPETITION
CONCEPT 2 CREATION
ADVANCED TECHNOLOGY INDUSTRY SCHOOL PATHWAYS PROGRAM

LOCKHEED MARTIN

ME PROGRAM
2019 STEM DAY OUT
NATIONAL YOUTH SCIENCE FORUM
CODE QUEST
THE ADVANCED TECHNOLOGY INDUSTRY SCHOOL PATHWAYS PROGRAM (TO 2019)
LOCKHEED MARTIN AUSTRALIA ENGINEERS IN THE CLASSROOM PROGRAM
REGIONAL DEVELOPMENT AUSTRALIA (RDA) HUNTER ME PROGRAM
LOCKHEED MARTIN AUSTRALIA TECHNOLOGY EXPO (TO 2018)
SCIENCE ALIVE! 2019 STEM DAY OUT IN SA
UAV CHALLENGE (TO 2019)

BOEING

ME PROGRAM
YMCA SPACE SQUAD
FIRST LEGO LEAGUE
FIRST ROBOTICS COMPETITION
ABOVE AND BEYOND EXHIBITION
AEROSPACE GATEWAY SCHOOLS PROGRAM
REGIONAL DEVELOPMENT AUSTRALIA (RDA) HUNTER ME PROGRAM
Third biggest weapons maker in the world
87% of total sales are arms
Arms sales in 2018 were $26.2 billion
Products include combat aircraft, drones, cyber security, land combat vehicles, anti-submarine systems, electronic warfare, and weapons for launch from air, land and sea based platforms.

As well as boosting Middle East weapons sales, Northrop Grumman has been heavily involved in the training and development of Saudi military personnel.

Tenth biggest weapons maker in the world
50% total sales are arms
Arms sales in 2018 were $9.5 billion
Products include warships, armoured vehicles, radar and other electronics, drones, rifles, remote weapons systems, and missiles including for nuclear weapons.

Thales is being prosecuted for bribing former South African President Jacob Zuma for ongoing protection from any investigation of a 1999 $2 billion arms deal.

In 2010, in conjunction with the French government, Thales was sentenced to pay $830 million to the Taiwanese government for bribing officials in an effort to secure contracts for the Taiwanese navy.

In 2004 the World Bank’s Integrity Unit blacklisted Thales from any of the World Bank’s projects for one year because of fraudulent practices.

SAAB is involved in the ongoing maintenance and development of nuclear armed missiles for the French nuclear arsenal. Produces submarines, military subsystems, weapons and next-generation aircraft.
Fourth biggest weapons maker in the world
87% total sales are arms
Arms sales in 2018 were $23.4 billion

Products include bombs, torpedoes, missiles, missile defence, electronic warfare, unmanned aircraft, and other munitions. Involved in missile production and development for the US nuclear arsenal.

ASC Pty Ltd is wholly-owned by the by Commonwealth and delivers shipbuilding and sustainment for Australian submarines and warships.

Naval Group Australia - a subsidiary of French company Naval Group – leads work on the controversial Future Submarine Program, the most expensive defence project in Australian history.

Airbus develops and manufactures military aircraft and unmanned Next Generation Weapon Systems.

In 2020 Airbus was ordered to pay €3.6bn in penalties to regulators in France, the UK and the US after admitting to bribery and corruption offences stretching back to at least 2008, as well as breaches of disclosure on US arms export reports.
References


Department of Defence, 2020, Defence Strategic Update.


REFERENCES


Page 10


LEGO images: Jordan Parmegiani | thelegocarblog.com | Universal Bricks | D-Town Cracka / Andy
MINORS & MISSILES: ISSUES FOR EDUCATORS
Copyright MAPW 2021 | Research by Lisa Coulthard | Report written and prepared by Medical Association for Prevention of War (Australia) | www.mapw.org.au