FORTRESS AUSTRALIA uncovers one of the most extraordinary chapters in Australia’s history - the brazen attempt by successive Australian governments to fortress the nation with atomic weapons. This groundbreaking film reveals a web of intrigue as it penetrates a murky world of diplomatic double-dealing and atomic espionage. Set against a backdrop of cold war paranoia and fear of Asian aggression, it explores the motives of the politicians, defence chiefs and scientists who set out to buy, then ultimately build, a nuclear arsenal.
FORTRESS AUSTRALIA is a film about choices in history—and specifically about choices that were made in cold-war Australia about nuclear weapons.

Why would Australia have wanted them? Why did it fail to get them? Is this an option that might still exist today? These are among the key questions that the film explores.

In raising these questions, the film reveals much about how nations make choices and shape their destiny. It also reveals how important it is that we understand the context of events and the forces at work in a society if we are to make sense of what happened in the past—and what might happen in our future.

In this guide, there are a number of suggested exercises and activities that teachers can use in the classroom.

- **Activity 1: Setting the scene**
- **Activity 2: Exploring the film**
- **Activity 3: Analysing the film as a historical source**
- **Activity 4: The ‘Cold War’ context**
- **Activity 5: What is ‘nuclear fission’?**

Teachers may choose to go straight to the analysis of the film, or choose the ‘context-setting’ and ‘concept-understanding’ activities that have been included here before viewing the film and exploring the story that is told there.

CURRICULUM LINKS

Fortress Australia can be used to explore aspects of

- History
- Australian Studies
- English
- Science
- Media Studies
- Politics
- Society and Environment,

learning strands include

- Discovering Democracy
- Civics and Citizenship

KEY LEARNING OUTCOMES

Study of the film can help students achieve these key learning outcomes that are commonly set in individual states’ and territories’ curricula:

- Describe significant events that have shaped Australia.
- Critically analyse the reasons for change or continuity.
- Appreciate the forces promoting and resisting change.
- Explain how causes, motives and consequences may be related.
- Evaluate the consequences for individuals, society and the environment of attempts to change political policies.
- Analyse representations of history.
- Reflect on the ‘lessons’ of the past and how they may relate to the present and the future.

Teachers will identify which of these are relevant to their own major state or territory curriculum document.

ACTIVITY 1

SETTING THE SCENE

IMAGINE THAT . . .

YOU ARE LIVING IN AN AUSTRALIA THAT HAS RECENTLY GONE THROUGH A WAR. IT IS NOW A FEW YEARS AFTER THAT WAR, BUT THE MEMORIES OF THE EXPERIENCE ARE STRONG.

During the war, northern parts of Australia were bombed, enemy warships and submarines laid mines in Australian coastal waters and there was even a submarine that entered Sydney Harbour and sunk some ships there. Many people believed and feared that Australia might even be invaded.

Australia’s full manpower and industrial production had to be used to fight the war. We relied on help from our big and powerful allies, and their troops and military equipment were essential in the ultimate victory.

The war ended when one of our allies developed a new and powerful bomb, and dropped it on the enemy’s homeland.

Post-war atomic weapons will become available to a few wealthy and determined nations—some are our allies, but all of them are far away. However, there has been political and social unrest in countries to our north, and one country has even claimed that it expects to have its own super-bomb within a few years, despite the huge cost in money, resources and expertise that its development involves.

You, as part of the Government of Aus-
both allies and enemies treated Australia with mistrust.

This groundbreaking film penetrates the murky world of atomic espionage and counter-espionage. It exposes KGB infiltration of crucial political offices, which almost thwarted Australia’s nuclear ambitions. It also brings to light the secret role of the Australian Atomic Energy Commission in the quest for nuclear weapons—in particular, the ill-fated Jervis Bay Nuclear Reactor Project, which could have enabled Australia to build as many as 30 nuclear weapons a year.

All this happened within living memory—many of you will have grandparents or even parents who remember the Cold War period well. Chances are, however, that they will not know much about the influences and forces that were at work on this issue, as these were secret. Under the 30 year public access rule, many of the

**ACTIVITY 2**

**EXPLORING THE FILM**

You are about to watch a film that exposes aspects of the way power and influence were exercised in Australia to make a choice about whether we should have nuclear weapons.

**SYNOPSIS TO FILM AUSTRALIA’S FORTRESS AUSTRALIA**

Set against a backdrop of Cold War paranoia and fear of Asian aggression, Fortress Australia explores the motives of the politicians, defence chiefs and scientists who set out to buy, then ultimately build, a nuclear arsenal.

From uranium exploration and guided weapons research to A-bomb tests on Australian soil, the film shows how Canberra aided both Britain and the United States in the hope of sharing their nuclear secrets. But it proved to be an extraordinary double game in which build as many as 30 nuclear weapons a year.

All this happened within living memory—many of you will have grandparents or even parents who remember the Cold War period well.

These are issues that you need to consider as you watch Fortress Australia.

**1 Discuss each option, and list the advantages and disadvantages associated with each option.**

**2 Then make your own decision: what will you do?**

This was actually the situation facing Australia between the end of the Second World War in 1945, and the Australian Government’s signing of a United Nations Nuclear Non-Proliferation Treaty in 1973.

What did our Government actually do? Do you think that this was the appropriate decision? Could these decisions be reversed in your lifetime?

These are issues that you need to consider as you watch Fortress Australia.

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documents revealing this information have only recently made available for public scrutiny.

To understand the story presented in Fortress Australia you may need to first investigate the Cold War context in which the events occurred (Activity 4), and possibly also the meaning of 'nuclear fission' (Activity 5).

The film traces the stages by which Australia moved from being a nation that wanted to have nuclear weapons in the 1940s to the 1960s, to one that signed an international treaty guaranteeing not to develop them in the 1970s. After you have watched the film, discuss these questions and ideas (see chart 2).

UNDERSTANDING THE CONTEXT

The film starts by setting up the context at the end of the Second World War in 1945.

1 What had happened to Australia during the War that influenced people's ideas about the defence of Australia?
2 How would having access to atomic weapons help Australia?

SHARING IN BRITISH NUCLEAR ABILITY

Immediately after the war, Australia tried to co-operate with Britain in order to get access to atomic weapons.

3 Why did Australia's security problems make this impossible?
4 How did Australia try to use access to uranium as an entry into atomic energy research?

TRANSFER OF NUCLEAR WEAPONS

5 How did Australia then try to use British access to Australian test sites as a way of getting access to nuclear weapons?

INSTABILITY IN ASIA

6 What developments in Asia increased Australian fears of isolation and vulnerability?

BUILDING OUR OWN WEAPON

7 What was meant by the idea of 'Fortress Australia'? In 1965, Australia took its first step towards building its own bomb when Prime Minister Menzies requested a report on the costs of producing nuclear weapons from the Atomic Energy Commission.
8 How would having a nuclear reactor at Jervis Bay promote our access to nuclear weapons? (That nuclear reactor was never built.)
9 Why did Australia sign the Nuclear Non-Proliferation Treaty and stop trying to become a nuclear-armed nation in the end?

REFLECTING ON KEY IDEAS

THE ROLE OF SCIENTIFIC AND TECHNOLOGICAL EXPERTS IN A DEMOCRACY

In the film, Ann Moyal states that Sir Phillip Baxter did not believe that democratic principles should apply to
decisions about nuclear technology. Moyal: ‘He said, “This is not a matter for the ballot box or for public participation, or even public discussion. Most people know nothing about the technology, therefore the expert must be trusted”’.

10 Do you agree?
11 What would be the benefits and the costs for a society in following this belief?

POWER AND INFLUENCE IN POLICY-MAKING

12 What sorts of factors were relevant in the final decision not to develop a nuclear reactor that could produce materials for nuclear weapons? (You might consider such aspects as the influence of individuals, economic considerations, attitudes towards allies, attitudes towards neighbours, political divisions, etc.)

INTERNATIONAL PRESSURES AND GLOBAL ‘GOOD CITIZENSHIP’

13 Why did Australia sign the Nuclear Non-Proliferation Treaty in the end?
14 Why do we stay a member?
15 Does that make us a good international citizen?

AUSTRALIA—A NUCLEAR FUTURE?

16 What certain conditions, according to ANU defence analyst Des Ball, might lead Australia to build a bomb?
17 If these conditions occurred, should Australia develop a bomb? Discuss the arguments for and against this proposal.

NATIONAL AND INTERNATIONAL MORALITY

At one stage in the film, Baxter says that because of its size and vulnerability, Australia has a duty to consider any weapon—including nuclear, chemical, biological—to protect its soldiers and civilians. All of these weapons kill civilians as well as military forces.

18 Do you think that any weapon is legitimate in war, or are there limits that need to be applied?

ORGANIZATIONS AND CHARACTERS

LIBERAL PARTY OF AUSTRALIA
The conservative party in Australia, it was in opposition from 1941 until 1949, and then in government until 1972. Strongly anti-communist. Strong ties to Britain and the USA.

AUSTRALIAN LABOR PARTY
In government during the Second World War and a strong supporter of the creation of the United Nations in 1945 to regulate international disputes. Many ALP members were sympathetic to the social reformist philosophies of communist parties.

BEN CHIFLEY
Labor Prime Minister from 1945 to 1949.

HERBERT EVATT
A brilliant lawyer, one of the founders of the United Nations after the Second World War, and leader of the Australian Labor Party in opposition between 1951 and 1960. An erratic character, suspected by conservative opponents of having strong sympathies with communism.
ROBERT MENZIES
Pro-British leader of the Australian Liberal Party and Prime Minister between 1949 and 1966.

WILLIAM McMACHON
Liberal politician, Government Treasurer and Prime Minister between 1971 and 1972.

GOUGH WHITLAM
Reformist Labor Party leader, he was Prime Minister from 1972 until dismissed by Governor-General Sir John Kerr in 1975.

HAROLD HOLT
Liberal Prime Minister between 1966 and 1967. Famous for his pro-American stance during the Vietnam War that Australia would go ‘all the way with LBJ’—the American President Lyndon Baines Johnson.

JOHN GORTON
Ex-Second World War pilot, Liberal Government Defence Minister, then Prime Minister from 1967 to 1971.

SIR PHILLIP BAXTER
British scientist who worked on the development of the original US atomic bomb, then migrated to Australia and headed the Australian Atomic Energy Commission. Firm believer in the value of nuclear weapons and nuclear power for civilian uses.

ARTHUR CALWELL
Leader of the ALP from 1960 to 1967. A strongly anti-communist Catholic. Opposed Australian involvement in the Vietnam War, which he saw as a civil war, not one that would spread communism.

AAEC
Australian Atomic Energy Commission. The organization responsible for the research, planning and implementation of Australian atomic energy and weapons involvement.

ASIO
Australian Security Intelligence Organisation set up to defeat spying, particularly by pro-USSR sympathisers and agents, within Australia.

ACTIVITY 3
ANALYSING THE FILM AS A HISTORICAL SOURCE

Film-makers make documentaries for a variety of reasons. They may wish to create an audio-visual record of events, to present ideas, interpret aspects of
| CHART 3 |
|-----------------|-----------------|-----------------|
| **ELEMENT**     | **EXAMPLE FROM THE FILM** | **CHART 3** |
| Narration – What does the narrator say? How does he or she say it? What is the argument being put forward? What is the tone adopted? | | |
| Language – Is it emotive? Are certain words used to influence your responses? | | |
| Music – How is it used? What ‘messages’ are created or reinforced by its use? | | |
| Sound effects – When and how are they used? What impressions do they create? | | |
| Images – What variety of images is used? Are certain images selected for their special impact? Are certain images repeated for impact? | | |
| Editing – How are images sequenced? Are there messages in the choice of footage used, or the order or frequency of their use? | | |
| Special effects – What impressions do the special effects create? | | |
During the Cold War period, there was great rivalry and hostility between the democratic capitalist world, led by USA, and the communist world, led by the USSR and including China.

During the Second World War, both the USA and its allies, and both Russia and China, were fighting Germany and Japan. At the end of the War, the victors occupied previously German- and Japanese-controlled territories. Each then supported and encouraged those areas in their economic and social recovery, but in doing so each provided its own system as the model. So the democratic and capitalist system was restored in western Europe, South Korea, South Vietnam and Japan; the communist system was supported in eastern Europe, North Korea, North Vietnam and China after 1949.

In effect, much of the world came to be dominated by one of the two systems, and each wanted to spread its influence over the other.

Various conflicts and clashes developed during this period, with the opposing powers often engaged in other people's wars and conflicts in their attempt to spread their own influence, and to counter the other system's expansion.

These conflicts sometimes led to war—most notably with the United States and associated troops under the United Nations banner fighting Chinese troops in North Korea during the Korean War. At times, also, the world has seemed close to nuclear war—most memorably when the United States and the Soviet Union seemed about to go to war over the nuclear arming of Cuba in 1962.

Various countries gained nuclear weapons after the USA—Russia in 1949, the UK in 1952, France in 1960 and China in 1964. Since then India and Pakistan have also developed nuclear weapons; Israel does not admit to having them, but is generally considered to have nuclear weapons capability; while South Africa used to have nuclear weapons capability but has dismantled its structures. Several countries are strongly suspected of still trying to develop a nuclear capability—including North Korea and Iraq.

However, no nuclear weapon has been used in a conflict since 1945.

life and/or to persuade others to agree with their ideas. A documentary may have an approach that is...

- Neutral—that is, presenting facts and arguments fairly, and letting people draw their own conclusions
- Partisan—presenting facts and arguments fairly, but supporting and promoting a particular interpretation of those facts and arguments
- Propagandist—presenting facts and arguments while promoting a particular interpretation

Into which of these categories do you think Fortress Australia fits?

1. There are various ‘tests’ that you can apply to make a decision. Use this table to help you analyse the film and decide (see chart 2).
2. To explore the bias/position you need to look carefully at the elements that are used to construct the film (see chart 3). How are these elements designed to influence your response to the film? Find and discuss examples from the film, then discuss your opinion about the film’s bias or position.

What is your conclusion—would you say Fortress Australia is a neutral, partisan or propagandist documentary?
About Uranium The basis of nuclear fission is the ore, uranium. Uranium is very dense, being the heaviest of all naturally-occurring elements. This means it contains large amounts of stored energy. There are 16 different forms (called ‘isotopes’) of uranium, with U235 being the one most suitable for the release of nuclear energy.

All matter is made up of atoms. An atom is made up of a nucleus and surrounding electrons. The nucleus is made up of protons and neutrons. In ‘atomic’ or ‘nuclear’ weapons, the explosive power comes from the changing of the atom or nucleus by an atomic reaction.

In this atomic reaction, an atom of uranium is bombarded with a neutron. This causes the uranium atom to split (called ‘fission’), giving off heat and radiation. It also releases two or three more neutrons, which in turn may cause other atoms to split, releasing more heat and radiation. Each of these releases neutrons, which split more atoms—and so the process goes on, with a massive amount of energy able to be released in a split second. This is called a ‘chain reaction’.

Look at this description of the effects of a small nuclear explosion (one megaton, or the equivalent of one million tonnes of the traditional explosive TNT) on a major city.

Within three seconds, a fireball would be formed with the intensity of heat of the inside of the sun. People in the open beneath the fireball would be vaporized—that is, simply disappear. Even seven miles away, fires would rage and people’s flesh would be charred with third-degree burns.

Within twelve seconds the blast waves, creating winds twice the speed of a hurricane, would smash buildings over a five-mile radius. Fires would be fanned by the wind and cars tossed about.

Within ten minutes, a great mushroom cloud about six miles in radius would be formed which would then shower radioactive dust. Some of this would be scattered over a wide area, depending on the wind.


The three major elements described above are the blast, heat, and spread of radioactivity.

Look back at the Film Australia synopsis of the film on page 4. Do you think it is a fair and accurate synopsis? If so, give your reasons. If not, suggest what changes might be made to it.

ACTIVITY 4
THE ‘COLD WAR’ CONTEXT

The ‘Cold War’ refers to the period from the end of the Second World War in 1945 to the collapse of the Berlin Wall in 1989 and the subsequent disintegration of the USSR (see chart 4).

ACTIVITY 5
WHAT IS ‘NUCLEAR FISSION’?

What does a nuclear weapon do?

Nuclear weapons kill people, destroy property and contaminate the environment.

Damage caused by nuclear explosions can vary greatly, depending on the weapon’s yield (measured in kilotons or megatons); the type of nuclear fuel used; the design of the device; whether it’s exploded in the air or at earth’s surface; the geography surrounding the target; and whether it’s winter or summer, hazy or clear, night or day, windy or calm.

Virtually everything is destroyed between the 12 and 5 psi rings. The walls of typical multi-storey buildings, including apartment buildings, have been completely blown out. The bare, structural skeletons of more and more buildings rise above the debris as you approach the 5 psi ring. Single-family residences within this area have been completely blown away—only their foundations remain. Fifty per cent of the population between the 12 and 5 psi rings are dead. Forty per cent are injured.

Any single-family residences that have not been completely destroyed are heavily damaged. The windows of office buildings have been blown away, as have some of their walls. Everything on these buildings’ upper floors, including the people who were working there, is thrown onto the street. Substantial debris clutters the entire area. Five per cent of the population between the 5 and 2 psi rings are dead. Forty-five per cent are injured.

Residences are moderately damaged. Commercial buildings have sustained minimal damage. Twenty-five per cent of the population between the 2 and 1 psi rings have been injured, mainly by flying glass and debris. Many others have been injured from thermal radiation—the heat generated by the blast. The remaining seventy-five per cent are unhurt.
2 Photocopy a map that shows a 400 km radius around the place where you live. Mark your place with an X. Draw a 400 km long pencil-shaped oblong (called a ‘plume’), with the X marking your home at the right-hand edge of the shape.

Assuming a wind speed of 25 kilometres per hour due east, and an impact point of a nuclear explosion at X, colour the plume to show which areas would be affected in the following ways:

DISTANCE: 50 KILOMETRES
Much more than a lethal dose of radiation. Death can occur within hours of exposure. About 10 years will need to pass before levels of radioactivity in this area drop low enough to be considered safe by US peacetime standards.

DISTANCE: 150 KILOMETRES
A lethal dose of radiation. Death occurs from two to 14 days.

DISTANCE: 250 KILOMETRES
Causes extensive internal damage, including harm to nerve cells and the cells that line the digestive tract. Also results in a loss of white blood cells and temporary hair loss.

DISTANCE: 400 KILOMETRES
No immediate harmful effects, but does result in a temporary decrease in white blood cells. Two to three years will need to pass before radioactivity levels in this area drop low enough to be considered safe by US peacetime standards.

(Source: www.hotstuffworks.com Go to ‘how nuclear bombs work’)

3. Comment on the effects the explosion would have on the area where you live.

The explosion described above would be the result of ‘nuclear fission’.

Nuclear fission is the process that splits a uranium atom, releasing enormous energy. This energy may be controlled to produce electricity, or it may be uncontrolled to produce heat and an explosion (see chart 5).

In nuclear energy, this release is controlled and the heat is used to create steam. This drives a turbine which in turn drives a generator to create electricity.

There were 435 nuclear power reactors in operation worldwide and 38 more under construction in 1998. About 16 per cent of the world’s electricity is generated in this way.

Nuclear-generated electricity plants are far more ‘greenhouse friendly’ than coal-fired equivalents, but their big disadvantage is that they produce dangerous wastes, particularly plutonium. Plutonium is highly poisonous until it breaks down—after 10,000 years! Until that time, it needs to be stored in geologically stable conditions.

Nuclear reactors also produce radioactive materials or isotopes that are used in

- medicine—in diagnosis and therapy, and for the sterilization of medical instruments,
- food preservation,
- industry,
- smoke detectors,
- measuring underground water supplies,
- archaeological dating, and many other uses.

The process of creating nuclear fission and nuclear materials occurs in a reactor. All nuclear reactors produce waste, including plutonium, the basic product needed to produce a nuclear weapon.

Australia has one nuclear reactor at Lucas Heights in Sydney. This is a small reactor, suitable for creating
small quantities of medical and industrial isotopes, but not for generating sufficient plutonium for nuclear weapons. A reactor that was used to generate electricity in commercial quantities would be able to produce such materials.

1. There are plans to build a new nuclear reactor at Lucas Heights to replace the existing one. Research this and develop an argument for or against the location of this nuclear reactor at this place.

SUBJECTS

( IN ORDER OF APPEARANCE )

SIR PHILIP BAXTER

SIR LENOX HEWITT
Permanent Head of Prime Minister's Department, Gorton Government, 1968 - 1971

WAYNE REYNOLDS
Author, Australia's Bid for the Atomic Bomb

JIM WALSH
Political Scientist, Harvard University

PROFESSOR MARCUS (MARK) OLIPHANT
Nuffield Laboratory, Birmingham, 1945 - 1950

PETER MORTON
Author, Fire Across the Desert

DES BALL
Defence Analyst, Australian National University

FRANK CAIN
Historian, Australian Defence Force

ALICE CAWTE
Author, Atomic Australia

BRIAN MARTIN
Author, Nuclear Knights

HAROLD MACMILLAN
British Prime Minister, 1957 - 1963

ALAN PARKINSON
Commonwealth Representative, 1993 - 1997, Maralinga Rehabilitation Project

ARTHUR CALWELL

ANDREW ROSS
Cabinet Secretary, Gorton Government, 1968 - 1971 and Military Analyst

ANN MOYAL
Historian of Australian Science

WILLIAM WENTWORTH

ARCHIVE SOURCES

ABC Radio Archives

ANSTO

Australian Broadcasting Corporation

Australian Labor Party

Australian War Memorial

Department of Defence

Department of Industry, Science and Resources

Film Australia (NFSA)

FilmWorld

Herald and Weekly Times Ltd

John Fairfax Holding Limited

National Archives of Australia

National Library of Australia

Rob McAuley Productions

ScreenSound Australia

UKEA

United Nations

US Department of Defense

US National Archives

US National Security Agency

FORTRESS AUSTRALIA

A Film Australia National Interest Program. Produced with the assistance of the Australian Broadcasting Corporation.

NARRATOR: Robin Williams

WRITER/DIRECTOR: Peter Butt

EXECUTIVE PRODUCER: Stefan Moore

YEAR OF PRODUCTION: 2001

DURATION: 55 minutes

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For information about Film Australia's programs, contact:
National Film and Sound Archive of Australia

Sales and Distribution | PO Box 397
Pymont NSW 2009

T +61 2 8202 0144 | F +61 2 8202 0101

E: sales@nfsa.gov.au | www.nfsa.gov.au

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