

Air Force Lesson and Activity Ideas

SOSE / HSIE / The Humanities / Society & History

- In groups, students to investigate ways in which the Air Force helps and supports people in Australia, and overseas, and then present their findings to the class.
- Students to complete the '**RAAF Base Amberley Crossword**' interactive. Printable versions of both crosswords are also available as student activity sheets.
- Students to complete the '**Australian Air Force Bases**' activity sheet.
- Students to research recent humanitarian and peacekeeping missions with which the Air Force has assisted. They then select one mission and write a short report on what happened, why the Air Force was involved, and what specific assistance it provided.
- The Air Force has a number of stated values that it expects its people to abide by. Students to research: www.airforce.gov.au to discover what these are. What values do you have in your class and school? Discuss why values are important. Students to complete the '**Values Are Important**' activity sheet.

Science / Design & Technology

- Students to complete the '**Air Force Aircraft**' activity sheet. Share these findings with the class.
- When pilots fly from one point to another, they prepare a flight plan before they take off. In groups, students to produce an aerial map of the school grounds. Each group is then to plot some points on the map (*waypoints*), and provide directions for other groups to follow to find these waypoints. The distances between waypoints can be stepped out (*using a scale of one step being equal to 1 kilometre*) and directions to each waypoint can be given as compass bearings. Successful navigation of the waypoints will result in students ending up at a specific location in the school grounds.
- When Air Force personnel are deployed on exercises or operations they may wear camouflage uniforms. Students to discuss why camouflage uniforms are important and then find an example of an Australian animal that uses camouflage as a protection mechanism.
- Students to complete the '**AP-3C Orion Check Flight**' interactive.
Students will discover how to raise and lower the nose of the aircraft, lower the flaps, raise and lower the undercarriage and much more.

Mathematics / Mathematics - Numeracy

- While the speed of cars is measured in kilometres per hour, aircraft use knots (*nautical miles per hour*) and Mach speed (*the aircraft's speed relative to the speed of sound*).
Students to research the origin of the term 'knot', which dates back to the days of early sailing ships. How was it first calculated?



- Students to calculate how long each of the aircraft listed below would take to fly from Brisbane to Perth (an approximate distance of 3,604 kms).

Example: For the purpose of this exercise, 'Mach 1' (the speed of sound) can be assumed to be approximately 1,238 km/h. To calculate the flight time for an F-111 strike aircraft to travel between Brisbane and Perth at its maximum speed:

- 1) multiply the speed of sound by the mach speed of the F-111 aircraft (Mach 2.4, or 2.4 times the speed of sound) to obtain its speed in km/h:

$$1,238 \text{ km/h} \times 2.4 = 2,971.2 \text{ (rounded to 2,971 km/h)}$$

- 2) divide the distance between Brisbane and Perth by the km/h speed figure:

$$3,604 \div 2,971 = 1.21 \text{ hours (i.e. approximately 1 hour and 12 minutes travel time)}$$

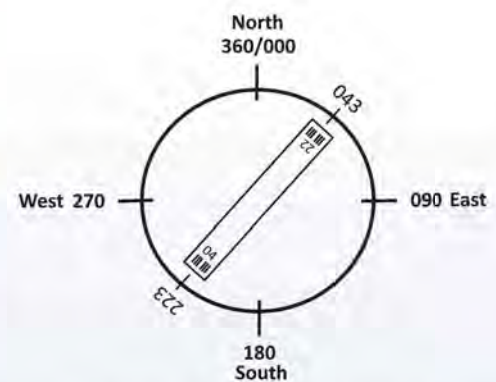
Aircraft

- Boeing 737 passenger flight at normal cruise speed (approx. Mach .785)
- RAAF AP-3C Orion maritime aircraft at normal cruise speed (approx. Mach .525)
- RAAF C130-H Hercules transport aircraft at normal cruise speed (approx. Mach .481)
- RAAF F/A-18 Hornet fighter aircraft at maximum speed (approx. Mach 1.8)
- C-17 Globemaster at normal cruise speed (approx. Mach .646)

Students to graph and compare the results.

- Airport runways are named according to their compass direction (to the nearest 10 degrees) in each of the two directions for which they can be used for takeoffs and landings, depending on the wind direction (aircraft take off and land into the wind).

For example, if an aircraft was taking off on a compass bearing of 043 degrees, the runway being used would be referred to as Runway 04, with the reciprocal direction of the same runway being referred to as Runway 22 (i.e. 180 degrees difference).

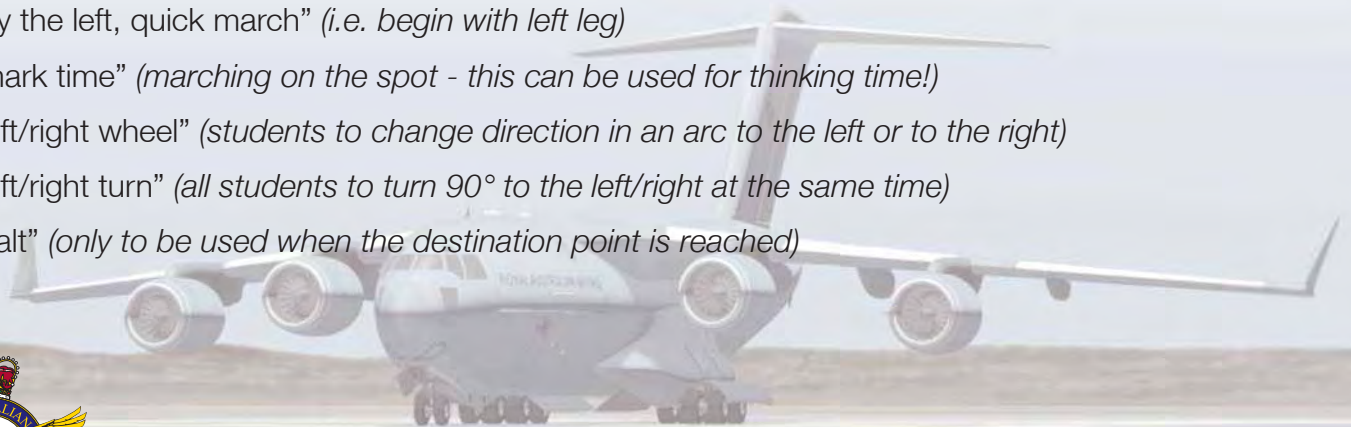


Example Compass Rose for Runway 04/22

Students to complete the 'Compass Rose' activity sheet.

Health & Physical Education / Personal Development / Health & Wellbeing

- Students to take turns at being a Military Skills Instructor and marching their classmates around obstacles to a particular point on the school grounds, using the following commands:
 - "by the left, quick march" (i.e. begin with left leg)
 - "mark time" (marching on the spot - this can be used for thinking time!)
 - "left/right wheel" (students to change direction in an arc to the left or to the right)
 - "left/right turn" (all students to turn 90° to the left/right at the same time)
 - "halt" (only to be used when the destination point is reached)



- It is important for Air Force personnel to stay fit and healthy. In groups, students to design an obstacle course (*with each group contributing one activity*). Have the whole class complete the obstacle course.

English / English Language / English - Literacy

- Students to complete the '**Air Force K/W/L Chart**' activity. Students to write down what they **K**now about the Air Force, what they **W**ant to know about the Air Force and then, following research, what they have **L**earnt about the Air Force.
- Students to write a short story or poem describing what they think it would be like to be a pilot flying one of the RAAF aircraft.
- Students to research interesting facts about the history of the Air Force Roundel and write a short report on it.
- Students to write a paragraph about the Air Force motto, "Per Ardua ad Astra" (*'Through Struggle to the Stars'*) and what the motto means to them.

The Arts / Creative Arts

- Students to plan an advertising campaign to promote attendance at an Air Force air show, including a key slogan.
- Students to create a cartoon character which would appeal to a younger audience and could be used to promote RAAF Base Amberley.
- Students to design their own 'supersonic strike aircraft' and label its special features. They can then present their aircraft in poster form to the class.

Languages / LOTE / English - Literacy

- There are many countries in the world that Australians consider to be our allies. Students to investigate some of the overseas equivalents of our Australian Air Force. What are their official names? (*e.g. the British Air Force is called the Royal Air Force*) What are their mottos and what do they mean? What main languages are spoken in these countries?

