



Australian Government
Department of Defence
Defence Materiel Organisation



Regional
Development
Australia
HUNTER



me
program

**ASSESSMENT NOTIFICATION
PHYSICS- PRELIMINARY
F-18 HORNET DVD WORKSHEET**



**DVD Worksheet Discovery Channel - Great
Planes: McDonnell-Douglas F-18 Hornet**

Weighting: 25%

Due Date:

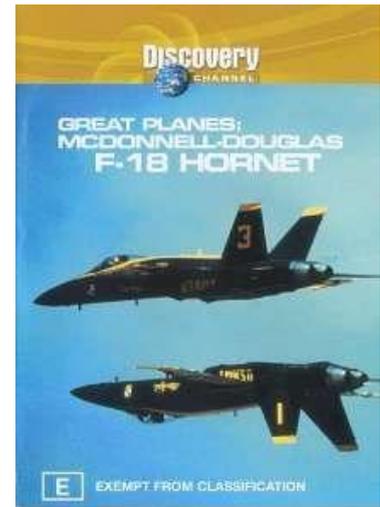
F-18 HORNET DVD WORKSHEET

Activity 1 – Collect Information:

Watch “Great Planes: McDonnell-Douglas F-18 Hornet” DVD, and answer questions found on page 1.

Activity 2 – Use Information:

Using the information on page 1 to answer higher order questions about: F-18 Hornet, its development, and its use.



F-18 HORNET DVD WORKSHEET

Activity 1 – Collect Information

1. During the 1950's, 1960's, 1970's and 1980's the United States (USA) was in a "Cold War" with the Union of Soviet Socialist Republics (USSR).

- a. Name three aircraft that the USSR built during the 1950's that caused the USA concern.

- b. What two weapons did the USA develop to counter these new advanced planes from the USSR?

2. With new weapons, there was a need for "Interceptor" (fast and high flying) aircraft.

Name the first widely used US interceptor.

- a. Which two interceptors were widely used by the USA next?

3. Circle the air defence strategy used by the USA and the USSR:

- a. USA – [more planes for cheap / less, more expensive planes]
b. USSR - [more planes for cheap / less, more expensive planes]

F-18 HORNET DVD WORKSHEET

4. Name the two planes that the USA bought to counter the air defence strategy of the USSR.

5. Name the two European built planes that played an important role in NATO (North Atlantic Treaty Organisation) air defence

(France) _____

(Sweden) _____

6. In the late 1970's, the F-16 Fighting Falcon was in competition with the F-17 Cobra for a major contract with the US Air Force.

- a. Which plane was the forerunner of the F-18 Hornet?

- b. Which plane won the contract?

7. The US Navy required a new plane to fly off of its aircraft carriers. The F-18 Hornet was selected for this role. Name three other countries that bought this aircraft.

F-18 HORNET DVD WORKSHEET

Activity 2 – Use Information

1. Explain the main modifications that had to be made to the F-18 to make it suitable for use on an aircraft carrier?

2. Describe how the challenge of a short runway is overcome on an aircraft carrier for:

- a. Take-off

- b. Landing

3. Why was the F-16 deemed unsuitable for use on aircraft carriers by the US Navy?

4. The F-18 Hornet is a capable fighter and a capable attack aircraft. Explain how this was particularly attractive to the US Navy.

F-18 HORNET DVD WORKSHEET

- 5. BAE Systems provides the Hawk Fighter (a small and low cost fighter) to the Royal Australian Air Force (RAAF) as a trainer for the F-18 Hornet. Explain the benefit of training pilots in the Hawk Fighter.

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TEACHER ANSWER SHEET

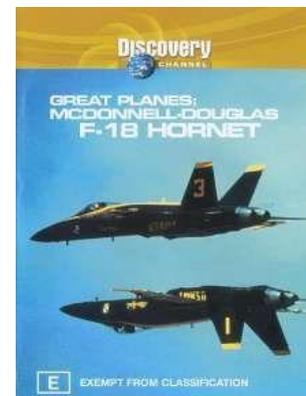
Discovery Channel - Great Planes: McDonnell-Douglas F-18 Hornet

Activity 1 – Collect Information:

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Activity 2 – Use Information:

Using the information on page 1 to answer higher order questions about: F-18 Hornet, its development, and its use.



F-18 HORNET DVD WORKSHEET

Activity 1 – Collect Information

1. During the 1950's, 1960's, 1970's and 1980's the United States (USA) was in a "Cold War" with the Union of Soviet Socialist Republics (USSR).
 - a. Name three aircraft that the USSR built during the 1950's that caused the USA concern. Badger, Bear, M4 Bison
 - b. What two weapons did the USA develop to counter these new advanced planes from the USSR? Air to Air Rockets, Guided Missiles
2. With new weapons, there was a need for "Interceptor" (fast and high flying) aircraft.
 - a. Name the first widely used US interceptor. F-4
 - b. Which two interceptors were widely used by the USA next? F-14 Tomcat, F-15 Eagle
3. Circle the air defence strategy used by the USA and the USSR.
 - a. USA – [~~more planes for cheap~~ / less, more expensive planes]
 - b. USSR - [more planes for cheap / ~~less, more expensive planes~~]
4. Name the two planes that the USA bought to counter the air defence strategy of the USSR. Star Fighter, F-5 Tiger
5. Name the two European built planes that played an important role in NATO (North Atlantic Treaty Organisation) air defence. (France) Mirage (Sweden) Dracon
6. In the late 1970's, the F-16 Fighting Falcon was in competition with the F-17 Cobra for a major contract with the US Air Force.
 - a. Which plane was the forerunner of the F-18 Hornet? F-17 Cobra
 - b. Which plane won the contract? F-16 Fighting Falcon
7. The US Navy required a new plane to fly off of its aircraft carriers. The F-18 Hornet was selected for this role.
Name three other countries that bought this aircraft. Canada, Australia, Spain

F-18 HORNET DVD WORKSHEET

Activity 2 – Use Information

1. Explain the main modifications that had to be made to the F-18 to make it suitable for use on an aircraft carrier? A reinforced, robust undercarriage, which included strengthened landing gear.
2. Describe how the challenge of a short runway is overcome on an aircraft carrier for:
 - a. Take-off a latch connected to the front wheels of the F-18, sits in a groove that runs the length of the carrier. On take-off, a sling mechanism accelerates the F-18 to take-off speed.
 - b. Landing an arrester cable (a cable that runs across the runway) catches a hook that is connected to the undercarriage of the F-18, quickly decelerating the aircraft to rest.
3. Why was the F-16 deemed unsuitable for use on aircraft carriers by the US Navy? The undercarriage was not robust enough to take the high accelerations of take-off with a sling-shot, and far too fragile to take the extreme forces of steep landing angles.
4. The F-18 Hornet is a capable fighter and a capable attack aircraft. Explain how this was particularly attractive to the US Navy. It was not necessary to have two different aircraft on the carrier. Every plane could be used in either scenario, increasing combat numbers.
5. BAE Systems provides the Hawk Fighter (a small and low cost fighter) to the Royal Australian Air Force (RAAF) as a trainer for the F-18 Hornet. Explain the benefit of training pilots in the Hawk Fighter. It is cheaper to maintain and to operate. This leaves more F-18 in standby for actual combat, whilst maximising the service life of the F-18.