AIRPORTS AND AIRFIELDS

BACKGROUND

BACKGROUND

KEEPING SAFE

Airports and airfields are exciting places. They can also be very dangerous places. When you visit an airfield you need to be safe and secure.

Activity link

"Keeping safe"

AIRFIELD COMPONENTS

There are lots of different parts to airfields and airports. These include:

- Runway
- Perimeter track
- Control tower
- Signal square
- Hangar
- Taxi-ways
- Apron
- Runway headings
- Cable dropping areas

Activity link

"Airfield and airport terms"

Answers:
Runway (A), Perimeter track (B), Control tower (C), Signal square (D), Hangar (E), Taxi-ways (F), Apron (G), Runway headings (H), Cable dropping areas (I).

Activity link

"Draw a map of an airport or airfield"

AIRPORTS

There are many commercial international airports within the UK and lots of other domestic or private airfields.

Many airports in the UK serve passengers for domestic flights within the UK, external flights to the rest of the world and it is also a hub for connecting flights to many countries as well. The UK is a relatively small country but it can take hours to drive from one end of the country to the other which is why domestic internal flights are popular from the smaller airports.

There are 20 large commercial airports in the UK, all of them have their own unique 3-letter code - for example the code for Leeds Bradford Airport is LBA.

Activity link

"Airport codes"

Answers:
London-Heathrow LHR, London-Gatwick LGW, Manchester MAN, London-Stansted STN, London-Luton LTN, Edinburgh EDI, Birmingham BHX, Glasgow GLA, Bristol BRS, Belfast-International BFS, Newcastle NCL, Liverpool LPL, East Midlands EMA, London-City LCY, Leeds, Bradford LBA, Aberdeen ABZ, Belfast-City BHD, Southampton SOU, Jersey JER, Cardiff CWL

Activity link

"Airport wordsearch"

Answers:

AIRPORT AND AIRFIELD HAZARDS

Airports and airfields are potentially dangerous places. Aircraft are large and powerful pieces of machinery so you should be aware of the dangers and hazards they present.

The principle upon which a jet engine works is to suck in large quantities of air, heat it up and then expel it at a very high speed. Because of the large amount of air being sucked in and expelled, and the very high pressures attained, the jet engine is probably one of the most dangerous hazards on any airfield. The areas covered by the blast from the exhaust and the intake of the air are large.

Activity link

"Airport hazards"

WARNING SYSTEMS TO KEEP AIRSPACE SAFE

Early detection systems

These are radar bases that collect information to protect the country from being attacked.

Radar

A system for detecting the presence, direction, distance, and speed of aircraft and ships. It works by sending out pulses of radio waves which are reflected off the aircraft or ship and sent back to the radar operators.

BACKGROUND

AWACS
(Airborne Warning and Control System)

Detects enemy aircraft and also ships by picking up their radar signals and emitters. The crew of the AWACS then sends the information through to the RAF via its data links and communication systems.

Activity link

"Warning systems"

MARSHALLING AIRCRAFT

Marshalling is used on the ground to move an aircraft through tight gaps or into its parking space on an airfield (known as a stand). It is a set of arm movements that allow workers on the ground to communicate with a pilot without having to talk to them (although a radio can be used at the same time).

Activity link

"Marshalling aircraft"

Answers:
(Left to right on page) Hold/stand by, Straight ahead, Stop, Move back, Start engines, Turn left, Turn right, Establish communications, Chocks inserted.

AIRPORTS AND AIRFIELDS

ACTIVITIES

ACTIVITY

KEEPING SAFE

Discuss with your teacher/RAF STEM Ambassador the rules for visiting an airfield and write the three most important rules here:

IMPORTANT RULES TO FOLLOW WHEN VISITING AN AIRFIELD:

1. .....
.....
.....

2. .....
.....
.....

3. .....
.....
.....

AIRPORTS AND AIRFIELDS

ACTIVITY

AIRFIELD AND AIRPORT TERMS
Can you match up the airfield and airport terms below to the correct description?

CONTROL TOWER

RADAR

APRON

SIGNAL SQUARE

TAXI-WAYS

PERIMITER TRACK

HANGAR

RUNWAY

RUNWAY HEADINGS

CABLE DROPPING AREA

Description:

A The area of the airfield used for takeoff and landing. Not all of these has a tarmac surface; grass is often used for gliders and light aircraft.

B The roadway around the outside of most military and some civil airfields. This is sometimes used as an aircraft taxi-way.

C The air traffic control centre of an airfield marked on the outside by a yellow board showing a black 'C'. If no air traffic control exists, get in touch with the senior instructor or member available.

D A square marked on the ground, usually near the control tower, containing details of operations and facilities at that airfield.

E A large 'shed' in which aircraft are kept.

F Grass or tarmac route between operational areas.

G Outside parking for aircraft when not in use.

H The direction expressed in terms of degrees (to the nearest ten degrees without the final nought) e.g. an east-west runway would be 'runway 27' and have the figures '27' marked on the eastern threshold; a west-east runway would be 'runway 09' and have the figures '09' near the western threshold, so as to be visible to an approaching aircraft.

I The area where a glider and paragliding or parascending launching cable will fall to earth after being jettisoned by the glider at, or near the top of, its climb. This could be a wide area, not necessarily just over the runway strip.

ACTIVITY

DRAW A MAP OF AN AIRPORT OR AIRFIELD

Draw an airfield map by thinking of the main features that might be present. Your drawing will be different depending on whether you choose to draw a small airport or an airfield with private leisure flights and gliders, a commercial airport, or an Royal Air Force base. Discuss with your teacher or RAF STEM Ambassador and find out about other important elements of an airfield that you can add in. Try to include as many of the features identified below. Can you think of any more to include?

INCLUDE AN AIRCRAFT

As part of your design, draw an aircraft that would use the airport or airfield. Label your aircraft to include its main features.

ACTIVITY

AIRPORT CODES
Can you match up the correct 3-letter airport code with the right UK airport?

Airport codes:

ABZ
BFS
BHD
BHX
BRS
CWL
EDI
EMA
GLA
JER
LBA
LCY
LGW
LHR
LPL
LTN
MAN
NCL
SOU
STN

AIRPORT	CODE? (WRITE IT HERE)
London-Heathrow	
London-Gatwick	
Manchester	
London-Stansted	
London-Luton	
Edinburgh	
Birmingham	
Glasgow	
Bristol	
Belfast-International	
Newcastle	
Liverpool	
East Midlands	
London-City	
Leeds Bradford	
Aberdeen	
Belfast-City	
Southampton	
Jersey	
Cardiff	

ACTIVITY

AIRPORT WORDSEARCH

Try to find the words below in the wordsearch box. Circle each word that you find. Why not compete with other students to find all the words in the quickest time!

AIR
AIRCRAFT
AIRPORT
ENGINEER
FORCE
HELICOPTER
PILOT
REDARROWS
RUNWAY
SPITFIRE
TOWER

E H C S M H S T I Q H S W P U
K H H F W A O U R P N K S G R
B R S N E W T E N G I N E E R
M I H B E A I R H W F C V W R
A S E R T W Z V L J Q O S N T
X S L S S N T G Q L B I Q Z B
U Z I X R Z P Y A Q W O E L R
R N C M O D Y C K Z P X A G T
S F O E R I F T I P S I V R F
U P P S W O R R A D E R O O L
V A T R J V U E R U S P R I M
T U E P I L O T K V R C J O O
A Z R Y A W N U R I E C X Q S
A I R C R A F T A C Q L C K P

WARNING SYSTEMS
Find out about these 3 ways of protecting airspace in the UK.

Scan this QR code to find out more about at least one of the warning systems pictured above.

DID YOU KNOW?
THE DIFFERENCE BETWEEN MAYDAY AND PAN PAN

INTERNATIONALLY RECOGNISED AS A DISTRESS CALL, THE MAYDAY CALL SHOULD ONLY BE SENT WHEN THE PERSON IN CHARGE OF AN AIRCRAFT CONSIDERS THAT THEY ARE IN IMMINENT AND SERIOUS DANGER OF LOSS OF LIFE OR AIRCRAFT. IN LESS SERIOUS SITUATIONS, YOU MAY CONSIDER ISSUING A PAN PAN CALL. THIS TELLS THE WORLD AROUND YOU THAT THE CALL IS URGENT. YOU HAVE A PROBLEM AND WOULD LIKE SOME ASSISTANCE BUT IT IS NOT A LIFE THREATENING EVENT.

ACTIVITY

AIRPORT HAZARD

Look at this busy airport map. Can you identify any hazards that might be present? Circle where they are and write them in the box below.

When you've done this, try to think of ways to make the hazards safer and share your ideas with your teacher or RAF STEM Ambassador.

AIRPORT HAZARDS:

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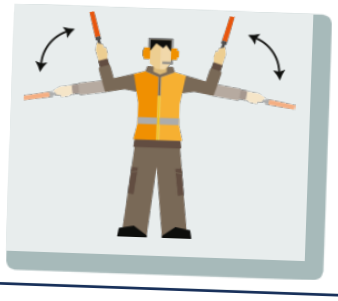
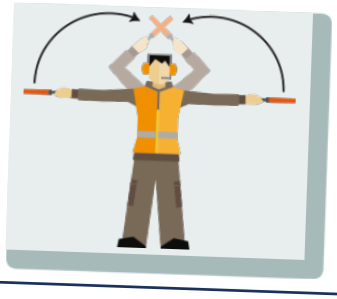
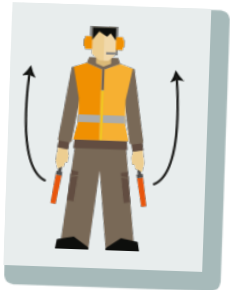
MARSHALLING AIRCRAFT

Standard signals are used by marshallers on airfields all over the world, which are set by the International Civil Aviation Organisation (ICAO). Carry out some online research work to find out what the marshalling signals below mean.

As a start, you could try this website - http://www.icao.int.







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ACTIVITY