



# SCOUT AIR ACTIVITIES VICTORIA

## Scout Air Activity Target Badge Explorer Level

Name: \_\_\_\_\_

Group \_\_\_\_\_ Date \_\_\_\_\_





**Notes & Instructions:**

1. Enter your name, group and date above
2. Staple pages together
3. All material in this worksheet will be covered at the Target Badge Day
4. Complete the pre-assignment worksheet

To achieve the Explorer Air Activities Target you must complete all of the requirements below:

**1. RECOGNITION**

1.1 Write down the type of each aircraft and their function and use.



	Type of Aircraft	Function/Use
	<p>.....</p>	<p>.....</p>
	<p>.....</p>	<p>.....</p>
	<p>.....</p>	<p>.....</p>
	<p>.....</p>	<p>.....</p>



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	<p>.....</p>	<p>.....</p>
	<p>.....</p>	<p>.....</p>



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1.2 Find out and list the specifications for the following 2 aircrafts:

Specifications	Aircraft 1	Aircraft 2
		
<b>Name of Aircraft</b>	<b>Airbus A380- 800</b>	<b>Piper PA28 Warrior</b>
<b>Manufacturer</b>	.....	.....
<b>Country of Origin</b>	.....	.....
<b>Main Purpose or Use</b>	.....	.....
<b>Example of Operators</b>	.....	.....
<b>Passengers/Crew/Payload</b>	.....	.....
<b>Wingspan</b>	.....	.....
<b>Length</b>	.....	.....
<b>Maximum take off weight</b>	.....	.....
<b>Normal Cruise Airspeed</b>	.....	.....
<b>Fuel Type</b>	.....	.....
<b>Operational Ceiling</b>	.....	.....
<b>Range</b>	.....	.....



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#### 2. WEATHER

a) Explain three elements of weather and the effects they have on:

- i) the flight performance
- ii) take off and landing of an aircraft or glider.

1. Effect:

- i) Effect on the flight performance

.....

.....

- ii) Effect on take off and landing of an aircraft or glider.

.....

.....

.....

2. Effect:

- i) Effect on the flight performance

.....

.....

.....

- ii) Effect on take off and landing of an aircraft or glider.

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.....

.....

3. Effect:

- i) Effect on the flight performance

.....

.....

.....

- ii) Effect on take off and landing of an aircraft or glider.

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(b) (i) Have a knowledge of weather pattern in your geographical area. Set out the type of weather you generally get in the following months:

**December to March:**

.....

**March to May:**

.....

**June to September:**

.....

**October to December:**

.....

(ii) PRE ASSIGNMENT- Prepare a seven day weather chart of the conditions in your area.

- With Cloud note whether cloudy
- Most of day/about 1/2 day/ very little/nil
- With Rain note whether None/Some/Alot
- With Temperature note maximum and minimum

Date	Cloud	Rain	Wind	Temperature

c) (i) What is the difference between "ground speed" and "air speed"?

Ground speed is .....

.....

Air speed is .....

.....

(ii) How does "ground speed" and "air speed" relate to headwinds and tailwinds?

.....

.....



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### 3. THEORY

a) Explain the principles governing the theory of flight.

a) (i) Explain what lift is:

.....

.....

.....

Lift of an aircraft is generated mainly by what part of the aircraft? .....

.....

a) (ii) Explain what drag is:

.....

.....

Induced drag is caused by :.....

.....

Parasite drag is caused by :.....

.....

Induced drag is greatest at:..... speed.

Parasite drag is greatest at:..... speed.

a) (iii) Explain what the angle of attack is:

.....

.....

.....

a) (iv) Explain what thrust is:

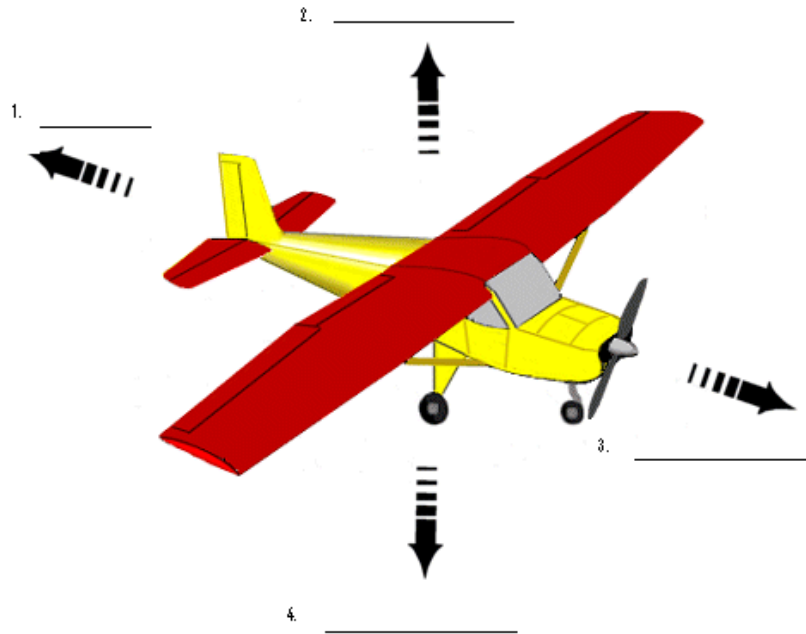
.....

.....

a) (v) Explain what gravity is:

.....

a) (vi) Label the forces of lift, thrust, drag and mass/gravity on the diagram below:



b) (i) Describe the use in an aircraft of an airspeed indicator.

.....

.....

.....

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b) (ii) Describe the use in an aircraft of an altimeter.

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b) (iii) Describe the use in an aircraft of a magnetic compass.

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c) (i) Explain the 24 hour clock and why it is used:

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c) (ii) Write below what the 24 hour time is for the following AM/PM times:

**Example: 6.20AM is 0620 hours.**

12:01AM	..... hours	4:15PM	..... hours
8:45AM	..... hours	3:30AM	..... hours
8:45PM	..... hours	10:22PM	..... hours
12:01PM	..... hours	7.59AM	..... hours

Write below what AM/PM time is for the 24 hour times set out below:

**Example: 0620 hours is 6:20AM**

0100 hours	..... : ..... AM/PM	0525 hours	..... : ..... AM/PM
2100 hours	..... : ..... AM/PM	2011 hours	..... : ..... AM/PM
0756 hours	..... : ..... AM/PM	1834 hours	..... : ..... AM/PM
2359 hours	..... : ..... AM/PM	0243 hours	..... : ..... AM/PM





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c) (iii) Write below the phonetic alphabet: Example: A is Alpha

A- .....	B- .....	C- .....	D- .....
E- .....	F- .....	G- .....	H- .....
I- .....	J- .....	K- .....	L- .....
M- .....	N- .....	O- .....	P- .....
Q- .....	R- .....	S- .....	T- .....
U- .....	V- .....	W- .....	X- .....
Y- .....	Z- .....	0- .....	1- .....
2- .....	3- .....	4- .....	5- .....
6- .....	7- .....	8- .....	9- .....

d) Describe the function of the following movable control surfaces of an aircraft and describe how they are controlled. Also put what number corresponds with the location of the part on the aircraft pictured below at the end of this section:

### Rudder

Function: .....

.....

How it is controlled .....

.....

Number on picture: .....

### Elevators

Function: .....

.....

How it is controlled .....

.....

Number on picture: .....



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#### Ailerons

Function: .....

.....

How it is controlled .....

.....

Number on picture: .....

#### Flaps

Function: .....

.....

How it is controlled .....

.....

Number on picture: .....

#### Trimtab

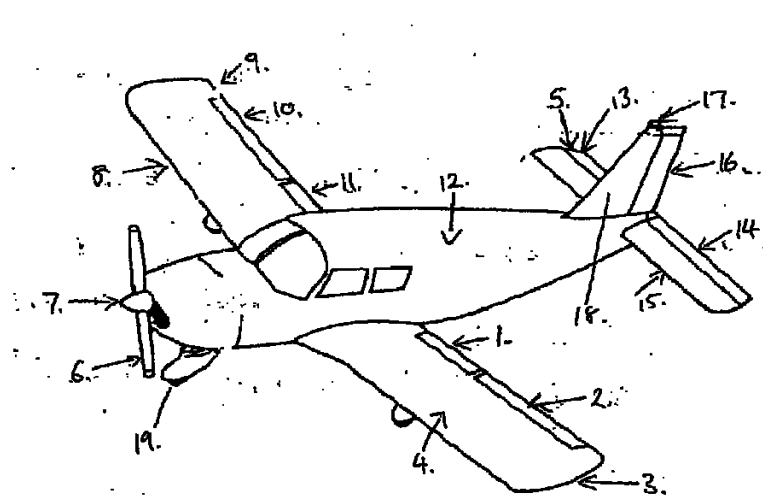
Function: .....

.....

How it is controlled .....

.....

Number on picture: .....





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#### 4. ACTIVITY

Draw a map showing the location of hangars, control tower, runways, taxiways, tarmac, wind socks, the direction of the prevailing wind, fuel stores, navigation aids, and emergency facilities at Moorabbin Airport.

What is the direction of wind? .....

What is the active runway/s? .....

A large, empty rounded rectangular box with a black border, intended for drawing a map of Moorabbin Airport.