Exploring the Air Pavilion

The Air Pavilion contains exhibits about moving air, forces and sound. This document is one of five making up a teacher's guide to the Air Pavilion. The exhibit list contains key questions which can be answered, investigated, or discussed. The education pack also contains a simplified plan with questions, 'Air Pavilion Quiz', for teachers who wish to provide pupils with a directed, written task whilst visiting the pavilion. Material for reflective learning can also be collected by camera, sound recording and downloaded from Magna's website.

Type Key: h = Hands-on interactive, a = Audio-visual display, t = Touchscreen interactive

Exhibit	Type	Question
1 Cloud Rings	h	What do you notice about the ring of mist? What else has this shape?
2 Winds of Change	h	How does it feel when the wind is strong?
3 On a Wing and a Prayer	a	Which flight attempts were successful?
4 Air Cannon	h	What happens to the wall? Why does that happen?
5 Speaking Tubes	h	Why does the sound travel a long way down the tube? How is your voice made?
6 Hydrogen Rocket	h	Which tube contains hydrogen gas and which tube contains oxygen gas?
7 Air Hockey	h	Why does the puck glide easily across the table?
8 Good Vibrations	h	How does the wave pattern change? Which wind instruments have you tried playing?
9 Air Waves	h	How are the sounds made? Can you play a tune?
10 Spinning Chair	h	How can you spin faster or slower? Where else have you noticed this effect?

Exhibit	Type	Question
11 Gravity Well	h	Where do the balls move fastest? Why do you think they speed up?
12 Dyson Cyclone	t	What happens to the dust when the Dyson collects it?
13 Blow a Body Noise	h	Where could you find air in your body?
14 Turbulent Orb	h	How do the patterns change when you spin the globe faster, slower or in opposite directions?
15 Big Blow	t	How has the steelmaking process changed over time? How does it use oxygen?
16 Fresh Air	t	What have been some of the main causes of air pollution?
17 Infalling clouds	h	How can you change the shape of the swirling cloud?
18 Air Tornado	h	Where are the forces that make the tornado? What happens when you blow on the tornado?
19 Galloping Gertie	a	Why do you think the bridge collapsed?
20 Suspension Bridge	h	Why do you think steel is a good material for bridges?

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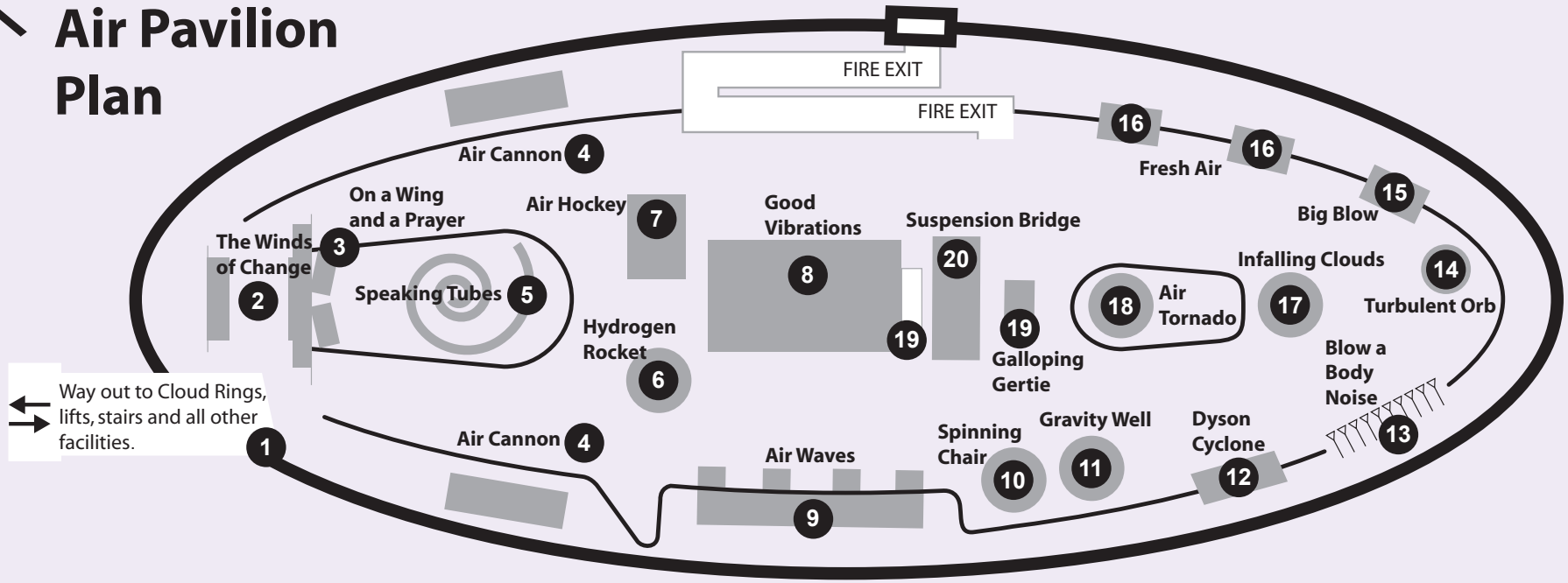
Air Pavilion Plan



1. Cloud Rings - push down and a doughnut of water vapour rolls upwards.
2. Winds of Change - from a gentle breeze to a gale force wind.
3. On a Wing and a Prayer - watch early attempts at flight.
4. Air Cannon - push and pull to set the leaf wall rippling.
5. Speaking Tubes - say hello, shout to a friend, whisper to someone new.
6. Hydrogen Rocket - split water into hydrogen and oxygen... 3, 2, 1 FIRE.
7. Air Hockey - slip, slide and score as the puck glides on a cushion of air.
8. Good vibrations - explore sound waves and resonance.
9. Air Waves - set the air vibrating with bottles, hammers and tubular bells.
10. Spinning Chair - speed up and slow down as you rotate.
11. Gravity Well - set the balls spiralling into the black hole.
12. Dyson Cyclone - an air tornado in your vacuum cleaner.
13. Blow a Body Noise - amusing sounds from the human body.
14. Turbulent Orb - spin the globe and look for the swirling patterns.
15. Big Blow - Bessemer and the blast furnace.
16. Fresh Air - find out about pollution, then and now.
17. Infalling Clouds - stir up a storm with a vortex of vapour.
18. Air Tornado - blow hard to watch the tornado collapse and rebuild.
19. Galloping Gertie - watch as the bridge shakes itself apart.
20. Suspension Bridge - steel and bridge construction.

Curriculum Links in the Air Pavilion

This document is one of five making up a teacher's guide to the Air Pavilion. 'Exploring the Air Pavilion' provides a list of questions to focus exploration and promote discussion about what is happening at each exhibit. Questions are open-ended to enable all ages to interact at an appropriate level. There is a quiz and answer sheet which can be used with pupils, 'Air Pavilion Quiz', focusing on air, forces and sound. The 'Air Pavilion Plan' contains a comprehensive exhibit list, the numbering is not intended to provide a guided route around the pavilion.

The Air Pavilion contains exhibits about moving air, forces and sound. Many of the exhibits also convey ideas about art, design and the use of materials. Your visit to Air has these potential links to the National Curriculum:

KS1 and KS2 Science

Sc4 Physical Processes:
Forces and Motion
Light and Sound

KS3 Science

3.1 Forces
3.2 Material Behaviour

KS1 and KS2 Art and Design

Breadth of Study 5.d.
Investigating art, craft and design

KS3 Design and Technology

2.2 Understand and Evaluate
Reflect and evaluate on others' design work

KS1 and KS2 Learning Across the Curriculum

Creativity and Skills

KS3 Skills

Encouraging creative thinkers

Check the Air Pavilion exhibits to see which will have most relevance to your curriculum theme. The numbers in brackets refer to the location on the Air Pavilion plan:

Air, Forces and Structures
- ◯ Winds of Change(2)
- ◯ On a Wing and a Prayer(3)
- ◯ Air Cannon(4)
- ◯ Good Vibrations(8)
- ◯ Galloping Gertie(19)
- ◯ Suspension Bridge(20)

Spinning Air, Forces and Rotation
- ◯ Cloud Rings(1)
- ◯ Spinning Chair(10)
- ◯ Gravity Well(11)
- ◯ Dyson Cyclone(12)
- ◯ Turbulent Orb(14)
- ◯ Infalling Clouds(17)
- ◯ Air Tornado(18)

Air and the Local Environment
- ◯ The Big Blow(15)
- ◯ Fresh Air(16)

Air and Sound
- ◯ Air Waves(9)
- ◯ Speaking Tubes(5)
- ◯ Blow a Body Noise(13)
- ◯ Good Vibrations(8)

Weather Features
- ◯ Winds of Change(2)
- ◯ Turbulent Orb(14)
- ◯ Infalling Clouds(17)
- ◯ Air Tornado(18)

Design and Aesthetics
- ◯ Cloud Rings(1)
- ◯ Winds of Change(2)
- ◯ Air Cannon(4)
- ◯ Air Waves(9)
- ◯ Air Tornado(18)

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