

Wind Tubes



What are wind tubes?

Wind tubes are a like a mini vertical wind tunnel. They are a playful way to explore how moving air affects everyday objects. During your classes visit to *Wind Tubes*, children will learn about the concepts of aerodynamics, weight, gravity, surface area and shape in relation to moving area with children. Basic scientific theories such as gravity and air movement will also be introduced. Children will then be able to create flying devices with simple materials such as foam, cardboard, ping pong balls, feathers and cellophane and test the flying ability of their creations inside the wind tube.

What are the main ideas behind the Wind Tubes exhibition?

Wind tubes are a playful way to explore the effect moving air has on everyday objects. Children can make their own flying creations out of everyday materials and see them become aerial performers inside the tubes. Discover how gravity, shape and airflow cause your design to fly, fall or hover in the moving air. Challenge theories about how creations will fly, make modifications and test again. Wind Tubes are a playful and inventive way to explore the intersection of art, science and physics. Some of the key concepts explored in *Wind Tubes* are defined below:

Aerodynamics:	An area of study which looks at how moving air and solid objects interact
Gravity:	The force of attraction, of weight of an object which makes it fall towards the centre of the earth
Weight:	The heaviness of an object which is created by gravity
Wind:	The movement of air
Lift:	The force that directly opposes the weight of an object and holds it in air
Drag:	The force acting opposite to the relative motion of any object moving in the air
Velocity:	Velocity is a vector measurement of the rate and direction of motion

Children can build, test, try and fly their creations in their specially built wind tubes and then take home their creations for more fun experimentation.

What materials float in the tube?

Many everyday materials can be used to make flying machines in the wind tube. Some of the best materials include polystyrene balls, cardboard tubes, pipe cleaners, foam, plastic bags, tissue paper, ribbon, feathers and paper cups are excellent as they are light and aerodynamic.

Where can I get further information on Wind Tubes?

How to make your own Wind Tube. The Exploratorium website offers step-by-step instructions as to how to make your own wind tube (it's not as complex as it sounds!)

http://tinkering.exploratorium.edu/tinkering/site/files/2010/10/Wind_Tubes.pdf

Other Resources

Reverse Garbage. A not-for profit reuse centre that diverts industrial off-cuts from landfill and sell them at a low cost to the general public. Reverse Garbage frequently stock a rich array of materials ideal for experimentation on the over-head projectors, light tables and shadow sculpture activities. Located in Woolloongabba, Queensland.

<http://www.reversegarbage.com.au/>

Fizzics Education. A website featuring hands on science experiments

<http://www.fizzicseducation.com.au/experiments/Force%20and%20Movement/Force%20and%20Movement.html>