
A New Invention For The Oldest Science



Every day we are affected by astronomical events that we fail to see because we were never made aware of their significance.

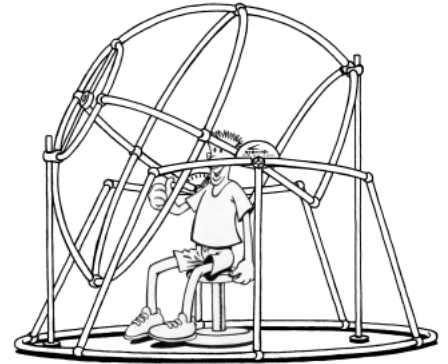
Pipehenge integrates astronomical events into everyday experience.

It has been designed to teach many principles of astronomy during daytime when students are at school by making observations of the motions and interaction of the nearest star (the Sun), the nearest planet (Earth) and nearest moon (Earth's Moon).

The most important observations are of the Sun's apparent path across the sky from sunrise to sunset.

This path expands to become a band across the sky between the Sun's highest path in mid-summer and its lowest path in mid-winter. This is the same band along which the Moon, planets and many constellations appear to move. Establishing this observation during daytime enables an easy introduction to night-time astronomy. The pipes then become a grid reference for star recognition.

Pipehenge - A Day & Night Astronomical Laboratory



An Observatory.

Like Stonehenge, the unique design of Pipehenge provides a framework through which observers may better interpret what they see in the sky by day or night. Pipehenge lets us study the movement of the Earth in relation to the Sun and stars, and helps us understand the wonders of the universe.

A Compass.

Set on a true South/North line with the compass degrees marked on the seat of Pipehenge the principle of finding your way is demonstrated.

A Sundial.

The Sun was the first means of telling time. With Pipehenge you can not only tell the time, but also see exactly when morning becomes afternoon.

A Calendar.

Use Pipehenge to record the changing seasons and plot your birth date.

A Research Tool.

Research done by students is recognized nationally, and networked internationally.

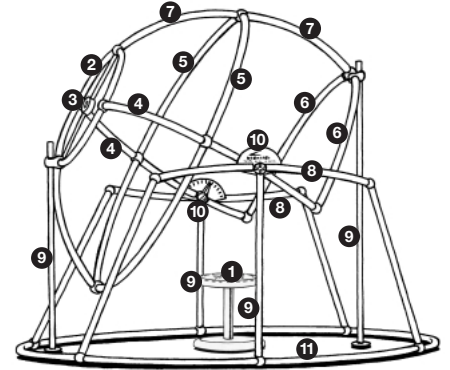
A Teaching Aid.

Pipehenge is a practical aid for teaching mathematics and science to people of all ages.

“Pipehenge is science for all. When investigating with this teaching tool, neither boys nor girls, abled nor disabled are disadvantaged. It is not ethnically exclusive. In fact people of all ethnic origins used astronomy to their advantage from planting to navigation and predicting seasonal change”

Graham Elsmore
Science Adviser to Schools, Auckland College of Education, New Zealand

Pipehenge Components Explained



1 Navigator's Seat.

This is the central point of Pipehenge. From here, students make their observations as the "Navigator". A compass rose is imprinted into the seat.

2 Circle.

This marks the path of the Little Dipper as it appears to the navigator, to revolve round the North Pole of the sky. The Little Dipper is always found inside the Circle.

3 Ring.

This marks the North Celestial Pole, the point in the sky above the North Pole, around which the Earth turns. Northern sky stars appear to revolve around this point (are circumpolar).

4 Star Bars.

These pipes may be used to measure the rotation of northern sky stars at night.

5 Summer Arc.

This pipe indicates the path of the Sun on the longest day of the year (21 June).

6 Winter Arc.

This pipe indicates the path of the Sun on the shortest day of the year (21 December).

7 Meridian.

This pipe is aligned true south to north and is the division between east and west, a.m. and p.m. At solar noon its shadow makes a straight line true south/north.

8 Horizons.

These pipes represent the eastern and western horizons from the viewpoint of the navigator. They show the changing positions of sunrise and sunset throughout the year.

9 Compass points.

The four vertical legs of Pipehenge are at the cardinal points of a compass. (As marked on the Navigator's seat).

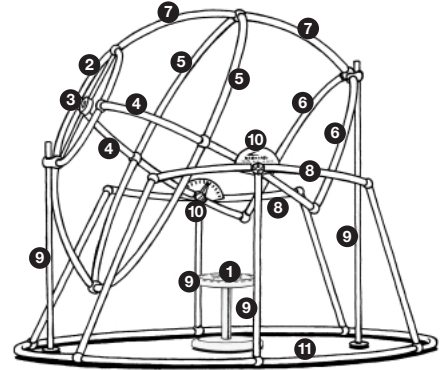
10 Protractor.

The Protractor enables the Portable Multi-latitude Module to be adjusted for any latitude throughout the world.

11 Base Frame.

Provides a platform for the structure.

Pipehenge Components Explained



1 Navigator's Seat.

This is the central point of Pipehenge. From here, students make their observations as the "Navigator". A compass rose is imprinted into the seat.

2 Circle.

This marks the path of the Pointers of the Southern Cross as they appear to the navigator, to revolve round the South Pole of the sky.

3 Ring.

This marks the South Celestial Pole, the point in the sky above the South Pole, Around which the Earth turns. Southern sky stars appear to revolve around this point (are circumpolar).

4 Star Bars.

These pipes may be used to measure the rotation of southern sky stars at night.

5 Summer Arc.

This pipe indicates the path of the Sun on the longest day of the year (21 December).

6 Winter Arc.

This pipe indicates the path of the Sun on the shortest day of the year (21 June).

7 Meridian.

This pipe is aligned true north to south and is the division between east and west, a.m. and p.m. At solar noon its shadow makes a straight line true north/south.

8 Horizons.

These pipes represent the eastern and western horizons from the viewpoint of the navigator. They show the changing positions of sunrise and sunset throughout the year.

9 Compass points.

The four vertical legs of Pipehenge are at the cardinal points of a compass. (As marked on the Navigator's seat).

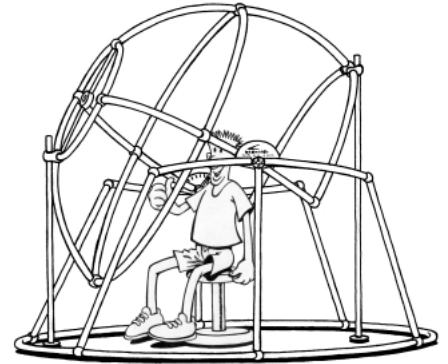
10 Protractor.

The Protractor enables the Portable Multi-latitude Module to be adjusted for any latitude throughout the world.

11 Base Frame.

Provides a platform for the structure.

Two Module Options Available Portable (PML)

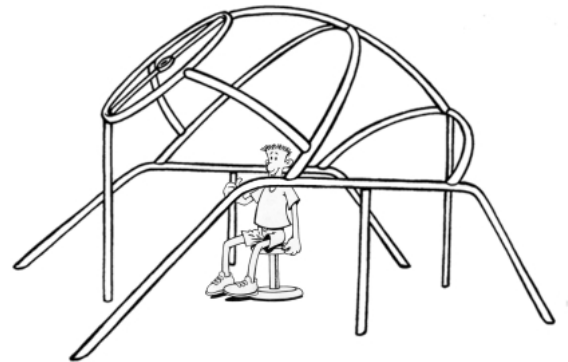


This module is designed as a portable multi-latitude module and can be used indoors or outdoors at any latitude throughout the world. If adverse weather precludes outdoors activities the PML module can be very effectively used in the classroom or anywhere indoors using a bright spot light on a light stand as a substitute for the sun. It is not designed for permanent outdoor installation or use as a climbing frame.

The footprint of the assembled PML module is 2100 mm (6'10") x 2100mm (6'10") and the highest point is 2000 mm (6'7").

The versatile PML module comes with its own custom made transit bag 1350 mm (4'5") x 500 mm (20") x 100 mm (4"), and can be transported in the average family car, (total weight approximately 13 kg). A custom designed component jointing system ensures accurate and stable assembly. When this is completed by the students (approximately 10 minutes) they will have a better understanding of the key components and basic principles of Pipehenge.

Two Module Options Available Dedicated Site (DSM)



The DSM is designed for use by all age groups as a permanent outdoors structure installed at a dedicated site.

Ages between 5 and 12 can use it as an astronomy teaching aid and also an exciting playground climbing frame. The DSM meets all playground safety standards. From age 12 years it provides a comprehensive walk-in laboratory for teaching and learning both daytime and night-time astronomy.

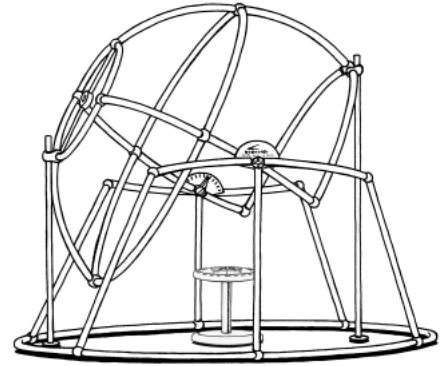
Pipehenge modules are designed for each specific latitude. No further adjustments are required when the structure is being installed.

The footprint of the DSM is 2500 mm (8'2") long by 2500 mm (8'2") wide and the highest point is 2400 mm (7'10") above the ground.

Safety Regulations require that an approved energy impact-absorbing product or safety matting be installed immediately beneath the structure and extend a further 2500 mm (8'2") around its perimeter. The required site footprint therefore should be no less than 7500 mm (24'8") x 7500 mm (24'8").

The Navigator's Seat must be removed before the module is used as a climbing frame.

Included With The Modules



The DSM and the PML modules are supplied with a comprehensive teaching aid kit.

- Pipehenge Resource and Activity Notebook three-ring binder including Sections One to Six inclusive (See Table of Contents)
- Twenty-two Velcro component ID tags.
- Navigator's Seat.



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