

# ASTRONOMY FOR THE MIDDLE SCHOOL

Written by John Trevillion, class teacher at the Chicago Waldorf School, these wonderful verses help orient the children to space as well as provide them with vocabulary for understanding Astronomy.

## Orienting to Heaven and Earth

[Teacher speaks-children respond with gestures]

Here I stand under the sky.	[Remember to face North]
The center of the world am I.	
My right hand points to the rising sun;	[Extend right hand]
My left hand shows where the day is done.	[Extend left hand]
My nose points to the cold North Star;	[Extend right arm forward]
My back is turned to where the warm lands are.	[Extend right arm backwards]
North. South, East, West.	[Repeat all 4 motions]
Where I stand I am at rest.	[Fold hands across chest]

[Class recitation]

In course of time Man's dwellings change;  
My ancestors would find ours strange;  
But overhead the sights I see  
Are those that awed my ancestry.  
We have a name for this our home:  
We call it the celestial dome.

By day 'tis lit by one close star,  
And o'er the Earth I can see far;  
The sky is charged with azure through;  
No other stars may pierce its blue.  
When sky is blanketed with night,  
Sun's distant cousins twinkle bright;  
Like fleets superb and orderly  
They sail across the celestial sea.

[Slowly raise extended left hand and  
trace arc from. East to West]

Of all this motion to make sense  
I need some lines of referencel-  
Lines which seem straight from where I gaze,  
Yet circles are from other place.  
Such lines which tharry curved and straight  
Great Circles we do designate.

[Trace straight horizontal line]  
[Trace large circle]

Extend your arm and point straight out  
And slowly rotate once about;  
With this motion I define  
The Ideal Horizon in a line.

[As directed]

A straight line through my trunk I see  
Extending to infinity.  
At the point it locates in the sky  
The Zenith I identify.  
Below my feet another point  
The Nadir I do thus anoint.

[Point straight up]

[Point straight down]

One star alone stays in one place,  
And to it I direct my gaze.  
Polaris this one star I name  
And thus true North I can now claim.  
A straight line from this star I draw  
Through zenith and nadir without flaw;

[Point towards Pole Star]

[Slowly trace the great circle that  
pass the 3 points indicated]

And tracing thus this circle round  
The Meridian I have now found.

Point to Polaris straight and true  
And imagine an axis running through.  
Now point the other arm with care  
To make with the first an angle square;  
With one arm pointed at the Pole  
Let the other around it roll.  
This great circle which is the third  
As Celestial Equator is referred.

[With right arm]

[Indicate extension briefly with left  
arm then bring left arm to horizontal to  
make a right angle-the right arm does not move]

[A very difficult challenge-  
must be visualized carefully]

With circles three we thus can scan  
With confidence the celestial plan.

## **EXTENSIONS:**

As the course continues. other aspects of astronomy could also be internalized by means of poetry and motion, i.e., following a suitable introduction to the phenomena. The poem that follows was, in fact, the outcome of this author's introduction of a sixth grade class to. astronomy. It was similarly broken down into parts which groups of students were asked to memorize and recite to their classmates. It was eventually presented to the entire school and parent body.

The order of the poem reflects the order in which astronomical phenomena were introduced. Again, look for opportunities to highlight the words and concepts with movement.

## Stars

All stars from greatest to the least  
Begin ascending in the East;  
Unto the Meridian they rise,  
Then sink into the western skies,  
In groups called constellations we  
Recall the patterns that we see.

A Dipper round the Pole revolves-  
Thus, one great problem it resolves:  
Two stars afore this celestial pot  
To Pole Star point and help us spot.

The Dipper we can always see  
Along with royal company:  
A queen, shaped like a double-u,  
Her husband and her daughter, too;  
A winged horse and hero bold  
Complete this circumpolar fold.

When to the South we turn our search,  
Orion holds the central perch;  
With faithful dogs he hunts the hare  
Till weather foul gives way to fair.

Twelve constellations form a bow.  
In winter high, in summer low;  
The Zodiac we call this band;  
It forms a background proud and grand-  
For through this stellar company  
Revolve Sun, Moon, and planetry.

The line on which these bodies move  
Does yet one more great circle prove.  
From time to time Moon hides the Sun,  
Or Earth casts shadow on the Moon;  
And for this solar shadow game,  
This line the Ecliptic we do name.

The paths of stars, when they are viewed,  
Depend upon your latitude.  
Throughout the long, dark polar night  
The stars in horizontal flight  
Parade. But o'er the Equator  
The star from out the East do soar.

And arcing semi~circularly,  
They plunge into the west:ern sea.  
It's not surprising, you'll conclude.  
That in our own mid-latitude  
The stars do rise and set oblique  
To th' horizon o'er which they streak.

## Sun

What is the Sun? This much is right:  
The source 'tis of all warmth and light.  
All life is blessed by its warm rays;  
Full worthy 'tis of all our praise.  
From East to West it sails each day  
Illumining all upon its way.

Near March and September twenty~first  
Day equals night o'er all the Earth;  
The Equinox of Spring and Fall  
These two momentous days we call.

When day is longest, night most short,  
June twenty-first we'll like report;  
With Summer Solstice we rejoice.  
Sing Summer's praises with one voice.

## Moon

The Sun commands all in the day  
But in the night the Moon holds sway,  
Casting light in less degree,  
Yet with enchanting majesty;  
Though if the truth be known in full,  
The Moon reflects the light of Sol.

Now like the Earth the Moon's a sphere-  
At any time one half is clear  
With light of day. while th' other side  
In gloomy darkness must abide.  
Throughout the course of twenty-nine  
days  
The Moon appears in varying phase  
As round the Earth it makes its route  
Twelve times a year or thereabout.

Each month the Moon will disappear-  
The New Moon we do call it here.  
Then from an evening Crescent fine  
It waxes Full in two weeks' time,  
Then wanes unto the New Moon when  
The Lunar Cycle starts again.