

# Curriculum

## Support Workshop through the Fall Semester

- Cosmic Education

### Theory

#### The Montessori Approach

- Self-Construction
- Planes of Development
  - Planes of Development and the neuroscience
- Cosmic Educations
- Story Telling

### Geography/Geology

#### The Universe: Its Matter and Its Laws

- *Cosmic Tale: The formation of the Universe*
  - Matter attracts matter
- *Story: A Periodic Kingdom Tale*
- *Story: Nucleosynthesis of a Star*
  - The Model of an Atom
- *Cosmic Tale: The formation of the Earth*

- **How Matter Obeys**

- Temperature Affects the State of Matter
- Solids
  - Model of a Solid
  - Properties of a Solid
  - Solids Push Down Only
- Liquids
  - Model of a Liquid
  - Properties of a Liquid
  - Liquids Take the Shape of Their Container
  - Liquids Push Sideways and Down
- Gases
  - Model of a Gas
  - Properties of a Gas
  - Gases Move in All Directions to Take Up the Available Space
  - Gases Can Push Upwards

- **Composition of the Earth**

- Layers of the Earth

- **Composition of the Earth, Further Details**

- Plate Tectonics
- Isostatic Balance
- Effects of Plate Tectonics
  - Rock formation
  - Volcanos
  - Earthquakes
  - Geysers

- **Further States of Matter**

- Temperature Affects the States of Matter
- Liquids – Fluid/Viscous
- Liquids - Temperature Affects Viscosity
- Liquids Settle According to Their Weight
- Solids - Rigid/Elastic/Plastic

- With Movement, Different Materials Arrange Themselves According to Their Weight
- **Different Ways of Combining**
  - Combining
    - Mixture
    - Suspension
    - Solution
  - Chemical Change
    - Color Change
    - Gas Evolves
    - Precipitation Occurs
    - Temperature Change
    - Light Emitted
  - Separating
    - Separating a Mixture
    - Separating a Suspension
    - Separating a Solution
    - Separating a Compound
  - Saturation and Crystallization
    - Saturated Solution
    - Supersaturated Solution
    - Crystallization

## **The Sun and the Earth**

- **Our Solar System (including idea of revolution and rotation)**
- **Effects of Earth's Rotation**
  - Parts of the Day
    - Time
    - Time-Zones

- **Effects of Earth's Revolution**
  - Solstices, Equinoxes, and the Seasons
  - Climate-Zones
- **Effects of Earth's Revolution and Earth's Rotation**
  - Angle of Incidence of the Solar Rays
  - Daytime Temperature in the course of a year

## The Work of Air

- **How the Air obeys**
  - Different Experiments
- **The Winds**
  - Global Winds
- **Interaction of Heated Land/Water and Wind**
  - Sea/Land Breeze
  - Work Chart for the Winds
- **Rain**
  - Seasonal Rain
  - Local Conditions for Rain
- **Ocean Currents**
  - Air Can Make the Water Surface Move
  - Land Causes the Currents to Turn
- **Wind Erosion**

## Work of Water

- **The River Model**
  - Parts of the River
  - Sedimentation
  - Main Rivers of the Earth

- **Erosion**
  - By Rivers
  - By Rain
  - By Waves
  - By Ice
  
- **The Water Cycle**
  - Charts of the Water Cycle
  
- **River Model**
  - How and where to build a river model

## **Mineralogy**

- ***Story: The Earth's Restaurant***
  
- **Examination of Rocks**
  - Examining the Content of Carbon in Rocks
  - Examining the Content of Iron in Rocks

## **Life on the Earth**

- **Vegetation in Different Zones**
  
- **People in Different Zones**
  
- **Interdependencies of Human Beings in Society**
  - Where Do We Get Our Food From?
  - What does the ... Need?
  - The Flow of Goods
  - The Collection Bowl
  
- **Economic Geography**
  - What is Produced and Where?
  - How Much is Produced?
  - How Much Do We Consume?
  - Comparison of Consumption and Production

# **Biology**

## **The Coming of Life**

- ***Cosmic Tale: The Coming of Life***
- **Timeline of Life**

## **Botany**

- ***Story: The Story of the Plants***
- **Nature Walk**
- **The Plant and Its Vegetative Parts**
  - Parts of a Plant
  - Needs of a Plant
  - The Leaf
  - The Root
  - The Stem
- **The Plant and Its Reproductive Parts**
  - The Flower
  - The Fruit
  - The Seed
- **The Plant Cell**
- **Plant Classification**

## **Zoology**

- **The Body Functions of Vertebrates**
- **The Animal Cell**
- **Animal Classification**

## **The Human Body**

- **Story: The Great River**
- **Human Body Systems**
- **Microbes and Immune System**

## Ecology

## Chart of Interdependencies

# History

## Pre-history

- **The Black Strip**
- **The Clock of Eras**

## History

- **The Coming of Human Beings**
  - *Cosmic Tale: The Coming of Human Beings*
  - The Timeline of Human Beings
  - The Hand Timeline
- **The Phases of History**
  - Nomadic Phase
  - Agricultural Phase
  - Urban Phase
- **Civilizations**
  - River Civilizations (Sumer, Egypt, Nubia, Indus Valley, Hwang-Ho)
  - American Civilizations (Meso-American, Aztec, South American, Incan)

- Classical Civilizations (Ancient Greece, Ancient Rome)
- Middle Ages (Medieval Life)
- **The Movements of People**

## The Exercises for Time

- **The Year**
- **The Calendar**
  - Months of the Year
  - Origin of the Names of the Months of the Year
  - Days of the Week
  - Origin of the Names of the Days of the Week
  - Clock Time
  - Telling Time to the Hour
  - Timeline of my Day

## Culture

- ***Story*: The History of Spoken Language**
- ***Cosmic Tale*: The Story of Our Alphabet**
- ***Cosmic Tale*: The Story of Our Numerals**
- ***Story*: The Story of How Geometry Got its Name**
- ***Story*: The Story of the Multitude**
- ***Story*: The Story of the Grand Staff**

## Keys for Exploration

- **The Fundamental Needs**
- **The History Question Charts**
- **Making a Time Line**