



# Mad Science Workshops & 4th Grade Science

## **Weeks 1-4 August: Scientific Thinking (4 weeks)**

Sunshine State Standard - The Nature of science – H

- All Mad Science Programs - Scientific Method

## **Weeks 5-14 October – December: The Earth (10 weeks)**

Sunshine State Standard – Processes that shape the Earth – D

Sunshine State Standard – Earth and Space – E

- Mad Science Workshop - Mineral Mania
- Mad Science Workshop - Space
- Mad Science Workshop - The Dirt on Garbage (recycling)

*These workshops address most Essential to know and Important to know benchmarks*

- Know the stages of the rock cycle
- Know the properties of different types of soil
- Understand the processes of weathering and erosion and how they change the Earth's surface
- Know that tilt of the earth on its axis causes seasonal change, length of day and energy available
- Know ways that people can conserve natural resources
- Know that the misuse of natural resources affects the quality of life for the entire planet
- Know how energy of sun can be captured as a source of heat
- Know the characteristics of planets in our solar system including their relative position
- Know how gravity keeps planets in orbit around sun
- Know characteristics of sun as star, galaxies, and universe

## **Weeks 15-18 January: Force & Motion (4 weeks)**

Sunshine State Standard – Force and Motion – C

- Mad Science Workshop - Moving Motion
- Mad Science Workshop - Energy Burst

*These workshops address all Essential to know and Important to know benchmarks*

- Know to use tools to measure changes in position direction and speed of a moving object
- Know how inertia, gravity, friction, mass, and force affect motion.
- Know that velocity describes a change in distance over time
- Understand how simple machines are used to make work tasks possible

## **Weeks 19-22 September: Energy (4 weeks)**

Sunshine State Standard - Energy – B

- Mad Science Workshop - Harnessing Heat
- Mad Science Workshop - Energy Burst
- Mad Science Workshop - Electricity

*These workshops address all Essential to know and Important to know benchmarks*

- Know the various sources of energy,
- Thermometers are used to measure energy transfer and changes in temperature
- Know that energy can be transformed from one type to another
- Know that electricity can produce magnetic forces and vice versa
- Know how to measure electrical energy.



### **Weeks 23-32 February – April: Living Systems (10 weeks)**

Sunshine State Standard – Processes of Life – F

Sunshine State Standard - How Living things Interact with Their Environment – G

Sunshine State Standard - Energy – B

- [Mad Science Workshop - Ecosystems](#)
- [Mad Science Workshop - Cells](#)
- [Mad Science Workshop - Photosynthesis](#)
- [Mad Science workshop - Body Basics](#)

*These workshops address most Essential to know and Important to know benchmarks*

Benchmark Concepts:

- Know the characteristics that allow members within a species to survive
- Know that plants and animals share and compete for limited resources (oxygen, food, space)
- Know the similarities and differences among plants
- Know how plants and animals are different but have common characteristics, and both have structures for reproduction, respiration, and growth
- Know that living things use energy from the sun to live and grow
- Know how to trace the flow of energy in a system such as an ecosystem. (energy webs)
- Know that plants and animals interact with each other in an ecosystem
- Know that variations in light, water, temperature and soil content create differences in organisms in ecosystems
- Know that complex organisms have specialized organs to carry out different life processes
- Know the role of producers, consumers, and decomposers in an ecosystem
- Know the major systems of the human body and their functions
- Know how to use magnifying tools, to identify cells and its major structures.
- Know the similarities and differences between plant and animal cells

### **Weeks 33-36 April – May: Nature of Matter (4 weeks)**

Sunshine State Standard – The Nature of Matter – A

- [Mad Science Workshop – Turn up the Volume](#)
- [Mad Science Workshop – Matter of Fact](#)

*These workshops address all Essential to know and Important to know benchmarks*

Benchmark Concepts:

- Determine Physical properties of matter using metric measurements and tools, (rulers, Thermometers, Balances)
- Physical changes in the states of matter can produced by heating and cooling
- Weight of an object is equal to the sum of the weigh of its parts
- Identify organisms or objects too small to be seen without a microscope