

Nurturing the Spirit-Nature Connection



A UU Ministry for Earth Religious Education Resource
By Sparrow Alden

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<http://uuministryforearth.org/>

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Unitarian Universalist Ministry for Earth is an independent organization related to the Unitarian Universalist Association.

Our mission is to facilitate and support the work of Unitarian Universalists, by affirming and promoting the seven principles of the Unitarian Universalist Association, including the seventh: "to affirm and promote respect for the interdependent web of all existence of which we are all a part." We do this by focusing on the theological, spiritual, and ethical aspects of human values and activities that affect the health and sustainability of living Earth.

Our vision is that Unitarian Universalists recognize and embrace the moral imperative to live in covenant with the web of life through personal, congregational, and denominational practices.

As you use these materials, we hope that you will make an opportunity to educate yourself and others about the important mission and work of Unitarian Universalist Ministry for Earth. Please feel welcome to contact us at office@uuministryforearth.org for information about our current programs.

This resource is made possible by the generosity of individual donors and congregations. Please consider [making a donation today](#). Your gift will help UU Ministry for Earth develop additional resources. You may [donate online](#) or send your contribution to Unitarian Universalist Ministry for Earth, 1034 SW 13th Ave., Portland, OR 97205.

Thank you for your commitment to Earth ministry. Working together, we will transform our individual and congregational lives into acts of religious witness, discarding our harmful habits for new behaviors and practices that will sustain life on Earth.

This resource and additional materials are available on the UU Ministry for Earth website at <http://uuministryforearth.org/>. You are welcome to adapt the materials in this resource to design a curriculum for your congregation. If you use or adapt the materials, please credit the original authors when applicable and reference UU Ministry for Earth in any reprints or adaptations. We encourage you to print sparingly, using recycled paper and soy ink.

NOTE: Some URLs in the first edition are not accessible in 2013.

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A Map of the Earth-oriented Religious Education Curricula
by Sparrow Alden, DRE

Supplement for Use with *Hands-On-Nature: Information and Activities for Exploring the Environment with Children* (Jenepher Lingelbach and Lisa Purcell, Vermont Institute of Natural Science)
by Sparrow Alden, DRE

Additional Resources for Designs of Nature Lessons, Vermont Institute of Natural Science

Pluto, The Adopted Planet: A Great Story Parable
by Connie Barlow

The Man Who Planted Trees, An Intergenerational Service based on the story
by Jean Giono
by Sandra Greenfield, DRE, Unitarian Universalist South Church, Portsmouth, New Hampshire

Story Beads Curriculum: Leading to an Exploration of the Great Story
by Leslie Klein Pilder

Energy Activities for Faithful Youth, produced and contributed by the Interfaith Coalition on Energy, Melrose Park, PA, Andrew Rudin, Project Coordinator

Acknowledgements

We wish to acknowledge the generous contributions of Connie Barlow, Sandra Greenfield, Leslie Klein Pilder, and Andy Rudin of the Interfaith Coalition on Energy for helping the Seventh Principle Project (now UU Ministry for Earth) seed our initiative to build a comprehensive resource of environmentally-oriented religious education resources to help Unitarian Universalists teach our children about the connection between their natural world and their spiritual development.

We especially wish to acknowledge the enthusiastic and diligent work of Sparrow Alden who has provided a great service to Unitarian Universalist Directors of Religious Education and RE teachers by mapping most of the Earth-oriented religious education curricula used by UU religious educators. Now, RE teachers and DREs can easily locate an age-appropriate lesson on any of the following themes: The Interdependent Web, Cycles, Creation and Creativity, Earth Spirit, the Elements, Fauna, Flora, Trees—Very Special Flora, and Sustainability. In addition, Sparrow has developed an annotated bibliography of materials she and other religious educators have found especially effective to use with children.

How You Can Make this Resource Grow!

Our hope is that this beginning will inspire you to make this resource grow. We know that many of you are incorporating lessons on honoring the Earth into your congregation's religious education programs. If you would like to contribute lessons, intergenerational services, annotated additions to the bibliography, or ideas for this resource, please contact us: UU Ministry for Earth, 1034 SW 13th Ave., Portland, OR 97205 or office@uuministryforearth.org

In addition, we encourage you to take your favorite piece of children's literature or other resource for working with children and nature and write a UU teacher's guide to accompany it. Sparrow's supplement to the first section of *Hands-On Nature* is one model for such a teacher's guide.

For Earth,
Claudia Kern, Project Coordinator

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Updated for new contact information, June, 2010
Published to the Web, 2013

NURTURING THE SPIRIT - NATURE INTERCONNECTION

A Unitarian Universalist Ministry for Earth Religious Education Resource

Compiled by Sparrow F. Alden

Dear Friends,

This work in progress includes the favorite children's environmental stewardship resources of a number of religious educators. Thank you, Lyn Stangland Cameron, Claudia Kern, Lori Harriman, Terry Stafford, Sandra Greenfield, and Heather Norway.

The first section sorts the resources by topic, ready for you to prepare a thematic unit. You'll find individual lessons and songs listed, since some resource books include different items applicable to different environmental themes. The lessons are sorted by sub-topic if there is one (for example, the Cycles theme has Daily Cycles, Life Cycles, and Annual Cycles) and then by age for which the lesson is intended. Songs had to be singable by and accessible to children to be included.

The second section sorts the resources by title, and includes annotations for many of them as well as contact or ordering information if that was available. This resource is meant to be distributed freely – please pass it on, charging only for copying and postage.

The UU Ministry for Earth hopes that this is the beginning of an ongoing adventure. We hope to add more resources, expanding the breadth to include items for adult religious education, and a possible web-based searchable format.

Thanks for all you do for the Earth, for our children, for the future.

Peace,

Sparrow

INTERDEPENDENT WEB

INTERDEPENDENT WEB - CURRICULA

- *Keepers of the Earth: Native American Stories and Environmental Activities* Primary, Elementary.
- *A Supplement for Use With Keepers of the Earth* Preschool, Primary, Elementary
- *In Our Hands, Grades 1 - 3* , Primary
- *We Believe* Multi-Age
- *The Senses: Our Access to the Living Earth* Preschool, Primary, Elementary
- *Hands-On Nature* Primary, Elementary
- *Supplement to Hands-On Nature* Primary, Elementary
- *Experiences With the Web of Life* Primary
- *A Stepping Stone Year* Primary, Elementary
- *Connecting With The Earth* Multi-Age
- *In Our Hands, Grades 4 - 6* Elementary
- *Celebrating Me and My World* Preschool
- *We Are Many We Are One* Preschool

INTERDEPENDENT WEB - LESSONS

- Celebrate Native American Arts in *Honoring Our Mother Earth* - Music, dance, art, and stories
- Session #3: The Coming of Gluscabí in *Keepers of the Earth*
A sense of place and belonging. See Borchelt's *Companion* #1.
- Session #4: The Earth on Turtle's Back in *Keepers of the Earth*
Nature and human needs. See Borchelt's *Companion* #3.
- What is Ecology? in *Ecology: Usborne* - habitats, building your own pond
- Ecosystems in *Ecology: Usborne* climates, food webs.
- Adaptation in *Ecology: Usborne* Deserts, extreme environments, seed study
- Relationships in nature in *Ecology: Usborne* - colonies, parasites, cooperation, ant colony.
- Population and conservation in *Ecology: Usborne*
Population control, territorial behavior, predators, threatened habitats and wildlife
- Urban ecosystems in *Ecology: Usborne* - Urban adaptations, succession, pollution; a pocket park.
- Evolution in *Ecology: Usborne* - Evolution, fossils, fossil hunting, Darwinism, the Gaia hypothesis.
- People and Planet in *Ecology: Usborne* Human population growth.
- The future in *Ecology: Usborne* - soil erosion, rainforest destruction, acid rain, desertification, habitat destruction, ozone depletion, greenhouse effect, practical action, genetic engineering, Antarctica.
- Building a compost heap in *Ecology: Usborne* science and experiments
- Session #23: The White Buffalo Calf Woman and the Sacred Pipe in *Keepers of the Earth*
Earth stewardship and earth cycles. Story used in Borchelt's *Companion* #11.
- Galls: Small Homes for Tiny Creatures in *Hands-On Nature*
- 1: Experiences with Introductions in *Experiences With the Web of Life*
- 2: Experiences with our "piece of the earth" in *Experiences With the Web of Life*
- 12: Experiences with the food we eat in *Experiences With the Web of Life*
- 15 A Kwanzaa experience in *Experiences With the Web of Life*
- 23 Experiences with uniqueness in *Experiences With the Web of Life*
- 27 Experiences with friendship and cooperation in *Experiences With the Web of Life*
- 44 Experiences with our bodies as miracles in *Experiences With the Web of Life*
- 45 Experiences with remembering together in *Experiences With the Web of Life*
- 10: Appreciation of nature in *In Our Hands, Grades 1 - 3*
- 11: Feelings about nature in *In Our Hands, Grades 1 - 3*
- 12: The web of interdependence in *In Our Hands, Grades 1 - 3*
- 13: Partners with nature in *In Our Hands, Grades 1 - 3*
- You Live on a Speck in a Spinning Spiral in *The Kids' Book of Awesome Stuff*
- The Ancestor of All Your Ancestors Was Invisible in *The Kids' Book of Awesome Stuff*

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- If There were No Bugs to Bug You in *The Kids' Book of Awesome Stuff*
- The Awesome Thing About Poop, Pee, and Stuff That Rots in *The Kids' Book of Awesome Stuff*
- 14: Earth Awareness in *In Our Hands, Grades 4 - 6*
- Peace and Justice with our Earth in *In Our Hands, Grades 4 - 6*
- 15: Earth Interdependence in *In Our Hands, Grades 4 - 6*
- 16: Earth Stewardship in *In Our Hands, Grades 4 - 6*
- Our Planet and Global Home (Session Six) in *Building Your Spiritual Home*
- Session 1: Creation in *Supplement to Keepers of the Earth Uses Keepers of the Earth #3.*
- Session 11: Unity of Earth in *Supplement to Keepers of the Earth* - uses KotE sessions #23 and #10.
- 3: Making a covenant in *Walking the Rainbow Path*
- 5: Sacred places on earth in *Walking the Rainbow Path*
- 10: Being a seed of peace in *Walking the Rainbow Path*
- 13: The many names of god in *Walking the Rainbow Path*
- 20: Our actions can make a difference in the world in *Walking the Rainbow Path*
- 22: Our commitment to the Web Of Life in *Walking the Rainbow Path*
- 24 Henry David Thoreau in *Walking the Rainbow Path*
- 25 The beauty around us and inside us in *Walking the Rainbow Path*

INTERDEPENDENT WEB - RESOURCES

- Rise Up Singing*
- Project WILD*
- Ecology: Usborne science and experiments*
- Play Lightly on the Earth*
- Project Learning Tree*
- The Kids' Book of Awesome Stuff*
- Windows on the Wild*
- Sharing Nature With Children*
- Sharing the Joy of Nature*
- Singing the Living Tradition*
- Ferry Beach Park Association*
- Ferry Beach Ecology School*
- Predator: The Food Chain Game*
- Tom Brown's Field Guide to Nature and Survival For Children*
- Ranger Rick's Nature Scope Series*
- Nature for the Very Young*
- National Wildlife Week Educator's Guides*
- Fostering a Sense of Wonder During the Early Childhood Years*

INTERDEPENDENT WEB - SONGS

- 19 The Sun That Shines in *Singing the Living Tradition*
- 203 All creatures of the earth and sky in *Singing the Living Tradition*
- 402 From You I Receive in *Singing the Living Tradition*
- Let it Be in *Rise Up Singing*
- We Are the Flow in *Rise Up Singing*

INTERDEPENDENT WEB - STORY BOOKS

- Who Speaks for Wolf*
- From a Distance*
- Pass the Energy, Please!*
- Earth Child*
- The Tree in the Ancient Forest*

CYCLES

CYCLES - CURRICULA

- *Keepers of the Night* Primary, Elementary
- *Lifetimes* Primary

CYCLES - LESSONS

DAILY CYCLES

- Cycles in nature in *Ecology: Usborne*
water cycle, carbon cycle, greenhouse effect, nitrogen cycle, mineral cycle.
- Session #7: How Grandmother Spider Stole the Sun in *Keepers of the Earth*
A great story with activities about the diurnal cycle and the sun.
- How the Bat Came to Be in *Keepers of the Night*
- Moth, the Fire Dancer in *Keepers of the Night*
- Oot-Kwah-Tah, the Seven Star Dancers; the Creation of the Moon in *Keepers of the Night*
- Chipmunk and the Owl Sisters; the Great Lacrosse Game in *Keepers of the Night*
- How Grizzly Bear Climbed the Mountain in *Keepers of the Night*

LIFE CYCLES

- Session #22: The Origin of Death in *Keepers of the Earth*
Story and activities that address the cycle of life and death and the effect of human population growth on the Earth. See Borchelt's *Companion* #10.
- Insect Lives: Surviving the Seasons in Stages in *Hands-On Nature*
Could also be fauna or seasons!
- 9: Experiences with growth and change in *Experiences With the Web of Life*
- 30 Experiences related to aging in *Experiences With the Web of Life*
- 31 Experiences related to reproduction in *Experiences With the Web of Life*
- 32 Experiences with death and grief in *Experiences With the Web of Life*
- 12: Unique and Wonderful You in *A Stepping Stone Year*
- 13: Jesus' Birth Story and Yours in *A Stepping Stone Year*
- 14: Buddha's Birth Story and Yours in *A Stepping Stone Year*
- 26: The Mustard Seed Medicine in *A Stepping Stone Year*
- 27: The Road to Olelpanti in *A Stepping Stone Year*
- 28: The Tree with Forbidden Fruit in *A Stepping Stone Year*

ANNUAL CYCLES

- Change in nature in *Ecology: Usborne*
Seasonal changes, climate changes, landscape changes, butterfly metamorphosis
- Session #15: Spring Defeats Winter in *Keepers of the Earth*
Story and activities that address seasons and plant cycles. See Borchelt's *Companion* #7.
- Session #19: How Turtle Flew South for the Winter in *Keepers of the Earth*
A story with discussion and activities concerning winter, hibernation, migration, and an awesome activity about realizing your dreams.
- Animals in Winter: Many Ways to Cope With Winter in *Hands-On Nature*
Clearly this could be under "Fauna" as well.
- Snug in the Snow: Snow Is a Welcome Blanket for Many in *Hands-On Nature*
- Winter Twigs: Signs of Four Seasons in *Hands-On Nature*
- Winter Weeds: Rugged Remnants of Summer Flowers in *Hands-On Nature*
- 16 Experiences with life in winter in *Experiences With the Web of Life*
- The Wheel of the Year in *Paganism 101*
The celebratory circle of eight sabbats; making and consecrating magic wands.
- Session 10: Life, Death, Spirit in *Supplement to Keepers of the Earth*

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We become aware of the cycles of life and death and explore how death and loss affect our lives. Uses *Keepers of the Earth* session #22.

- Session 7: Seasons in *Supplement to Keepers of the Earth*

Seasonal changes on the planet. Uses *Keepers of the Earth* session #15.

- 9: Spring Makes our Earth Beautiful with Color in *We Are Many We Are One*
- 10: Spring Brings Changes to Our Earth in *We Are Many We Are One*
- 7: Winter Brings Changes to Our Earth in *We Are Many We Are One*

CYCLES - RESOURCES

- Reading the Outdoors at Night*
- Seasonal Walks

Rev. Collins-Ranadive wants to remind us to take walks with the kids at the solstices and equinoxes, observing the signs of the changing year!

- Spring Holidays from a Unitarian Universalist Perspective*
- Winter Holidays from a Unitarian Universalist Perspective*
- A Guide to Nature in Winter*

CYCLES - SONGS

- 38 Morning Has Broken in *Singing the Living Tradition*
- 44 We Sing of Golden Mornings in *Singing the Living Tradition*
- 46 Now the Day is Over in *Singing the Living Tradition*
- evening. Makes a great lullaby!
- Down on the Farm in *Rise Up Singing*
by Molly Scott
- One Grain of Sand in *Rise Up Singing*
Lullaby - stars, sand, grass, sleep
- How Lovely is the Evening in *Rise Up Singing*
traditional German folk song, a round
- Hymn for the Russian Earth in *Rise Up Singing*
- 51 Lady of the Turning Year in *Singing the Living Tradition*
- 73 Chant for the Seasons in *Singing the Living Tradition*
hymn with accessible vocabulary less singable, but worth working on!
- 68 Come, Ye Thankful People in *Singing the Living Tradition*
- 62 When Daffodils Arrive in *Singing the Living Tradition*
- 61 Lo the Earth Awakes Again in *Singing the Living Tradition*
- 377 Doxology / Talis Canon variation in *Singing the Living Tradition*
. The Old Hundredth tune - in praise of spring!
- Apple Trees in Bloom in *Rise Up Singing*
melody given in *Rise Up Singing*; a lovely round - apple trees in spring
- 66 When the Summer Sun is Shining in *Singing the Living Tradition*
- Sumer is Icumen In in *Rise Up Singing*
OK, so it's in Middle English. It's still great! Modern English translation in *Rise up Singing*, and it doesn't have to be sung as a round, but why not try it?
- 234 In the Gentle of the Moon in *Singing the Living Tradition*
verses one and two most green
- 235 Deck the Halls With Boughs of Holly in *Singing the Living Tradition*.
- 241 In the Bleak Midwinter in *Singing the Living Tradition*
verse one is most green

CREATION & CREATIVITY

CREATION & CREATIVITY CURRICULA

- *Celebrating Our Origins in the Universe* Primary, Elementary

CREATION & CREATIVITY LESSONS

- 1: Introduction to Beginning Myths in *A Stepping Stone Year*
- 2: The Tree with Animal Fruit in *A Stepping Stone Year*
- 3: The First Animals Make People in *A Stepping Stone Year*
- 4: The Great Earth Goddess in *A Stepping Stone Year*
- 5: The First Seven Days and the Forbidden Fruit in *A Stepping Stone Year*
- 6: Heart of the Earth and Sky in *A Stepping Stone Year*
- 7: Raven story from the Haida Indians in *A Stepping Stone Year*
- 8: Stories in the Stars in *A Stepping Stone Year*
- Yang and Yin and the Dwarf P'an Ku in *Beginnings: Earth, Sky, Life, Death*
Chinese creation story
- Heart of the Earth and Sky in *Beginnings: Earth, Sky, Life, Death*
Mayan creation story.
- The First Three Things: Ice, Fire and Salt in *Beginnings: Earth, Sky, Life, Death*
Icelandic creation story.
- The First Seven Days and The Forbidden Fruit in *Beginnings: Earth, Sky, Life, Death*
Hebrew creation story.
- Out of the Caves of the World in *Beginnings: Earth, Sky, Life, Death*
Zuni creation story.
- The First Animals and the Twin Gods in *Beginnings: Earth, Sky, Life, Death*
Iroquois creation story.
- The First Sunrise and Sunset in *Beginnings: Earth, Sky, Life, Death*
Australian Aborigine creation story.
- From the Floating Bridge of Heaven in *Beginnings: Earth, Sky, Life, Death*
Japanese creation story.
- A Box Full of Troubles in *Beginnings: Earth, Sky, Life, Death*
Greek creation story.
- The First Animals Make Man (humans) in *Beginnings: Earth, Sky, Life, Death*
Miwok creation story.
- The Road to Olelpanti in *Beginnings: Earth, Sky, Life, Death*
Wintu creation story.
- The Tree with Animal Fruit in *Beginnings: Earth, Sky, Life, Death*
South African Bush creation story.

CREATION & CREATIVITY RESOURCES

- *Nature Through Science and Art*
- *Beginnings: Earth, Sky, Life, Death*

EARTH SPIRIT

EARTH SPIRIT - CURRICULA

- *Honoring Our Mother Earth: Experiences in Native American Spirituality* Primary, Elementary
- *When She Was Young: Stories of the Earth Goddess in Early Times and Places* Elementary
- *Paganism 101: a Unitarian Exploration of The New Paganism* Young Adult and Adult

EARTH SPIRIT - LESSONS

- Medicine Wheel in *Honoring Our Mother Earth*
All things in the Universe are Equal; Introduces Native American Spirituality
- All Things are Connected in *Honoring Our Mother Earth*
guided meditation children choose an animal name
- Mask Making in *Honoring Our Mother Earth*
mask making personal ceremonial pendant
- Giving Thanks in *Honoring Our Mother Earth*
smudging
- The Ceremony in *Honoring Our Mother Earth*
short, can be part of larger service
- The Adventures of Kwan Yin in *When She Was Young*
- Gesteanna and Dumuzi in *When She Was Young*
- The Memory of Belit Sheri in *When She Was Young*
- Earth Mother in *When She Was Young*
- Like a River in *When She Was Young*
- Euronymy in *When She Was Young*
- Introduction in *Paganism 101*
What is paganism? The stone game.
- Ritual in *Paganism 101*
What is ritual? What is its place in spirituality? Salt water purification; kinesthetic body meditation.
- The Goddess and The God in *Paganism 101*
The Divine personified; mask making.
- Witchcraft in *Paganism 101*
The working circle; a spell to befriend our deep self.
- The Moon in *Paganism 101*
Symbols and meanings of the moon; guided meditation and divination.
- Where do We Go From Here? in *Paganism 101*
The meaning of Gaia; nature religion for real.
- Circling in *Paganism 101*
Why cast a circle? Eclectic ritual and guided meditation.

EARTH SPIRIT - SONGS

- 21 For the Beauty of the Earth in *Singing the Living Tradition*
- The Earth is My Mother in *Rise Up Singing*

EARTH SPIRIT - STORY BOOKS

- *Loving the Earth*
- *The Earth Is My Mother*

ELEMENTS

ELEMENTS - CURRICULA

- WOW!: *The Wonders of Wetlands* Multi-age

ELEMENTS - LESSONS

AIR AND SKY

- Session #9: Gluscabí and the Wind Eagle in *Keepers of the Earth*
An Abenaki story and activities that address wind, air pollution, and seed dispersal.
Corresponds to Borchelt's *A Companion* session #4
- Session #13: How Coyote Was the Moon in *Keepers of the Earth*
The moon and eclipses. Story used in Borchelt's *A Companion* #6.
- Session #14: How Fisher Went to the Skyland: The Origin of the Big Dipper in *Keepers of the Earth*
Story and activities that address astronomy, constellations, and stargazing. Activity used in Borchelt's *A Companion* session #6.
- Snow and More: Crystals in the Clouds in *Hands-On Nature*
- Breath of Life: Earth's Invisible Blanket in *Hands-On Nature*
- Sound Symphony: Good Vibrations in *Hands-On Nature*
- Wind and Clouds: Reading the Sky in *Hands-On Nature*

EARTH

- The environment in *Ecology: Usborne*
geology, climate, soil, plant experiments
- Session #8: Rock stories in *Keepers of the Earth*
Stories and activities that address geology and soil. One activity is used in Borchelt's *A Companion* session #3
- Finding Your Way: Clues that Give Us Directions in *Hands-On Nature*
- Erosion: Shaping the Landscape in *Hands-On Nature*
- Pebbles and Rocks: Archives of Earth's History in *Hands-On Nature*
- 10: Stories in Rocks and Bones in *A Stepping Stone Year*

FIRE AND SUN

- Session #6: Loo-Wit, The Fire-Keeper in *Keepers of the Earth*
A Nisqually story and activities that address energy sources, use, and conservation. See Borchelt's *Companion* #2
- Sun Power: Energy for Life in *Hands-On Nature*

WATER AND SEA

- The ocean in *Ecology: Usborne*
marine habitats, food cycle, and pollution
- Session #10: Water stories in *Keepers of the Earth*
Stories and activities that address fresh water and its inhabitants and the water cycle. Story used in Borchelt's *A Companion* session #5; Activity used in Borchelt (2001) session #11.
- Session #11: Stories about the Ocean in *Keepers of the Earth*
Two stories with discussions of Inuit survival in extreme conditions and activities about fluid dynamics, marine life, salt water, and Inuit life.
- Session #12: How Raven Made the Tides in *Keepers of the Earth*
A story with discussion of tidal mechanics and activities concerning the sea, seashore creatures, and quiet meditation in and observation of the tidal zone.
- Streams: the Challenge of a Moving, Watery World in *Hands-On Nature*
- Ponds: Life in Still Waters in *Hands-On Nature*
- Water, Water Everywhere: Journey Through the Water Cycle in *Hands-On Nature*

- 19 Experiences with rain and the web of life in *Experiences With the Web of Life*
- 43 Experiences related to clean water in *Experiences With the Web of Life*
- 9: Stories in a Drop of Water in *A Stepping Stone Year*

- You're Made of Star-Stuff in *The Kids' Book of Awesome Stuff*
 You're related to everything on Earth, because all things come from the same star-stuff.
- The Elements in *Paganism 101*
 The elements and directions and their attributes and correspondences; passing the talking stick; elemental spiral dance.
- 28: My World Has Darkness in *Celebrating Me and My World*
- 29: My World Has Light in *Celebrating Me and My World*
- Session 4: Air in *Supplement to Keepers of the Earth*
 We become aware of the air as wind and weather. Uses *Keepers of the Earth* session #9.
- Session 5: Water in *Supplement to Keepers of the Earth*
 We become aware of water as necessary to life. Uses *Keepers of the Earth* session #10.
- Session 6: Sky in *Supplement to Keepers of the Earth*
 The sky and celestial objects. Uses *Keepers of the Earth* sessions #13 and #14.
- 27: My World Has Air in *Celebrating Me and My World*
- Session 3: Earth in *Supplement to Keepers of the Earth*
 We become aware of the earth, soil, and rocks. Uses *Keepers of the Earth* sessions #8 and #4.
- 30: My World Has Sand and Soil in *Celebrating Me and My World*
- Session 2: Fire in *Supplement to Keepers of the Earth*
 We become aware of many kinds of fire in the world. Uses *Keepers of the Earth* session #6.
- 26: My World Has Water in *Celebrating Me and My World*
- 8: We Need the Rain in *We Are Many We Are One*

ELEMENTS - RESOURCES

- Brother Sun, Sister Moon: A personal resource collection of stories, poems, songs, and graphics*
 A great resource to supplement adult personal study or to assist in preparing worship for all ages. roughly 30 pages.
- Find the Constellations*

ELEMENTS - SONGS

- 100 I've Got Peace Like a River in *Singing the Living Tradition*
- 387 The Earth, Water, Fire, Air in *Singing the Living Tradition*
- 11 O God of Stars and Sunlight in *Singing the Living Tradition*
- 363 Alleluia! Sang Stars in *Singing the Living Tradition*
- I Circle Around in *Rise Up Singing*
- 362 Rise Up, O Flame in *Singing the Living Tradition*
- Canoe Round in *Rise Up Singing*
- The Element Song by Tom Lehrer

•ELEMENTS - STORY BOOKS

- Bring the Rain to Kapiti Plain*
- Earth, Fire, Water, Air*
- The World Beyond the Waves*
- All Around Us*

FAUNA

FAUNA - CURRICULA

- *Keepers of the Animals* Primary, elementary
- *Animal Helpers* Preschool

FAUNA - LESSONS

- Building a bird table in *Ecology: Usborne science and experiments*
- Session #20: Gluscabi and the Game Animals in *Keepers of the Earth*
Story and activities that address the relationship of predator and prey. Corresponds to Borchelt 's *A Companion* session #9.
- Session #21: Awi Usdi, the Little Deer in *Keepers of the Earth*
Animal species survival and our role as stewards.
- Amazing Insects: Adapted and Adaptable in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Hunter - Hunted: A Complex Relationship in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Teeth and Skulls: Dentition Determines the Diet in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Beaks, Feet, and Feathers: Fantastic Flying Machines in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Owls: Silent Predators of the Night in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Frogs and Polliwogs: Miraculous Transformation in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Life in a Field: Exposed to the Elements in *Hands-On Nature*
- Forest Floor: Home of the Hidden Workers in *Hands-On Nature*
- White-Tailed Deer: Elusive Beauty of Woods and Field in *Hands-On Nature*
- Fly Away or Stay?: Where Do the Birds Go and Why? in *Hands-On Nature*
- Bird Songs: Musical Messages in *Hands-On Nature*
- Spiders and Webs: Webs and Their Weavers in *Hands-On Nature*
- Tracks and Traces: Clues that Tell a Tale in *Hands-On Nature*
- Camouflage: Designed to Conceal in *Hands-On Nature*
- Honeybees: Hives and Honey in *Hands-On Nature*
- 3: Experiences with moths and butterflies in *Experiences With the Web of Life*
- 4: Experiences with insects in *Experiences With the Web of Life*
- 8: Experiences related to bats in *Experiences With the Web of Life*
- 10: Experiences with squirrels in *Experiences With the Web of Life*
- 13: Experiences with woodpeckers in *Experiences With the Web of Life*
- 17 Experiences with litters and runts in *Experiences With the Web of Life*
- 18 Experiences with pets in *Experiences With the Web of Life*
- 20 Experiences with spiders and webs I in *Experiences With the Web of Life*
- 21 Experiences with things that hatch from eggs in *Experiences With the Web of Life*
- 22 Experiences related to pigs as food in *Experiences With the Web of Life*
- 24 Experiences with how we treat wild things in *Experiences With the Web of Life*
- 25 Experiences with rodents in *Experiences With the Web of Life*
- 28 Experiences with spiders and webs II in *Experiences With the Web of Life*
- 29 Experiences with crickets and grasshoppers in *Experiences With the Web of Life*
- 34 Experiences with earthworms in *Experiences With the Web of Life*
- 36 Experiences with related to birds II in *Experiences With the Web of Life*
- 37 Experiences with a cat in *Experiences With the Web of Life*
- 38 Experiences related to bees I in *Experiences With the Web of Life*

- 39 Experiences related to bees II in *Experiences With the Web of Life*
- 40 Experiences with moths and butterflies in *Experiences With the Web of Life*
- 11: Stories in Animals in *A Stepping Stone Year*
- Session 9: Animals in *Supplement to Keepers of the Earth* We become aware of the role animals play in the cycles of the earth. Uses *Keepers of the Earth* session #20.
- 1: Meeting Our Animal Helpers in *Animal Helpers*
This session introduces guided meditation and identification with an Animal Helper.
- 2: Helping Animals of the Air in *Animal Helpers*
In this session we build a nest, learn about the air, and make window-clings to help birds avoid windows.
- 3: Helping Animals of the Land in *Animal Helpers*
In this session we learn about the forest, and make terrariums to take home.
- 4: Helping Animals of the Water in *Animal Helpers*
In this session we learn about water, and find ways to save water in our own church building.
- 5: Mask Making in *Animal Helpers*
In this session we make masks and move and play like our *Animal Helpers*
- 6: Story Making in *Animal Helpers*
In this session we make a story about our Animal Helpers and cooperation.
- 7: Children's Sunday in *Animal Helpers*
This worship and presentation can easily be part of a larger worship service.
- 23: My World Has Animals in *Celebrating Me and My World*
- 24: My World Has Fish in *Celebrating Me and My World*
- 25: My World Has Birds in *Celebrating Me and My World*

FAUNA - RESOURCES

- *A Guide to Bird Behavior I & II*
- *A Guide to Observing Insect Lives*
- *A Guide to Animal Tracking and Behavior*
- *TOPS Learning Systems: Animal Survival*

FAUNA - STORY BOOKS

- *Every Living Thing*
- *Hawk, I'm Your Brother*
- *Prince William*
- *The Legend of the Whale*
- *The Lady and the Spider*
- *Tano and Binti, Two Chimpanzees Return to the Wild*

FLORA

FLORA - CURRICULA

- *Keepers of Life* Primary, Elementary

FLORA - LESSONS

- Session #16: The Coming of Corn in *Keepers of the Earth*
Farming, the nutrient cycle, farmers and the soil. See Borchelt's *Companion* #8.
- Session #18: Kokopilau, the Hump-Backed Flute Player in *Keepers of the Earth*
A story with discussion and activities concerning insects, flowers, and pollination.
- Grasses: Slender Stalks with Seeds that Nourish the World in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Thorns and Threats: Plants' and Animals' Strategic Defenses in *Hands-On Nature*
RE Supplement for this lesson is available from UU Ministry for Earth.
- Seed Dispersal: Ingenious Ways to Get Around in *Hands-On Nature*
- Inside a Flower: Making a New Generation in *Hands-On Nature*
- Dandelions: Survivors in a Challenging World in *Hands-On Nature*
- Variations on a Leaf: The Great Producers in *Hands-On Nature*
- 9: Experiences with bulbs and seeds in *Experiences With the Web of Life*
- 26 Experiences related to miracles in *Experiences With the Web of Life*
- 33 Experiences with wild flowers in *Experiences With the Web of Life*
- 35 Experiences with gardening in *Experiences With the Web of Life*
- 42 Experiences with grass and grains in *Experiences With the Web of Life*
- The Sky Tree; How Kishelmukong Made the People and the Seasons in *Keepers of Life*
- The Thanks to the Trees in *Keepers of Life*
- The Circle of Life and the Clambake in *Keepers of Life*
- Fallen Star's Ears in *Keepers of Life*
- Koluskap and Malsom in *Keepers of Life*
- Why Some Trees Are Always Green in *Keepers of Life*
- The Bitterroot; Indian Summer in *Keepers of Life*
- The First Basket in *Keepers of Life*
- Blue Dawn in *Keepers of Life*
- The Woman Who Lives in the Earth; Waw Giwulk - The Center of the Basket in *Keepers of Life*
- How Fox Brought the Forests From the Sky; the People of Maize in *Keepers of Life*
- Waynabozho and the Wild Rice in *Keepers of Life*
- The Buffalo Bull and the Wild Rice in *Keepers of Life*
- You're Saved by Something Green in *The Kids' Book of Awesome Stuff*
You're part of Earth's systems. You and plants breathe together.
- Session 8: Plants in *Supplement to Keepers of the Earth*
The role plants play in the cycles of the earth. Uses *Keepers of the Earth* session #16.
- 32: My World Has Flowers in *Celebrating Me and My World*

FLORA - RESOURCES

- *A Guide to Enjoying Wildflowers* - Stokes' *Nature Guides*.

FLORA - SONGS

- I Love the Flowers in *Rise Up Singing*
That great old campfire round - flowers, daffodils, mountains, and firelight!

FLORA - STORY BOOKS

- *Miss Rumphius*
- *Noah's Wife: The Story of Naamah*

TREES - VERY SPECIAL FLORA!

TREES - LESSONS

- Coniferous and deciduous forests in *Ecology: Usborne*
types of forests, identifying conifers, measuring tree heights.
- Tropical rainforests in *Ecology: Usborne*
build your own rainforest, forest layering, people of the rainforest, importance of the rainforests, destruction of the rainforests.
- Planting Trees in *Ecology: Usborne* science and experiments
- Session #5: Four Worlds: the Dine Story of Creation in *Keepers of the Earth*
A Dine creation story and activities that address trees, trees' spirits, soil, and stewardship.
- Session #17: Manabozho and the Maple Trees in *Keepers of the Earth*
A story with discussion and activities concerning the succession of the forest and the parts of a tree.
- Rotting Logs: Temporary Homes on the Forest Floor in *Hands-On Nature*
- Meet a Tree: The Sum of Many Parts in *Hands-On Nature*
- Cones: Cradles for the Conifers in *Hands-On Nature*
- 5: Experiences with trees I in *Experiences With the Web of Life*
- 6: Experiences with falling leaves in *Experiences With the Web of Life*
- 41A Experiences with trees II in *Experiences With the Web of Life*
- 41B Experiences with trees II in *Experiences With the Web of Life*
- 31: My World Has Trees in *Celebrating Me and My World*
- 5: Each Tree is special in *We Are Many We Are One*
- 6: We Must Care For Trees in *We Are Many We Are One*

TREES - RESOURCES

- The Tree of Life: A personal resource collection of stories, poems, songs, and graphics*
A great resource to supplement adult personal study or to assist in preparing worship for all.

TREES - SONGS

- I am an Acorn in *Rise Up Singing*
"God is" can be easily replaced by "Spirit" for those who wish.

TREES - STORY BOOKS

- A Tree in a Forest*
- Maxine's Tree*
- Once There Was a Tree*
- The People Who Hugged Trees*
- The Man Who Planted Trees*

This is a short book for grown ups about a man who single-handedly reforested a huge section of Provence... but it became an intergenerational service in Portsmouth, NH: "We modified the story for length and to accommodate several instruments. During the story, one of the artists in our congregation painted. She started with a black and white landscape depicting the village and the surrounding land that she did ahead of time and then with color she brought the scene to life"

SUSTAINABILITY

SUSTAINABILITY - CURRICULA

- *Caring for Our Planet Earth* Primary, Elementary

SUSTAINABILITY - LESSONS

- Earth & Resources in *Caring for Our Planet Earth*
Resources are finite Natural resources Renewable and nonrenewable resources manufactured resources
- Garbage I in *Caring for Our Planet Earth*
Swap meet! - great action project finite resources humans must reduce garbage reuse materials
- Garbage II in *Caring for Our Planet Earth*
recycle recycling center field trip recycle at home
- You Can Help! in *Caring for Our Planet Earth*
write letters collect trash lots of activities
- Celebration in *Caring for Our Planet Earth*
a short worship, can be part a longer service, celebrating the children's environmental action
- Disturbing the cycles in *Ecology: Usborne*
Pollution, recycling, acid rain, organic and chemical farming
- Energy and the environment in *Ecology: Usborne*
renewable energy, conserving energy.
- Making recycled paper in *Ecology: Usborne* science and experiments
- 7: Experiences with leaves and composting in *Experiences With the Web of Life*
- 14: Experiences with recycling and holiday giving in *Experiences With the Web of Life*
- 11: We Must Care for the Earth and its Plants and Animals in *We Are Many We Are One*

SUSTAINABILITY - RESOURCES

- *50 Simple Things Kids Can Do to Save the Earth*

SUSTAINABILITY - SONGS

- 16 'Tis a Gift to be Simple in *Singing the Living Tradition*
- Solar Carol in *Rise Up Singing*
tune is "Angels We Have Heard on High", #231 in *Singing the Living Tradition*

SUSTAINABILITY - STORY BOOKS

- *The Lorax*
- *Katherine and the Garbage Dump*
- *The Moonlight Hide and Seek Club, The Pollution Solution*
- *Everybody Needs a Rock*

RESOURCES BY TITLE

50 Simple Things Kids Can Do to Save the Earth, The EarthWorks Group, (1990), Andrews and McMeel, Kansas City.

Sustainability, Resource. Suitable for Primary, Elementary, Junior Youth, Youth, Young Adults, Adults, Fifty action projects with discussion information. Wow! and the grown-ups can learn how to pitch in, too. Could easily be the centerpiece for a curriculum with the thoughtful addition of a spiritual element..

A Guide to Animal Tracking and Behavior, Donald and Lillian Stokes, Little, Brown, and Company.

Fauna, Resource. Stokes' Nature Guides are great resources and background information for teachers.

A Guide to Bird Behavior I & II, Donald and Lillian Stokes, Little, Brown, and Company.

Fauna, Resource. Stokes' Nature Guides are great resources and background information for teachers..

A Guide to Enjoying Wildflowers, Donald and Lillian Stokes, Little, Brown, and Company.

Flora, Resource. Stokes' Nature Guides are great resources and background information for teachers..

A Guide to Nature in Winter, Donald and Lillian Stokes, Little, Brown, and Company.

Cycles, Resource. Stokes' Nature Guides are great resources and background information for teachers..

A Guide to Observing Insect Lives, Donald and Lillian Stokes, Little, Brown, and Company.

Fauna, Resource. Stokes' Nature Guides are great resources and background information for teachers..

A Stepping Stone Year, Margaret K. Gooding, (1989).

Interdependent Web, Curriculum. Suitable for Primary, Elementary, Four of the six units relate to the seventh principle: Beginning myths; Stories scientists tell; Wonder of birth; and Wonderings about death. High-quality curriculum.

A Supplement for Use With Keepers of the Earth, Dawn Star Borchelt, (2001).

Interdependent Web, Curriculum. Suitable for Preschool, This companion to Caduto and Bruchac (1988) excellent work puts Keepers of the Earth in a Unitarian Universalist context. Borchelt provides Chalice lighting words, music, closing circle, a music tape and hooray! activities for preschoolers. This model for supplementing available secular environmental education programs is definitely one to follow., Dawn Star Borchelt, 17710 Indian Head Hwy, Accokeek MD 20607; dawnstar.borchelt@dmuuc.org (\$25)

A Tree in a Forest, Jan Thornhill, Simon & Schuster.

Trees, Story Book. Suitable for Primary, Follow the life of a tree from a seedling, through all the seasons and all its stages of life until its death over 200 years later. .

All Around Us, Eric Carle.

Elements, Story Book. Suitable for Preschool, This preschoolers' storybook has vivid illustrations of air, sea, and underground., Out of Print

Animal Helpers: An Environmental Stewardship and Earth Spirit Curriculum for UU Preschool Children, Sparrow F. Alden, (2004), Birch Books, Plainfield, NH.

Fauna, Curriculum. Suitable for Preschool, This seven session curriculum helps children identify with an animal helper, use guided visualization to learn about the environment, and participate in action projects to help different habitats, and express themselves through sacred dance. The closing session is a presentation suitable for inclusion in a larger worship service., Birch Books, 297 Porter Road, Plainfield, NH 03781; LFSALden@alumni.bowdoin.edu (\$20)

Beginnings: Earth, Sky, Life, Death, Sophia Lyon Fahs & Dorothy T. Spoerl, (1958). *Creation & Creativity*, Story Book. Beautiful creation stories from twelve cultures. Absolutely classic. See *A Stepping Stone Year* for lessons which incorporate these tales. Also see *Which Lesson* for suggestions of activities..

Bring the Rain to Kapiti Plain, Verna Aardema.
Elements, Story Book. Suitable for Preschool, Primary, Rhythmic folk tale in which our hero brings water to a drought stricken area..

Brother Sun, Sister Moon: A personal resource collection of stories, poems, songs, and graphics, Beth Brownfield.

Elements, Resource. Suitable for Youth, Young Adults, Adults, A great resource to supplement adult personal study or to assist in preparing worship for all ages. roughly 30 pages., Beth Brownfield, 107 W. Rustic Lodge, Minneapolis, MN 55409; bethbrown@aol.com

Caring for Our Planet Earth, Tirrell H. Kimball, Green Timber Publications, Portland, Maine.

Sustainability, Curriculum. Suitable for Primary, Elementary, This five session curriculum is practical, fun, and very tightly put together. It features great activities to help us all reduce, reuse, and recycle., Green Timber Publications, PO Box 3884, Portland, Maine 04104 (207) 797 4180

Celebrating Me and My World: a Unitarian Universalist Preschool Curriculum, Debora C. Pratt, (1995), Unitarian Universalist Association, Boston, MA.

Interdependent Web, Curriculum. Suitable for Preschool, Year-long program encourages children to celebrate themselves and their interconnectedness to the world. The ten sessions of unit 2 relate to nature., UUA Bookstore 1-800-215-9076; www.uua.org/bookstore.

Celebrating Our Origins in the Universe, Rev. Adrian Melott and Gaye Gronlund.
Creation & Creativity, Curriculum. Suitable for Primary, Elementary, A UU RE Curriculum about the story of Creation from the Big Bang through the evolution of Humans. , Rev. Adrian Melott, Department of Physics and Astronomy, University of Kansas, Lawrence, KS, 66045 (913) 864 3037. Gaye Gronlund, Early Childhood Education Consultant, 12005 Watermark Court, Indianapolis, IN 46236 (317) 823-8860

Connecting With The Earth, Canadian Unitarian Council.
Interdependent Web, Curriculum. Suitable for Preschool, Primary, Elementary,

Junior Youth, Youth, Young Adults, Adults, multi-age, including adults, units for each of several climate/habitats , Canadian Unitarian Council, 600 Eglinton Ave. East, Suite 401, Toronto, Ontario, M4P 1P3

Earth Child, K. Sheehan & M. Waidner, (1994), Council Oak Books, Tulsa, OK.
Interdependent Web, Story Book. Suitable for Preschool.

Earth, Fire, Water, Air, Mary Hoffman.
Elements, Story Book. Suitable for Elementary, Junior Youth, Young Adults, Adults, Facts, myths, stories, poems about the classic four elements. From ancient burial rituals to constellations in the night sky to legends of mermaids, kids will have much to mull over and enjoy..

Ecology: Usborne science and experiments, Richard Spurgeon, 1988, Usborne Publishing Ltd, London.

Interdependent Web, Resource. Suitable for Preschool, Primary, Elementary, Junior Youth, Youth, Young Adults, Adults, An excellent resource for background and activities which could be built into lessons at any age level. , Usborne Publishing Ltd, 20 Garrick Street, London WC2E 9BJ, England, United Kingdom

Every Living Thing, Cynthia Rylant.
Fauna, Story Book. Suitable for Primary, Book of short stories about different animals, not anthropomorphized..

Everybody Needs a Rock , Byrd Baylor.
Sustainability, Story Book. Suitable for Preschool, This storybook celebrates the joys of having a rock! Commercial things are nothing in comparison... and great, simple illustrations..

Experiences With the Web of Life, Marjory M. Donn, Abby L. W. Crowley, Jean Rashkin, Carla Miller, Charles Tompkins, and Penny O'Brien, (1996), Paint Branch Unitarian Universalist Church, Adelphi, MD.

Interdependent Web, Curriculum. Suitable for Primary, 46 sessions, great instructions for preparation, many activities to fit different time schedules. Uses Charlotte's Web for a centerpiece. Projects and themes which weave throughout the curriculum mean that this is best used as a continuous piece, rather than mixing with another curriculum., Paint Branch Unitarian Universalist Church, 3215 Powder Mill Road; Adelphi, MD 20783, 301-937-3666

Ferry Beach Ecology School.

Interdependent Web, Resource. The mission of Ferry Beach Ecology School is to foster stewardship for the Earth by educating youth and adults about ecology, natural history, environmental preservation and sustainability. They offer residential ecology education on the southern coast of Maine for many different age groups throughout the year. Their outdoor lessons focus on fun, hands-on learning with an emphasis on interdisciplinary science and exploration. kids, spring and fall. but weekends are church retreats., Ferry Beach Ecology School, 5 Morris Avenue, Saco, Maine 04072; www.fbes.org; 207-283-9951

Ferry Beach Park Association.

Interdependent Web, Resource. Summer programs in association with the UUA, delivering the same high-quality information as the Ferry Beach Ecology School adding the

spiritual and UU components; programs for adults, kids, and families., same address, phone 207 282 4489; www.ferrybeach.org

Find the Constellations, H. A. Roy, (1954), Houghton Mifflin Company, Boston.
Elements, Resource.

Fostering a Sense of Wonder During the Early Childhood Years, R. Wilson, (1993), Ohio Environmental Education Fund, Columbus, OH.

Interdependent Web, Resource. Suitable for Preschool, Resource for Preschool Leaders.

From a Distance, Julie Gold, Illustrated by Jane Ray.
Interdependent Web, Story Book. Suitable for Preschool, Primary, Beautifully illustrated book of the popular song lyrics - about the interconnectedness of Earth as seen from a distance.

Hands-On Nature, Jenepher Lingelbach and Lisa Purcell, editors, (2000), University Press of New England, Hanover, NH.

Interdependent Web, Curriculum. Suitable for Primary, Elementary, The Vermont Institute of Natural Science has created an extraordinary nature curriculum! Five units of eight lessons each, designed for Kindergarten through fifth grade, are full of good science and lots of fun. Each lesson has a wide variety of activities which run about an hour and a half - more if you can get outdoors - so leaders can pick and choose their activities to fit their group, time frame, and budget (some materials, like owl pellets, will take up resources). Units are: Adaptations; Habitats; Cycles; Designs of Nature; Earth and Sky. The UU Ministry for Earth publishes a supplement (Alden, 2004) which adds a sacred element to these lessons (as of June 2004, Adaptations unit is supplemented), University Press: 800-421-1561; www.upne.com.

Hawk, I'm Your Brother, Byrd Baylor.
Fauna, Story Book. Suitable for Preschool, Primary, A Native American boy wants to fly like the hawk - and makes his dream come true.

Honoring Our Mother Earth: Experiences in Native American Spirituality, Tirrell H. Kimball with Gina Orlando, 1988, Green Timber Publications, Portland, Maine.

Earth Spirit, Curriculum. Suitable for Primary, Elementary, Six sessions, including one worship and one multi-age creativity activity. The curriculum is for Primary and elementary grades, elegantly put together. I would be sure to find leaders who are sensitive to issues of cultural misappropriation so the curriculum can be used in the respectful and appropriate spirit in which it was written., Green Timber Publications, PO Box 3884, Portland, Maine 04104 (207) 797 4180

In Our Hands, Grades 1 - 3, Samuel Goldenberg, Eleanor Hunting and Mary Thomson, (1989), Unitarian Universalist Association, Boston, MA.

Interdependent Web, Curriculum. Suitable for Primary, This 16 session curriculum on peace and fairness includes a brief unit on environmental stewardship, UUA Bookstore 1-800-215-9076; www.uua.org/bookstore.

In Our Hands, Grades 4 - 6, Barry Andrews and Pat Hoerltoerfer, (1990), Unitarian Universalist Association, Boston, MA.

Interdependent Web, Curriculum. Suitable for Elementary, This 16 session curriculum on peace and justice includes a unit on environmental stewardship, UUA.

Bookstore 1-800-215-9076; www.uua.org/bookstore.

Katherine and the Garbage Dump, Martha Morris.

Sustainability, Story Book. Suitable for Primary, Elementary, Katherine's yard is turned into a garbage dump, she gets the community to reduce, reuse, recycle, and compost.

Keepers of Life, Michael J. Caduto and Joseph Bruchac, (1994), Fulcrum, Inc., Golden, CO.

Flora, Curriculum. Suitable for Primary, Elementary, This part of the excellent Earth Keepers series concerns discovering plants and our interconnections with them. Activities are just right for primary and elementary students, but a social and a reflective component carries the rich material right through Junior Youth. , Fulcrum Publishing, 16100 Table Mountain Parkway, Suite 300, Golden, CO 80403-1672; 800-992-2908; www.fulcrum-books.com.

Keepers of the Animals, Michael J. Caduto and Joseph Bruchac, (1991), Fulcrum, Inc., Golden, CO.

Fauna, Curriculum. Suitable for Primary, Elementary, Smooth connections between the traditional stories and the hands-on environmental stewardship activities set this series at the top of my list. Sessions require less than an hour's thoughtful preparation. Activities are just right for primary and elementary students, but a social and a reflective component carries the material right through Junior Youth. , Fulcrum Publishing, 16100 Table Mountain Parkway, Suite 300, Golden, CO 80403-1672; 800-992-2908; www.fulcrum-books.com.

Keepers of the Earth: Native American Stories and Environmental Activities for Children, Michael J. Caduto and Joseph Bruchac, (1988), Fulcrum, Inc., Golden, CO.

Interdependent Web, Curriculum. Suitable for Primary, Elementary, Smooth connections between the traditional stories and the hands-on environmental stewardship activities set this book - and its sequels - at the top of my list. Twenty three sessions require less than an hour's thoughtful preparation. Activities are just right for primary and elementary students, but a social and a reflective component would carry the material right through Junior Youth. Dawn Star Borchelt's (2001) companion provides preschool activities, see elsewhere in this bibliography., Fulcrum Publishing, 16100 Table Mountain Parkway, Suite 300, Golden, CO 80403-1672; 800-992-2908; www.fulcrum-books.com.

Keepers of the Night, Michael J. Caduto and Joseph Bruchac, (1994), Fulcrum, Inc., Golden, CO.

Cycles, Curriculum. Suitable for Primary, Elementary, The "holistic, interdisciplinary, and multicultural" approach set this series at the top of my list. Sessions should be held at night! Activities are just right for primary and elementary students, but a social and a reflective component carries the material right through Junior Youth. , Fulcrum Publishing, 16100 Table Mountain Parkway, Suite 300, Golden, CO 80403-1672; 800-992-2908; www.fulcrum-books.com.

Lifetimes, David Rice, Dawn Publications, Nevada City, CA.

Cycles, Curriculum. Suitable for Primary, Comparison of different creatures' life cycles includes conversation questions. Teacher's Guide is available., Dawn Publications, 12402 Bitney Springs Road, Nevada City, CA 95959; 800-545-7475; www.dawnpub.com.

Loving the Earth, Fredric Lehrman.

Earth Spirit, Story Book. Subtitled "A Sacred Landscape Book for children"
Beautifully illustrated - the fundamentals of Mother Earth; descriptions of what the earth offers; genuinely calls attention to the importance of Earth and her needs..

Maxine's Tree , Diane Leger.

Trees, Story Book. Suitable for Preschool, Primary, Elementary, A child wants to save the trees of her valley, protests in a loving way. This book was banned in British Columbia.

Miss Rumphius, Barbara Cooney.

Flora, Story Book. Suitable for Preschool, Primary, A strong female has an adventurous life, but knows that she must also make the world more beautiful. Scatters zillions of lupine seeds, beautifying her home region and gaining comfort in her advanced years..

National Wildlife Week Educator's Guides, National Wildlife Federation, National Wildlife Federation, Vienna, VA.

Interdependent Web, Resource. Guides available for many years!,
<http://www.nwf.org/nationalwildlifeweek/guide.html>

Nature for the Very Young, M. Bowden, (1989), John Wiley & Sons, New York.
Interdependent Web, Resource. Suitable for Preschool.

Nature Through Science and Art, S. G. Criswell, (1994), TAB Books, Division of McGraw-Hill, Inc., Summit, PA.

Creation & Creativity, Resource. Suitable for Elementary.

Noah's Wife: The Story of Naamah, Sandy Eisenberg Sasso, Jewish Lights Publishing.

Flora, Story Book. This lovely midrashic tale explains what Noah's wife did to prepare for the flood: she served God by collecting seeds of all the plants of the earth and then tended them in the ark. Brings a nice balance to the story, and explains the abundance of dandelions....

Once There Was a Tree , Natalia Romanova.

Trees, Story Book. Suitable for Preschool, Primary, A lightning-struck tree is cut into a stump, but then sustains other forest creatures. Beautiful illustrations, some find the message rather didactic..

Paganism 101: a Unitarian Exploration of The New Paganism, Louise Bunn, 1998.

Earth Spirit, Curriculum. Suitable for Young Adults, Adults, This nine-session adult curriculum explores the basic concepts of modern paganism, giving participants activities and spiritual practices to add to their repertoire. The lessons should be pursued as a whole. The binder includes an audio tape of chants!., Louise Bunn, 1932 Ferndale Street, Vancouver, British Columbia, V5L 1X8, Canada

Pass the Energy, Please!, Barbara Shaw McKinney, Dawn Publications, Nevada City, CA.

Interdependent Web, Story Book. Suitable for Primary, Elementary, Rhyming story connects plants, herbivores, carnivores, and insects. Teacher's guide is available using movement, art, music, writing and math activity centers., Dawn Publications, 12402 Bitney Springs Road, Nevada City, CA 95959; 800-545-7475; www.dawnpub.com.

Play Lightly on the Earth, J. Horsfall, (1997), Dawn Publications, Nevada City, CA.
Interdependent Web, Resource. Suitable for Preschool, Primary, Elementary, Dawn Publications, 12402 Bitney Springs Road, Nevada City, CA 95959; 800-545-7475; www.dawnpub.com.

Predator: The Food Chain Game, Ampersand Press, Ampersand Press, Oakland, CA.
Interdependent Web, Resource.

Prince William, Gloria and Ted Rand.
Fauna, Story Book. Suitable for Primary, Elementary, Girls help baby seal in an oil spill.

Project Learning Tree, American Forest Foundation, (1995), American Forest Foundation, Washington, DC.
Interdependent Web, Resource. Suitable for Preschool, Primary, Elementary, Junior Youth.

Project WILD, Council for Environmental Education, (1992), Council for Environmental Education, Bethesda, MD.
Interdependent Web, Resource. Suitable for Preschool, Primary, Elementary, Junior Youth, Youth.

Ranger Rick's Nature Scope Series, National Wildlife Federation.
Interdependent Web, Resource. Suitable for NWF, 1412 16th St. NW, Washington, DC 20036

Reading the Outdoors at Night, Vinson Brown, (1972), Stackpole Books, Harrisburg, PA.
Cycles, Resource.

Rise Up Singing, Peter Blood-Patterson (editor), 1988, Sing Out Corporation, Bethlehem, PA.
Interdependent Web, Resource. Suitable for Preschool, Primary, Elementary, Junior Youth, Youth, Young Adults, Adults, This book consists of lyrics, chords, and sources for over 1200 songs which work especially well in group singing. Indispensable from the Sunday School classroom to the campfire., Sing Out Corporation, PO Box 5253, Bethlehem, PA 18015 (215) 865-5366

Seasonal Walks, Gail Collins-Ranadive.
Cycles, Resource. Rev. Collins-Ranadive wants to remind us to take walks with the kids at the solstices and equinoxes, observing the signs of the changing year!.

Sharing Nature With Children, J. Cornell, (1998), Dawn Publications, Nevada City, CA.
Interdependent Web, Resource. Suitable for Adults, This guide for adult leaders is a great resource., Dawn Publications, 12402 Bitney Springs Road, Nevada City, CA 95959; 800-545-7475; www.dawnpub.com.

Sharing the Joy of Nature, J. Cornell, (1989), Dawn Publications, Nevada City, CA.
Interdependent Web, Resource. Suitable for Adults, This guide for adult leaders is a great resource., Dawn Publications, 12402 Bitney Springs Road, Nevada City, CA 95959;

800-545-7475; www.dawnpub.com.

Singing the Living Tradition, Unitarian Universalist Association, 1993, Unitarian Universalist Association, Boston.

Interdependent Web, Resource. Our inclusive hymnal of great depth and breadth. Indispensable. Elsewhere you will find listed hymns which are singable and understandable by children of environmental content. I recommend that the religious educator get a large print spiral bound edition, and make sure the readings are included!, UUA Bookstore 1-800-215-9076; www.uua.org/bookstore.

Spring Holidays from a Unitarian Universalist Perspective, Beth Brownfield, 1993.

Cycles, Resource. This collection of poems, essays, historical notes, activities, and worship materials addresses Easter, Passover, and earth-based traditions of spring celebration. Resource for the planner of events for all ages., Beth Brownfield, 107 W. Rustic lodge, Minneapolis, MN 55409; Bethbrownf@aol.com (\$7 + \$2.50 postage and handling)

Supplement to Hands-On Nature: An Environmental Stewardship and Earth Spirit Curriculum for UU Primary Grade Children, Sparrow F. Alden, (2004), Unitarian Universalist Ministry for Earth.

Interdependent Web, Curriculum. Suitable for Primary, This supplement to Hands-On Nature (Lingelbach and Purcell, 2000) brings that excellent nature curriculum into the UU Sunday School classroom with altar settings, chalice lightings, joys and concerns, prayer, music, and questions for group consideration. Individual sessions are inextricable from Hands-On Nature, and so are not listed separately. The supplement is intended as a model for adapting secular environmental curricula to sacred context, UU Ministry for Earth, 1034 SW 13th Ave., Portland, OR 97205; 503-595-9392; www.uuministryforearth.org.

Tano and Binti, Two Chimpanzees Return to the Wild, Andy and Linda DaVolls. Fauna, Story Book.

The Earth Is My Mother, Bev Doolittle and Elise Maclay, (2000), The Greenwich Workshop Press, Shelton, CT.

Earth Spirit, Story Book. Greenwich Workshop Press, PO Box 875, Shelton, CT 06484; 800-243-4246

The Kids' Book of Awesome Stuff, Charlene Brotman, 2004.

Interdependent Web, Resource. Suitable for Elementary, Junior Youth, This book can be the basis for at-home family study, for group Sunday School lessons, for personal inspiration! This collection of puzzles, activities, and stories is science-based and designed to nurture a sense of wonder, Charlene Brotman, 22 Howard Street, Newton, MA 02458; 617-332-5616; brotmanco@aol.com

The Lady and the Spider, Faith McNulty.

Fauna, Story Book. Suitable for Primary, Spider is happy inside a lettuce – but the lady wants lettuce for lunch. Fortunately for us, she sees the spider and marvels at its beauty.

The Legend of the Whale, Ian Stansfield.

Fauna, Story Book. Suitable for Primary, Elementary, Folk tale – fictional and real animals rescue the whales which had gone out to see if the world were ready to be a peaceful place. Not for little ones.

The Lorax, Dr. Seuss.

Sustainability, Story Book. Suitable for Primary, Elementary, Adults, In this story, the culture is using up the resources (trees) on a consumer fad. It's Dr. Seuss, so delivered with rhythm, rhyme, and style - also with rather a direct finger pointing at humans' abuse of nature, which is why I don't recommend it for preschool..

The Man Who Planted Trees, Jean Giono Wood.

Trees, Story Book. Suitable for Youth, Young Adults, Adults, This is a short book for grown ups about a man who singlehandedly reforested a huge section of provence... but it became an intergenerational service in Portsmouth, NH: "We modified the story for length and to accommodate several instruments. During the story, one of the artists in our congregation painted. She started with a black and white landscape depicting the village and the surrounding land that she did ahead of time and then with color she brought the scene to life", Sandra Greenfield, DRE, South Church, Portsmouth, New Hampshire

The Moonlight Hide and Seek Club, The Pollution Solution, Rosamund Elwin and Michele Paulse.

Sustainability, Story Book. Suitable for Primary, Elementary, not necessarily a read-aloud story, but a great referral for an elementary reader. The kids have a club, find pollution, us cooperative problem solving to fix the problem.

The People Who Hugged Trees, Deborah Lee Rose.

Trees, Story Book. Suitable for Elementary, Junior Youth, A folk talke from India, designated by UNESCO among the top children's books in the world.

The Senses: Our Access to the Living Earth, Beth Brownfield.

Interdependent Web, Curriculum. Suitable for Preschool, Primary, Elementary, These six session include the "UU Principles that apply" in every lesson - one introductory and one for each sense., Beth Brownfield, 107 W. Rustic lodge, Minneapolis, MN 55409; Bethbrownf@aol.com (\$7 + \$2.50 postage and handling)

The Tree in the Ancient Forest, Carol Reed-Jones, (1995), Dawn Publications, Nevada City, CA.

Interdependent Web, Story Book. This lovely book uses cumulative verse to show the interdependence of the creatures and plants of the ancient forest., Dawn Publications, 12402 Bitney Springs Road, Nevada City, CA 95959; 800-545-7475; www.dawnpub.com.

The Tree of Life: A personal resource collection of stories, poems, songs, and graphics, Beth Brownfield.

Trees, Resource. Suitable for Youth, Young Adults, Adults, A great resource to supplement adult personal study or to assist in preparing worship for all ages. , Beth Brownfield, 107 W. Rustic Lodge, Minneapolis, MN 55409; bethbrown@aol.com

The World Beyond the Waves, Kate Kempton.

Elements, Story Book. Suitable for Elementary, Junior Youth, In this fantasy tale, a girl is whisked beneath the waves to witness environmental damage in the ocean caused by humans. Some find this heavy-handed, others find it uplifting..

Tom Brown's Field Guide to Nature and Survival For Children, Tom Brown, Jr., (1989), Berkley Books, New York.

Interdependent Web, Resource.

TOPS Learning Systems: Animal Survival, Don Balick, (1986).
Fauna, Resource. Suitable for 10970 S. Mulino Road, Canby, Oregon 97013.

Walking the Rainbow Path, Rev. Laurie Bushbaum
Interdependent Web Curriculum. Suitable for Primary. A well-organized curriculum on the seven principles. RevLBushbaum@visi.com

We Are Many We Are One, Colleen McDonald, (1996), Unitarian Universalist Association, Boston, MA.

Interdependent Web, Curriculum. Suitable for Preschool, Unit 2 of this excellent curriculum is "Nature Gives Us Gifts, Nature Needs Our Care" (7 lessons). Very organized and rich., UUA Bookstore 1-800-215-9076; www.uua.org/bookstore.

We Believe, Ann Fields and Joan Goodwin, editors, (1998), Unitarian Universalist Association, Boston, MA.

Interdependent Web, Curriculum. Suitable for Preschool, Primary, Elementary, This multi-age curriculum addresses each of the seven principles with activities, stories, worship materials, games, and music., UUA Bookstore 1-800-215-9076; www.uua.org/bookstore.

When She Was Young: Stories of the Earth Goddess in Early Times and Places, Anita Louise, (1994).

Earth Spirit, Curriculum. Suitable for Elementary, Dance, music, discussion, and activities support each lesson's story of the Earth goddess. Six sessions, each featuring a tale from a different culture. Objectives include: "to gain an understanding of the Earth Mother religions as a celebration of the creative life force through connectedness, relatedness, and interdependence" ..

Which Lesson? Unitarian Universalist Curriculum Content Finder second edition, Virginia G. Steel, (2001).

Interdependent Web, Resource. Summaries of curricula for preschool through middle school. Sorted by age, sorted by topic, lesson by lesson brief descriptions. Also available on disk, handy DRE's reference., Virginia G. Steel, 22 Sylvan Way, Wayland, MA 01778; 508-358-7517; virginia@thesteels.com

Who Speaks for Wolf, Paula Underwood Spencer, Tribe of Two Press.

Interdependent Web, Story Book. Suitable for Primary, Elementary, Junior Youth, Young Adults, Adults, the People's struggle to live as Nature instructs..

Windows on the Wild, World Wildlife Fund, World Wildlife Fund.

Interdependent Web, Resource. Suitable for Junior Youth, On line activities and other teaching resources., <http://www.worldwildlife.org>

Winter Holidays from a Unitarian Universalist Perspective, Beth Brownfield, 1993.

Cycles, Resource. This collection of poems, essays, historical notes, activities, and worship materials addresses Winter Solstice, Advent, and Christmas celebrations. Resource for the planner of events for all ages., Beth Brownfield, 107 W. Rustic lodge, Minneapolis, MN 55409; Bethbrownf@aol.com (\$7 + \$2.50 postage and handling)

WOW!: The Wonders of Wetlands, B. E. Slattery, (1991), Environmental Concern, Inc, St. Michaels, MD.

Elements, Curriculum. Suitable for Preschool, Primary, Elementary, Junior Youth, Youth.

Supplement for use with

Hands-On Nature

Information and Activities for
Exploring the Environment with Children

Edited by Jenefer Lingelbach and Lisa Purcell
Illustrated by Susan Sawyer
Published by the Vermont Institute of Natural Science

*An Environmental Stewardship and Earth Spirit Curriculum
for Unitarian Universalist Primary Grade Children*

Sparrow F. Alden, 2004

*Published by Unitarian Universalist Ministry for Earth
(Formerly the Seventh Principle Project)*

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CONTACTS:

To order *Hands-On Nature*:

University Press of New England – 1-800-421-1561; www.upne.com

Vermont Institute of Natural Science – 1-802-457-2779; www.vinsweb.org

UU Ministry for Earth – 1-503-595-9392; www.uuministryforearth.org

To reach Sparrow:

LFSAlden@alumni.bowdoin.edu

GOALS:

To guide primary grade children on an exploration of environmental stewardship, supplementing *Hands-On Nature* with spiritual search and growth.

To encourage children to incorporate the values of each lesson into their own value system and translate these ideas into action.

To support religious education programs in Green Sanctuaries and all others who wish to incorporate environmental stewardship into their ministry with children.

To serve as a model for using secular environmental curricula in a sacred way.

OBJECTIVES:

To have fun!

To learn about environmental stewardship by sharing information and exploration activities.

To use silence and prayer as tools of spiritual search.

To raise Earth Spirit awareness, understanding and appreciation.

THANKS:

To the friendly folks at the Vermont Institute of Natural Science for their inspiration, dedication, ministry, and humour - particularly to Lisa Purcell who is excited to see *Hands-On Nature* reach as many children as possible;

To the UU Ministry for Earth for encouragement and all their good work.

Dedicated to my life partner who built this cozy straw bale cabin.

Undertaken in service to the Spirit of the Birch.

To the Religious Educator;

Hello! Thanks for embarking on this adventure with your primary grade children. Many great nature and environmentalism curricula for children fill the library and bookstore shelves - how exciting for all of us! *Hands-On Nature* is one of the best - designed for kids in kindergarten through fourth grade, beautifully researched, and offering a large number of activities.

How do we turn secular educational materials into central pieces of our religious education programs? The UU Ministry for Earth offers this supplement as one model. We earnestly hope that religious educators throughout the UUA will take on the cooperative task of creating supplements to all the best in Green Curricula currently available.

THIS SUPPLEMENT IS MEANT TO BE DISTRIBUTED, PHOTOCOPIED, AND SHARED WITH JOYFUL ABANDON! Please spread the word, asking for no more than copying and postal fees.

In this second edition, we supplement two units of *Hands-On Nature*, eight lessons on Adaptations and eight on Designs of Nature. Send in the back page to receive supplements for the remaining units.

Please choose at least two adults to lead this course. In a kindergarten classroom, I've found that a ratio of four children per adult works well; for older children a slightly higher ratio might be acceptable - but this is so much fun, you'll have plenty of adults joining in! I've included a copy of the UUA's Code of Ethics for the teachers to sign and for you to file when you have teacher training workshops (make photocopies and leave your original blank).

Each lesson requires careful preparation. Be sure that you and the teachers are clear on who is responsible for this work.

Enjoy the journey!

Peace,

Sparrow

To the Minister;

Thanks for your support of the primary children who will be working with *Hands-On Nature* in your RE program.

When you provide a Children's Message in your ministry with children, both sides benefit greatly. When you can tailor your message to the curricular lesson of the day it will reinforce the children's learning and deliver the message that these lessons about environmental stewardship and a responsible search for truth and meaning are shared by the whole congregation.

For each of the children's lessons, then, I include here the day's themes around which you might craft your story.

Peace,

Sparrow

Unit 1: Adaptations

Lesson 1: Amazing Insects: Adapted and Adaptable

Lesson 2: Grasses: Slender Stalks with Seeds that Nourish the World

Lesson 3: Hunter - Hunted: A Complex Relationship

Lesson 4: Teeth and Skulls: Dentition Determines the Diet

Lesson 5: Beaks, Feet, and Feathers: Fantastic Flying Machines

Lesson 6: Owls: Silent Predators of the Night

Lesson 7: Thorns and Threats: Plants' and Animals' Strategic Defenses

Lesson 8: Frogs and Polliwogs: Miraculous Transformation

Unit 4: Designs of Nature

Lesson 1: Spiders and Webs: Webs and Their Weavers

Lesson 2: Variations on a Leaf: The Great Producers

Lesson 3: Cones: Cradles for the Conifers

Lesson 4: Snow and More: Crystals in the Clouds

Lesson 5: Tracks and Traces: Clues that Tell a Tale

Lesson 6: Winter Weeds: Rugged Remnants of Summer Flowers

Lesson 7: Camouflage: Designed to Conceal

Lesson 8: Honeybees: Hives and Honey

Dear, Dear Teachers,

Thank you for leading this class. Through this act of love, you will be leading our children to incorporate our Unitarian Universalist values into their own value system. You touch the future. Thank you. Bless you.

Peace,
Sparrow

- Read this whole curriculum soon, both *Hands-On Nature* and this supplement.
- Get clear with your co-teacher and your DRE on who is doing which pieces of the preparation.
- You will notice that I've repeated myself from lesson to lesson - who knows when you might get ill and a substitute needs a full description of the opening circle?
- The Code of Ethics form serves for you and your DRE to be informed about the ethics of working with children and is another way in which the church ensures children's safety. Please photocopy it to sign and leave the original in this supplement.
- Set up the altar in the center of your gathering circle, away from the activity materials.
- Chalice - I use a sealable food container full of sand and seat a votive candle in the center.
- A chime or similar signal belongs on your altar, too
- Matches - I get about twenty small books of matches and stash them everywhere.
- Birthday candles - enough for one for each child each session for joys and concerns.
- Display your classroom covenant prominently!
- Check out your First Aid kit before you need it, make sure it includes gloves.
- Fidgets - carded wool, modeling clay, or similar tactile thing.
- A copy of *The Sun In Me*, compiled by Judith Nicholls - poems for children about the planet. Use any time that the children want more reflection and prayer in their lesson.

Code of Ethics for Adults and Older Youth who are in leadership roles with children and youth

Adults and older youth who are in leadership roles are in a position of stewardship and play a key role in fostering spiritual development of both individuals and the community. It is, therefore, especially important that those in leadership positions be well qualified to provide the special nurture, care and support that will enable children and youth to develop a positive sense of self and a spirit of independence and responsibility.

The relationship between young people and their leaders must be one of mutual respect if the positive potential is to be realized. There are no more important areas of growth than those of self-worth and the development of a healthy identity as a sexual being. Adults play a key role in assisting children and youth in these areas of growth. Wisdom dictates that children, youth and adults suffer damaging effects when leaders become sexually involved with young persons in their care; therefore, leaders will refrain from engaging in sexual, seductive or erotic behavior with children and youth. Neither shall they sexually harass or engage in behavior with youth which constitutes verbal, emotional, or physical abuse.

Leaders shall be informed of the code of ethics and agree to it before assuming their role. In cases of violation of this code, appropriate action will be taken.

This Code of Ethics was adopted by the Unitarian Universalist Association in 1986.

RE Volunteer's Statement:

I have read and understand the above statements of position, expectations and actions.

Date:

Printed Name:

Signature:

Lesson 1: Amazing Insects: Adapted and Adaptable

Set Up

Your altar could hold, in addition to the chalice materials,
An altar cloth with dragonflies or butterflies or other insects
Mounted or display-boxed insects
Insect toys or stuffies (those butterfly finger puppets are great)
Insect images - photos or drawings

Warm Up

Bring the children into your sacred space with an opportunity for silence.
One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

Flame of fire, spark of the universe...
We strive to understand ourselves
and our earthly home.

by Leslie Pohl-Kosbau; #451 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Great Spirit, accept our joys, our concerns, and the
light of our flaming chalice. Change them from flames to
understanding just as beautifully as caterpillars change to
butterflies.

Blow out the flames.

Discussion Questions

I prayed to the Great Spirit. What does Great Spirit mean?
What does “interconnected” mean?
What does “Great Spirit” have to do with “interconnected”?
What do those words have to do with the things we passed around the circle?
What do you think is the coolest thing about insects?
What can anyone tell me about insect colonies?
What do insect colonies have to do with “interconnected”?

Lead right into your discussion opening in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate, but how about Ants on a Log?
3 inch pieces of celery, filled with peanut butter, with four or five raisin
“ants” imbedded in the peanut butter.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, “Thank you.”

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child’s name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop’s Fables are a hit with this crowd! You might also enjoy *The Lady and the Spider* by Faith McNulty, as long as you point out that a spider is not an insect!

Lesson 2: Grasses: Slender Stalks with Seeds that Nourish the World

Set Up

Your altar could hold, in addition to the chalice materials,
a small bowl of rice
cut grasses with seed heads
a grass weaving
a grass-woven basket

Warm Up

Bring the children into your sacred space with an opportunity for silence.

One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

We gather in reverence before the wonder of life -
The wonder of this moment...

by Sophia Lyon Fahs; #439 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Mother Earth, our lives and our thoughts are part of
this beautiful spinning world. May Your peace blow
around us like a breeze, scattering our joys like seeds.

Blow out the flames.

Discussion Questions

What does Mother Earth mean?

What is a web? Where can you see a spider's web? What's the worldwide web?

How is Mother Earth like a web?

How is grass part of that web?

Do humans eat grasses?

Does anyone here have an allergy to grass or plant pollen?

How many different kinds of grass are near your home?

Lead right into your discussion opening in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. I suggest:

rice cakes

popcorn

crackers with sesame seeds

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop's Fables are a hit with this crowd! Also, this week, I recommend Sandy Eisenberg Sasso's *Noah's Wife: the Story of Naamah*.

Lesson 3: Hunter - Hunted: A Complex Relationship

Set Up

Your altar could hold, in addition to the chalice materials, stuffed animals which are predators or prey; try to include one or two which we do not typically think of, like a sea star or a dinosaur. photos of animals hunting or hiding

Warm Up

Bring the children into your sacred space with an opportunity for silence. One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

Look to this day!
For it is life, the very life of life...
Look well, therefore, to this day

attributed to Kalidasa; #419 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Spirit of Love and Mystery, sometimes we feel grand.
Sometimes we feel small. As these flames disperse, may
we feel close to You.

Blow out the flames.

Discussion Questions

What is the Spirit of Love and Mystery?

There's a local pest called _____. What makes it a pest? What is a loving way to think of _____?

I have a mystery for you, too. What is an interconnected web which is not a spider's web? Last week we learned about grasses. How are grasses part of an interconnected web? This week we are learning about different animals. How are animals part of an interconnected web?

Do you know anyone who doesn't eat meat?

How do rabbits rely on foxes?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. This is a great week for Animal Crackers or Goldfish.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop's Fables are a hit with this crowd! Also, this week, I recommend Keiko Kasza's *My Lucky Day*.

Lesson 4: Teeth and Skulls: Dentition Determines the Diet

Set Up

Your altar could hold, in addition to the chalice materials, skulls, teeth, pictures from a dentist - this week it's very important to get some real skulls to see and perhaps touch! If the skulls are tiny, keep them in their display boxes.

Warm Up

Bring the children into your sacred space with an opportunity for silence. One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

By many cares and occupations, by diverse aims are
we separated... yet we know that no branch is severed
from the Tree of Life that sustains us all.

adapted from Phillip Hewett; #440 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Tree of Life, we are many different leaves on diverse
branches. We ask you to sustain us in our joy and in our
sorrow.

Blow out the flames.

Discussion Questions

What is the Tree of Life?

Why is that one name for the Great Spirit to which we lift our joys and concerns?

We've also called it The Spirit of Love and Mystery. Here's a mystery for you - (holding up one of the skulls from the altar) Without even knowing what kind of animal this came from, what can we deduce about what it eats?

How do teeth and skulls show the interconnectedness between animals and their food?

Have any of you lost a tooth? What did it look like?

If you were a Nature Detective and you found a human tooth without knowing what animal it came from, what would you guess that the creature eats?

Lead right into your opening discussion from *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

An awesome extension activity during Feast is to bring in lots of kitchen utensils which are like different animals' dentition or lack thereof - and a variety of foods. They have to match which food goes with which utensil. For example:

Straw - tall-necked bottle of juice (like a hummingbird)

Fork - mouse burgers (slices of cheese or pepperoni)

Tongs - cooked spaghetti noodles (worms)

Nutcracker - walnuts

Spoon - bowl of water

We brought in just about everything from my utensil drawer and a wide variety of snacks and let the children do the inventing!

Before your feast activity, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop's Fables are a hit with this crowd!

Lesson 5: Beaks, Feet, and Feathers: Fantastic Flying Machines

Set Up

Your altar could hold, in addition to the chalice materials,
nests
feathers - please remember that many birds' feathers are protected by law from
being collected. Try getting them from a parishoner who raises chickens!
photos of birds

Warm Up

Bring the children into your sacred space with an opportunity for silence.
One teacher will greet children at the entrance to your classroom, allowing
children to enter once they've heard and acknowledged that they should go directly
and silently to circle. The second teacher will carefully pass the items from the altar
around the circle, modeling how to treat the objects and observe silence. Passing
objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the
children. Teachers should model lighting the chalice the first time or two, but the
privilege could be shared among the children at your discretion (with coaching as
needed for these beginning readers!).

To worship is to stand in awe
under a heaven of stars,
Before a flower, a leaf in the sunlight,
or a grain of sand.

by Jacob Trapp; #441 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in
Large Church or Children's Chapel). If a child does not wish to speak, light a candle on
her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence
about three full breaths. Since the rest of class is so active and the birthday candles burn
down quite quickly, it's best to extinguish the flame at this point. Again, this should be
led by teachers at first, but could be shared at your discretion.

We give these joys and concerns to the universe, of
which we are a part, in a spirit of trust and hope.

Blow out the flames.

Discussion Questions

How can you pray to the universe if you're part of it?
Can we humans be part of the interconnected web of nature? Which animals and plants do we have a connection with?
Why is it illegal to collect many kinds of bird feathers - what's the interconnection there between the birds and the humans?
Does anyone have a favorite bird?
What birds can you see at your house?
Do you put out a feeder?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. I suggest seeds, nuts, and gummy worms!

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop's Fables are a hit with this crowd! Also, this week, you might try *Hawk, I'm Your Brother* by Byrd Baylor or a guided meditation on flying.

Lesson 6: Owls: Silent Predators of the Night

Set Up

Your altar could hold, in addition to the chalice materials, stuffy owls, owl photos, the cover of *Pass the Energy, Please* is an owl in flight owl feathers if you were able to borrow them - handle very gently! some other downy materials if you couldn't get owl feathers.

Warm Up

Bring the children into your sacred space with an opportunity for silence.

One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

To worship is to be silent, receptive
before a tree astir with the wind,
or the passing shadow of an owl.

adapted from Jacob Trapp; #441 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

We offer these joys and concerns from our hearts,
"the mystery within us reaching out to the mystery
beyond." also from Jacob Trapp, *Singing the Living Tradition* #441

Blow out the flames.

Discussion Questions

What is the mystery within us? What is the mystery beyond?
What is the interconnected web of all existence? What does it include?
Have you ever seen an owl? With what is it interconnected in its environment?
What time of day was it when you saw one - or when you imagine you would see one?
Have you ever heard one calling at night?
What do owls make you think of?
What qualities do owls have in old stories?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate.
Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop's Fables are a hit with this crowd! Today I also recommend *Pass the Energy, Please*.

Lesson 7: Thorns and Threats: Plants' and Animals' Strategic Defenses

Set Up

Your altar could hold, in addition to the chalice materials,
thorns, brambles
burrs
teeth
porcupine quills

Warm Up

Bring the children into your sacred space with an opportunity for silence.

One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

Gaia, mother of everything
we walk gently across your back
to come together again
in this place.

by Barbara J. Pescan; #417 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Gaia, living, spinning unity of all the cosmos, sing with
us in our joys and walk quietly with us in our concerns.

Blow out the flames.

Discussion Questions

- Can the whole world all together be one organism?
- How did the whole world organism come to be named Gaia? (It's her name in Greek mythology)
- What is "the interdependent web of all existence of which we are a part"?
- How is a plant interconnected with others in its environment?
- If you were a plant, what kind of defense would you most like to have?
- What is the best strategic or defensive adaptation of humans?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen! If you can *possibly* get outdoors into some natural space today, I would even set aside all other activities.

Feast

Serve what is available and appropriate.
Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Aesop's Fables are a hit with this crowd! If you can find it, I recommend the story of Brer Rabbit and Brer Fox in which Brer Rabbit depends on the briar patch for his life.

Lesson 8: Frogs and Polliwogs: Miraculous Transformation

Set Up

Your altar could hold, in addition to the chalice materials,
jar of frog eggs or tadpoles
or a model of a tadpole
stuffy frogs
frog photos

Warm Up

Bring the children into your sacred space with an opportunity for silence.

One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

Inside this flame there are canyons and pine
mountains, ... All seven oceans are inside, and hundreds
of millions of stars...

adapted from Kabir; #608 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

We ask the transforming power of Love to act
through us and around us.

Blow out the flames.

Discussion Questions

What does it mean that the seventh principle of Unitarian Universalism is to “affirm and promote the interdependent web of all existence of which we are a part”? What does that have to do with Love?

(I often reword “affirm and promote” as “say ‘yes’ to”)

Add your observation that the central idea of Universalism is: the Great Spirit of Love.

What’s lovable about frogs?

What’s mysterious about frogs?

What was the connection, several weeks ago, between caterpillars and butterflies?

So what’s the connection between this fishy-looking tadpole and frogs?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen! Save the “Sharing Circle” activity for your Wrap-Up

Feast

Serve what is available and appropriate.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Use the Sharing Circle activity from *Hands-On Nature*.

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, “Thank you.”

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child’s name.

If this is your final class together, you might choose to have every child meet everyone else’s gaze or repeat everyone’s names and say thanks.

Please wait for parents to come get their children - you can have informal story time together until then.

Lesson 25: Spiders and Webs: Webs and Their Weavers

Set Up

Your altar could hold, in addition to the chalice materials,
pet tarantula in tank, temporarily caught spiders in view-boxes
a webby altar cloth
stuffy spiders (pipe cleaners and pom-poms and 8 google eyes make great ones)
that fake-cobweb stuff in a container (I used a clementine box)

Warm Up

Bring the children into your sacred space with an opportunity for silence.

One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

This single flame joins a single flame two towns away.
They join others hundreds of miles from here in each
direction. Thousands of chalices sparkle in our churches,
our chapels, our homes, in a pattern we cannot see from
here beside this single flame.

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Dear Weaver of our lives' design, ... show us the
patterns we may use to set our spirits free.

by Nancy C Dorian; #22 in *Singing the Living Tradition*

Blow out the flames.

Discussion Questions

What does “interdependent” mean?

What does “web” mean to a spider?

So, how are the parts of a spider’s web interdependent?

What is “the interdependent web of all existence of which we are a part”?

What is a spider interdependent with?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. Pretend bugs are fun, either gummy bugs or homemade ones (melt chocolate chips and marshmallows, pour in a can of oriental noodles, and allow to dry in buggy or spidery clusters.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, “Thank you.”

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child’s name.

Please wait for parents to come get their children - you can have informal story time together until then. May I suggest *The Adventures of Spider: West African Folktales* by Joyce Cooper Arkhurst? And *James Herriot’s Treasury for Children* is an excellent all-around choice for these children!

My favorite Spider trivia: a child won a contest in the early space exploration days by suggesting that the NASA folks take up a spider and see if she could weave her web in space. It was an orb spider, and she couldn’t. Her eggs hatched up there, though, and her spiderlings could weave perfect orb webs.

Lesson 26: Variations on a Leaf: The Great Producers

Set Up

Your altar could hold, in addition to the chalice materials,
Leaves which you will use in the main lesson, if they're mounted
Potted plants

Warm Up

Bring the children into your sacred space with an opportunity for silence.
One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

For the wonder of each hour
of the day and of the night,
hill and vale and tree and flower,
sun and moon and stars of light...

by Folliot Stanford Pierpoint; #21 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Source of all, to thee we raise
these our words of grateful praise.

adapted from Folliot Stanford Pierpoint; #21 in *Singing the Living Tradition*

Blow out the flames.

Discussion Questions

What is the source of your energy? what did you have for breakfast today?

What is the source of that food?

Where does the energy come from in that plant/ animal?

Keep backing off until the answer gets to green leaves and the sun!

What is the source of all energy in our ecosystem?

What is the "Source of All" which we spoke to when we dedicated our candles?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. A variety of fresh greens may sound a little daring, but I've had a class of six-year-olds go wild over a Caesar salad after this lesson! Perhaps a mesclun mix and the kids can discuss the leaf types...

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. *The Fall of Freddie the Leaf* by Leo Buscaglia might be a bit too young for primary children, but this classic will be familiar to them - and the message about the life-cycle is classic. *Lucky Leaf* by Kevin O'Malley is one your students may be able to read on their own - why not have it available? *James Herriot's Treasury for Children* is an excellent all-around choice for these children!

Lesson 27: Cones: Cradles for the Conifers

Set Up

Your altar could hold, in addition to the chalice materials,
Cones which you will use in the lesson
Potted conifers. Muir Woods National Park will sell and ship baby redwoods
and sequoias (they're definitely slow-growing enough to be non-invasive!)
Winter holiday cards or small models or real Christmas trees!

Warm Up

Bring the children into your sacred space with an opportunity for silence.
One teacher will greet children at the entrance to your classroom, allowing
children to enter once they've heard and acknowledged that they should go directly
and silently to circle. The second teacher will carefully pass the items from the altar
around the circle, modeling how to treat the objects and observe silence. Passing
objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the
children. Teachers should model lighting the chalice the first time or two, but the
privilege could be shared among the children at your discretion (with coaching as
needed for these beginning readers!).

We are here to abet creation and to witness to it,
to notice each other's beautiful face and complex
nature.

by Annie Dillard; #420 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in
Large Church or Children's Chapel). If a child does not wish to speak, light a candle on
her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence
about three full breaths. Since the rest of class is so active and the birthday candles burn
down quite quickly, it's best to extinguish the flame at this point. Again, this should be
led by teachers at first, but could be shared at your discretion.

We entrust Creation with our joys and our sorrows,
and no one will carry them alone.

Blow out the flames.

Discussion Questions

What does it mean to create something?
Can something beautiful and complex be made by an artist?
Can something beautiful and complex just happen without an artist?
If we call the world "creation" does that mean that an artist created it?
Today we're going to look at something very beautiful and complex that no artist made!

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. I like to serve a few pine nuts along with something less expensive!

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. *The Golden Pine Cone* by Catherine Clark and Greta Guzek is a fantasy book, but so delightful! Allow extra time if you choose it! *James Herriot's Treasury for Children* is an excellent all-around choice for these children!

Lesson 28: Snow and More: Crystals in the Clouds

Set Up

Your altar could hold, in addition to the chalice materials,
Sparkly altar cloth
The snowflake puppets from the lesson
Bentley and Humphreys book, *Snow Crystals* or any other fine snowflake
photography.

Warm Up

Bring the children into your sacred space with an opportunity for silence.
One teacher will greet children at the entrance to your classroom, allowing
children to enter once they've heard and acknowledged that they should go directly
and silently to circle. The second teacher will carefully pass the items from the altar
around the circle, modeling how to treat the objects and observe silence. Passing
objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the
children. Teachers should model lighting the chalice the first time or two, but the
privilege could be shared among the children at your discretion (with coaching as
needed for these beginning readers!).

The hand that shaped the rose hath wrought the
crystal of the snow ... and laid a silent loveliness on hill and
wood and field.

by Frances Whitmarsh Wile; #57 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in
Large Church or Children's Chapel). If a child does not wish to speak, light a candle on
her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence
about three full breaths. Since the rest of class is so active and the birthday candles burn
down quite quickly, it's best to extinguish the flame at this point. Again, this should be
led by teachers at first, but could be shared at your discretion.

We share many joys and sorrows with our words.
Today we remember to share and honor them in silence.

Blow out the flames.

Discussion Questions

In our opening chalice lighting, we said “the hand that shaped the rose [has made] the crystal of the snow” What hand? Did a person or being make each rose and snowflake?

What is Nature, if Nature made these?

Why does everything seem quieter when there’s snow around?

What changes inside you when you feel quieter?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. Ice water is definitely appropriate!

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, “Thank you.”

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child’s name.

Please wait for parents to come get their children - you can have informal story time together until then. Not about snowflakes themselves, but someone who loved them - *Snowflake Bentley* by Jacqueline Briggs Martin, is a nice choice. If you have smaller children, try *Names for Snow* by Judi K Beach. *James Herriot’s Treasury for Children* is an excellent all-around choice for these children!

Lesson 29: Tracks and Traces: Clues that Tell a Tale

Set Up

Your altar could hold, in addition to the chalice materials,
plaster cast tracks
track identification cards
different shoes - baby booties to high-heeled shoes and especially including
fuzzy animal-shaped slippers

Warm Up

Bring the children into your sacred space with an opportunity for silence.
One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

We hallow this time together by kindling the lamp of
our heritage.

by Albert Thelander; #449 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

May these flames be like our hopes and tears,
transformed by our breath.

Blow out the flames.

Discussion Questions

Have you ever had to search for something that wasn't right where you thought it would be?

What do you do when you're really searching hard for something?

Do you search even harder if you're looking for something very precious?

What does it mean in our Seven Principles that we search for truth and meaning

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. (I've heard of finger food, but if anyone comes up with a good way to serve "foot food", let me know!!!)

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. I like *Snow Music* by Lynne Rae Perkins for the grand illustrations of tracks in the snow! If your class is made up of small children, try *Tracks In the Snow* by Wong Herbert Yee. *James Herriot's Treasury for Children* is an excellent all-around choice for these children!

Lesson 30: Winter Weeds: Rugged Remnants of Summer Flowers

Set Up

Your altar could hold, in addition to the chalice materials, dried weeds, flowers, seed pods

Warm Up

Bring the children into your sacred space with an opportunity for silence.

One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

Though earth is bare, one more seed is planted there.
Give up your strength the seed to nourish, that in
course the flower may flourish.

by Eleanor Farjeon; #226 in *Singing the Living Tradition*

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

Love, the Guest, is on the way.
Love, the Rose, is on the way.
Love, the Star, is on the way.

by Eleanor Farjeon; #226 in *Singing the Living Tradition*

Blow out the flames.

Discussion Questions

Why do Unitarian Universalists study nature?
What do we find in nature?
have you ever been surprised when you looked closely at something?
How does it make you feel to learn something wonderful about something that seemed ordinary?
How can Love be a guest or a rose or a star?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Extension

If the timing works out for your congregation, this is an excellent day to plant seeds for your Flower Ceremony in the spring. Radishes will come up very quickly. Marigolds will bloom quickly (about 6 weeks from seed to flower).

Feast

Serve what is available and appropriate, but especially seeds, poppyseed muffins, dried fruit, and such.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Books to have on hand: *Discover Nature in Winter* by Elizabeth P. Lawler devotes much of chapter 6 to winter weeds; poetry book *Winter Eyes* by Douglas Florian; *A Kid's Winter EcoJournal: With Nature Activities for Exploring the Season* by Toni Albert. *James Herriot's Treasury for Children* is an excellent all-around choice for these children!

Lesson 31: Camouflage: Designed to Conceal

Set Up

Your altar could hold, in addition to the chalice materials, wildlife photo books with camouflage shots (*Take a Look* books) optical illusions, even if not from nature any stuffies in their natural colors

Warm Up

Bring the children into your sacred space with an opportunity for silence. One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

May this light be our beacon, our torchlight in our search for hidden mysteries.

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

May these candles light the mysteries of each day.
May we learn how to be lights ourselves.

Blow out the flames.

Discussion Questions

Why might you need a light when you search?
How can a person be a light for another person?
Why are some things hidden?
Can a hidden thing be more mysterious?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Although Leo Lionni's *Color of His Own* is written for slightly younger children, it's not only a tale about camouflage, but one of friendship and liking yourself. You probably have students who can read it to others! *James Herriot's Treasury for Children* is an excellent all-around choice for these children!

Lesson 32: Honeybees: Hives and Honey

Set Up

Your altar could hold, in addition to the chalice materials,
beeswax candles
a beesting kit
honeycomb in a see-through container

Warm Up

Bring the children into your sacred space with an opportunity for silence. One teacher will greet children at the entrance to your classroom, allowing children to enter once they've heard and acknowledged that they should go directly and silently to circle. The second teacher will carefully pass the items from the altar around the circle, modeling how to treat the objects and observe silence. Passing objects from your altar for observation will engage the senses and focus the children.

Chalice Lighting

When all items have been returned to the altar, ring your chime to focus the children. Teachers should model lighting the chalice the first time or two, but the privilege could be shared among the children at your discretion (with coaching as needed for these beginning readers!).

We come together to light this chalice of friendship
and understanding.

Sharing

Time for the children to share their own joys and concerns (if it's not provided in Large Church or Children's Chapel). If a child does not wish to speak, light a candle on her or his behalf anyway.

When all joys and concerns have been shared, join hands. Wait in the silence about three full breaths. Since the rest of class is so active and the birthday candles burn down quite quickly, it's best to extinguish the flame at this point. Again, this should be led by teachers at first, but could be shared at your discretion.

These lights we will carry in our hearts, sharing the
sorrows and increasing the joys, greater when we are
together.

Blow out the flames.

Discussion Questions

Why are friendship and understanding important to Unitarian Universalists?
What can people do together that they couldn't by themselves?
What do we need to know or do to work together?

Lead right into your opening discussion in *Hands-On Nature*.

Hands-On Nature

Enjoy the activities from this lesson that best fit your kids, your resources, and your time frame! During the puppet show or other listening time, let the kids hold the fidget materials - it helps them listen!

Feast

Serve what is available and appropriate. A little bread and honey would make a nice treat, or a tiny portion of honeycomb with instructions to chew on the beeswax, not swallow it.

Each should wait to eat until all have been served; while passing the food and drink around, bless your feast:

From you I receive, to you I give,
Together we share, and from this we live.

Hymn # 402 in *Singing the Living Tradition*

Wrap Up

Before the first child must leave the classroom, take a moment to get their attention. Ask them to each meet your eyes with theirs - after looking each child in the eye, simply say, "Thank you."

If your class includes any visually impaired students, replace the looking with touch - a high-five, a handshake, a finger-touch - or with your voice, going around the group saying each child's name.

Please wait for parents to come get their children - you can have informal story time together until then. Hooray! for *the Magic Schoolbus Inside a Beehive* by J. Cole - Ms Frizzle and the gang! *James Herriot's Treasury for Children* is an excellent all-around choice for these children!

Thanks for using this supplement to *Hands-On Nature*. Please be in touch and we'll send supplements to further units!

Name: _____

Address: _____

E-mail: _____

Phone: _____

Organization: _____

How did you find *Hands-On Nature* and this supplement?

What great things happened when you used it?

What did you add?

What can be improved in this supplement?

We look forward to hearing from you!

Unitarian Universalist Ministry for Earth:
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503-595-9392
www.uuministryforearth.org

DESIGNS OF NATURE

Hands-On Nature 2000: Additional Suggested References

Spiders and Webs

National Audubon Society. National Audubon Society Field Guide to Insects and Spiders. New York: Alfred A. Knopf, 1980.

Variations On A Leaf

Baldwin, Henry. Forest Leaves: How to Identify Trees & Shrubs of Northern New England. Peter Randall, 1993.

Vitale, Alice. Leaves In Myth, Magic & Medicine. New York: Stewart, Tabor I & Chang, 1997.

Cones

Farrar, John. Trees of the Northern United States and Canada. Ames, Iowa: Iowa State Press, 1995.

van Gelderen, D.M., and J.R.P. van Hoey Smith. Conifers: The Illustrated Encyclopedia (2 volumes). Timber Press, 1996.

Snow and More

Libbrecht, Kenneth, and Patricia Rasmussen. The Snowflake: Winter's Secret Beauty. Stillwater, MN: Voyageur Press, 2003.

Tracks and Traces

Elbroch, Mark. Bird Tracks & Sign. Mechanicsburg, PA: Stackpole Books, 2001.

Elbroch, Mark.. Mammal Tracks & Sign. Mechanicsburg, PA: Stackpole Books, 2003.

Gibbons, Diane. Mammal Tracks and Sign of the Northeast. Hanover, NH: University Press of New England, 2003.

Smith, Richard. Animal Tracks and Signs of North America. Mechanicsburg, PA: Stackpole Books, 1982.

Winter Weeds

Heiser, Charles B. Weeds In My Garden: Observations On Some Misunderstood Plants. Timber Press, 2003.

Holm, Leroy, et al. World Weeds: Natural Histories and Distribution. John Wiley & Sons, 1997.

Martin, Alexander C., and Jean Zallinger. Weeds. (Golden Guide) St. Martin's Press, 2003.

U.S. Dept. of Agriculture, Common Weeds of the United States. Dover, 1972.

Uva, Richard, et al. Weeds of the Northeast. Ithaca, NY: Cornell University Press, 1997.

Honeybees

Green, Rick. Apis Mellifera: A.K.A. Honeybee. Branden, 2002.

Longwood, William, et al. Queen Must Die and Other Affairs of Bees and Men. W.W. Norton, 1988.

Von Frisch, Karl. The Dance Language and Orientation of Bees. Harvard University Press, 1993.

Bird Nests

Hansell, Mike. Bird Nests and Construction Behavior. Cambridge University Press, 2000.

Harrison, Colin, and Paul Baicich. A Guide to the Nests, Eggs and Nestlings of North American Birds. Academic Press, 1997.

Pascoe, Elaine. Birds Build Nests. Milwaukee, WI: Gareth Stevens, 2002

Smith, Ned. A Field Guide to the Birds' Nests: U.S. east of the Mississippi River (Peterson Field Guide). Boston: Houghton Mifflin, 1998.

Winston, Mark. The Biology of the Honeybee. Harvard University Press, 1987.

PLUTO, THE ADOPTED PLANET: A Great Story Parable

by Connie Barlow

SCIENCE BACKGROUND: In the late 1990s, top astronomers engaged in a public debate about whether or not Pluto should be considered a planet. In fact, visitors to the Rose Center of New York City's Hayden Planetarium are often shocked to discover that Pluto is not included in the displays about the planets. In this playful parable, suitable for adults and children, you will learn the science behind the debate — and how that controversy might easily be resolved. This parable is also a way to teach children about adoption.

IMPORTANT!!!! DO NOT TELL LISTENERS THE TITLE of this parable before you read it aloud. "Adopted" is the punch line, so you don't want to give it away at the start. Just say it is a story about Pluto. It is useful to show the audience a picture or poster to begin with of the planetary orbits in the solar system. Pluto's slanted orbit is clearly visible. "What's different about Pluto's orbit?" Then begin reading the parable.

Once upon a time, not long ago, the nine planets were all playing in their orbits around the Sun, as planets are prone to do. Jupiter was stirring its Great Red Spot. Venus and Uranus were playing peek-a-boo through thick clouds. Mars was kicking up a storm of red dust, and Saturn was smoothing its rings. Our own lovely Earth, of course, was playing with dinosaurs.

Just then, a comet made of ice approached Pluto. Icy Comet was doing exactly what comets like to do: testing how close it might fly by a stranger without risking capture.

"Ho there, Comet!" Pluto called out.

"Ho there, Space Rock!" responded Icy Comet.

"Hey!" said Pluto. "I am not a Space Rock. I'm a Planet. My name is Pluto, and I am the ninth planet of our Solar System."

"That may be what *you* think," taunted Icy Comet. "But I can tell from the slant of your orbit that you are not like the others. You are different. And I have heard that the Sun is not your parent star."

"The Sun not my parent star!?" gasped Pluto. "You are wrong. The Sun is my Mother-Father!"

Icy Comet said nothing.

Pluto began to speak again, softly. "Well, I do sometimes wonder why my orbit is different from the rest. All the other planets glide around the Sun, as if skating on the surface of a vast pond. Yet I plunge through that surface at an angle, sometimes above the other planets and sometimes below."

"And unlike the others," offered the comet, "occasionally you even cross over inside of Neptune's orbit. When that happens, Neptune becomes the outermost planet, instead of you."

"I thought I was the only one who knew about that!" protested Pluto, who was beginning to cry. "You won't tell on me, will you?"

Icy Comet felt bad. "No, I won't tell," said the comet, moving closer. "And, hey, I'm sorry I said anything. You know, I might be wrong."

Pluto sniffled.

"I have an idea," said the comet. "If you will turn down your gravitational force for awhile, I will invite you to join me on my journey into the solar system. You may be able to learn more about who you are along the way."

Pluto was happy to comply. As soon as the gravity was turned down, Icy Comet curved a long icy tail around the little planet.

Thus began Pluto's journey toward the very center of the solar system, in the company of a comet. One by one, Pluto and Icy Comet would meet and greet the other planets.

"Ho there, Neptune!" called Icy Comet. "Please tell us how you know that you are a planet."

"Certainly," said Neptune, flashing its loveliest hue of sea-blue blue. "Whenever I look inward, toward my Mother-Father Sun, I can see all my sibling planets, like boats sailing across the surface of a sea. That is how I know that I am a true planet of this solar system."

"Thank you, Neptune," said the comet. "You have answered our question. Goodbye."

"That is not how I see the other planets," whispered Pluto to the comet. "I see them through my slanted orbit. They look like snowflakes swirling in a blizzard, every which way!"

The journey continued. Icy Comet called out to each planet the same way, and each time the response left Pluto feeling less and less like a planet.

Uranus claimed to be a planet because of thick clouds — thick clouds that Pluto did not share. For Saturn it was rings that glistened silver and gold in the light of the Sun. For Jupiter it was size. Mars reported that its very name was contained in that of Mother-Father Sun; the M, the A, the R, and the S were all embedded within the name of its parent. Earth pointed out that its dinosaurs all depended on plants that ultimately depended on the energy of the Sun. Venus was pleased to show how bright the Sun's light reflected off its clouds.

By now the two travelers were becoming uncomfortably hot. Icy Comet worried about melting if they lingered long this close to the Sun.

"Only one more planet to go!" Icy Comet told Pluto. "And then we can retreat to cooler realms!"

"Ho there, Mercury," said Icy Comet. "Please tell us how you know that you are a planet."

"I am happy to oblige," replied Mercury warmly. "I know I am a planet because my surface temperature is hot like my Mother-Father Sun. It is hot enough to melt lead."

"I am not at all hot — at least not when I am in my own orbit," whispered Pluto to the comet.

"Thank you , Mercury," Icy Comet called out. "You have answered our question. Goodbye."

Icy Comet turned sharply, with Pluto still snug in the curve of its tail. The two headed back toward the cool relief of the outer solar system.

Pluto cried out in despair, "Oh, Icy Comet! Our journey has ended, and I am quite sure now that I am not a planet."

There was nothing Icy Comet could do to comfort Pluto, except stroke the would-be planet tenderly with a somewhat melted icy tail.

All of a sudden their journey came to a standstill. Neither Pluto nor Icy Comet could move, even an inch. Something was holding them back.

"Whew!" exclaimed Pluto. "I have never felt this much gravity coming from Mother-Father Sun before. Something must be wrong!"

"It is only to remind you, Pluto, that wherever you go, you are forever held within my gravitational embrace."

"Mother-Father Sun! It is you!"

"Yes, dear planet."

"You just called me a planet!" Pluto exclaimed. "Am I really a planet? Am I *your* planet?"

"Indeed you are!" said the Sun. *"Earth lacks the rings of Saturn, yet Earth is a planet. Mercury is not big like Jupiter, yet Mercury is a planet. Mars is missing the thick atmosphere of Uranus, yet Mars is a planet. Neptune has no dinosaurs, yet Neptune is a planet."*

"What, then, makes us all planets?" asked Pluto.

"It is the one thing you all share. You all share my loving, gravitational embrace. That is what holds you in your orbits."

"It is true," continued the Sun, *"that you, Pluto, are different from the rest. Your orbit is slanted because you came to me from outside my solar system. You are my adopted planet. But I hold you in my embrace no less than any of my other planets. Go now, dear one, and return to your orbit in the company of your comet friend. I believe you are overdue for a nap."*

Pluto and Icy Comet happily returned to the outer reaches of the Solar System, where Pluto promptly fell asleep, dreaming happy dreams, as planets are prone to do.

Many years have passed since that grand adventure. Icy Comet is still seeing how close it can fly by planets and big space rocks without risking capture. And Pluto is still orbiting on a slant. But now, whenever Icy Comet visits Pluto, this is how they greet one another:

"Ho there, Icy Comet!"

"Ho there, Planet Pluto!"

Notes: Connie got the idea to write this parable after a program she gave at the Unitarian Church of New Brunswick, New Jersey, in 2002. The children had just called out the names of all the planets, when one of the older boys challenged, "Pluto is not a planet!" Connie hemmed and hawed, as she was well aware that some scientists, including the director of the Hayden Planetarium in New York City, had stripped Pluto of its planethood because all agreed that Pluto had been added to the solar system through capture. In contrast, the other planets had formed from the same cloud of gases and space dust from which our Sun coalesced nearly five billion years ago.

Visit www.TheGreatStory.org for a longer version of this parable intended for younger children and for 4-and-5-part scripts ready to be acted out with no rehearsal necessary. Additional parables and materials for teaching children are also available on this wonderful website.

The Man Who Planted Trees

An Intergenerational Service

Unitarian Universalist South Church, Portsmouth, New Hampshire

This imaginative service was given on February 15, 2004 at the Portsmouth, NH Unitarian Universalist Church and was shared by their DRE Sandra Greenfield. The service centers around the story The Man Who Planted Trees, by Jean Giorno,[Michael McCurdy, Chelsea Green Publishing, White River Junction, VT, 1985.]

Prior to the service, an artist in the congregation created a canvass in black and white of a barren landscape using the etchings in the book as her inspiration. This 4'x6' painting was placed on the chancel, covered. A table of paints and other supplies was set aside, hidden from view. The canvass was not uncovered until the story began.

Different instruments represented elements or situations in the story:

Pennywhistle...acorn
Hands rub....wind
Bassoon ...trees
Percussion, war, desolate village
Flute...water
Organ...happy village,

They either played while passages were read or they played alone. The pieces were created by each musician, depending on their varying artistic and technical capabilities. Each musician was supplied with the a copy of the story, which was edited by Rev. Marta Flanagan to an appropriate length, and was marked indicating where each instrument should play.

While the story and music were expressed, the painting took place. The artist began adding color to the barren landscape following the story of how the trees brought new life to the villages, mountains and waterways. She did not finish by time the story was ended, so she continued right to the end of the service. The children remained in their seats with their families, and they were riveted.

There were two services that morning; so one of the finished paintings was auctioned at the annual fundraiser and the other hangs in their RE Space.

A lesson from the service follows:

AN APPLE TO KEEP

Materials needed: one apple and a sharp knife

Imagine this apple (hold up an apple) as the earth. Picture the oceans, the mountains, the forests, the swamps, and the deserts. Picture the cities, the highways, and the factories. Picture all of this as the place we live.

Well, actually, we can't LIVE in all these places. Three-fourths of the earth is the oceans of the world.

So let's get rid of the oceans (cut apple into quarters and set aside three of them)

What's left? Right...one-fourth. This is the earth.

But not all of the earth can be lived on or worked on (slice in half and set aside one of the halves). This is the part people can't live or work on...the north and south poles, the deserts, the swamps, and the high mountains.

What's left? Right....one-eighth. This is where humans live, but not necessarily where they grow their food.

(Slice the one-eighth piece into four sections...put aside three of the four of them).

What's this? Right one-thirty-second.

These pieces represent the places where soil is too poor to farm, where it's too rocky, wet, cold or steep to produce food.

They also represent the cities, houses, highways, shopping malls, schools, parks, factories, parking lots and miniature golf courses where people live, play and work – but do not grow any food.

(Take the 1/32 piece that's left and carefully peel it).

This small scrap of apple peel represents the farmable surface of topsoil of the planet, the thin skin of the Earth's crust upon which humankind totally depends. It is less than five feet deep and is a fixed amount of food-producing land.

(Eat the 1/32 piece of apple).

That was very good, but I am going to carefully save this tiny piece of apple skin and treat it as if my life depends on it, because in the real world it does!

Story Beads Curriculum

Leading to an Exploration of the Great Story

by Leslie Klein Pilder

* * *

LESLIE KLEIN PILDER has worked for many years in early childhood education, starting as a Montessori teacher at the Whitby School and currently as an Educational Consultant to Head Start centers in the NYC metropolitan area. She is also the founder of Altared Paths, creating life-cycle and seasonal rituals which remind us of our connection to Earth and Spirit. These two life-long interests find a happy mutual expression in The Great Story Beads Curriculum.

Contact Leslie at: LPilder@optonline.net, or 845-358-3871, or visit her web site: <http://www.geocities.com/lkpilder/AltaredPaths.html>.

BACKGROUND

Story Beads are a way of symbolically representing the stories that are central to a young child's life, primarily the story of Me and My Family. The lessons that follow offer the early childhood educator yet another variation on exploring these topics, while exercising the developing child's mind and body. The lessons encourage literacy and pre-reading skills, math skills, eye-hand coordination, artistic expression, an experience of time and a whole host of other benefits that fit in any developmentally appropriate early childhood curriculum.

In using beads to represent important people and events in their lives, children have the added benefit of having created a mnemonic device that will assist them in sharing their story with others. The use of beads as a storytelling device is ancient. Pre-literate groups of people all over the world have used visual and tactile clues, such as beads, to help them remember their people's history. *Lukasa* memory boards among the Luba of central Africa, for example, are beads affixed to a shield that the tribe's historian uses to keep track of the main events of the clan. The use of mnemonic devices for the pre-literate person (adult or child) encourages memory and storytelling, reinforces the relationship of object to abstraction and, not incidentally, is an early stage of artistic representation of self and others.

Great Story Beads are a symbolic representation of the 13 billion year epic of Cosmos, Earth, life, and humanity, told as a sacred story that embraces all other sacred stories (including those of our own personal journeys). It is the story of our Universe, starting before the Big Bang and leading right up to our own individual births and life experiences. Learning to tell this story, with as much or as little scientific data as one is capable of understanding

and comfortable with telling, is an enlightening experience. It teaches us about the wisdom and mystery of the unfolding universe, of the world we inhabit, and our own connection to everything that is and ever was. (For more on Great Story beads, see

http://www.thegreatstory.org/great_story_beads.html.)

On the simplest level, The Great Story teaches the facts of evolution and offers us a scientific understanding of what has led humanity to the present moment in time. On a deeper level, The Great Story offers a unifying umbrella of mythology that celebrates our shared experience on this planet. It offers a context in which to see our relationship to Earth with new eyes, leading to a greater understanding of our responsibility for taking care of the ecological systems that sustain us all. The Great Story is *not* a religion and it requires no particular belief system, save a general acceptance of scientific evolutionary thought. The facts taught are in accordance with most public school curricula. At the same time, non-fundamentalist religious leaders and instructors will find the story a rich template on which to elaborate particular tenets of faith and to teach values — both traditional values and the global, ecological values crucial for these times.

Teaching a simplified version of The Great Story to young children is an exciting way to introduce scientific understandings of where we come from, while raising fascinating questions about the consequences of natural processes as well as our role in the greater gestalt of the Universe.

THE LESSONS

Lesson 1: My Family Sculpture

MATERIALS:

- odd pieces of wood or big beads or spools, of a variety of shapes and sizes.
- sturdy pieces of cardboard (for base)
- white glue
- marker for teacher to label with text

AGES: 2–5

GOALS:

- sense of family
- beginning abstraction
- one-to-one correspondence

ACTIVITY: (original source for this idea from: *Emergent Curriculum*, by Elizabeth Jones and John Nimmo, p.87)

- Children glue one object on the cardboard for each member of their family.
- They tell the teacher who is represented by each object, and the teacher labels the object accordingly.

PREPARATION might include:

- discussion of families
- other gluing activities
- display of photos of families (see p. 34, *Emergent Curriculum* for examples)
- Idea: loan each family a Polaroid camera with instructions to photograph each family member, labeling each photo. Display and discuss in class.

VARIATIONS AND EXTENSIONS:

- have children decorate the beads/objects before gluing. Paint or markers might be used.
- Use color or shapes to sort people in family into groups: male/female or adult/child (ie: Red beads for “boys”, green for “girls”)
- Have children show and share at circle time.

Lesson 2: My Family Necklace

MATERIALS:

- large beads or spools
- string (ends may need to be taped for stringing), long shoelaces, or lanyard.

AGES: 2–5

GOALS:

- one-to-one correspondence
- eye-hand coordination
- discussion of family

ACTIVITY:

- Child strings one bead for each family member.

PREPARATION might include:

- Lesson 1
- bead stringing
- discussion of families

VARIATIONS AND EXTENSIONS:

- Smaller beads for older children
- Beads used representationally: large ones for adults, smaller for children OR red for "girls" and green for "boys".
- Large beads might be decorated beforehand (faces drawn on, etc.) to represent the family member. Or teacher might write family member's name on each bead.
- Line up beads and label before stringing.
- Consider lining beads up, starting with the oldest family member, proceeding to the youngest (introduces time as a dimension). Could also line up according to size (ie: Dad is the tallest, then Grandpa, then Mami, then Titi, etc.)
- Have children show and share their necklaces at circle time.
- Make a "Friends" necklace, with a bead representing the child's friends.

Lesson 3: My Life Necklace

MATERIALS:

- beads and string (or laces, etc.)
- paper and marker (for teacher to label)

AGES: 3–6

GOALS:

- one-to-one correspondence
- eye-hand coordination
- left-to-right, top-to-bottom tracking
- sense of family
- sense of time and of personal history

ACTIVITY:

- Child names major events in his/her life, and selects a bead for each one.
- Place on paper, and have teacher label, first bead at top, with teacher's writing to the right. Next event underneath.
- Child then strings the beads *in order*.

EXAMPLE OF SEQUENCE:

I was born.
I learned to walk.
I went to school.
My baby brother was born.
I went to Puerto Rico to visit my papi.

PREPARATION might include:

- Lesson 1
- bead stringing
- discussion of families
- birthday ritual (walking the ellipse around the sun, for each year of birth (included in this group of lessons)
- which-came-first puzzles and games, and sequencing cards (etc.)

VARIATIONS AND EXTENSIONS:

- Repeat this activity, as child will think of new events and will get ideas from listening to his/her peers.
- Make new necklaces when a major event happens in the child's life, such as a new baby or moving to a new house.
- Include events that happened before child was born

EXAMPLE OF SEQUENCE:

My parents got married.
My big brother was born.
My family moved to New York.
I was born.

INTRODUCTION OF VOCABULARY: "before", "next", "after"

Lesson 4: Other Lives

MATERIALS:

- beads and string (or laces, etc.)
- paper and marker (for teacher to label)

AGES: 3-6

GOALS:

- one-to-one correspondence
- eye-hand coordination
- left-to-right, top-to-bottom tracking
- grouping (sorting) similar events/objects
- specific vocabulary (such as names of creatures in these categories: "farm animals," "jungle animals," "dinosaurs")
- specific scientific understandings, such as "endangered species"

- abstract thinking

ACTIVITY:

- With teacher, child decides on a category to depict in a necklace.
- A bead is chosen for each item in the category, as many or few as suits the child. Teacher may help child make a written list of these items. For example, if the category is "Dinosaurs", the child strings one bead for every dinosaur chosen, such as "Tyrannosaurus rex, Stegosaurus, Brachiosaurus," etc.

PREPARATION might include:

- Previous lessons
- Books, discussions and extended projects on a particular topic (such as "dinosaurs")

VARIATIONS AND EXTENSIONS:

- Use photos or models of the objects being represented by the beads. For example, place dinosaur figures on the table in the order they will be represented by the beads. A list may be made or an instant photo (Polaroid or digital) taken, which the child would keep as a reference.
- Do as a group lesson, with children making identical necklaces for use as a mnemonic device for specific lessons. For example, necklaces could be made to remember the order of the animals that appear in the book *Brown Bear, Brown Bear*. The colors of the beads could correspond with the colors of the animals. This idea works well as a Preparation or an Extension, depending on the difficulty of the subject matter.
- Addition of more beads when more members of the category are identified by the child.

Lesson 5: Introduction to the Great Story

MATERIALS:

- beads and string (or laces, etc.)
- paper and marker (for teacher to label)

AGES: 5+

GOALS:

- one-to-one correspondence
- eye-hand coordination
- left-to-right, top-to-bottom tracking
- sense of time
- introduction to the history of the universe

ACTIVITY:

- After making a timeline of significant evolutionary events (see "Preparation"), the child selects a bead for each moment in time. With

adult help, as needed, each bead's significance is noted, and the order of the beads is laid out, left to right.

- Child strings beads in order.

PREPARATION might include:

- Previous lessons
- Reading of Jennifer Morgan's *Born with a Bang!* and other science books (See "Resources")
- Creation of a timeline of significant facts from this book. (See "Resources" for a list of significant events to choose from) Number of events is dictated by the child's interests and understanding.

VARIATIONS AND EXTENSIONS:

- A younger child might make a necklace with only a few items, such as: birth of the sun, birth of Earth, dinosaurs live, dinosaurs die, other animals 'born'.
- Children should tell their Great Stories at circle time and to parents.
- Add to necklaces other items as children gain in understanding and interest.
- Discuss "extinction" in relation to dinosaurs and then with endangered species.
- Make a necklace of extinct or endangered species. (Even younger children could do this.)

Lesson: The Birthday Ritual

(This lesson is familiar to many Montessori teachers.)

MATERIALS:

- taped ellipse or chalk line on the floor
- candle (in a glass globe) or appropriate light
- small globe or Earth-like ball

AGES: 2+

GOALS:

- honoring the birthday of a child
- giving a sense of the passage of time
- introduction of the concept of a "year"
- gross motor, concentration

ACTIVITY:

- Children gather in circle, outside of the ellipse.
- Teacher explains that it is someone's birthday, and that we are going to tell the story of the child's life.
- Teacher puts the candle in the center of the ellipse. "This is the Sun!"
- Teacher asks child to step forward and hands the child the globe. "This is Earth! Really, we ride around the sun on Earth, but it's too big for us to

hold, so this is our pretend Earth which [Child] will carry around the sun. Every time you have a birthday it means you have ridden around the sun one time, because that's how long it takes to make you one year older.

- Teacher tells the child to walk on the line as she begins dramatically to tell the tale of the child's life...as generically or specifically as possible, without lingering too long and losing everyone's attention!

EXAMPLE (Teacher recites as child walks one ellipse):

"On October 26 in 1999, [Child] was born. His parents were so happy. All his family came to visit. After some time [Child] began to make funny baby sounds, and his mommy and daddy told him how smart he was. When he was 6 months old he got his first tooth and loved to eat baby food. Soon he learned to roll over and crawl."

- Coach the child to keep walking, and pace your tale so that when the child is back to where he started you are ready to tell about his first birthday:

"Then [Child] had traveled once around the sun, and it was his first birthday!"

- Repeat for each year of the child's life. This does not have to be very detailed or very long.
- When the child has walked around the appropriate number of times, announce that now he is [his new age] and sing "Happy Birthday."
-
- Child can 'make a wish' on the sun candle, and be the person to blow it out.

PREPARATION might include:

- Making a birthday chart and displaying it in the room
- Talking about birthdays.
- Bringing in baby pictures and making time lines of our lives through the use of photos

VARIATIONS AND EXTENSIONS:

- Good time for a party!
- Having parents tell stories about their children when they were babies, or showing photo albums of themselves over time.
- This activity can be combined with the message from Jennifer Morgan's book, *Born With a Bang*: Since the Universe is 13 billion years old and the child is part of the Universe, on his or her birthday the child is now "13 billion and [x] years old!"

Resources

- Dawn Publications at <http://www.dawnpub.com/> sells children's nature books, including *Born With a Bang: The Universe Tells Our Cosmic Story*, by Jennifer Morgan; illustrations by Dana Lyon. Here the Universe tells its own life story, from its birth, through the formation of stars, galaxies, the Earth — and you. The first book of the trilogy (galactic era) was published in 2002; the second (life era) is scheduled for 2003.
- The Great Story at <http://www.thegreatstory.org> will give you the scientific information you need to create your own timeline of evolution, as well as beautiful adult examples of Great Story necklaces. Links to articles and resources.
- *Emergent Curriculum* by Elizabeth Jones and John Nimmo is a guide for creating a developmentally appropriate curriculum emerging from the interests and needs of the teachers and children together. Lesson 1 was taken from this book.
- Directions for making beads out of paper, clay, dough, and more are available at About.com at <http://familycrafts.about.com/mbody.htm>.

Search for directions for paper beads (listed here as "Junk Mail Jewelry") at this link or go directly to:
<http://familycrafts.about.com/gi/dynamic/offsite.htm?site=http%3A%2F%2Fusers.hsonline.net%2Fkidart%2Fhtdoc%2Flesson5.htm> .

Great Story Bead Sequence for Children

Version 1

This is a simple list of events children can understand.
(Note: "bya" means billion years ago; "mya" means million years ago.)

THE GREAT MYSTERY

13 bya THE GREAT RADIANCE / BIG BANG

12 bya PROTOGALACTIC CLOUDS of hydrogen form; the Universe differentiates into vast clumps of gaseous matter.

11 bya GALAXIES emerge — producing the large-scale structures of the Universe.

11 bya Gravity draws hydrogen into dense spheres of gas, sprinkled throughout each galaxy. At a threshold pressure, nuclear fusion begins: this is the birth of **STARS**. Let there be Light!

5 bya the **SUN** ignites.

4.6 bya EARTH and other planets form by aggregating space debris in their orbital paths.

4.5 bya the **MOON** is carved out of Earth by a huge impact; its orbit around Earth gradually becomes more distant through time.

RAIN falls upon a cooling Earth for first time.

OCEANS form.

3.8 bya the first **LIFE** (Archaea) evolves in a very hot environment, possibly at great depth within Earth's crust or at hydrothermal fissures in the floor of the deep oceans.

565–543 mya the **GARDEN OF EDIACARA** is the time when the first multicellular life forms in the sea evolve differentiated body forms.

First true animals, including jellyfish and **SPONGES**.

SIGHT is invented, and Earth begins to see.

First **LAND PLANTS**.

TETRAPODS ("four-footed" vertebrates) originate, as the **first amphibians** come onto land.

Earth learns to fly, as insects evolve **FLIGHT**.

DINOSAURS

Early **MAMMALS** diversify.

EXTINCTION OF DINOSAURS

NEW PLANTS are born, and we get grass and daisies and dandelions for the first time.

2.5 mya **HUMAN BEINGS** (*Homo habilis* — "handy human") use stone tools.

According to the class's interests, adding items from **HUMAN HISTORY** is desirable. For example: humans learned to cook, talk and tell stories, write, build houses, as well as fly airplanes, build rockets, dance ballet.

Significant events in the child's **PERSONAL STORY**.

Great Story Bead Sequence for Children

Version 2

For a very detailed, adult-level timeline of the Universe Story visit http://www.thegreatstory.com/great_story_beads.html .

(Note: “bya” means billion years ago; “mya” means million years ago.)

THE GREAT MYSTERY (before the Universe, time, and space were born)

13 bya The Universe is born in a **GREAT RADIANCE** of energy. Scientists call this time the **BIG BANG**.

10 bya GALAXIES, like our Milky Way Galaxy, emerge and begin to light up with billions of stars.

5 bya our own star, the **SUN**, ignites.

4.6 bya EARTH and other planets form by using their gravity to gather up asteroids and other space debris in their orbital paths.

4.5 bya the **MOON** is carved out of Earth when a huge asteroid passes by, striking a glancing blow to the edge of Earth. Earth reaches out with its gravity to pull back the missing piece, but gravity is not quite strong enough. Instead, the moon settles into a gentle orbit around Earth.

3.8 bya Earth finally cools enough for **RAIN** to begin to fall and to gather into **OCEANS**. Very soon, the first **LIFE** (Archaea) is born, possibly at great depth within Earth's crust or at volcanic cracks at the bottom of deep oceans. All early life is single-celled, microscopic.

565 mya the **GARDEN OF EDIACARA** is the time when the first multicellular life forms in the sea evolve distinctive body forms. These are the first creatures that would have been big enough for you and me to see without a microscope.

545 mya the first true **ANIMALS** evolve in the sea during the CAMBRIAN period. These early animals include jellyfish, sponges, sea worms, and the ancestors of starfish, clams, and fish. Trilobites, which are related to today's crabs, evolve complex eyes, and so, in a way, Planet Earth, for the very first time, begins to see through the eyes of animals.

450 mya Some forms of sea life evolve ways to come out and survive on land during the SILURIAN period **MOSESSES** are the first plants grow on land. Millipedes and insects and spiders and scorpions follow. Later, the first creatures with bones come out onto land. These are the

amphibians, which evolved from fishes, and which are the ancestors of today's salamanders and frogs.

350 mya Plants figure out how to make themselves strong by growing wood, and so for the very first time, during the CARBONIFEROUS period, tall trees make forests on planet Earth. Ferns, club mosses, and horsetails are the first kinds of plants that learned how to grow into trees. Even today, although none of these plants grows into trees anymore, they (along with mosses) are still the oldest forms of plants on Earth.

At the same time that trees began to grow, Earth learns to fly, as insects evolve **FLIGHT** for the very first time. Some of the earliest flying insects were gigantic: dragonflies as big as seagulls; millipedes six feet long.

200 mya Some reptiles have evolved into giant **DINOSAURS**. Others are returning to the sea as giant mosasaurs and ichthyosaurs and plesiosaurs. Still others learn how to fly: these are pteranodons.

65 mya DINOSAURS GO EXTINCT when a huge meteor strikes Earth and sets off volcanoes, darkening the sky with dust exploded from earth and with ash blown high into the air from massive forest fires. But many of the plants that coexisted with the dinosaurs – like redwood and ginkgo and sycamore trees – sleep through the bad times as seeds, ready to grow once again when Earth gets back to normal.

50 mya. With the dinosaurs gone, **MAMMALS** that had remained small during the time of dinosaurs finally have a chance to safely grow gigantic. Some mammals grow into brontotheres and rhinos bigger than today's elephants. **BIRDS** that had to watch out for pterandons now have the skies to themselves. And with the mosasaurs and ichthyosaurs and plesiosaurs gone from the seas, some mammals begin to return to the oceans, becoming **WHALES** and dolphins.

30 mya. SQUIRRELS evolve, and various nut-producing trees (like oaks with acorns, and walnut trees with walnuts) co-evolve nutritious seeds for squirrels to plant for them. Meanwhile, **BUTTERFLIES AND BEES** are coevolving with the **FLOWERS** they visit to sip nectar or harvest pollen. Finally, the newest families of plants are born, adding to the diversity of life. These newest plant families are the **GRASSES** and the **DAISIES** and dandelions.

2.5 mya HUMAN BEINGS (*Homo habilis* – "handy human") evolve from primate ancestors and begin to use stone tools for hunting and butchering animals.

2.5 mya to 15,000 years ago, the Ice Ages come and go: glacial ice advances and retreats seventeen times, encouraging the newest animals of all to evolve. These are the animals that live in cold, icy climates: **POLAR BEARS AND CARIBOU.**

Historic Period. It is suggested that students choose twelve or more events from **HUMAN HISTORY**, according to teacher and student interests. These events might be technological or cultural innovations (including agriculture), social and political changes, milestones in religious traditions, turning points in art, philosophy, science, etc. For ideas see <http://www.thegreatstory.org/timeline3.html>

Personal History. Significant events in each child's **PERSONAL HISTORY**, as they themselves see their own story.

Energy Activities
For
Faithful Youth

May 1998

The Interfaith Coalition on Energy

The Archdiocese of Philadelphia

The Board of Rabbis of Greater Philadelphia

The Metropolitan Christian Council of Philadelphia

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Often, a congregation's interest in reducing energy costs does not extend to its young members or those in religious schools. The purpose of this ICE publication is to suggest ways to include the youth in a congregation by providing a variety of ideas for specific activities concerning energy.

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Amish Beliefs

Read the following article. Discussion questions are at the end.

There are more than 16,000 Amish people in Lancaster County. Their population has doubled its number in 20 years. The Amish family includes an average of 6.6 children. The rules of the church discourage higher education, emphasizing instead on the job training. They have strong families and communities. Amish religion prohibits owning automobiles and connecting their buildings to any wires from the local electric company.

Electricity

The Amish are not against electricity. One finds electronic typewriters and cash registers in Amish stores. However, they run on electricity from 12-volt batteries because the Amish refuse to have their homes and businesses connected to an electric utility. Tanks for propane, compressed air, and fuel oil are evident everywhere, but the electric wires on utility poles bypass each Amish building.

The Amish don't like what electricity does to their lives. They don't want exposure to secular values from the outside. They prefer a slower, softer, more family-centered lifestyle over the speedy, consumption-oriented lifestyle promoted by the mass media. Were their buildings connected to the utility grid, modern appliances would be easy to install. Eliminating the use of off-site electricity eliminates the use of fax machines, compact disks, stereos, VCRs, televisions, radios, hair dryers, electric clothes dryers, toasters, air conditioners and microwave ovens -- most modern conveniences.

Amish homes and businesses contain a lot of machinery. Electric generators, however, may be used to power welding machines and to charge batteries... nothing else. Milk is cooled by compressors that are directly powered by fossil fueled engines. Motors are powered by compressed air or by hydraulics. Water is pumped by the wind or by the flow of a stream. The Amish use propane refrigerators and heating systems, along with wood, coal and some passive solar heating. There are no active solar heating systems for either space heat or domestic water. A few photovoltaic panels are used to recharge batteries. .

This is not an easy lifestyle. Using electricity would be more convenient, and less expensive. Lighting, for example, is frequently supplied by gas mantles glowing with burning propane gas. A pair of mantles in one lamp produces light roughly equivalent to a 100-watt light bulb. One tank of gas, costing about \$6.50, should light the mantles for about 100 hours at full brightness, giving propane light a value of about \$0.65 per kilowatthour -- about six times the cost from the utility.

Automobiles

The Amish are not against automobiles, but they refuse to own them. They will ride on mass transit, rent vans, or ride with outsiders, but they will

not own cars. They feel that car ownership destroys their families and communities. "You would expect the speed and convenience of cars to allow more time for home life," one Amish man said, "but just the opposite is true."

It takes about 10 minutes from start to finish to get a horse and carriage ready for the road. They travel about 10 to 12 miles per hour. Therefore, the Amish are very thoughtful about their travels. "If we had cars, we would not have to plan ahead as much," an Amish man said. "We can't afford to forget details. We must combine errands; not travel alone or shop spontaneously. Our travel is deliberate."

Some Amish have tried bicycles, but they seemed to lead toward the justification for owning automobiles. Bicycles are now shunned. Similarly, tractors may be used around the barn, but not in the fields. One Amish settlement began using them in the fields, but found, once again, that such use seemed to justify owning cars.

We asked "What if everyone used a horse and carriage?" An elder Amish replied that horse manure would get too deep too quick. There would have to be a massive increase in mass transit, which the Amish would like to see.

Electricity, automobiles and values

While modern society is plagued with drugs, divorce, and environmental contamination, Amish society has few of those problems. Could it be that their limitations on energy use are in part responsible? The Amish believe that not owning cars and not using off-site electricity limits consumerism and strengthens family and community vitality. Divorce and drug addiction are symptoms of broken social structures. Electricity and automobiles certainly are major contributors to environmental pollution.

Using energy affects our lives. It's difficult for people to explain or quantify the benefits of limiting their consumption of energy. The Amish cannot easily explain to outsiders the benefits of not having electric meters or cars, and yet they continue, generation after generation, to live happily without them.

Research has been done in at least two universities about the relationship of society to the energy it uses. Earl Cook was a Professor of Geology and Geography at Texas A&M University. He was the executive secretary of the National Academy of Sciences from 1963-66. In Chapter 7 of his book *Man, Energy, Society*, he discusses the differences among societies based on the amount of energy they use. Although Professor Cook did not mention the Amish, we see remarkable coincidences in his writing with what we found in Lancaster County:

"In a low energy society, family and community are of great importance. Not only are many goods and services produced within the family, but also the family is a major instrument of social control. Social efficiency is given strong preference over individual choice....

"Life in a high energy society is in sharp contrast to life in a low energy society. Family and community are subordinated to the state because most goods and services are produced outside the family and because the means of social control do not depend upon the family's and community's allocating status and inculcating behavior. Services are performed by specialists."

Discussion questions:

How does energy use affect our lives?

How does energy use affect everything around us?

Here are two lists of human activities. One always requires an expenditure of electricity and/or fuel, and the other list does not. What do you feel about the items in each list?

Activities which don't require
electricity or fuel

Making love
Walking and swimming
Talking and singing
Meditation and prayer
Teaching and understanding
Thinking and imagining
Using the five senses
Reading
Art and creativity
Peace

Activities which
require electricity and/or fuel

Travel and transportation
Most manufacturing
Cooking
Television and movies
Medicine
War
Constructing & operating
buildings
Mass media
Money and banking

In what ways are you already like the Amish?

Are the Amish an example of how controlling energy use improves one's relationship with the environment?

Does the Amish lifestyle have a message for your congregation?

Bibliography

Earl Cook, *Man, Energy, Society* San Francisco: Freeman, 1976

Fred Cottrell, *Energy and Society* Westport, CT: Greenwood Press, 1977.

John A. Hostetler, *Amish Society*, Baltimore: John Hopkins University Press, Third edition, 1980

Stephen Scott and Kenneth Pellman, *Living Without Electricity*, Intercourse, PA: Good Books, 1990

Edward S. Klimuska, "Old Order Lancaster County", Lancaster, PA: *Lancaster New Era* newspaper series, 1990.

Donald B. Kraybill, *The Puzzles of Amish Life* Intercourse, PA: Good Books, 1990

What is zoning?

Your building is probably designed so that sections (zones) of the building can be heated without heating the other sections. Where are these heating zones?

Step 1. Draw a plan of your building. If it has more than one floor, draw each floor. If possible, try to get all the floors on one page.

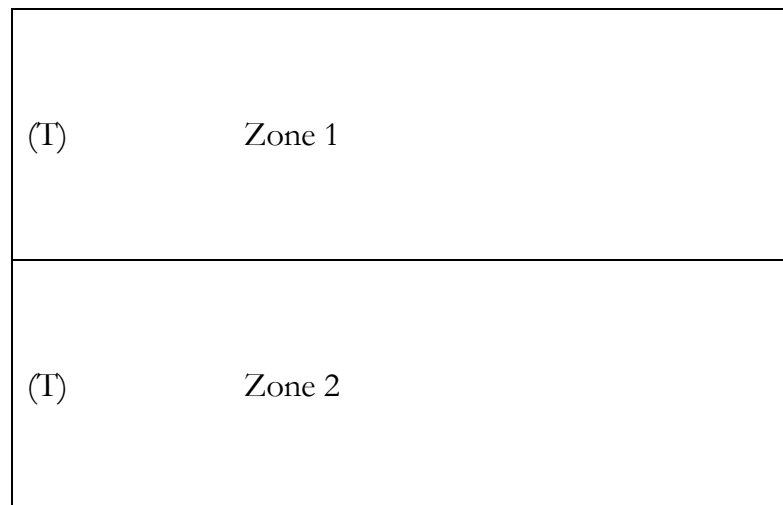
Step 2. Find each heating thermostat and mark its location on your plan by drawing a "T" with a circle around it.

Step 3. With the help of an adult, turn up one of the thermostats to find out what rooms heat up. Those rooms are one zone.

Step 4. Mark these rooms on your plan, maybe in color. Then, color the thermostat with the same color so that you know which thermostat controls the heat in that zone.

Step 5. Repeat Steps 3 and 4 until you have found and labeled all the zones.

Example:



Rating the electricity used by your congregation

What would you do if you found out that your congregation used twice as much electricity as the average for similar buildings? How can you determine whether it used that much or not?

Step 1. How much of your building uses electricity? Probably the whole building uses electricity in one form or another. So, you have to measure the building and find out your square feet of floor area. Area is the length multiplied by the width. It's easiest to get the measurements from blueprints, if your congregation has them. If you can't get the blueprints, you can measure the building directly. It's easier to do this on the outside of the building with a long tape measure, as long as the weather is OK.

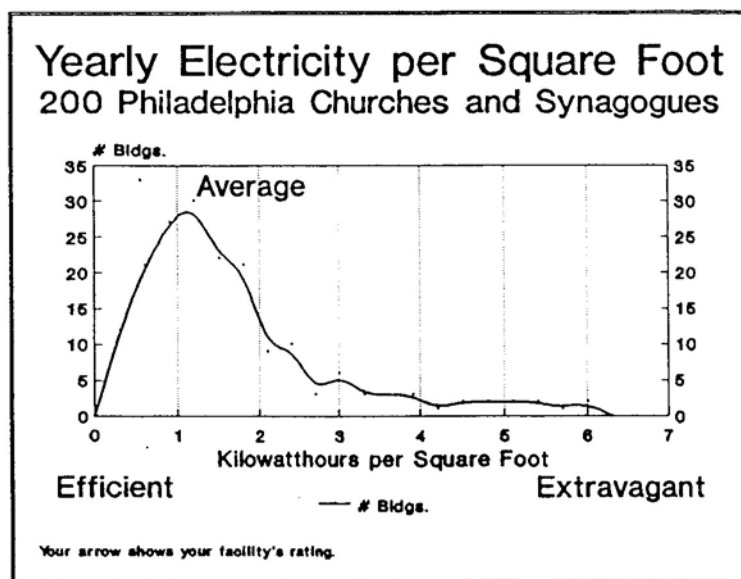
Step 2. As you look around the building, find out where the electric meter is. This is what measures the amount of electricity coming into your building. That amount is called a kilowatthour. You need to measure all the floor area served by that electric meter, even if it supplies electricity to more than one building.

Step 3. Gather all the electric bills for one year. It doesn't matter which month you start with, but you should end up with twelve months, one right after the other.

Step 4. Write down the number of kilowatthours used during each month, and then add the total for the year.

Step 5. Divide the total kilowatthours for the year by the square feet of floor area served by the meter. And BINGO, you get kilowatthours per square foot.

Step 6. Draw an arrow on the chart below to see how your congregation compares with hundreds of other congregations in and around Philadelphia.



Naming and labeling mechanical equipment

We are amazed how few items are labeled in the mechanical equipment rooms for which congregations are responsible.

Mechanical equipment rooms usually have locked doors and signs telling you not to come in. Inside they are usually dark and mysterious. Inside these rooms, you can find fans, boilers, electric panels, pipes, ducts and lots of other stuff. Unless you know the names of what you see, you actually cannot see them. They are invisible. The whole room looks like a dark gray mess.

The cost of energy flowing through an average Philadelphia church is \$12,000 per year. How much is that for one day?

For synagogues, it's \$33,000 per year. How much is that per day?

So, mechanical equipment rooms are the most expensive rooms in the building, and yet they are dark and mysterious and usually not well cared for.

This project is going to take some of the mystery out of these spaces.

Step 1. Borrow a flashlight from someone.

Step 2. Ask the custodian for a tour of a mechanical equipment room. Using the flashlight to pick out specific objects, ask the custodian what each one's name is. Let each student pick something.

Step 3. Draw a picture of that specific object, and label it in the picture. Each student can draw a different object.

Step 4. When you get back to your classroom, try to put all the pictures together to make a "collage." A collage is a big picture made up of small ones pasted together.

Step 5. Discuss how each student has a different opinion about the mechanical equipment room.

Step 6. Give the collage to the custodian, and ask him or her to label the items clearly, so that everybody understands what each one is called and what it does.

The view from your roof

This exercise applies only to flat roofs. Roofs that are sloped are too dangerous to be on. Flat roofs are fun, but you have to be careful not to fall off, and you must walk where you are told to walk because you can damage the roof by walking in the wrong place.

1. Borrow a Polaroid camera.
2. Ask the custodian to guide you.
3. Pick a pleasant day -- not too hot, not too cold, not too windy and not raining. With one or more adults supervising the project, go out onto the flat roof. Sometimes this means climbing up stairs, and sometimes ladders. Sometimes you have to climb out a window to get out onto a flat roof. Whatever way you get there, be careful.

4. Once you are on the flat roof, ask yourself these questions:

Does it seem like people care about the flat roof? For example, is there a lot of rubbish on it? Does it seem pretty?

What are the things that are poking up through the roof? Are there any skylights, vents, ventpipes, chimneys? Ask the custodian to explain what these things are called and what they do.

What is mounted on the top of the roof? Are there any air conditioning units, fans, or antennas? What does each do? What are the names of their parts?

Often, you can get a good view of the neighborhood from a roof. What do you see?

5. Take pictures of the roof and the neighborhood.
6. Carefully go back into the building to your classroom. By then, the Polaroid pictures should be fully developed.
7. Look at the pictures. What are the names of the things you see?
8. You can make a collage out of these photos.

Organizing an energy patrol

Young people can save lots of money and energy. For example, a school in Arizona saves \$2,000 each year by having their students remind everyone to turn things off when they are not being used. Here's how to do it in your church or synagogue:

1. Start by listing the electricity your building uses for at least one year. You do this by copying the kilowatthours of electricity from the electric bill which comes each month. Your list could look like this...

Month	1996	1997	1998	Savings
January	3,822	4,104	_____	_____
February	3,940	4,200	_____	_____
March	3,777	4,104	_____	_____

2. Once you have made a list of the past kilowatthours used, you begin your Energy Patrol. What does the Patrol look for?

Lights on in empty rooms

Air conditioners running when no one is around Computers left on

Empty but cold refrigerators, freezers and walk-in coolers

Basically, any use of energy when no one benefits.

3. When you find that something is left on, don't just turn it off yourself. For example, turning off a computer may ruin computer files. Or turning off a light in a bath room may cause someone to panic if they are in the dark. Instead, make a list of what is left on, when you found it on, and present it to the custodian. If you want to get even quicker results, present your list to the property committee or the finance committee. The finance committee is responsible for money.

4. When you think that your Patrol is making some progress, fill in the last two blanks in your list with the changes in the kilowatthours billed by the electric company. Your list might look something like this:

Month	1996	1997	1998	Savings
January	3,822	4,104	3,500	604
February	3,940	4,200	3,443	757
March	3,777	4,104	_____	_____

5. How much is the savings worth? You could estimate each kilowatthour is worth about ten cents. How much did you save each month?

6. What do you think the congregation should do with the money saved?

Mapping solar time on the floor

You already know that the sun seems to move across the sky. You probably also know that your shadow is longer in the winter than in the summer.

But have you ever tried to watch shadows move? For example, you could lay a pencil on the shadow cast on the floor by part of a chair. Now, watch the shadow move. Pretty slow, right?

So, this project can let you follow these slow movements of sunlight. ,

Step 1. Pick a room which is exposed to sunlight. Pick a sunny day.

Step 2. Using masking tape, or some other tape that can easily be removed from painted walls, stick a strip on the floor or wall right where the edge of a window is creating a shadow of the sunlight.

Step 3. Label the strip of tape with the date and the time of day.

Step 4. Wait an hour or so, and then label the shadow again with another piece of tape with the same date but a different time.

Step 5. One week later, if the day is also sunny, label the same shadow at the exact same time of day, but with a different date, of course.

Step 6. Now, analyze the pattern between the two weeks and predict where the next strip of tape should be placed for the shadow at that same time, but one week into the future.

Step 7. Did your prediction turn out to be right?

You now have a sun clock on the floor or wall of the classroom.

Your custodian as your, teacher

Custodians are not hired to be teachers. Sometimes, however, they can talk about their practical experience in operating buildings in ways that other teachers can't.

Ask you custodian if he or she would be willing to talk to your class.

If he or she agrees to do so, here are some of the things they can teach you:

- How the energy systems in the building work

 - Heating

 - Air conditioning Lighting

 - Ventilation Cooking Heating

 - sink water

- How to reduce the amount of energy used by occupants

- Where to get more information about energy

Here are some particularly interesting items:

How thermostats work

- How the custodian adjusts the building's systems to make people more comfortable

- How people communicate with the custodian

- How you read a meter

- How the building occupants can make life easier for the custodian

- How important it is to keep up with repairs

- How the custodian adjusts the systems when the weather changes

Zero energy worship

You know what worship services usually are. They occur in the middle or late morning. You ride there in a car. Sit in an air conditioned room. Listen to voices amplified by electricity, and so on.

What would a worship service be if it involved using absolutely no electricity or fuel?

Could it be inside?

If it were outside, could it be on a very cold day? a very hot day?

Could you get there in a car without using any fuel or electricity? If not, how would you get there?

Would the service be held after dark?

Worship itself does not require electricity and fuel, but it is to worship and being housed comfortably do.

Here is the project:

Step 1. Design a worship service which uses no electricity or fuel at all.

Where would it be?

What time would it occur?

What would the weather have to be like?

What do you expect to happen as a result of zero-energy worship?

What songs?

Any dance?

What reading?

What prayer?

Step 2. Do it.

Follow through on your plan by holding your own service? You can ask a minister, priest or rabbi to officiate, if you want.

Note what happens before, during and after the service.

Step 3. Discuss your feelings about the result.

Discuss what happened.

How would you do things differently?

Did anyone use any electricity or fuel?

If so, how can you not use it in the next zero-energy worship?

Energy use when no one is using the building

Why should your building use electricity, water or fuel when no one is in the building?

This project allows you to find out how much energy and water is being used so that you can make suggestions on how to use less.

Step 1. Fill in the following information from your electric, gas and water meters. If you can't do the readings yourself, ask the custodian to do it for you.

Day one:

Electric meter reading at the start of the day
Electric meter reading at the end of the day
Gas meter reading at the start of the day
Gas meter reading at the end of the day
Water meter reading at the start of the day
Water meter reading at the end of the day

Day two:

Electric meter reading at the start of the day
Electric meter reading at the end of the day
Gas meter reading at the start of the day
Gas meter reading at the end of the day
Water meter reading at the start of the day
Water meter reading at the end of the day

Day three:

Electric meter reading at the start of the day
Electric meter reading at the end of the day
Gas meter reading at the start of the day
Gas meter reading at the end of the day
Water meter reading at the start of the day
Water meter reading at the end of the day

Step 2. Subtract the readings at the beginning of the day from those at the end of the day to get the consumption when people are using the building. Each dash below is a minus sign:

Electricity: (End of day) - (beginning of day) = daytime use

Day 1:	-	=
Day 2:	-	=
Day 3:	-	=

Natural gas: (End of day) - (beginning of day) = daytime use

Day 1: - =

Day 2: - =

Day 3: - =

Water: (End of day) - (beginning of day) = daytime use

Day 1: - =

Day 2: - =

Day 3: - =

Step 3. Now here is the interesting part. Subtract the readings at the beginning of the day from those at the end of the day before to get the consumption when the building is empty:

Electricity: (Beginning of day)-(End of Previous day) = Overnight use

Day 2: - =

Day 3: - =

Natural gas: (Beginning of day)-(End of Previous day) = Overnight use

Day 2: - =

Day 3: - =

Water:(Beginning of day)-(End of Previous day) = Overnight use

Day 2: - =

Day 3: - =

Step 4. What equipment is using energy or water overnight?

What equipment is using electricity overnight? How can less be used?

What equipment is using gas overnight? How can less be used?

What equipment is using water overnight? How can less be used?

Polling the adults

This project is a way to figure out what adults are thinking. The idea is to prepare a list of questions, ask randomly-selected adults to answer the questions in a way that protects their privacy, and then to summarize the results so you can understand them:

Step 1. What do you want to find out about the way adults are thinking about energy? What questions would give you the answers you seek? Possible categories:

What do they think will happen when fuel prices go up?
What do they think about car pooling, efficient lighting?
Would they be willing to be uncomfortable if it saves the congregation money?

Step 2. Be careful about how you ask your questions. Here are some general hints about questions:

To be able to count the answers, you could ask opinions with answers scored from 1 to 5. It is best to pick an odd number.

Avoid open-ended questions. Instead of asking "How do you feel about...?" try "Rate your feelings to this statement from 1 if you agree strongly to 5 if you disagree strongly....!"

Step 3. Pick adults at random. One way to do this is to pick names out of a list of the members of the congregation... every tenth name, or every twentieth.

Step 4. Try to be consistent in getting the answers. Use the same questionnaire and answer sheet for each person you interview. Try to avoid saying anything which would bias their answers one way or another.

Step 5. If you find out that a question just does not work, remove it and try your poll again.

Step b. Score the answers and share them with the entire congregation.

Ideal design of a future worship center

What kind of worship center would you and your class like to have? Here are some questions which can stimulate class discussion:

Can the congregation rehabilitate an existing structure instead of building a new one?

What about sharing space with other congregations?

Should the building be easily converted to other uses if necessary? ,

How would you design the the inside and outside to take advantage of the path of the sun, prevailing winds, and other environmental factors?

How would you make it easier to worship outside?

Does the design of the building allow for natural light while minimizing heat loss through glass?

Do you want a garden outside? Also, would you want a garden inside?

How about shade from trees during the summer and windbreaks of trees in the winter?

How does your class feel about lawns? Can you think of other natural habitats which require less maintenance?

Do you want a plan for easily and conveniently composting kitchen and yard waste?

What happens to the storm water run-off from the roofs and paved surfaces?

How can the location and orientation of the building design lend itself to

ease of use of bicycles, walking, carpooling and mass transit? Can your parking lots have more than one function?

Where will you put lots of snow in the winter?

Where should the building's water come from and where should waste water go?

Where is the air going?.

Each person interested in doing this needs to get a pencil, some tissue paper, and some adhesive tape. Cut a piece of tissue as wide as the pencil and twice as long. Tape the tissue to the pencil so that it looks like a flag. Blow on it. See the tissue move? When the tissue moves, it means the air around it is moving. You have built an "Air Motion Detector."

Step 1. Go to the doorway of your classroom and open the door.. Stand next to the doorway with your Air Motion Detector in the door opening. i You will have to wait a minute or two to get a correct reading. Is the air moving? Which way? Where is it going?

Step 2. Often, someone in the office has a drawing of the plan of the building. If they don't have one, draw one. It does not have to be exact, but it should show all the rooms and all the doorways.

Step 3. Stand in each doorway marked on the plan. Use only inside doors. You can try this with an outside door, but you will probably find that the air is always coming into the building. Your goal is to find out how it travels once the air is inside. Mark the direction the air flows through each doorway on your plan.

Step 4. After you have done this with each inside doorway, figure out where the air is going. How is it getting out of the building?

Keep the ice from melting

This project can be a bit messy, so it might be good to do it outside when the weather is pleasant.

Step 1. Talk about the project first. Each student is going to get an ice cube. The object is to keep the ice cube from melting as long as possible. Discuss ways to do this and what materials would be needed.

Remember, you have to be able to prove that the ice cube has not melted. So, pick materials that will allow you to check it easily either by touching it or being able to see it. You can feel it before it turns into water, for example.

Examples of insulating materials include tissue paper, hot drink cups, pieces of styrofoam, plastic with bubbles in it, or fiberglass. Can you think of others?

Step 2. Gather any materials needed to prevent the ice from melting.

Step 3. Each student constructs a container to hold an ice cube so that the ice melts as slowly as possible.

Step 4. Once every student or group of students has gathered their materials, distribute an ice cube to each and start a stopwatch or note the time on a wrist watch.

Step 5. Note the time that each ice cube has completely melted.

Step 6. Whose ice cube lasted the longest? Why?

Step 7. How can you apply what you learned to keeping your house warm in the winter?

An Energy Walk

We often take energy for granted, which means we don't even notice it. In this project, you are going to become much more aware of energy.

Energy walks can be inside the building or outside. You put a blindfold on and have someone carefully lead you around, visiting places where you can experience different forms of energy.

Step 1. Decide who goes first, second, third and so on.

Step 2. Put a blindfold on whoever goes first.

Remember, you have to be very careful about this. Some people get scared when they can't see. Don't force anyone to do this if they don't want to.

Step 3. Have someone lead the blindfolded person around.

Remember, the blindfolded person can't see. Be very careful about stairs, doors, sharp objects and so on.

BE GENTLE, AND GO SLOW.

Step 4. When leading the blindfolded person, here are some questions to ask and places to visit:

Can you tell what temperature the air is?

What sounds can the blindfolded person hear? What use of energy is producing the sound?

Which sounds are natural, and which are made by humans?

What smells can the blindfolded person smell? What use of energy is causing the smell?

Which smells are natural, and which are made by humans?

Have the blindfolded person touch several objects. *Which* feel colder? Can he or she feel the movement of air? Which direction is it moving? Can he or she tell where the sun is by feeling it?

Step 5. After some or all of the students have been on their Energy Walk, discuss what feelings came up. Can one or more students imitate a type of energy so the others can guess what type it is?

Four additional activities:

Posting the Accounts

Each month, tack the electric, gas, oil and water bills to a bulletin board where everyone can see. Members of congregations usually have no idea the cost of energy to operate a house of worship. Posting the accounts is simply tacking to a bulletin board a copy of the invoices conspicuously showing the amount of money paid in the past month for water, electricity and fuel. When members of a congregation see how much is being spent, they may be more motivated to help lower costs.

Mime of the turn off

In this ritual, students are encouraged to imitate turning things off. Silently, they re-create scenes in which not using electricity or fuel brings a greater appreciation of how we use energy unnecessarily, following the principle that waste does not lead to a better lifestyle or environment.

Witness the dumpster

Some congregations continue to discard material whose street value has increased, particularly paper and aluminum. A congregation can bear witness to what they have discarded by emptying the contents of the dumpster for all to see. Hopefully, items which can be recycled will be sorted into appropriate containers. The recycled contents of a dumpster can add to congregation income. (Contributed by Pastor Richard Purchase of the Upper Merion Baptist Church in King of Prussia.),

Our best fans

Moving air cools our bodies by increasing the rate that moisture evaporates from our skin. For this reason, ceiling fans make us feel cooler, even when the temperature of the moving air remains the same. Some congregations have placed individual hand-held fans in the pews. Often, these fans have advertising from funeral parlors or other local businesses. The fans can be ordered, however, with no printing on them and can be decorated by children from religious education programs. The project involves the decoration of the fans, the admiration of the art work and the use of the fans to improve comfort without the use of air conditioning. (Contributed by Matthew White of Philadelphia's Tenth Presbyterian Church.)