8. INTERCONNECTION: THE WEB OF LIFE

This Lesson's Goals

- *To see the vast variety in the world as a reflection of God's power, seeing value in the splendid diversity*
- *To become aware of the interdependence of all life*
- *To develop an attitude of brotherhood/sisterhood with all life*

Sample Agenda

Posting a simple agenda can help both the teachers and the children stay on track. Choose what activities work for you.

1. **Opening:** Silent Worship, Share Quote, Song, Scripture
2. **Activity: We are Connected Human Chain**
3. **Small Group Activities**
4. **Closing**
5. **Sharing of Take-Home Materials**

Opening [10-15 min.]

Open with silent worship.

Use the songs, the Scripture, and the Black Elk quote to introduce the theme of how everything is connected.

> The first peace, which is the most important, is that which comes within the souls of people when they realize their relationship, their oneness, with the universe and all its powers, and when they realize that at the center of the universe dwells the Great Spirit, and that this center is really everywhere, it is within each of us.
> — Black Elk

Songs

All God's Critters Got a Place in the Choir
Ancient Mother
The Earth Is My Mother
God Who Touchest Earth with Beauty
I Sing the Almighty Power of God
Magic Penny/Potluck

Potluck Words to "Magic Penny"

This potluck version was written by Young Friends [including two of the authors] in 1976 or 1977 at the first or second Western Young Friends New Year's Gathering.

Chorus:

Food tastes better when you pass it around
Pass it around, pass it around.
Food tastes better when you pass it around
It always seems like more.

Verse:

It's just like a loaf of rye bread
Hold it tight and it ends up dry bread
Pass it around, it ends up inside bread
'Till everybody is full

Scripture

1 Corinthians 12: 14–26

A body is not one single organ, but many. Suppose the foot should say 'Because I am not a hand, I do not belong to the body', it does belong to the body nonetheless. Suppose the ear were to say, 'Because I am not an eye, I do not belong to the body', it still does belong to the body.

If the body were all eye, how could it hear? If the body were all ear, how could it smell? But in fact, God appointed each limb and organ to its own place in the body as he chose. If the whole were a single organ, there would not be a body at all; in fact, however, there are many different organs, but one body. The eye cannot say to the hand, 'I do not need you'; nor the head to the feet, 'I do not need you.'

Quite the contrary: Those organs of the body which seem to be more frail than others are indispensable, and those parts of the body which we regard as less honorable are treated with special honor. To our unseemly parts is given a more than ordinary seemliness, whereas our seemly parts need no adorning.

But God has combined the various parts of the body, giving special honor to the humbler parts, so that there might be no sense of division in the body, but that all its organs might feel the same concern for one another. If one organ suffers, they all suffer together. If one flourishes, they all rejoice together.

We are Connected—Human Chain [5-10]

- Start standing in a circle, facing center.
- Select a child and say, "We are connected because . . . " and state a connection such as "your mother is my sister," or "we both like to bicycle," or "you came to my house and played with my dog," or "we're both wearing blue." Any connection is okay. Join one hand with that child.
- That child then goes to someone else, tells how they are connected, and takes the new person's hand, adding to the chain.
- The new person then makes another connection and the game continues until

everyone is connected to the group. If you have a large group, start two chains.

» You can lead your chain into a spiral and out again or form circles. There are chants and songs from many cultures that go with both spiral and circle shapes.

» Ask how we are connected with the whole world. Where does that *connection start?*

Small Group Activities:

Select from the activities, giving consideration to the age and size of your group. This is mostly an indoor or clean-space lesson. Do at least one version of webbing. If you are making two sessions of this chapter, group together the totem activities for one time period.

1. Webbing Story [10-15]

Materials: a ball of yarn or string and labels, one made out for each character [bold print] in the story.

Give each child one or more labels. With younger children, have an older child or assistant serve as the "spider" to guide the web. As the story is read, the web [yarn] is spun to each character when mentioned. The players hold onto the yarn, forming a crisscross as the web is created. You may want to change elements of the story to fit your local habitat.

Snack Ideas

Select a seasonally appropriate snack. Focus on an appreciation of the food itself. Invite the children to look at the food and describe the colors and shapes. Observe the aromas. Consider its path to the table from sun, soil, water, farmer, to kitchen, cooked with care and love.

A. The **sun** rises in the morning, touching the tall **pine tree** first with its light.
Soon the **robin** sings in the **willow trees**.
The **earthworm** burrows under the **grass** to stay out of the **sun**.
The **squirrel** goes looking for pine cones full of nuts in the pine tree.
The **rabbit** and the **deer** come out to eat the grass.
The **mouse** scampers down to the creek to get a drink of **water**.
The **owl** swoops down from its hole in the **oak tree** and grabs the **mouse**.
Up in the **sun**-lit sky the **red-tailed hawk** circles, sees the **rabbit**, and dives for it.
The **rabbit** ducks into the **blackberry brambles** and finds a hole in the ground.
That hole is the home of a **snake**, which chases the **rabbit** through the **grass**.
The **red-tailed hawk** catches the **snake**.
Some **children** come along picking and eating the ripe **blackberries**.
The **deer** runs to hide among the **willow trees**.
The **children** go to the creek to wash their hands in the **water**.
The **squirrel** chatters at the **children** and drops a cone from the **pine tree**.
The **clouds** begin to fill the sky, hiding the **sun**, and it starts to **rain**.
The **children** pick up the cone full of nuts from the **pine tree** and hurry home.
The **red-tailed hawk** lands on the **pine tree** to get out of the **rain**.
Under the **clouds**, the **robin** finds **earthworms** in shallow **rain** puddles in the **grass**.

Stop now. Look at the web of interconnection your group has created.

Which animals depend on the grass? Which on a tree? Which need water? The story can continue with people letting go of the web as they are named.

B. Lightning strikes the **pine tree** and singes the **red-tailed hawk. The fire spreads to the oak tree, the willow tree, and the** blackberry brambles. Where do the animals go when their homes and food are destroyed?

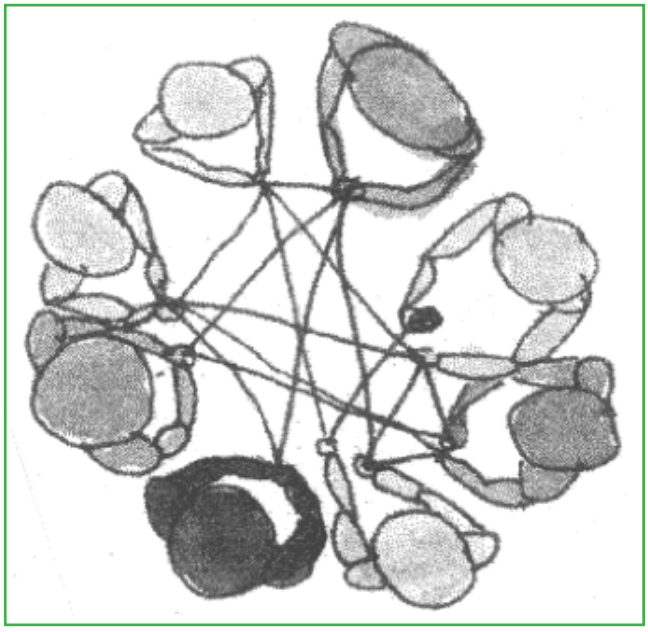
C. Not enough **clouds** form and no **rain** falls. There is no water and the creek soon dries up. How are the plants and animals affected by the drought?

D. The county clean-up crew comes along and pulls up all the **blackberry brambles** so the **children** don't come so often.

E. What else might be affected and how? Change or add **elements** drawn from your local ecosystems and the children's experiences.

3. Webbing Game [10-15]

[Older children's version]
Materials: a ball of string or yarn.



Sit in a circle. One person names an animal or plant. Taking hold of one end of the yarn, he/she passes the ball of yarn to the player who can name that animal's food or habitat. The yarn gets passed crisscross about the circle as players explore the food chain and shared environments. Who eats that? Who else lives there? What plants does it need? What else needs that?

Remember that people are part of the food chain and part of the environment, too. Continue asking questions based on the previous response until a good web is formed and everyone is included, holding on to at least one part of the yarn.

Pull gently on the yarn, stretching it tight. Think of elements in your web that are threatened today. Ask the person holding the yarn for a threatened item to let go of the yarn. It won't take more than two or three such drops before the web loses its shape. Ask the children what this means. Consider what parts of the local web are missing or damaged and ways people can help repair them.

4. Spaghetti Tangle [5-10]

1. Form circles with 6 to 12 players per circle.
2. All players reach into the center of their circle and grasp hands with two other people. Make sure every hand is connected to just one other hand.
3. Then, without letting go, step over, duck under, go around, or through, etc. in order to untie the tangle. The results may turn out to be one or more circles or a real knot. There's no 'right' answer.
4. The point is that the players are the problem solvers. Debriefing questions might include: what did it mean to the group that we were all physically connected? Did we need to include everyone in our solution? Why or why not? How is this related to our connection with the natural world?d

5. Chain of Life [10-15]

You will need stickers or small pictures of animals and plants, tape or glue, and paper strips for making paper chains.

Give each person several strips of paper. Each takes a strip labeled with a different animal or person, makes it into a loop, labels the next strip for a thing the first needs, and loops it through the first. The third link will be a thing the second loop needs, and so on.

Help the children see where one of their items shares a need for something in another's chain and link to it. Some chains may branch or circle. Work until everyone's links are connected. This could create quite a three-dimensional web. What would happen if one of the links became extinct?

6. Story Reading [15-20]

Read aloud and show the pictures of either *Hawk, I am Your Brother* or *Everybody Needs a Rock*. Both books were written by Byrd Baylor and illustrated by Peter Parnal. Both

are good quiet reading and could be used at other times, but they relate best to this chapter with a sense that all is interwoven.

7. Animal Totems [10-15]

Many people have favorite plants and animals. In some families and tribes, each person is expected to identify his or her personal totem animal or plant, as one he or she relates to in a special way. This may involve a totem quest or journey, often including time alone in the wild.

Ask the children to choose their own totems – what animal or plant has special meaning to them. Ask each to share the connection and tell some characteristics of their choices.

Feel the love of God: then . . .
You will find a magic, living relationship uniting the trees, the sky, the stars, all people, and all living things; and you will feel a oneness with them.
– Paramhansa Yogananda

8. Totem Images [10-25]

Materials: whatever you have. Modeling clay may be best, but you can use paper, fabric, or craft sticks held together with yarn, tape, and glue.

Native Americans who live along the north Pacific coast carve images of family totems on log poles, which they place in front of their homes. Ask each child to choose a plant or animal totem and make an image of it.

Display the images and talk about how the children feel connected to these animals.

9. Totem Movement Circle [10-5]

See Wonder Movement Circle in Chapter 1. The sequence can be refined and rehearsed for presentation to other groups.

1. Stand in one or more circles of five to twelve people per circle.
2. One person makes a movement or action to go with his or her totem animal or plant. For instance, "eagle" lifting arms like gliding wings.
3. Everyone copies the action and repeats the totem name for the first person. Remember to treat each totem choice with respect.
4. The second person does an action and names a totem. Everyone repeats the first two.
5. The third person gives a totem action, then everyone repeats all three, and so on, until all the actions and totem names have been given and repeated in sequence.

10. One with Nature [5-10]

Consider teaching one or two songs with movements which reflect the connection of all living things. Both "My Roots Go Down" and "Turn the World Around" are easy to learn and provide upbeat and joyful ways to relate our unity with the living earth. Lyrics may be found after the handouts and audio and video are readily available on the internet.

11. The Cosmic Walk [30-60]

Further instructions and the text may be found at the end of the chapter.

The Cosmic Walk is a ritual created by Sr. Miriam MacGillis of Genesis Farm in New Jersey. It is an invitation to understand the interconnection between time and the unfolding universe. It is a simple ritual that can be conducted in a large room or outdoors.

Materials: This activity requires preparing a spiral and printing cards which trace the passage of time to the present.

This may be offered as an intergenerational activity. You may need to ask the older children or adults to be the readers of the points along the time line.

Closing [10-15]

Each small group presents something to represent its totem.

In a period of worship, ask each one to think about his/her totem, its beauty, strength, its life force. Let the Spirit of God enter both you and your totem.

Alternately, invite the children to share their ideas about the web of life and their connection to all living things. Invite each child to finish the sentence: "Today I learned...."

Follow with silent worship.

Give out copies of the Take-Home Page.

Description of the Cosmic Walk

The Cosmic Walk is a ritual created by Sr. Miriam MacGillis of Genesis Farm. It has subsequently been modified and presented by many people around the world.

The Cosmic Walk is a way of bringing our knowledge of the 13.75 billion year Universe process from our heads to our hearts. It is a simple ritual that can be performed in a large room or outdoors.

A spiral representing the entire 13.75 billion years of the cosmic and evolutionary journey is laid out on the floor or ground. At Genesis Farm this spiral is painted on the floor of the library, but one can also use a rope. **The spiral should be at least 100 feet long (137 feet is easier to deal with) with each instance of emergence in time marked at a proportionate distance along the length of the spiral (10 feet = 1 billion years for a 137 foot spiral).**

Each such station is marked by an unlit votive candle and by a card describing the emergence. The first station, located at the very center of the spiral, represents the Great Emergence of the Universe itself. This primordial act is represented by a lit candle by itself or sometimes within a large, faceted glass bowl. One person, the walker, lights a candle from the primary candle and walks the spiral, starting with the Great Emergence and lighting each candle in turn. The walk is synchronized with the reading of the text below by a second person, the reader. The ritual is accompanied by music, traditionally "The Fairy Ring" by Mike Rowland.

This ritual works for any size of group, the limitation being the audience's ability to see the candles well. For fewer than about 15 people, it is feasible to have each person walk the spiral, in turn, reading the cards to themselves in silence. Since the Cosmic Walk was born, many variations in text, process, and music have emerged.

The Narrative for the Cosmic Walk

This is a story, the story of the Cosmos, the story of Earth, the story of human, of gazelle, of mountain, the story of you and me. It is the narrative of one single integrated activity, Universe. (Start music, Fairy Ring.) In the beginning was the Mystery. Through the Mystery all things came to be. Not one being had its emergence but out of the Mystery.

1. **Great Emergence 13.7 billion years ago**
Out of the mysterious chaos some 13.7 billion years ago time, space, and energy stabilize into the gift of existence. Our Universe is born hot and tiny. As the Universe expands and cools energy condenses into matter, sub-atomic particles, radical new beings with new powers, and they in turn transform into atoms of hydrogen & helium, new beings with new powers.

2. 380 thousand years later the Cosmic Web emerges.
The rapid expansion of the Universe stretches out the small fluctuations in the primal distribution of matter into gigantic filaments drawing matter into the Cosmic Web, the primordial creator of all subsequent forms.

3. 13.4 billion years ago (bya) primal stars emerge.
Concentrated by the gravitational force of dark matter these gaseous filaments collapse into enormous stars. Many of these short-lived beings become black holes, gathering together other stars and black holes to eventually become the stupendous black holes that live at the center of today's galaxies.

4. 13 bya galaxies emerge.
Flowing dark matter draws together stars, black holes, and gaseous clouds into small galaxies wherein stars are born, live, and die. Over time these clusters merge into the giant galaxies we see today. As they live, stars transform their hydrogen and helium into heavier elements: carbon, oxygen, aluminum. Some stars, in their death throes, become supernovas, giving out to the cosmos their precious gifts of selenium, tungsten, uranium. Many of these treasures will be gathered into the bodies of future generations of stars and planets. Supernovas are the mothers of the Universe, creating in their wombs the seeds of life. Birth, death, and resurrection are an ancient theme of the Universe.

5. 12 bya interstellar dust produces molecules.
Within the interstellar dust these chemical gifts of the supernovas are nurtured into simple organic molecules, vital components for the later emergence of life.

6. 7 bya gravitational repulsion of dark energy cancels gravitational attraction of matter.
The Universe starts to accelerate its expansion drawing apart galaxies and galactic clusters. Thus galactic evolution decreases significantly and the life-producing spiral galaxies are spared further collisions and destruction thereby permitting their resident stars to create planetary systems.

7. 4.6 bya our grandmother star births the solar system.
Our ancestral star gives herself into the transforming mystery of a supernova. Our Sun and a great disk of matter, all the planets and other members of our solar system family emerge from the dispersed body of our grandmother star. Here begins the story of our blue-and-white pearl of a planet.

8. 4.3 bya the Great Bombardment creates the Earth-Moon dance.
For tens of millions of years, Earth sweeps around the Sun gathering unto herself some of the disbursed body of our grandmother supernova, swelling as she does. Collisions great and small have kept Earth a churning, molten mass. During this time a large planetoid crashes into Earth. Some of the outer layers of the molten Earth and planetoid splash out into Earth orbit solidifying into Moon. Eventually the cataclysms of birth are over, and Earth and Moon begin to cool. Their relationship with each other and Sun will choreograph the exquisite dance of life.

9. 3.8 bya life emerges; cells invent photosynthesis.
As the young molten Earth quiets and cools, an atmosphere begins to form. Then come the first rains drenching the young planet and forming the vast covering of her oceans. Within the newly formed oceans a rich variety of chemicals gather together to birth the wonder of life. Earth comes alive and soon learns to eat the Sun. Molten rock, now in the form of small bacteria, learns to capture Sun's photons and store the energy in chemical bonds. In doing so, they claim a new source of food, water, for their rapidly growing population. However, however, their feasting liberates oxygen. Eventually the atmosphere becomes oxidizing, threatening all life.

10. 3.4 bya Earth's magnetic field deflects Sun's cosmic rays.
The strengthening magnetic shield protects Earth's early atmosphere and oceans from being stripped away by Sun's energetic radiation. Life is guaranteed a home.

11. 2 bya oxygen-loving bacteria and the nucleated cell emerge.
These tiny creatures invent respiration, breathing, and a new source of energy for Gaia. In the process they also enter into communion with larger cells thereby protecting them from oxygen. This communion leads to the nucleated cell, the basis for the evolution of all complex life.

12. 1 bya sexual procreation emerges.
Single-celled organisms learn to share their genetic heritage and bequeath to their progeny an extravagance of possibilities.

13. 800 million years ago (mya) death is invented.
Single-celled beings relinquish their immortality and enter into a great variety of novel relationships creating multi-celled sexual beings. Later, life invents purposeful cell death to facilitate the growth of these multi-celled organisms and the florescence of complex life. Death becomes a condition for creative life.

14. 600 mya ecosystems emerge; multicellular organisms begin to eat one another.
Predator organisms arise, ones who have learned to use the complex biomolecules of neighboring organisms, thereby saving their own genetic resources for the development of greater physical capabilities. Here begins the predator-prey dance that promotes the vast diversity of life: the power of the lion and the speed of the gazelle.

15. 540 mya sight is invented; eyes emerge.
Earth sees herself for the first time and is dazzled.

16. 460 mya plants and animals move on land.
Leaving the water, they seek the adventure of weather and gravity.

17. 400 mya insects invent flight.
Earth teaches herself to fly.

18. 235 mya dinosaurs emerge.
For 170 million years, these creatures explore the extremes of size, speed, and strength.

19. 215 mya mammals emerge.
Molten rock has reshaped itself to be able to express a mother's love for her child.

20. 150 mya birds and flowers emerge.
Birds follow the insects into the vast vault of the sky while Earth adorns herself magnificently in color and fragrances, and invites the sky creatures into a new dance.

21. 65 mya the Cenozoic Era begins.
With the disappearance of the dinosaurs, mammals are given unlimited opportunities to explore new habitats, new food and new varieties of size, shape, defenses, and creative expressions. This new community of animals, plants, birds and insects produces the great florescence of Earth life which will last 65 million years.

22. 6 Mya juvenile African apes stand up, walk on two legs, and leave their forest home.
The savannah offers the challenges and opportunities for these courageous young creatures to evolve into humans with brains and nervous systems complex enough that Earth would eventually bring forth a conscious self-awareness of herself.

23. A few Mya hominids extend childhood development
In animals, adult intelligence and flexibility are correlated with the immaturity of their babies. Primate babies have relatively long infant maturation periods. Hominids extend that greatly but at great cost to the vulnerability of their children and the demands of parenthood.

24. 200 thousand years ago modern humans & language emerge.
Pondering Earth and cosmos in their range of beauty and harshness, humans shape language, art, music, and ritual to respond to the mysteries of existence.

25. 3,000 years ago classical civilizations & religions emerge.
Over several thousand years, humans invent writing and more complex technologies and with them arise a variety of religious perspectives that gradually become institutionalized as Hinduism, Confucianism, Judaism, Buddhism, Christianity, and Islam.

26. 150 years ago humans learn of their descent from a common ancestor.
Charles Darwin confirms the wisdom of indigenous traditions that life is "all our relations".

27. 80 years ago astronomers observe the expansion of the Universe.

Family Graces

Before eating, many Quaker families pause for a few moments of silence, holding hands. It is appropriate to use that time for prayers of thanks to God for giving us the food we are about to eat.

Some families say or sing a grace to return thanks. Some cultures give thanks for the lives of animals killed for food.

- *What does your family do before meals?*
- *Find out about grace at your grandparents' or great grandparents' tables.*
- *How do people who come from different family traditions decide what they will do about having grace when they eat together?*
- *Would you like to try doing grace differently at your house?*
- *How do you feel about having grace at a friend's house, or in a restaurant?*
- *Should we thank the plants that gave up their fruits, seeds, roots, and leaves to feed us?*
- *How can we show reverence for life while we are consuming it?*
- *How might you appreciate the food we eat with all your senses? How might you take the time to notice smells, colors, etc.?*
- *Appreciate all that it took to bring the food to the plate in front of us. Sun, water, soil, farmers, markets, the person who prepared it with love. Taste it with this deep appreciation.*
- *Another form of Grace is to share what we are grateful for that day.*

Try one of these graces –– sing them, if you know the tune.

Oh, the Lord is good to me,
And so I thank the Lord
For giving me the things I need:
The sun, the rain, and the apple seed.
The Lord is good to me!

If we have earned the right to eat this food,
Happy indeed are we.
But if unmerited these gifts to us,
May we more thankful be.

Give thanks for the Mother Gaia
Give thanks for the Father Sun
Give thanks for the plants in the garden
Where the Mother and the Father are One.
Earth who gave to us this food
Sun who made it ripe and good

Dear Earth, Dear Sun, by you we live.
Our grateful thanks for you we give.

Thank you for this food, this food, this glorious, glorious food,
and the animals, and the vegetables, and the minerals that made it possible.

The Five Contemplations by Buddhist Thich Nhat Hanh may also be said before meals:

1. This food is a gift from the earth, the sky, the universe, numerous living beings and much hard work.
2. May we eat with mindfulness and gratitude so as to be worthy to receive it.
3. May we transform our unwholesome mental formations, especially our greed, and learn to eat with moderation.
4. May we keep our compassion alive by eating in such a way that we reduce the suffering of all beings, preserve our planet and reverse the process of global warming.
5. We accept this food so we can nurture our brotherhood and sisterhood, strengthen our community, and nourish our ideal of serving all beings.

[More hymns of thanks: Worship in Song #45 to #52 or Rise Up Singing, page 197]

A Food Web

Draw a line from the food to what eats it.
Some things both eat and get eaten.

TROUT

GRAINS

HAWK

DEER

BEAR

ROBIN

RABBIT

HUMANS

MOSQUITO

LETTUCE

MOUSE

SNAKE

HAY

COW

BAT

DEAD LEAVES

GRASS

CAT

CUPBOARD MOTH

EARTH WORM