**TE430 – Art Integrated Lesson Plan: Experiencing the Rainforest**

**“I can” objectives:**

* I can identify the levels of the rainforest.
* I can identify flora and fauna of the rainforest.
* I can demonstrate levels of dance.
* I can demonstrate qualities of movement.
* I can create a 24 count movement phrase.
* I can describe the interdependent nature of the rainforest.

**Michigan Grade Level Content Expectations:**

**Life Science***Organization of Living Things - Ecosystems*K-7 Standard L.EC: Develop an understanding of the interdependence of the variety of populations, communities and ecosystems, including those in the Great Lakes region. Develop an understanding of different types of interdependence and that biotic (living) and abiotic (non-living) factors affect the balance of an ecosystem. Understand that all organisms cause changes, some detrimental and others beneficial, in the environment where they live.

* L.EC.E.1 Interactions- Organisms interact in various ways including providing food and shelter to one another. Some interactions are helpful; others are harmful to the organism and other organisms.
* L.EC.E.2 Changed Environment Effects- When the environment changes, some plants and animals survive to reproduce; others die or move to new locations.
* S.IA.04.12 Share ideas about science through purposeful conversation in
* S.RS.04.11 Demonstrate scientiﬁc concepts through various illustrations, performances, models, exhibits, and activities, collaborative groups.

**Dance**:

* ART.D.I.4.3 Demonstrate the ability to make shapes at low, middle, and high levels using selected locomotor and nonlocomotor/axial movements.
* ART.D.II.4.3 Explore, improvise, discover, and invent movement to solve movement problems.
* ART.D.V.4.3 Demonstrate the ability to create a dance based on the life cycle of a plant or animal.

**Grade**:  4                                          **Time**:    70 minutes

**Source Materials**:  Eyewitness Jungle Book by Theresa Greenaway and Rainforest Secrets by Arthur Dorros

**Teaching Materials:**     Rainforest life cards, scene prompts, percussive instruments

***Engagement - 10***

Lead students through the *Sounds of the Rainforest* activity. Using different body parts start a “contagion” around the circle that begins softly with snapping fingers and builds up to stomping feet, reverse the process and take the sound back down to the snapping fingers, thus creating a rainstorm.

*Grouping: whole group Time: 5 minutes Type: sound/music/gesture*

Inform the student that we will create a system of interdependence and connectedness.

*Circle Lean*: students stand in a circle and hold hands, every other one takes one large step forward; on the count of three all students lean in and out respectively so that they are supporting each other.

*Grouping: whole group in a circle Time: 5 minutes Type: movement*

***Internal assessment:***

* **How did these activities show interdependence and connectedness?**
* **What did our bodies have to do to be successful in our connectedness?**
* **In what ecosystems can we find a strong example of interdependence and connectedness? Brainstorm a bit and land on rainforest.**

***Building Knowledge - 20***

***Part One-5***

* Give a definition of ecosystem (see notes at end of plan). Note the rainforest geography: Africa, South and Central America, parts of Australia and Southeast Asia.
* Use students to introduce the levels: forest floor, understory, canopy, emergent.  Compare these to the levels used in choreography: low, middle, high.
* Distribute rainforest life cards for students to read and review with each other. Ask them to learn as many rainforest plants and animals as possible.

Grouping:  small groups               Time:  5 minutes Type: discussion

**Part Two-15**

* After a few moments of review, ask students to find their place in the “rainforest” and become their animal/plant in statue form. Coach students to express body control and focus. Define the space students are allowed to use, remind them to be respectful of other animals in the rainforest and to make good decisions.
* Bring the “beings” to life while students explore the movement qualities: smooth, twisty, slow, bouncy, calm, nervous. . .
* Coach students with ideas: find your place in your appropriate level, you are seeking food, a patch of sun is shining, there is a heavy rainstorm, a bulldozer is the rainforest. How do you move?
* Practice this with an eight count of movement and an eight count of holding as counted by the teacher. (Use a percussive instrument for best results.)
* Observe and comment on these as a teacher, not a group discussion.

Then: Replay the activity in two groups. One group observes and takes notes on movement qualities and “characters.” After sharing ideas and observations, the groups change places.

***Internal assessment:***

* What life forms did you recognize in our rainforest?
* What actions gave clues as to the plants or animals?
* Describe some of the movement qualities?
* What level was the most popular? Why do you think this is?
* Do some plants/animals live in more than one level?
* How did you interact with others in your movement phrases?
* How do you think these life forms express interdependence?

*Grouping: whole group/two groups Time: 20 minutes Type: movement phrases*

**Explore - 15**Now that we are familiar with some of the life in the rainforest, let’s look at how these might be interconnected and interdependent. Introduce the idea of how the rainforest changes. Brainstorm some of the reasons for the change.

* natural events
* human intervention
* climate change

Using their already defined animals, students will create 24 count movement phrases to tell the story outlined on scene prompt cards.

Create groups and give them scene prompts. Each group rehearses. Students may also use percussive instruments in their work. Provide a final “dress rehearsal” time.

Grouping: whole/ small groups        Time:  15 minutes Type: movement rehearsal

**Internal Assessment?**

**Sharing and Review – 15**Share scenes. Read the scenario before beginning. End each one with a bow and applause.

***Internal Assessment:***

* What living beings did you see in this scene? How did you know what it was?
* How did the beings depend on each other? How could you tell that?
* What was the change that was introduced? How was it introduced?
* How did the rainforest respond?
* What levels were represented?
* What movement qualities did you see?
* Whose movement really captured the story? Why?
* Other questions that come up based on their performances, questions, and prior conversation.

Grouping:  small/whole group  Time:  15-20 minutes Type: movement performance

**Evaluation and Closure - 10**

* What are the levels of the rainforest?
* What living beings do you find in the rainforest?
* What causes destruction in the rainforest?
* Who can define an ecosystem?
* What is interdependency and connectedness?
* Where do you find this?
* How was this expressed in class today?
* What role did you play specifically?
* How did dance/movement add to our understanding?
* What was your favorite part of the lesson today?

**Circle Lean (time allowing)** - Repeat the activity to close the lesson. Point out improvements.

Compliment students on their great work. Bring the group to a ready state for the next event.

Grouping:  whole group                Time:  10 minutes Type: discussion

**After the Lesson students could:**

* Write from the point of view of the plant/animal describing the event that occurred to them in the rainforest. Use the prompt, “You’ll never guess what happened to me today!”
* Identify terms on a vocabulary test.
* Complete a matching worksheet on the plants and animals used in the lesson.
* Research their plant/animal and write a report.
* Combine their movement phrases and create a Rainforest dance to share with other classes.
* Research the plight of the rainforest and get involved in efforts to save the rainforest.

**Notes**
An ecosystem is a community in nature, made up of living and non-living parts.
It comes from the Greek work for “house” or “place.”  From treetop to beneath the forest floor, all parts of the ecosystem work together to make sure the rainforest thrives. Rainforests are the most complex ecosystems, perhaps because of their age (over 100 million years). Plants and animals have developed strategies for survival.  There is a great diversity of life, 90% of all forms of life on the earth are found there.

**Vocabulary – Science and Dance**

* Ecosystem
* Connectedness
* Interdependence
* Levels
* Movement qualities
* Forest floor
* Understory
* Canopy
* Emergent

**Scene Prompts x 3**You are the rainforest. (Be sure to represent all levels.)It is monsoon season and the rainforest can feel its affects.Create a 24 count movement that depicts the rainforest scene.
Begin with a frozen picture and end with a frozen picture.
Be sure to highlight a sense of connectedness and interdependency.Feel free to add sound effects.

You are the rainforest. (Be sure to represent all levels.)

There is an unexpected drought affecting the food supply in the rainforest.

Create a 24 count movement that depicts the rainforest scene.

Begin with a frozen picture and end with a frozen picture.
Be sure to highlight a sense of connectedness and interdependency.Feel free to add sound effects.

You are the rainforest. (Be sure to represent all levels.)

Humans are working to restore decimated portions of the rainforest.

Create a 24 count movement that depicts the rainforest scene.

Begin with a frozen picture and end with a frozen picture.
Be sure to highlight a sense of connectedness and interdependency.Feel free to add sound effects.

**Rainforest Life Cards**

**Ulysses Butterfly:**

The brilliant blue of this butterfly makes the Ulysses unmistakable, but oddly it also makes it hard for birds to catch. Much like catching fireflies, the flashes of color are so distracting that the path of the insect is hard to predict.

**Snake**

There may be 50 or more species of snakes in a tropical forest. All of these snakes are rare and many elusively live high in the treetops or come out at night and so are rarely seen!

**Gaudy Leaf Frog**

The bright colors (orange toes and cream-and-purple stripes) helps to attract a mate, yet the frogs also need to lay low during the day to avoid being discovered and eaten. By sitting on his hands and feet, pulling his elbows and knees to his sides, and closing his eyes during the daytime (while asleep) a male frog becomes nothing but leafy green.

**Poison Dart Frog**

Those species with the brightest colors tend to produce the strongest poisons. These poison chemicals (alkaloids) act specifically on the nervous systems of predators making even the slightest contact with the mouth very painful.

**Golden Orb Spider**

This saucer-sized spider is found beneath the forest canopy near the ground where the air is still. Notice the hairy knees on this spider, any vibrations in the air (either from an insect or hungry bird) cause the hairs to vibrate and gives the spider a chance to escape or prepare for its next meal.

**Scorpions**

Scorpions would not normally be thought of as good mothers, but they provide loving care to their offspring. To protect their young, females carry nearly one hundred youngsters on their backs for weeks!

**Leaf Cutting Ants**

When the first explorers of tropical rain forests encountered leaf-cutting ants they thought that the ants were cutting leaves to protect themselves from the sun. In reality, the ants cut leaves to make compost for a fungus they farm underground.

**Walking Sticks**

What appears to be wood walks! What was once walking suddenly turns into a twig! While this camouflage allows the walking-stick insect to sleep during the day and feed at night, it tricks many birds and monkeys of a meal.

**Toucans**

Toucans swallow whole fruit and then spit out the seeds unharmed. They feed and then fly off, often dropping seeds at great distances from the plant where they found them. This spreads the seeds and increases the chances that the seeds will find a good place to grow.

**Spider Monkeys**

Spider monkeys are large in size. Adult monkeys grow to be almost two feet tall excluding the tail. They have a powerful tail that they use as an extra limb. They like to hang upside-down with all four limbs and the tail holding on to branches which makes them look like a spider and thus their name. They also have the ability to swing from branch to branch at a high speed. Their fur color can be black, brown, golden, red, or tan.

**Scarlet Macaws**

These macaws take a high point of view for their lives amidst the highest tops of the trees. They form a life-long bond with their mates. In nature, several pairs of birds will often form loosely structured groups that travel together during the day and roost together during the night.

**Orchids**These flowering plants come in different shapes, sizes, and colors. Their roots are exposed, not buried in dirt, as they hang from trees and breathe the air. They attract birds and insects with their beautiful colors and wonderful smell!

**Lianas**These are vines that live all over the rain forest. They link trees to each other and animals use them to move around from tree to tree. Tarzan used these vines to swing through the forest!

**Passionflowers**These flowering plants are colorful and attract butterflies and hummingbirds! Animals, birds, and people eat the passion fruit that grows on this plant.

**The Strangler Fig Tree**This tree uses another tree to climb up to the sunlight. As they grow, they wrap around the old tree until it dies and only the strangler fig remains.

**Sloths**The sloth is the slowest mammal on Earth. It takes a month for a sloth to move 1 kilometer! Sloths are arboreal animals, which means that they spend most of their lives hanging upside-down from tree branches. They eat, sleep, mate, and give birth upside-down in the trees. They hold onto tree branches with strong, curved claws that are on each of their four feet.

**Giant Otters**These mammals are related to weasels, badgers, porcupines, polecats, and minks. Out of all of the members of their family, Otters are the species best adapted to aquatic life. Generally, they live in families of five to eight. They spend most of their time in the water and find most of their food there. Giant Otters hunt during the day and sleep at night.

**Rubber Trees**Well known from the products made from their milky sap, the rubber trees that dot the forest provide, through there abundant seed, an important source of food to fishes and other animals during the annual floods.

**Chocolate (Cocoa) Tree**Chocolate comes from a tree called the Cocoa tree, or in Spanish, Cacao. The cocoa tree or chocolate tree, is found in the Upper Amazon Basin where it can reach over fifty feet high. The fruit is thick and oval shaped, usually yellow or red, and can sometimes grow as big a as a football. The inside of the fruit is packed full of between twenty and sixty seeds. The seeds are surrounded by a sweet pulp that you can eat for a tasty treat. Children in the rainforest love to suck on the seeds from the Cacao tree as you might suck on candy where you live.

**Riberneros or Mestizos**

These are the names of the people who live along the rivers of the rain forest. They are of Spanish descent and they live in small villages or farms. They speak with Spanish accents and have dark skin and dark hair. They wear clothes much like we wear in the United States in warmer weather. They live a very simple life, usually cooking outside whatever they can find from the forest, grow in a small garden, or trade in the city for.