

# An Adventure Through the Kingdoms

• Samantha Vejay •

Summer 2020

Appreciation & gratitude to

Phyllis Pottish Lewis

for sharing her wisdom and knowledge  
with the AMI EAA Community.



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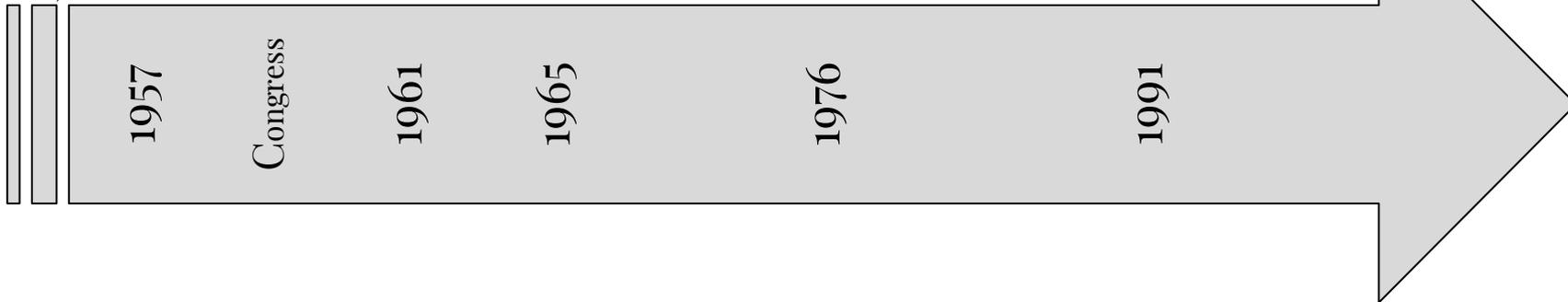


# The History Of the Classification Materials

With gratitude to:

Maria Montessori  
Mario Montessori  
Mrs. Eleanor Honneger  
Ms. Fahmida Malik  
Marsilia Palocci  
Margaret Stephenson  
Phyllis Pottish Lewis

*Maria & Mario Montessori  
develop materials while  
interned in India*



# 1976 Elementary Training Course at WMI



Margaret Stephenson

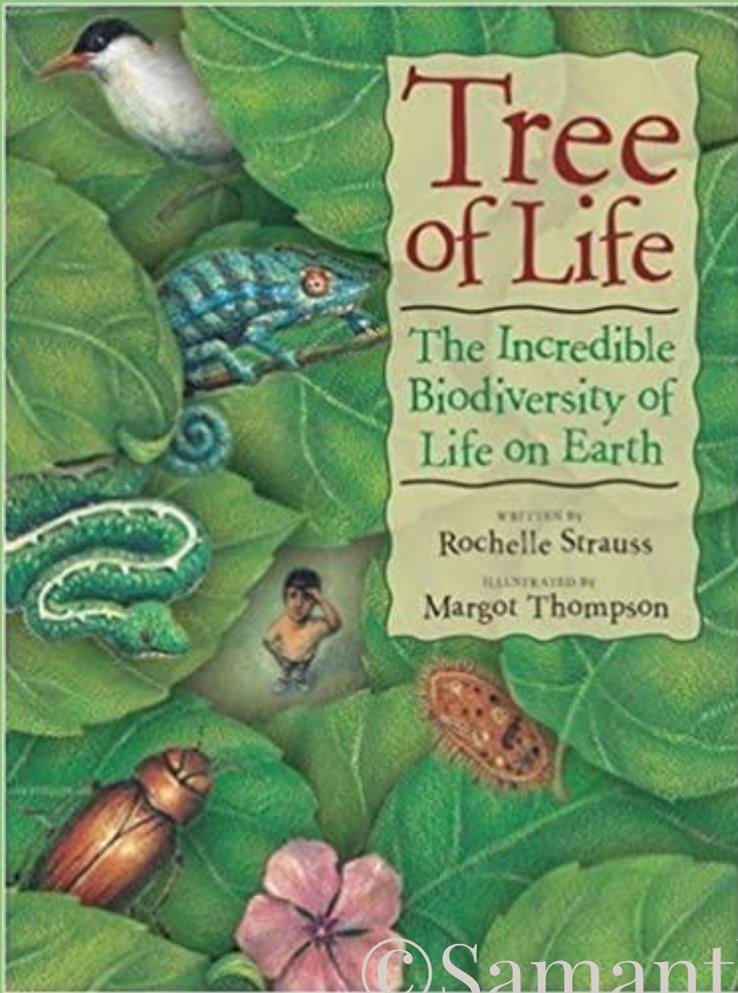
Mario Montessori

Fahmida Malik

Phyllis Pottish Lewis

Kay Baker

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Book  
recommendation  
for your classroom  
and for your own  
understanding.

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# GET YOURSELF READY!

Supplies needed:

- Colored paper
- Paper cutter
- Quality glue sticks
- Quality scissors
- LARGE WORKSPACE
- Access to a laminator

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Everything nests within the larger classification scheme.

It is important for you to understand the whole as you are working through making this material.

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# Unlocking the Archives from EAA

Kingdom Vegetalia

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# Shades of Green

Go from dark to light as you progress

- [CANSON Mi-Teintes Fine Art Sheets 19”x25”](#)
- <https://www.dickblick.com/products/canson-colorline-art-papers/>

Phyllis tells you exactly what you need!

Kingdom - 4 sheets

Division - 6 sheets

Branches - 6 sheets

Class - 3 sheets

Sub-class - 3-4 sheets

Families - 6-8 sheets

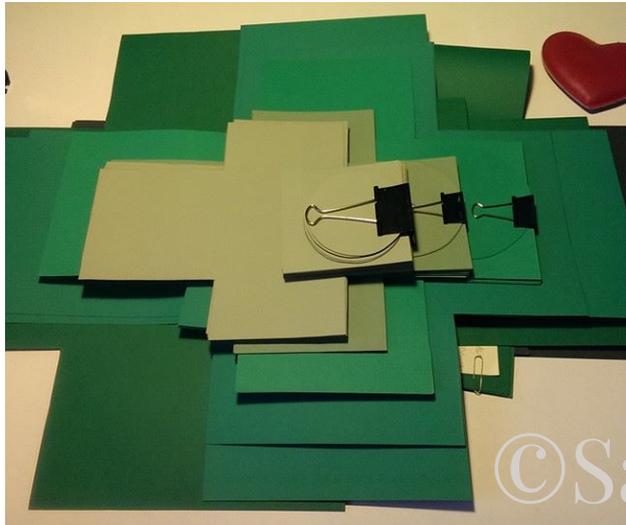
Branches of the ‘tree’ - 4-5 sheets of brown

It's better to have more than less.

These numbers were based off of what Phyllis made. Depending on the number of photos you use, you may need an additional sheet per color.

My advice:

- Start with families - and move up through the classification scheme
- Cut out circles and text cards first.
- Do not make the folders for division and kingdom until the end.



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Kingdom  
Vegetalia



directly or indirectly, all living beings depend for their nourishment.

They derive the material necessary for the building of their various organs from water and certain salts dissolved in it, and from the carbon dioxide which is in the air or in the water.

Plants live wherever there is sufficient warmth and moisture. There are plants everywhere, in the oceans, the lakes and the rivers; on plains and mountains; on rocks and sand. Some of them are able to live even on snow, and in water which is so hot that it is nearly boiling.

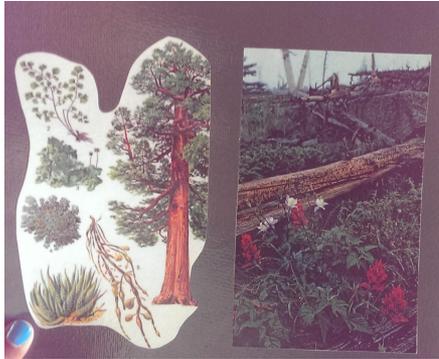
A collage of various plants, including a yellow flower, a purple flower, and a green plant.

Circle

Heading Card

Text Cards

Picture Cards



A considerable differentiation is shown by the different kinds of plants, especially those living on land.

The kingdom of plants has been subdivided into two great divisions.

(1) Division Phanerogamae: containing plants that produce flowers.

(2) Division Cryptogamae: containing plants that do not produce flowers.

A collage featuring a yellow flower on the left and a blue plant on the right.

Subdivision  
Card

Boxes/Folders  
of the  
subdivisions  
that are  
housed within  
the box/folder

**Understanding the layout within each container.**

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# Within the Kingdom Vegetalia Folder/Box:

- Kingdom Vegetalia Circle
- Heading Card
- Photo Card(s)
- Subdivision Card
- Division Phanerogamae folder/box
- Division Cryptogamae folder/box

Files from EAA Archives:

KV text Kingdom to Subclasses

Kingdom Vegetalia Circle

Kingdom Vegetalia Folder Pictures

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# Within Division Cryptogamae Folder/Box:

- Division Cryptogamae Circle
- Heading Card
- Text Card(s)
- Photo Card(s)
- Subdivision Card

This material is not further categorized, but the inspiration is there for students to investigate further from the subdivision card located within Division Cryptogamae.

Files from EAA Archives

KV text Kingdom to Subclasses

KV Circles.pdf

Division Cryptogamae

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# Within Division Phanerogamae Folder/Box:

- Division Phanerogamae Circle
- Heading Card
- Text Card(s)
- Photo Card(s)
- Subdivision Card
- Branch Angiospermae box/folder
- Branch Gymnospermae box/folder

Files from EAA Archives:

KV text Kingdom to Subclasses

KV Circles.pdf

Division Phanerogamae New

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# Within Branch Gymnospermae Folder/Box:

- Branch Gymnospermae Circle
- Heading Card
- Text Card(s)
- Photo Card(s)
- Subdivision Card

This material is not further categorized, but the inspiration is there for students to investigate further from the subdivision card located within Branch Gymnospermae.

Files from EAA Archives:

KV text Kingdom to Subclasses

KV Circles.pdf

Branch Gymnospermae

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# Within Branch Angiospermae Folder/Box:

- Branch Angiospermae Circle
- Heading Card
- Text Card(s)
- Photo Card(s)
- Subdivision Card
- Class Monocotyledonae box/folder
- Class Dicotyledonae box/folder

Files from EAA Archives:

KV text Kingdom to Subclasses

KV Circles.pdf

Branch Angiosperma New

# Within Class Dicotyledonae Folder/Box:

- Class Dicotyledonae Circle
- Heading Card
- Text Card(s)
- Photo Card(s)
- Subdivision Card
- Group Archichlamydeae box/folder
- Group Metaclamydae box/folder

Files from EAA Archives:

KV text Kingdom to Subclasses

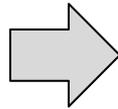
KV Circles.pdf

Class Dicotyledonae New

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# Within Class Monocotyledonae Folder/Box:

- Class Monocotyledonae Circle
- Text Card(s)
- Photo Card(s)
- Sub-division Card
- Group I
- Group II



It seems like the scientists ran out of creativity here... the children cannot rely on the etymology to guide them. They will need to come up with their own ways to remember what plants fall into Group I or Group II.

Files from EAA Archives:

KV text Kingdom to Subclasses

KV Circles.pdf

Class Monocotyledone New

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Class Monocotyledonae

Subclass GROUP I -- mostly grasses  
Flowers that have: no floral envelope,  
pistils and stamens, but no petals or  
sepals

Family Araceae (arum)  
Family Gramineae (grass)  
Family Typhaceae (cat-tail)  
Family Cyperaceae (sedge)

Subclass GROUP II -- early flowers  
Flowers that have: a floral envelope and  
sepals colored so they look like petals

Family Iridaceae (iris)  
Family Liliaceae (lilies)  
Family Amaryllidaceae (amaryllis)  
Family Orchidaceae (orchids)

Class Dicotyledonae

Subclass Archiclamydae (ancient dress)  
Flowers that have free petals or no  
petals

Family Ranunculaceae (buttercups)  
Family Rosaceae (roses)  
Family Cruciferae (mustard family)  
Family Leguminosae (legumes)

Subclass Metaclamydae (new dress)  
Flowers that have petals completely  
joined or partly joined

Family Compositae  
Family Labiate (mint)  
Family Polemoniaceae (phlox)  
Family Scrophulariaceae (snapdragons)

Class Monocotyledonae

Subclass GROUP I -- mostly grasses  
Flowers that have: no floral envelope,  
pistils and stamens, but no petals or  
sepals

- Family Araceae
- Family Gramineae
- Family Typhaceae
- Family Cyperaceae

Subclass GROUP II -- early flowers  
Flowers that have: a floral envelope and  
sepals colored so they look like petals

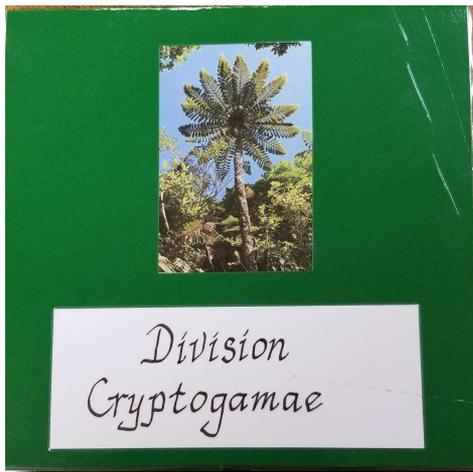
**These families are just a SAMPLE.**  
**There are many more**  
**for students,**  
**or you,**  
**to discover!**

Class Dicotyledonae

Subclass Archichlamydeae  
Flowers that have: a floral envelope,  
petals

- Family Ranunculaceae (buttercup)
- Family Rosaceae (roses)
- Family Cruciferae (mustard family)
- Family Leguminosae (legumes)

- Family Labiales (mint)
- Family Compositae
- Family Labiate (mint)
- Family Polemoniaceae (phlox)
- Family Scrophulariaceae (snapdragons)



Format for the folders:

Outside:

- The name of the folder/box
- A representative photo

Inside:

- The inside of the classification circle
- Text which describes the defining characteristics of the folder/box AND lists the possible subdivisions (if applicable)

**\*\*Exception\*\*** The Kingdom folder only has the name on the outside, and nothing on the inside.

From EAA Archives:

KV folder info.docx

Kingdom Vegetalia potential pictures

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This is a **much** larger classification scheme.

I typically introduce this after Kingdom Vegetalia so that students already have an understanding of how a classification system works.

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# Animals → Invertebrates

1 265 500 species

Invertebrates live everywhere on Earth—on land and in water. They range from sea sponges, corals and jellyfish, to insects, spiders and worms. About the only thing they all have in common is that none of them has a backbone. Instead, many have an exoskeleton—a tough, outer covering that protects them.

Of all the invertebrates, insects are probably the most familiar, for good reason—they make up more than three-quarters of all invertebrates.

Some invertebrates are enormous. The giant squid is probably the biggest invertebrate on the Tree of Life. It can grow up to 18 m (60 ft.) long and weigh over 450 kg (1000 lb.). Even its eyes are huge—as big as basketballs.

But most invertebrates are small enough that you'd easily overlook them. Their size makes them so difficult to find that scientists believe there may be millions more invertebrates still to be discovered and named.

## Invertebrate species

**950 000** insects  
(beetles, dragonflies, ants ...)

**75 000** arachnids  
(spiders, ticks, mites, horseshoe crabs ...)

**70 000** mollusks  
(snails, sea slugs, mussels, octopus, squid ...)

**40 000** crustaceans  
(lobsters, crabs, crayfish, shrimp, barnacles ...)

**20 000** nematodes  
(roundworms ...)

**16 000** annelids  
(leeches, earthworms ...)

**9000** cnidarians  
(jellyfish, corals, sea anemones ...)

**7000** echinoderms  
(sea stars, sea urchins, sand dollars ...)

**5000** sponges  
... and others



*Invertebrates—1 265 500 leaves on the Tree of Life*



# Animals → Vertebrates → Reptiles

8000 species

Slime! No way! Reptiles actually have dry, scaly skin like their ancestors, the great dinosaurs. Their scales help trap moisture in their bodies so they don't dry out. That's why reptiles are so successful in desert habitats. But reptiles aren't just desert dwellers—they can be found in a range of habitats, from land to freshwater and even in the oceans.

Scales aren't the only thing reptiles have in common. They are also cold-blooded.

That's why they bask in the sun—to warm up. And most lay eggs rather than bear live young.

Reptiles are divided into five groups—lizards, snakes, turtles and tortoises, crocodiles, alligators and caimans, and tuataras. All play an important role in the Tree of Life as both predators and prey. Most reptiles are carnivores (animal eaters), although some lizards are herbivores (plant eaters). And then there are the omnivores, such as turtles. They eat both animals and plants.

## Reptile species

4320 lizards

3300 snakes

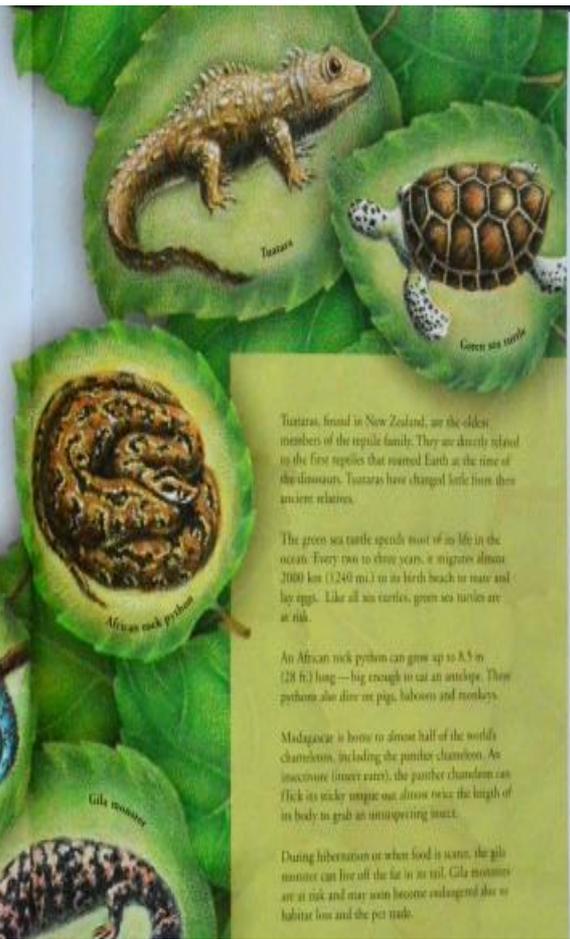
350 turtles and tortoises

28 crocodiles, alligators and caimans

2 tuataras



*Reptiles—8000 leaves on the Tree of Life*



Tuataras, found in New Zealand, are the oldest members of the reptile family. They are directly related to the first reptiles that roamed Earth at the time of the dinosaurs. Tuataras have changed little from their ancient relatives.

The green sea turtle spends most of its life in the ocean. Every two to three years, it migrates almost 2000 km (1240 mi.) to its birth beach to mate and lay eggs. Like all sea turtles, green sea turtles are at risk.

An African rock python can grow up to 8.5 m (28 ft.) long—big enough to eat an antelope. These pythons also dive on pigs, baboons and monkeys.

Madagascar is home to almost half of the world's chameleons, including the panther chameleon. An invertebrate (insect eater), the panther chameleon can flick its sticky tongue out almost twice the length of its body to grab an unsuspecting insect.

During hibernation or when food is scarce, the gila monster can live off the fat in its tail. Gila monsters are at risk and may soon become endangered due to habitat loss and the pet trade.

Excerpts from The Tree of Life: The Incredible Biodiversity of Life on Earth by Rochelle Strauss



The material we offer the student is just enough to arouse their interest. This work should not exhaust the entire offering of the classification scheme.

Make extra circles with colored paper along the way - this gives way for students to carry the work on further on their own.

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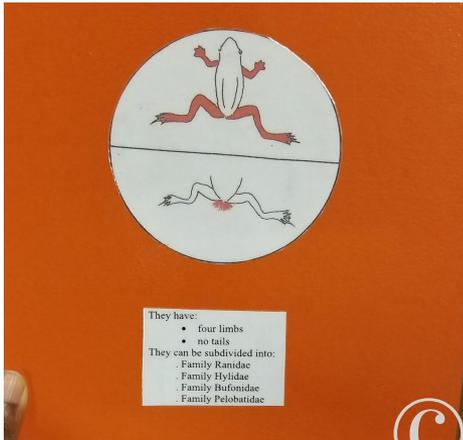
Format for the folders:

Outside:

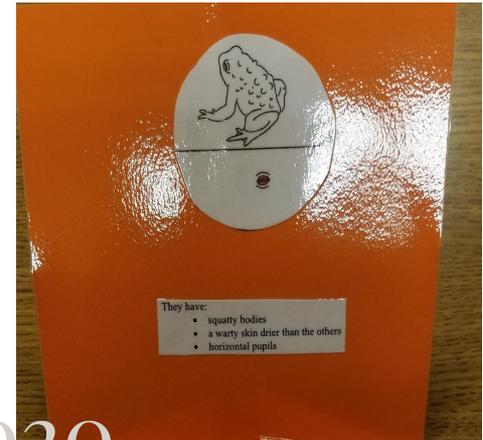
- The name of the folder/box
- A representative photo

Inside:

- The inside of the classification circle
- Text which describes the defining characteristics of the folder/box AND lists the possible subdivisions (if applicable)

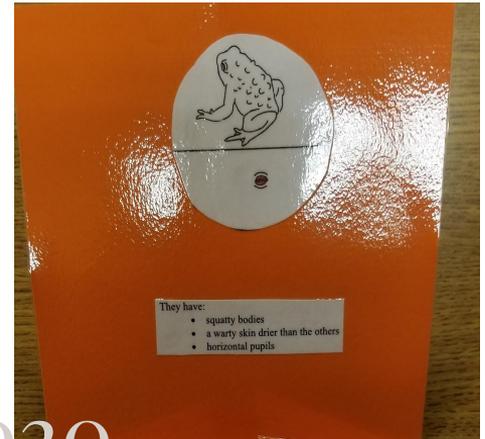


**\*\*Exception\*\*** the Kingdom folder only has the name on the outside - no pictures, and not text inside.



Special note about pictures within the family folders:

- When you open up the pictures for the family folders you will need to resize the pictures.
- They are too large to fit on the cards as is.
- You don't have to use all of the photos, but if you do - you will need to account for extra paper.





## Finishing Considerations

- Laminating
  - Cards and Circles
  - Pre-crease Folder/Box before laminating
  - Considerations for larger boxes/folders
- Closures
  - Corresponding ribbon (darkest to lightest)
  - Velcro



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