I DIG DINOS

DINO ENVIRONMENTS

What did our planet look like during the Age of Dinosaurs?

Earth's environment hasn't always looked the way it does now. During the Mesozoic or "Age of Dinosaurs" 251–66 million years ago (MYA), plants were evolving and changing into some of the plants we know and love today. One way we learn about the history of these plants is through their fossils.

This month we are digging into this exciting topic with hands-on activities you can do at home!

Click on a listing to visit an activity, or scroll down.

ANCIENT PLANT PURSUIT

Some plants alive today are similar to ones that were alive millions of years ago. Let's go on a hunt to see if there are any in your neighborhood!

MAKE A 3-D *STEGOSAURUS*

Just cut, fold, and tape to create your own dinosaur toy.

DINORAMAS

Learn about ancient plants as you make a diorama for your 3-D *Stegosaurus*.

PALEOBOTANIST Q&A

Dr. Caroline Strömberg, Burke Curator of Paleobotany, answered your questions.

Watch the video!

PLANT COLORING SHEETS

Learn to draw some Mesozoic plants and create a dinosaur environment for a *Parasaurolophus*.

ADDITIONAL RESOURCES

Dig deeper into the science of plants and fossils with these resources.

Yes! You can really click them.

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ANCIENT PLANT PURSUIT

The Mesozoic Era was a time of major change for plant and animal life. At the start of the Mesozoic, the continents moved into a large and continuous land mass (Pangea) that was generally warm, dry, and had no polar ice. You would have seen some familiar plants like ferns and trees with cones, but vegetation would have looked more spread out and less varied than the plant life you see on Earth today.

Over the next 186 million years, Pangea broke apart and dinosaurs took over the land. Plant populations expanded to grow in new places and developed new structures, such as the first flowers! Many of the plants that were common throughout the Mesozoic survived beyond the end of the Age of Dinosaurs and can still be found today.

Let's go on a quest to find them! Take a walk or ride through your neighborhood to see if you can spot any of these early plants!

SEARCH FOR:

- ☐ Fern
- ☐ Horsetail
- ☐ Monkey puzzle tree
- ☐ Conifer tree
- ☐ Ginkgo tree

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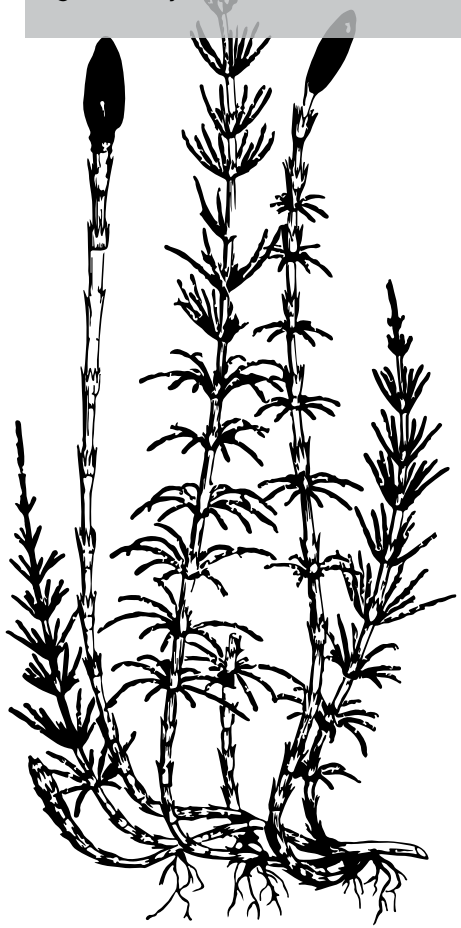
Fern

Local native ferns you might encounter are the deer fern, oak fern, lady fern, bracken fern, sword fern, and Christmas fern. These ferns can all be traced to families of the Mesozoic Era that may have been eaten by dinosaurs and other animals. We also have fossil evidence of ferns dating back to around 360 MYA, well before the Age of Dinosaurs. Like horsetails, ferns reproduce with spores instead of seeds. Both horsetails and ferns have been utilized locally by Coast Salish Peoples for thousands of years.

Horsetail

We have three common native horsetail varieties in western Washington: scouring rush, common or field horsetail, and giant horsetail. These and other modern horsetails make up the last surviving genus of the Equisetaceae family. Horsetails were a likely food for herbivorous dinosaurs throughout the Mesozoic. Today—66 million years later, spring horsetail shoots are a food for us! Coast Salish Peoples have utilized horsetail for food, tools, and in basketry for thousands of years. Another name for horsetail is puzzle plant, because you can take the segments apart and reassemble them—give it a try!



Monkey Puzzle Tree

Araucaria araucana first appeared in the Mesozoic. The branches of these trees are protected by tough, sharp, armor-like leaves. They were a likely food source for some of the Mesozoic's large, long necked sauropods. These tall trees are native to the Southern Hemisphere, though you may find some planted in your community. The common name monkey puzzle dates to the 1850s, and is said to originate from an Englishman's comment that the tree would be "puzzling for a monkey to climb."

Ginkgo Tree

Known for their unique fan-shaped leaves, ginkgo fossils date back to before the Mesozoic (~270 MYA). Modern *Ginkgo biloba* trees are native to China where they have been cultivated for thousands of years. These trees can reach 130 feet tall. Their leaves and seeds are popular for herbal medicines. *Ginkgo biloba* is the only living species of the ginkgo group. They were once common worldwide and disappear from the fossil record in North America around 7 MYA.

Dawn Redwood

The ancient ancestors of modern conifers (cone trees) evolved long before the Age of Dinosaurs. They changed into forms closely resembling modern conifers around 145 MYA in the middle of the Mesozoic Era. Dawn redwoods survived until recently (around 8 MYA) in eastern Washington and are now native only to China. The dawn redwood is an endangered species, and is the only surviving member of its genus. Unlike most other conifers, it is deciduous—meaning it loses its needles each year! Its cousins, the coastal redwood and giant sequoia are both native to Washington state. See if you can identify other conifers in using this guide.

SHARE YOUR SEARCH

Take some photos on your search and share it with **#burkefromhome**

You did it!

Thanks for taking part in our hunt for living fossils and other early evolved plants!

If you couldn't find any in person, you can hunt for them virtually using these UW resources:

- ☐ Burke Herbarium
- ☐ Brockman Memorial Tree Tour

Looking for more Burke activities?

Burke From Home by visiting
www.burkemuseum.org/burke-from-home

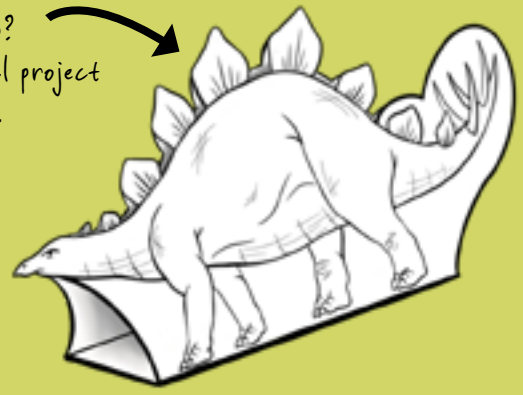
You'll find:

- Weekly curriculum packets made by the Burke Education Team.
- Printable activities to do at home.
- Blog posts written by Burke experts.
- Videos of Burke collections, communities and stories.

We Miss You!

STEGOSAURUS

Need some help? This is what the final project will look like.



This large herbivorous dinosaur lived in the Late Jurassic time period. During the Jurassic, Earth's climate changed from hot and dry to humid and subtropical. *Stegosaurus* probably ate low Jurassic plants like ferns and cycads.

Make a 3-D *Stegosaurus* by cutting out the figure below and taping its back plates together.

Glue or tape the plates of your stegosaurus to make it stand!

Fold on these dotted lines

Cut on the outside black line

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CREATE A DINORAMA!

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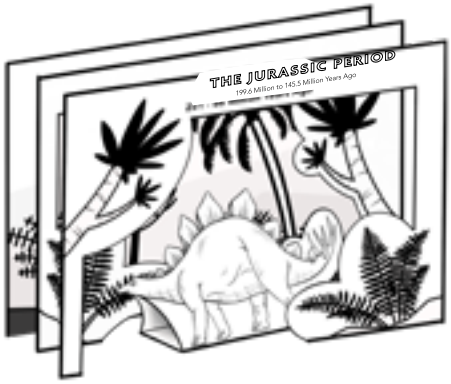


Make a Jurassic environment for your 3-D dinosaur!

FOR THIS ACTIVITY YOU WILL NEED:

- ☐ Printer
- ☐ Scissors and glue or tape
- ☐ Coloring supplies
- ☐ Completed 3-D *Stegosaurus*!
- ☐ 5 sheets of cardstock (preferred)

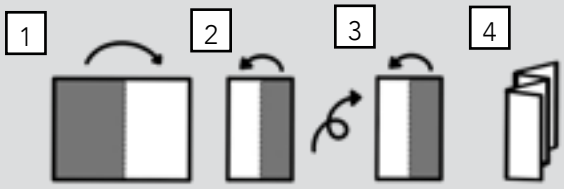
or

- ☐ 5 sheets construction paper and 3 sheets of printer paper

1 Print and color the three frame panels. Glue on a construction paper backing if not using cardstock.

2 Cut out the center piece of each frame panel.

3 Fold a sheet of cardstock or construction paper in half, then fold it in half again making an accordion shape. Repeat to make two accordion-folded papers.



4 Glue or tape the accordion-folded paper to the sides of the back frame panel.

5 On the middle fold, glue or tape the middle frame panel.

6 On the top end of the accordion-folded paper, attach the final frame panel. Now stand up your creation and put your dino inside!

Front

THE JURASSIC PERIOD

201.3 million to 145 million years ago

Cut on this black line

Cut out and remove this center piece.

Fern

In the Mesozoic Era, ferns were some of the most abundant low growing plants. We have fossil evidence of ferns dating back well before the Age of Dinosaurs —with modern ferns appearing in the late Mesozoic. There are over 10,000 species of fern alive today, and many thousands more that have gone extinct over their long history.

Williamsonia

This weird tree-like plant belongs to an extinct group of seed plants that were abundant throughout the Mesozoic Era and had their highest level of variety during the Jurassic. *Williamsonia* would have stood up to 6 feet tall and had large cup-shaped cones on it that looked a lot like flowers. One of the most complete *Williamsonia* fossils was found just north of Seattle on Vancouver Island!

Cut out and remove this center piece.

Cut on this black line

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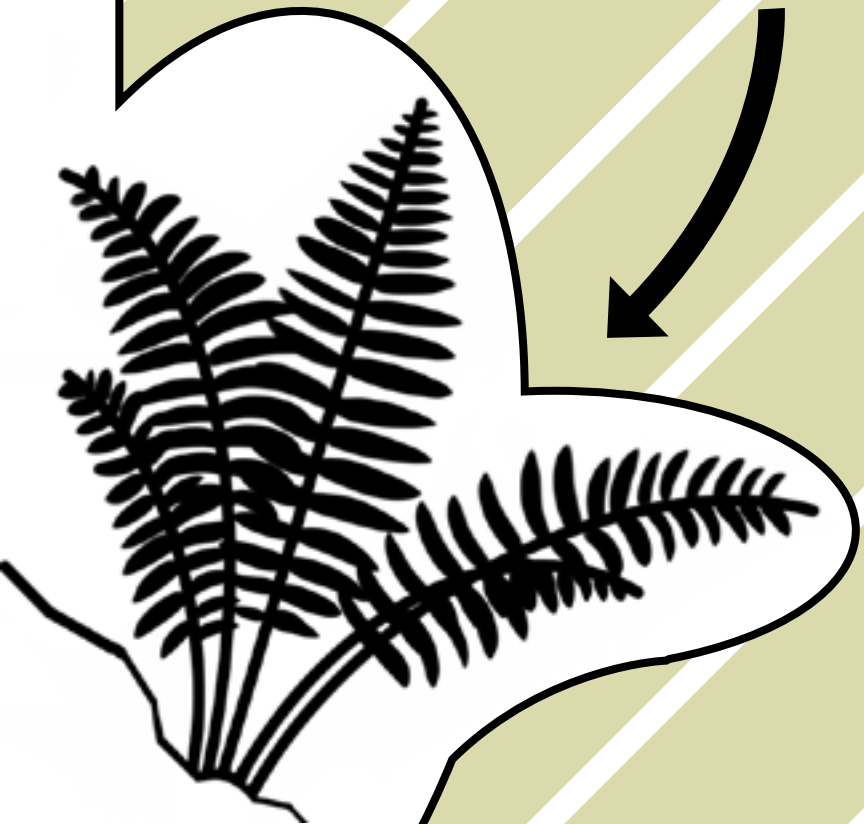

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Cycads

The Mesozoic Era is known as the "Age of Dinosaurs" but is also sometimes referred to as the "Age of Cycads" because at their Mesozoic peak, they may have represented up to 20% of the world's plants. Cycads likely evolved from ancient seed plants with fern-like leaves that began to appear on earth long before dinosaurs. Cycads are seed plants with long palm-like leaves and that ranged from stout shrubs to 50 foot trees. Though very similar in appearance to ancient cycads, recent genetic studies show that our modern species didn't evolve until a recent cycad resurgence around (5–12 MYA).

Monkey Puzzle Tree

The leaves of the monkey puzzle tree have cutting edges that end in a prickly point. They provide a tough, thick, scale-like armor along the trees thin, long branches. Modern monkey puzzle trees can grow up to about 150 feet tall, though some ancient relatives of this tree like *A. mirabilis* could grow to twice that height. The ancient family of the monkey puzzle tree (*Araucaria*) includes the *Wollemia* tree; a species thought to be extinct until a recent finding in Australia.

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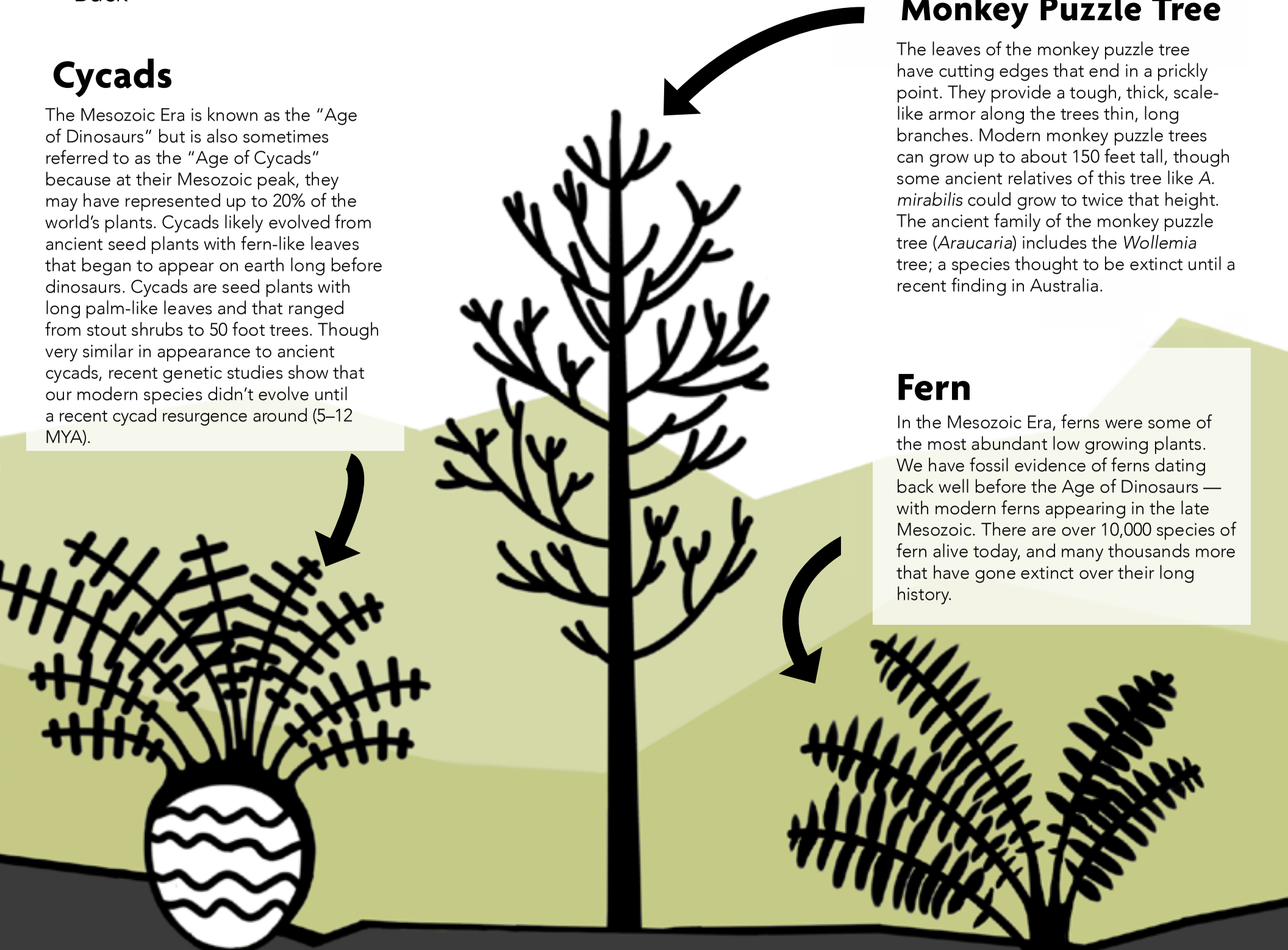


PALEOBOTANIST Q&A

MEET DR. CAROLINE STRÖMBERG

Dr. Caroline Strömberg is the Estella B. Leopold Professor of Biology & Curator of Paleobotany at the Burke.

Caroline is a paleobotanist, which means that she studies plants of the past through the fossils and remnants that they left behind. She is interested in how plants have shaped Earth's ecosystems through time.

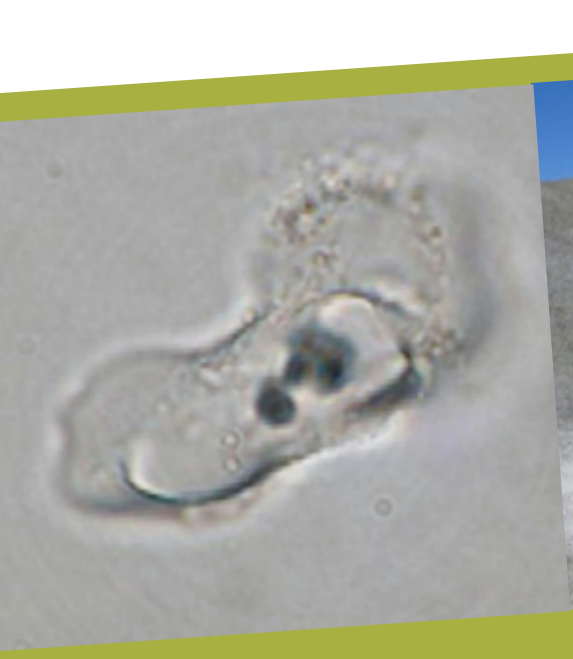
We asked you for questions on social media and sat down with Caroline to chat about the most common and interesting ones!

Stay tuned!

The video will be released during the live event! Sunday, April 26th, 10 am – 2 pm!

Interested in more?

Check out Burke Paleobotany and The Strömberg Lab



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FERN

Ferns have long bending **FRONDS** and each frond has multiple **BLADES** that attach to it.

Can you add some extra fronds and blades to finish this fern?

Now use the free space to draw your own!

Draw your own here!

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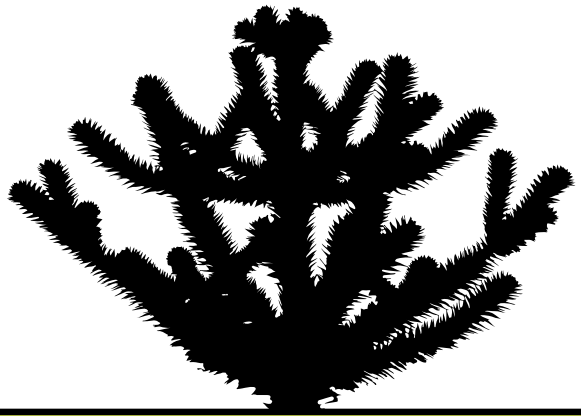
MONKEY PUZZLE TREE

Draw your own here!

Monkey puzzle trees have **BRANCHES** that split multiple times with sharp overlapping **LEAFLETS** that protect them.

Can you finish this monkey puzzle drawing by adding more branches?

Now use the free space to draw your own!



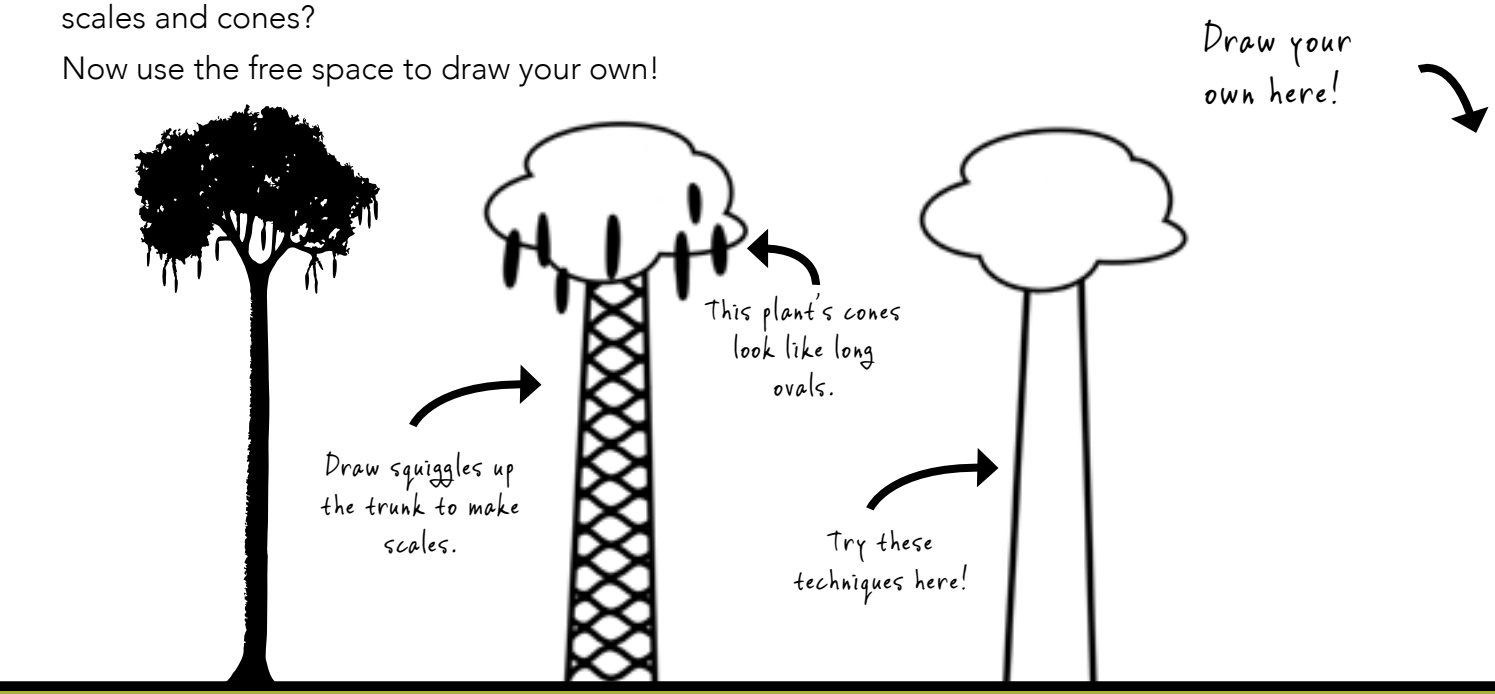
These trees can grow 130 feet! Try drawing a HUGE tree!

BURKE MUSEUM

LEPIDODENDRON

Often called "scale trees," these tall plants went extinct in the early Mesozoic. They are known for their trunk's **SCALED** appearance and their hanging **CONES**. Can you finish this drawing by adding scales and cones?

Now use the free space to draw your own!



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Now that you know how to draw some Mesozoic plants, give this ***PARASAUROLOPHUS*** an environment to live in.

ADDITIONAL RESOURCES

GET CREATIVE

Do you have a special paleontology-related activity that you love to do? A dig pit activity at home? Creature costume? Favorite books? We'd love to see what you come up with.

Share your projects with **#burkefromhome**!

DIG DEEPER INTO PALEOBOTANY!

BURKE FOSSIL COLLECTION DATABASE

Paleontology Database:

Select the "Mesozoic" Era and click on "Paleobotany" to check out fossils of the plants from these activities.

DINO ENVIRONMENT FAVORITES FROM THE FREE PBS VIDEO SERIES, *EONS*:

That Time it Rained for 2 Million Years:

Learn about early Mesozoic environmental change with lots of great paleo art.

A Short Tale About Diplodocus' Long Neck:

Learn how sauropods used their long necks to eat different types of plants.

History's Most Powerful Plants:

Learn more about the history of the Scale Trees featured on our Plant Drawing Sheet.

When did the First Flower Bloom?

Learn about the Cretaceous changes to plant life.