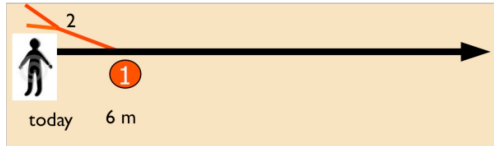


The 40 Meeting Points in "We Are All Cousins" Journey

(1)	6 mya	chimpanzees/bonobos	
(2)	7 mya	gorillas	
(3)	14 mya	orangutans	
(4)	18 mya	gibbons	SONG verse #1
(5)	25 mya	monkeys of Africa and Asia	
(6)	40 mya	monkeys of South America	
(7)	58 mya	tarsiers	
(8)	59 mya	lemurs and lorises	SONG verse #2
(9)	60 mya	tree shrews	
(10)	61 mya	rodents & rabbits	SONG verse #3
(11)	62 mya	Laurasiatheria mammals	SONG verse #4
(12)	63 mya	Xenarthran mammals	SONG verse #5
(13)	64 mya	Afrotheria mammals	SONG verse #6
(14)	140 mya	Marsupial mammals	SONG verse #7
(15)	180 mya	Monotremes	SONG verse #8
(16)	310 mya	reptiles & birds	SONG verse #9
(17)	340 mya	amphibians	SONG verse #10
(18)	417 mya	lungfish	
(19)	425 mya	coelacanth	
(20)	450 mya	ray-finned fishes	SONG verse #11
(21)	460 mya	sharks and rays	SONG verse #12
(22)	530 mya	lampreys	
(23)	560 mya	lancelets	
(24)	565 mya	sea squirts	SONG verse #13
(25)	570 mya	echinoderms (starfish & kin)	SONG verse #14
(26)	590 mya	mollusks, worms, insects, spiders	#15
(27)	630 mya	primitive flatworms	
(28)	700 mya	jellyfish, sea anemones, and corals	#16
(30)	740 mya	placozoans	
(31)	780 mya	sponges	
(29)	800 mya	comb jellies	
(32)	900 mya	single-cell choanoflagellates	SONG verse #17
(33)	950 mya	drips	
(34)	1 billion	fungi	
(35)	1.2 bya	amoebozoans	SONG verse #18
(36)	1.5 bya	plants & algae	SONG verse #19
(37)	2 billion	Giardia, diatoms, forams, & brown algae	#20
(38)	3 billion	Archaea	SONG verse #21
(39)	3.5 bya	Eubacteria	SONG verse #22
(40)	3.8 bya	Ocean of Origin	SONG verse #23

Note to Teacher: Before you hand out a new script, make sure you click on the slide program up to where you see the NUMBER that identifies this slide. For example, you would need to click 3 times on this first slide to see the Number 1, which looks like this:



From then on, whenever you see in your teacher's version of scripts a blue box, you will click so that something appears.



#1: CHIMPANZEE (6 million years ago) **

Hi humans!

I am your **closest living relative**.

Guess who I am?

[Wait until they guess "Chimpanzee".]

Yes! I am **Chimpanzee**!

My home is in **Africa**.

There are **two species** within my group.

One species is me: **chimpanzee**.

The other species is called a **bonobo** [bo-NO-bo]. 

I am chimpanzee! And I am very, very happy to be your cousin.



Bonobo

TEACHER'S VERSION of "We Are All Cousins" scripted program.

■ #2: GORILLA (7 million years ago) *

Hello humans and chimpanzees!

I am your **next closest relative**.

Guess who I am?

[Wait for someone to guess "Gorilla".]

Yes! I am **Gorilla!** ■

Just like chimpanzees, we gorillas live in **Africa**.

I am **Gorilla!**



#3: ORANGUTAN (14 million years ago) **

Hello cousins!

I am another kind of **ape**. I am your next closest relative, after gorillas.

I have **orange hair**. Who am I?

[Wait for them to say "Orangutan.".]

Yes! I am **Orangutan!** 

We live only in the **tropics of Asia**.

I am **Orangutan!**



#4: GIBBON (18 million years ago) **

Hello cousins!

My group is your **fourth closest relative**.

There are **12 species** in my branch of life. We are the last of the **apes** that you will meet on this journey. Who am I?

[Wait for 10 seconds, and then continue reading.]

Here is a **clue**: My name **rhymes** with "ribbon."

[Wait for someone to guess "Gibbon".]

Yes! I am **Gibbon!**



Note to Teacher: This next slide is the first verse of the song. Tell the class you will sing it through once, and then a second time inviting the students to join in. If you have a laser pointer, point to each syllable as you sing. *You will be amazed at how quickly the kids catch on!*



#5: MONKEYS of AFRICA and ASIA ***** (25 million years ago)

Hello all you apes! I am not an ape, but I am still a **primate**. Guess who I am?

[Wait for somebody to say "Monkey".]

Yes! I am **Monkey!**

My group includes the **100 kinds** of monkeys who live in **Africa or Asia**. Among us are the baboons, mandrills, langur monkeys, and me: **Colobus [COL-o-bus] Monkey**.

My group has asked me to speak to you because I have the **prettiest tail** of all! It is pure **white**, and oh so **fluffy**!

But what about all of you apes?

Let me have a look at you: Please stand up and turn the other way.

[Wait for them to turn.]

Oh! I feel so **sorry** for you!

Why did **evolution** take away your tails? The only thing you have left is a useless little "**tail bone**" that breaks really easily when you fall on your butt. How ridiculous!

I love my tail! I am **Colobus Monkey!**



#6: MONKEYS of SOUTH AMERICA ***
(40 million years ago)

Hello cousins! I am a **monkey**, too.
There are **nearly 100 kinds** of monkeys in my group.
None of us live in Africa or Asia.

Guess what **continent** we live on?

[Wait for someone to say "South America".]

Yes! We live in **South America**.

I have been chosen to represent all the monkeys of South America
because I am a great **acrobat**. Guess who I am?

Here is a **clue**: I am named after something small that has 8 legs.

[Wait for someone to say "Spider Monkey".]

Yes! I am **Spider Monkey**!

My **tail** is not pretty. But I can make it do something that no African
or Asian monkey can do. I can make it **curl around a branch** and
hold on!

I am **Spider Monkey**!





#7: TARSIER [TAR-see-er]
(58 million years ago)

Hello cousins!

You will never guess who I am. So I will just tell you:

I am **Tarsier** [TAR-see-er]! 

I am **really upset** that you chose this time of day to play this game!
Can any of you guess why?

[Wait for someone to say "nocturnal".]

Yes! I am **nocturnal**! I sleep during the day, so I am awake at night.

I have huge eyes so that I can see in the dark.

I am **Tarsier**!



#8: LEMURS, LORISES, BUSHBABIES *** (59 million years ago)

Hi cousins! Guess who I am?

Here is a clue: My name rhymes with the **thickest bone** in your leg.

[Wait for someone to say "femur" for the bone, and "lemur" to rhyme with it.]

Yes! I am **Lemur**! My group also includes **Bushbabies** and the **Slow Loris**.

Do any of you know the name of the only place where lemurs are found in the wild?

[Wait for someone to guess "Madagascar", or think of a clue to help them guess.]

Yes! **Madagascar**. Madagascar is the big island next to Africa.

I am **Lemur**!



Slow Loris



Lemur



Bushbaby

Note to Teacher: The next slide is a SONG VERSE.

TEACHER'S VERSION of "We Are All Cousins" scripted program.



#9: TREE SHREW

(60 million years ago)

Hello cousins!

You will never guess who I am. So I will tell you:

I am **Tree Shrew!**

That is a silly name because I am not actually a shrew. I look more like a little **squirrel**. But I am not a squirrel.

Please repeat after me:

"I am proud to be related to a tree shrew."

[wait for class to say it]

Please say it again louder:

[wait for class to say it]

Thank you!

I am **Tree Shrew**, and I am proud to be related to all of you!



tree shrew

■ **#10: RODENTS and RABBITS** ***
(61 million years ago)

Hello cousins! I am a tiny mammal.

My name rhymes with the kind of building that humans live in.

[Wait for somebody to guess "House", then "Mouse".]

Yes! I am **Mouse**! ■

I represent all the **Rodents** and **Rabbits** of the world.

There are more than **2000 species** of us alive today! ■

There are **mice** and **rats** and **lemmings**.

There are **chipmunks** and **squirrels**.

There are **marmots** and **ground hogs**.

There are **beavers** and **porcupines**.

There are **hamsters** and **guinea pigs** and **bunny rabbits**.

We are a huge family!

I am **Mouse**!

■ **Note to Teacher:** *At this click, the biggest living rodent will appear. Ask the children what continent it lives on (South America). Then ask them what it is.*

■ **Note to Teacher:** *At this click, the rodent's name will appear: CAPYBARA*

■ **Note to Teacher:** The next slide is a SONG VERSE.

■ **#11: LAURASIATHERES** *****
[lor-ASIA-theers] **(62 million years ago)**

Hello, cousins! Guess who I am?

[Howl like a Wolf, until somebody says "Wolf."]

Yes! I am **Wolf**! I am so happy that I was chosen to represent **2,000 species** of mammals.

My group includes all the **horses** and **cows** and **sheep** . . . ■

all the **camels** and **goats** and **deer** . . .

all the **hippos** and **rhinos** and **giraffes** . . .

and many, many more.

My group also includes all the **bears** and **hyenas** and **big cats**, like **lions** and **cheetahs** and **jaguars**.

All the **dogs** and **cats** who live with you in your home are also part of my group. So your **pets** are your cousins, too!

My group also includes mammals who **fly through the air** . . .

[Wait for somebody to say "bat".]

And we also include the **biggest animal who ever lived**. Who is that?

[Wait for somebody to say "Whale" or "Blue Whale"]

Yes! My group includes the **whales** and **dolphins**, and also the **seals** and **walruses**.

I am **Wolf**!

[Howl like a Wolf as you return to your seat.]

■ **Note to Teacher:** Next click stays on this slide, but gives the name of this group: "Laurasiathere" Low-RAY-sha-theer

■ **Note to Teacher:** The next click shows how the continents of the world were grouped together back then: North America and Eurasia were joined as "Laurasiathere." The common ancestor of all Laurasiatheres alive today lived in Laurasia.

■ **Note to Teacher:** The next slide is a SONG VERSE.

TEACHER'S VERSION of "We Are All Cousins" scripted program.

#12: XENARTHANS (zee-NAR-thrans) ** (63 million years ago)

Hello cousins!

Here is a **clue** to help you guess who I am:

When I get scared, I curl up into a ball.

[Wait for somebody to guess "Armadillo."]

Yes! I am **Armadillo!**

In addition to **armadillos**, my group also includes **tree sloths** and **ant-eaters**.

We are in the same group because we all evolved in **South America**.

I am **Armadillo**.



Tree sloth



armadillo



anteater

Note to Teacher: Next 4 **CLICKS** stay on this slide, but shows a creature that lived in the Ice Age but is now extinct: GIANT GROUND SLOTH. The yellow arrow points to how, since its ancestor lived entirely in the trees, it walks on the **sides of its feet**. (Have the kids get up and walk on the sides of their feet.) The final click **blacks out** the ground sloth – because it is extinct.

Note to Teacher: The next slide is a SONG VERSE.

#13: AFROTHERES

[AF-ro-theers] (64 million years ago)

Hello, cousins! Guess who I am?

[Bend over with your head down. Swing your arm next to your head like a trunk. Wait for someone to guess "Elephant".]

Yes! I am **ELEPHANT**! Guess what **continent** we evolved on?
[Wait for somebody to guess "Africa"]

Yes! **Africa**!

There are 70 species in my group, including the very first animal listed in the dictionary. Guess who that is?
[Wait for somebody to guess "Aardvark"]

Yes! **Aardvark**!

My group includes **Hyrax**, which looks like a rodent, but isn't a rodent. It also includes the **Golden Mole**, which isn't actually a mole.

Remember: hyraxes and golden moles are more closely related to me than they are to rodents.

My group also includes a **sea mammal** who is more closely related to me than to a whale or seal. Guess who that is?
[Wait for somebody to guess manatee or dugong.]

Yes! **Manatees** and **Dugongs**! I am **Elephant**!



aardvark



hyrax



golden mole

Note to Teacher: One more click shows the word "Afrothere" (the name of this group), and that Africa was part of the supercontinent "Gondwana" back then.

Note to Teacher: The next slide is a SONG VERSE.

● **Note to Teacher:** After the song, you will **click 6 times** to show the meteor impact that killed the dinosaurs and that shows the fossil and then an artist's painting of what our shared mammalian ancestor looked like – who survived the meteor impact! Have the kids guess what the slides are about: (the first click just says “66 million years ago”)

● **#14: MARSUPIAL MAMMALS! ******
(140 million years ago)

Hello, cousins! Guess who I am?

[Jump like a KANGAROO. Keep hopping till somebody guesses “Kangaroo.”]

Yes, I am **Kangaroo!** ●

Almost everybody in my group lives only in **Australia**.

We are a very different kind of mammal from all of you.

We are **marsupial** mammals. ● Our females all have **pouches** on their bellies to carry **babies** in after they are born.

Besides us **kangaroos**, the marsupials include **bandicoots** and **wombats**. ● Our family also includes **koalas** and **Tasmanian Devils**.

Only one **marsupial** lives outside of Australia: It lives in **North and South America**. Who is it?

[Wait for somebody to guess “possum” or “opposum”.]

Yes, **Possum** is a marsupial mammal too! ● I am Kangaroo!



koala



kanagaroo



Tasmanian devil

● **Note to Teacher:** The next slide is a SONG VERSE.

TEACHER'S VERSION of “We Are All Cousins” scripted program.

■ **#15: MONOTREMES** ***
[MON-oh-treems] (180 million years ago)

Hello cousins!

Just like the Marsupials, I live in **Australia**.

I am one of the **strangest** creatures alive today. Guess who I am?
[Wait for somebody to guess "Platypus".] ■

Yes! I am **Duck-billed Platypus!** ■ My head looks like a duck. I have webbed feet, too.

My group also includes **Spiny Echidnas**. **[ee-KID-nuhs]** ■

Our group produces **milk** like mammals do, but we lay **eggs** like reptiles do.

Evolution has made me halfway between a **reptile** and a **mammal**.
I am **Duck-billed Platypus!**



Duck-billed platypus



Spiny echidna

■ **Note to Teacher:** The next click gives the name of this group MONOTREMES.

■ **Note to Teacher:** The next click says they “**lay eggs**”.

■ **Note to Teacher:** The next click says “**partly a mammal and a reptile.**”

■ **Note to Teacher:** The next click shows cute babies!!!!

■ **Note to Teacher:** The next slide is a SONG VERSE.

 #16: BIRDS AND REPTILES ****
(310 million years ago)

Hello cousins! Guess who I am?

[Flap your arms and wait for somebody to guess "Bird".]

Yes! I am a Bird!  [a "Quetzal" in Mexico]

Guess who else is also in my group?

Here is a clue: These animals live on **land**, and they also lay **eggs**.
I bet all of you have seen some of these creatures outdoors.

[Wait for somebody to guess "Reptile" or "Lizard" or "Snake"]

Yes! **Reptiles** are close cousins of birds. 

Reptiles include **snakes, lizards, alligators, crocodiles**, and something with four legs that can hide inside its shell.

[Wait for somebody to guess "Turtle".]

Yes! Turtles! 

I am **Bird!**

 **Note to Teacher:** The next slide is a SONG VERSE.

#17: AMPHIBIANS

(340 million years ago)

**

Hello cousins! Guess who I am?

[Jump like a frog. . . Wait for somebody to guess "Frog".]

Yes! I am **Frog!**

My group includes **5,000 species** of **Amphibians.**

Amphibians include all the **frogs** and **toads** of the world.

We also include something whose name starts with "S".

[Wait for somebody to say "Salamander".]

Yes! **Salamanders!**

Unlike birds and reptiles, all amphibians must **lay our eggs** in water.

I am **Frog!**



Note to Teacher: The next slide is a SONG VERSE.



#18: LUNGFISH

(417 million years ago)

Hello cousins!

Guess who I am?

[Wait for somebody to guess "Fish."]

Yes I am a **fish**.

But now you need to guess **what kind of fish**, because I am your **closest fish relative**.

Here is a **clue**: My name **rhymes** with "**dung-dish**".

[Wait for somebody to guess "Lungfish". Hint: The first word is something you breathe with.]

Yes! I am **Lungfish!** 

Even though I am a **fish**, I have real **lungs**, too.

I can **breathe air** when my **stream** dries up in the hottest parts of Africa!

Your **ancestors** of long ago looked a lot like me.

I am **Lungfish!**



■ **#19: COELACANTH [SEAL-uh-kanth] ******
(425 million years ago)

Hello cousins!

Guess what kind of **fish** I am. Here is a **clue**:

Scientists have called me a “**living fossil**” because everybody thought I went **extinct** with the dinosaurs until I was discovered alive in the deep ocean.

[Wait for somebody to guess Coelacanth. If nobody can, just keep reading.]

I am **Coelacanth!** [SEAL-uh-kanth] ■

My closest relative is a **lungfish**. But lungfish must live in **freshwater**. I live only in the **deep ocean**.

I am **Coelacanth!**



#20: RAY-FINNED FISHES **** (450 million years ago)

Note to Teacher: Before script-reader begins CLICK once more to show how many species are in this new group – and how many of us have already joined together in this journey.

Hello cousins!

Every fish you can think of is part of my big family.

Some of us live in the ocean, like **swordfish** and **tuna**.

Some of us live in rivers and lakes, like **trout** and **minnows**.

And some of us live in coral reefs, like **Nemo** and **Dora**.

My group also includes animals that don't look much like a fish, even though they really are fish. One kind looks like a snake . .

[Wait for somebody to guess "eel"]

Yes, **eel**.

Another kind was named after a land mammal that **gallops** . . .

[Wait for somebody to guess "seahorse"]

Yes, **seahorse**.

I am Fish!



Note to Teacher: The next slide is a SONG VERSE.

■ **#21: SHARKS and RAYS *******
(460 million years ago)

[Speak in a sly, evil tone of voice.]

Hello **FOOD** — oh, I mean, COUSINS!

I am so happy to **EAT** you — I mean, **SEE** you.

I am **Shark!** ■

My group includes all the **sharks** and **rays**.

We are **missing** something in our bodies that all of you have. What might that be?

[Wait for somebody to guess "bones". Or give them a clue: "It rhymes with something you must turn off in a movie theater."]

Yes, sharks don't have any **bones**.

Instead, we have something inside us that is strong like a bone, but it is also flexible. What might that be?

[Wait for somebody to guess "cartilage". If they need a hint, say, "Your ear is made of this."]

Yes . . . **cartilage!**

I am **Shark!**



■ **Note to Teacher:** The next slide is a SONG VERSE.

■ **#22: LAMPREYS** *****
(530 million years ago)

Hello, cousins!

Guess who I am?

Here is a clue. I look like an **eel**, but I am not an eel. My name rhymes with "**damp-tree**".

[Wait for somebody to guess "lamprey". If they cannot, give another clue: "My name begins with the letter L."]

I am LAMPREY! ■

Sharks have something in their bodies that I am missing. What might that be?

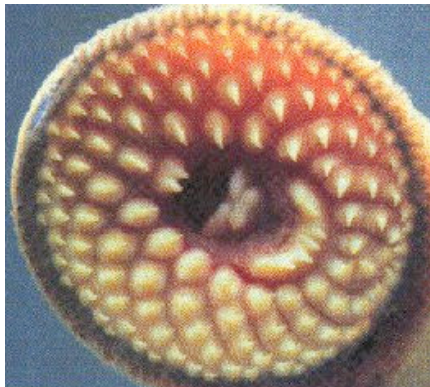
Here is a CLUE: a famous shark **movie** has this title, and we humans use this body part to bite and chew.

[Wait for somebody to say "JAWS".]

Yes, I am missing **jaws**.

Instead, my mouth is like a **suction cup**, with lots of little **teeth**.

I am **Lamprey**!





#23: LANCELETS

(560 million years ago)

Hi cousins! You will never guess who I am, so I will tell you:

I am **Lancelet!**

Lancelets are the size and shape of your **little finger**.

We like to **hide** in the **sand** of the ocean.

We do not have **lungs**, and we do not have **gills**.
So how do we **breathe**?

[Wait for somebody to say "skin". If nobody is right, say that it rhymes with "thin".]

Yes! We **breathe through our skin**! That's why we have to stay small.

I am **Lancelet**.



#24: SEA SQUIRTS (or Tunicate) ****
(565 million years ago)

Hello cousins! I live in the ocean. My name **rhymes** with "Bee Hurt".

[Wait for somebody to guess "Sea Squirt". If nobody is right, then say that the first word is "Sea".]

Yes! I am **SEA SQUIRT!**

Another name for me is "**Tunicate**" (Tune-i-cate)

As an adult, I look like a **paper sack** sitting on the bottom of the ocean.

But young sea squirts look like **tadpoles**. They have **muscles** and can **swim**.

When they turn into **teenagers**, they stop swimming and lose all their muscles. They also **lose** something else. It rhymes with "**train**".
[Wait for somebody to guess "brain".]

Yes! Our teenagers lose their **brain!** And adult sea squirts are brainless, too.

Life is so much **easier** if you never have to **think!**

I am **Sea Squirt!**



adult



young

Note to Teacher: The next slide is a SONG VERSE.

■ **#25: ECHINODERMS** *****
(ee-KINE-oh-derms) (570 million years ago)

Hello cousins!

My name ends in “fish”, but I am not a fish. Guess who I am?
[Wait until somebody says “Starfish”.]

Yes! I am **Starfish!** ■

My group includes **6,000 species** of **starfish, sea urchins, sea cucumbers**, and something that rhymes with “hand holler”.
[Wait until somebody says “sand dollar”.]

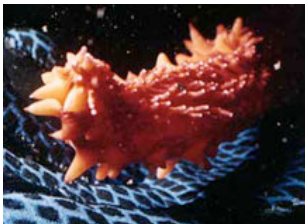
Yes! **Sand Dollars** are in my group too. ■

Our group is called “**Echinoderm**” (eee-KINE-oh-derm), which means “spiny skin”.

All of us Echinoderms have “**radial symmetry**”. This means that we don’t have a right side or a left side. We don’t have a head or a tail. Instead, we have the same **shape** as the wheels on something you ride that has pedals . . .

[Wait until somebody says “bicycle”.]

Yes! Our insides are shaped like the spokes on a bicycle wheel. That shape is called **radial symmetry**. I am **Starfish!**



■ **Note to Teacher:** The next slide is a SONG VERSE.

TEACHER’S VERSION of “We Are All Cousins” scripted program.

#26: LOTS OF AMAZING CREATURES ***** (590 million years ago)

Hello cousins! The group I represent has many different kinds of animals. Some of us live in the **sea**, but a lot of us are found on **land**. I am one of the land-dwellers. Guess who I am?

[Flap your arms and wait for someone to guess "butterfly"]

Yes! I am a **Butterfly**! My group includes all the **insects** and **spiders** and **centipedes** and **scorpions**.  Our cousins who live in the water include **crayfish**, **shrimp**, **lobsters**, **crabs** and **barnacles**. 

Our group also includes creatures who live in the ocean and whose name **rhymes** with "**slams**".

[Wait for someone to guess "clams"]

Yes! **Clams**!  Even though **butterflies** and **clams** have very different forms, we are more closely related to each other than we are to any of you. So that's why we all join your journey at the same time—in one fell swoop.

In addition to clams, our group includes **oysters**, **octopuses**, **squids**, **snails**, and **slugs**. 

Also in our group is an **animal** that lives in the **soil** and that **squirms** around a lot.

[Wait for someone to guess "worm".]

Yes! **Worm**!  Worms are important!

I am **Butterfly**!

 **Note to Teacher:** The next slide is a SONG VERSE.

■ **#27: FLATWORMS** ***
(630 million years ago)

Hello cousins! My name ends with “**worm**”, but I am much smaller than an earthworm.

Guess who I am? My first name **rhymes** with “splat”.

[Wait till somebody guesses “Flat-worm”.]

Yes! I am **Flatworm**! ■

Here is the most awesome thing about us:

Flatworms **eat** and **poop** through the same hole!

The **ancestor** you share with me also **ate** and **pooped** through one hole, too!

So tell me this: Are you **proud** to be **related** to a flatworm?

[Wait for some responses.]

I am **proud** to be **related** to you! I am **Flat Worm**!





#28: JELLYFISH, SEA ANEMONES, ** and CORALS (700 million years ago)

Hello cousins! I am **not** a **fish** and I am **not** a **starfish**.

But my **name** ends in “fish.” Who am I?

[Wait for them to guess “Jellyfish”.]

Yes! I am **Jellyfish!** 

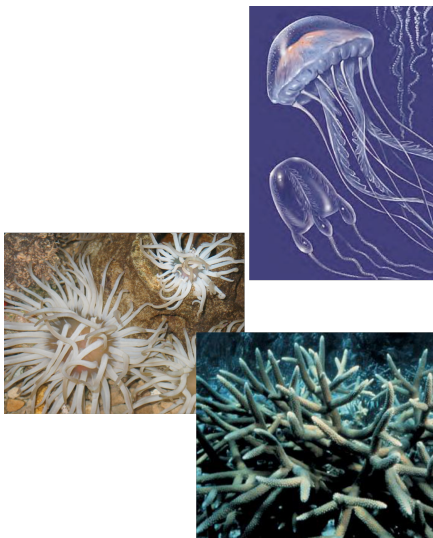
My group also has **corals** and **sea anemones** **[uh-NEM-uh-nees]**.

Just like **flatworms**, we **jellyfish eat** and **poop** through the same hole.

We have **no heart**, **no kidney**, and **no brain**.

We **breathe** through our **skin** — and so did your ancestors!

I am **Jellyfish!**



Note to Teacher: The next slide is a SONG VERSE.

#29: COMB JELLIES ***
(740 million years ago)

Hello cousins! My name has **two words**.

The **first word** is something you humans drag through your **hair**.

[Wait for somebody to guess "comb".]

Yes! My first name is "**Comb**".

My second name is something you add to a **peanut butter** sandwich.

[Wait for someone to guess "jelly".]

Yes! My second name is "**jelly**".

So I am "**Comb Jelly**".

I look a bit like a jellyfish. Jellyfish **capture food** by stinging. But I capture food like a **cowboy** captures a wild horse.

I toss a lasso **[lass-OOH]** out into the water and drag in my food.

I am **Comb Jelly**!



comb jelly

■ **#29: PLACOZOAN** (Plack-oh-ZOH-an) *****
(780 million years ago)

Hello, my dear and precious cousins!

I am **so excited** to meet all of you, because I have been so **lonely**!

You see, throughout this whole Journey of Life, you **humans** have been meeting **gibbons** and **monkeys** and **kangaroos** and **snakes** and **frogs** and **fish** and **sharks** and **lampreys** and **sea squirts** and **insects** and **flatworms** and **jellyfish**.

Meanwhile, I have been playing the **same game** for the same amount of time as all of you. But I have met absolutely **no cousins** along the way!

That is because I am the **only living species** in a single **genus** within a single **family** within a single **order** and a single **class** of a whole **phylum** of life! I am **unique**!

I have been **waiting** a very long time to meet **any cousins**. And look how many of you there are! Your group has already gathered up more than **1 million species** on your journey. Wow!!!

My name is **Placozoan** [**Plack-oh-ZOH-an**]. ■

I am tiny and I look like an **ameba**, but I am more complex than any ameba. I am **Placozoan**, and I am no longer **lonely**!



■ **#30: SPONGES** ****
(800 million years ago)

Hello cousins!

One hundred years ago, every **kitchen** and **bathroom** in America had my **dead body** in it, even though I only live in the **ocean**. Who am I?

Here is a **clue**: Today humans use something made out of **plastic** instead of me. But they still call it by my **name**.

[Wait for somebody to guess "sponge".]

Yes, I am **sponge**! ■

Here is something **amazing** to know about me:

If a **stormy sea** tears me to pieces, those pieces **fall apart** into little swimming cells.

Those **swimmers** then come back together and form a single big sponge once again!

I am SPONGE!



#31: COMB JELLIES *****
(800 million years ago)

Hello cousins! My name has **two words**.

The **first word** is something you humans drag through your **hair**.

[Wait for somebody to guess "comb".]

Yes! My first name is "**Comb**".

My second name is something you add to a **peanut butter** sandwich.

[Wait for someone to guess "jelly".]

Yes! My second name is "**jelly**".

So I am "**Comb Jelly**".

I look a bit like a jellyfish. Jellyfish **capture food** by stinging. But I capture food like a **cowboy** captures a wild horse.

I toss a **lasso** [**lass-OOH**] out into the water and drag in my food. That means I have **muscles** and also some **nerve** cells that can coordinate how I toss my lasso.

So how can I be more primitive than a sponge? Well, my **DNA** shows that I make **muscles** in a very different way than all of the rest of you animals do. I invented my own unique way to build muscles.

Also, the DNA of **sponges** shows that their ancestors used to be **smarter**! Sponges don't have **nerves**, but they have **genes** that could make nerves. So their **ancestors** probably did make nerves, but then stopped doing that. Sometimes it is **wiser** to not be too smart!

I am **Comb Jelly**!



comb jelly

■ **#32: "CHOANOFLAGELLATES" *****
[ko-AN-oh-FLAJ-el-ates] (900 million years ago)

Hello cousins!

I am **Choanoflagellate!** [ko-AN-oh-FLAJ-el-ate]

Who among you was **Sponge?**

[Look up to see who raises their hand.]

Hello Sponge!

A single one of your **cells** looks just like me. ■

But unlike you, I prefer to be **alone** my whole life.

I do not join with other cells to form a colony like yours.

I am **Choanoflagellate!**



■ **Note to Teacher:** The next slide is a SONG VERSE.

 #33: the DRIPS ***
(950 million years ago)

Hello cousins!

None of you has heard of my group. But my name is something that a leaky faucet does.

[Wait for somebody to guess, "drips." If nobody guesses correctly say, "Here is a clue: It rhymes with "hips".]

Yes! My group is the **Drips**!

You heard right. We are **Drips** — and proud of it!

We are all **parasites**. We attach onto bigger sea creatures.

I am a Drip! 



#34: FUNGI

(1 billion years ago)

Hello cousins! Guess who I am?

[Let them guess for awhile. If nobody guesses "Mushroom, read the clue that follows . . .]

Here is a **clue**: My name ends with the word "room", and many of you have eaten me.

[Wait for someone to say "Mushroom".]

Yes! I am **mushroom**! 

My group includes all the kinds of **fungi** in the world.

There are **more kinds** of us alive today than there are of all of you combined.

Fungi include something that grows on old **bread** and **cheese**:

What is that?

[Wait till someone says "Mold".]

Yes! **Mold**!

I am **Mushroom**!



#35: AMOEBOZOANS (1.2 billion years ago)

**

Hello cousins!

My **name** starts with an "**A**".

Here is a **clue**:

If you have ever looked at a **drop of pond water** through a **microscope**, you have probably seen me.

Who am I?

[Wait for somebody to say "Ameba".]



Yes! I am **Ameba**, and I am **happy** that you are my **cousins**.



Amoebozoans



Note to Teacher: The next slide is a SONG VERSE.

■ **#36: PLANTS & (green & red) ALGAE ******
(1.5 billion years ago)

Hello cousins! All of you know who I am.

[Stand perfectly still and put your arms out like a tree. Wait for someone to guess "tree." Give them clues if they need help.]

Yes! I am a **Tree!**

I represent all the **plants** of the world. ■

I also represent all the green and red **algae** **[ALE-gee]** that live in **water**. ■

Plants and **algae** are very proud of something that we can do.

It is something that no **animal** or **fungus** or **ameba** can do.

It is a long word that starts with a "**P**".

[Wait for someone to say "photosynthesis".]

Yes! **Photosynthesis!**

Unlike all of you, my group never has to search for **food**.

So long as there is **sunlight**, we make our own food.

I am **Tree!**



red algae and green algae

■ **Note to Teacher:** The next slide is a SONG VERSE.

#37: the remaining EUKARYOTES ***** (2 billion years ago)

Hello cousins! Guess who I am?

Here is a clue:

I am the reason why you must **filter water** for drinking from **streams** and **lakes** when you go **camping**.

[Wait for someone to guess "Giardia." If they can't, tell them it begins with a "G".]

Yes! I am **Giardia**! **[gee-AR-dee-uh]**
I make you sick if you drink me.

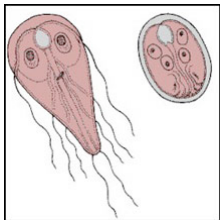
The group I represent is very **diverse**, and we all need to live in the ocean or in rivers and lakes.

Almost all of us are **single cells**, and we are the last on this journey to protect our precious **DNA** within a **nucleus**. We are the last of the **Eukaryotes** [You-CARRY-oats].

In addition to **Giardia**, our group includes:

- **foraminifera** **[FOR-uh-min-IF-er-uh]**, who have tiny shells made of calcium
- **radiolaria** and **diatoms** who build beautiful little shells of dissolved sand
- and all the **brown algae**, including huge ocean **kelp**.

I am **Giardia**!



Giardia

Note to Teacher: The next slide is a SONG VERSE.

TEACHER'S VERSION of "We Are All Cousins" scripted program.

■ **#38: ARCHAEA** [Ark-EE-uh] *****
(3 billion years ago)

Hello cousins! The name of my group is **Archaea** [ark-EE-uh]. ■

We are all **single cells**. We were discovered in the hot springs of a famous **national park** in the United States.

[Wait for somebody to say "Yellowstone".] ■

Yes! We were discovered in the **hot springs** of Yellowstone National Park. We live only in places that are **hostile** to humans: like **hot springs** on land or down **deep in the ocean**. ■

There is something in the **air** that will **poison** us. What is it?
[Wait for somebody to say "oxygen".]

Yes! **Oxygen**!

Oxygen is poisonous to us.

We **Archaea evolved** long before there was any **oxygen** in Earth's atmosphere.

However, there is **still one place** we can thrive today on the surface of Earth. It is a place without any **oxygen**. The only stuff we find to **breathe** there are **stinky farts**!

Where is that?

[Wait for somebody to say "intestines".]

Yes! We can live in animal **intestines** — including yours!

I am **Archaea**!

■ **Note to Teacher:** The next slide is a SONG VERSE.

■ **#39: EUBACTERIA** [YOU-bacteria] *****
(3.5 billion years ago)

Hello cousins!

Because this is the **very last meeting place** in your Journey of Life, you probably think I represent something that starts with a “**B**”.

[Wait for somebody to say “Bacteria”.]

Bacteria is what you think I am.

But that word is as **old-fashioned** as “groovy” and “ice box.”

Ever since scientists split **Archaea** [ark-EE-uh] away from our group, we have gone by a different name.

Now we are called **Eubacteria** [YOU-bacteria]. ■

A few of us cause some nasty diseases — like **Lyme Disease, tuberculosis, pneumonia, and diphtheria.** ■

But most of us should be **loved** by humans and other animals.

We are the ones who **recycle** your **garbage and poop**, and turn them into stuff that **plants** can use.

I am **Eubacteria**!

■ **Note to Teacher:** The next slide is a SONG VERSE.



#40: Ocean of Origin (3.8 billion years ago)

[Your voice should sound mysterious and wise. Look up at the people after each sentence and pause.]

Greetings, my **children**, and welcome to the **birthplace** of your most **ancient ancestor**! . . .

I am the **Ocean of Origin**. 

I gave **birth** to your most ancient ancestor long, long ago. . .

I am so **pleased** to see what all of you have **become**. . . .

I see that some of you **swim through the water**. . . .

Some of you **burrow into the soil**.

Some of you **fly through the air**; others **swing through the trees**.

Some of you **are trees**!

Some of you make beautiful **music** . . .

One species among you has done something especially **amazing**. . .

That species has dug up **fossils**, looked through **microscopes**, and asked big **questions**.

That species has **discovered** the **entire story of life**!

Thank you for learning **my story**. It is **your story**, too.

So tell me . . . Now that you know that every living thing is your **cousin**, tell me this: Are you **happy** to be part of a **very big family**?

Who is **thrilled** to be part of a **very big family**? . . .

Let us all **sing** together the **final verse** of the "Journey of Life Song".



Note to Teacher: The next slide is the **final SONG VERSE**.