

CHICAGO BOTANIC GARDEN

I'M DR. NORMAN WICKETT, AND I'M SEARCHING FOR THE ORIGINS OF PLANT LIFE ON LAND. OUR TEAM USES SUPERCOMPUTERS AND GENE SEQUENCING TO TRACE KEY STEPS IN EVOLUTION. IT'S LIKE TAKING A TRIP IN A TIME MACHINE.

Timeline on chalkboard:

- 160 MYA - FLOWERING PLANTS
- 350 MYA - GYMNOSPERMS
- 390 MYA - MONIOPHYTES (FERNS)
- 400 MYA - LYCOPHYTES
- 480 MYA - MOSSES
- 480 MYA - LIVERWORTS
- 500 MYA - HORNWORTS
- 500 MYA - ZYGNEMATOPHYCEAE

Labels on chalkboard: FLOWERS, SEEDS, LEAVES, LAND PLANTS

Speech bubble: 'LEAFING' NOW? 'SEED' YOU LATER!

*MYA = MILLION YEARS AGO

Timeline: 500 MYA

Speech bubble: THE CONTINENT LOOKS SO BARE WITHOUT PLANTS. IT'S JUST A MATTER OF TIME BEFORE ONE OF THOSE ALGAE MOVES TO LAND.

Speech bubble: WE'RE WORKING ON IT. JUST GIVE US ANOTHER 20 MILLION YEARS!

Timeline: 480 MYA

Speech bubble: FASCINATING! HORNWORTS MAY HAVE BEEN THE FIRST PLANTS TO BRANCH OFF THE LAND PLANT TREE OF LIFE. HOW DID THEY ADAPT?

Speech bubble: YEAH! WE'RE NO. 1!

Speech bubble: WHAT ABOUT MOSSES AND LIVERWORTS? WE'RE CLOSELY RELATED AND MAY HAVE BEEN FIRST!

Speech bubble: STOP A UING! WE'VE GOT TO CREATE MORE OXYGEN.

Diagram labels: XYLEM, PHLOEM, XYLEM, PHLOEM, XYLEM, PHLOEM, XYLEM, PHLOEM

Text: VASCULAR SYSTEMS ARE GREAT TOOLS FOR TRANSPORTING WATER AND NUTRIENTS.

Text: PHEW! BACK AT THE CHICAGO BOTANIC GARDEN. IT'S GREAT TO SEE MANY OF THE MORE THAN 300,000 PLANT SPECIES KNOWN TODAY. JUST THINK - IT ALL STARTED WITH SIMPLE ALGAE!

Timeline: 390 MYA

Speech bubble: LEAVES DO AN AMAZING JOB OF TAKING IN CARBON DIOXIDE AND PRODUCING OXYGEN AND WATER. THEY ALSO HELP THESE FERNS REPRODUCE BY RELEASING SPORES.

Speech bubble: WE CAN BREATHE A LITTLE EASIER!

Timeline: 350 MYA

Speech bubble: GYMNOSPERMS (LIKE MODERN PINE TREES) USE WIND TO MOVE THEIR POLLEN AND THEIR SEEDS ARE PRODUCED IN CONES.

Speech bubble: WHEEEE! I'M FLYING!

Timeline: 160 MYA

Speech bubble: SO BEAUTIFUL, AND PRACTICAL, TOO! FLOWERS ATTRACT MORE EFFICIENT POLLINATORS. BONUS: SEEDS GET AN EXTRA LEVEL OF PROTECTION INSIDE A FRUITING OVARY. NO WONDER FLOWERING PLANTS MAKE UP 80 PERCENT OF THE PLANTS LIVING TODAY!

Speech bubble: DO YOU THINK THAT BEETLE WOULD FIND ME ATTRACTIVE?

Timeline: PRESENT DAY

Speech bubble: TAKE GOOD CARE OF US! ALL LIFE DEPENDS ON IT!