

We Can All Be Scientists

Lessons for your classroom

For detailed lessons, materials, and resources—including the full text of the three classroom activities summarized here—please visit:

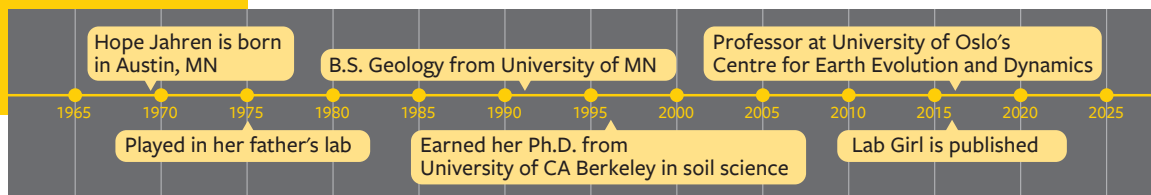
WWW.EARTHSCIWEEK.ORG/IFTHENAMBASSADORS

EXPLORE THE JOURNEY “LAB GIRL” DR. HOPE JAHREN TOOK ON HER WAY TO BECOMING A WORLD-CLASS SCIENTIST

IN THIS LESSON STUDENTS get warmed up thinking about “who is a scientist” through a series of images, before analyzing an interview with Dr. Hope Jahren using a close reading strategy. The students will produce a timeline of Dr. Jahren’s journey from a young girl to a world-class scientist. Students are invited to develop a timeline of their own life events as they consider how STEM is relevant in their lives and future path. They wrap up the lesson with a video featuring Dr. Jahren talking about how scientists have been portrayed to the public.

NGSS CONNECTIONS:

- **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information
- **Nature of Science:** Science is a human endeavor.



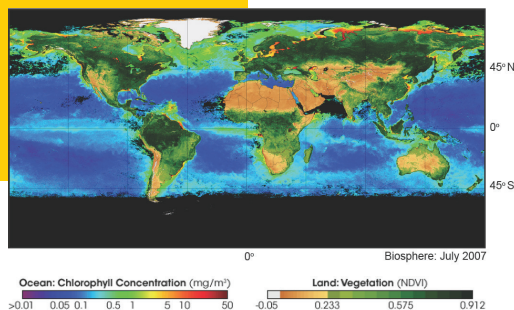
TREES: THE COMPLEX STORY THEY TELL IF WE JUST LISTEN

STUDENTS GET THE OPPORTUNITY to investigate the science that Dr. Jahren discusses in her videos. In the first activity, students explore Dr. Jahren’s love of trees as they work with a tree ring simulation, analyze tree ring data, and create a model to demonstrate what they have learned about paleoclimates. In the second activity, students analyze climate data from sites around the world to understand how climates are defined. Then they connect

climates and biomes using satellite imagery. Students examine NASA data and read an article about current changing rates of photosynthesis. Finally, students have the opportunity to design and conduct an experiment where they investigate different plant stressors.

NGSS CONNECTIONS:

- **Science and Engineering Practice:** Analyzing and Interpreting Data, Developing and using models
- **Crosscutting Concepts:** Systems and system models, Patterns



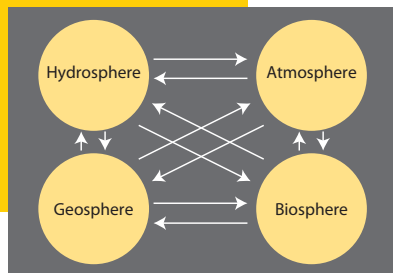
MAP OF EARTH'S BIOSPHERE FROM GLOBE.GOV; TIMELINE GRAPHIC: AGI.



HOPE JAHREN'S CAREER has included a wide variety of experiences and work settings.

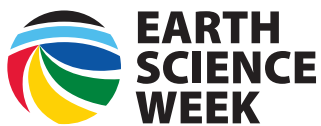
THE CARBON CYCLE AND YOUR TOWN — MODELING ENERGY AND MATTER FLOW WHERE YOU LIVE

JOURNEYING THROUGH THE CARBON cycle, students will move from one simulated reservoir to another as they practice systems thinking skills. A visit to their school campus provides new opportunities for students to make place-based observations and categorize them into the four spheres: geosphere, hydrosphere, biosphere, and atmosphere. Developing a visual model supports students as they consider interactions between and among the components of the spheres they identified, and build their systems thinking skills. As students wrap up the lesson they return to their personal timelines to explore how their thinking has changed related to their talents and STEM.



NGSS CONNECTIONS:

- **Science and Engineering Practice:** Developing and using models
- **Crosscutting Concepts:** Systems and system models



EDUCATION CONTENT: AIDA AWAD, CHERYL MANNING, LAURA HOLLISTER. TWO LEFT PHOTOS BY MATT CHING. RIGHT PHOTO COURTESY OF HOPE JAHREN. FOUR SPHERES DIAGRAM: AGI.