

Climates of the Past and Future

DAY 1:

1. CLIMATE OF A PLANET

8:00 BREAKFAST

8:30 Introductions, Pre-Test, & Assignment

8:50 Climate Concept Map

9:00 ENGAGE: Heat Packs and the Conservation of Energy

9:10 EXPLORE: Rainbow Glasses, thermal IR camera, & EM spectrum

9:30 EXPLAIN: Energy and EM Radiation

9:50 EXTEND: People Power

10:20 EVALUATE: Journaling (reflection questions)

10:30 BREAK

10:45 ENGAGE: Greenhouse molecule dancing

11:00 EXPLORE: Glass plates greenhouse model

11:30 EXPLAIN: Earth's Energy Budget

12:00 EXTEND: UCAR Planet interactive & Virtual Glass Plates

12:15 EVALUATE: Journaling (reflection questions)

12:30 LUNCH

2. CLIMATES OF THE PAST

1:00 ENGAGE: Molecules & Plate tectonics movies

1:10 EXPLORE: Sparkling water and the carbon cycle

1:30 EXPLAIN: Climate changes over Millions of Years

2:00 EXTEND: Climate TIC-TAC-TOE

2:20 EVALUATE: Journaling (reflection questions)

2:30 BREAK

2:45 ENGAGE: Ice Core movie

2:50 EXPLORE: UCAR Tree ring builder

3:05 EXPLAIN: Ice Age Climates (Thousands of Years)

3:35 EXTEND: CO₂ Graph Walk

3:55 EXTEND: Website Walk-through

4:05 EXTEND: Climate Concept Map (revisit)

4:15 EVALUATE: Journaling (reflection questions)

4:30 ADJOURN

Climates of the Past and Future

DAY 2

3. CLIMATES OF THE FUTURE

8:00 BREAKFAST

8:30 ENGAGE: Video – “Carbon Crisis in 90 Seconds”

8:40 EXPLORE: Discovery of Global Warming (card game)

9:10 EXPLAIN: Climate Forcing, Response, Sensitivity, & Feedback

9:55 EXTEND: Observations of Modern Climate Change

10:10 EVALUATE: Kagan Corners (forcing, +/- feedback, sensitivity)

10:20 EVALUATE: Journaling (reflection questions)

10:30 BREAK

10:45 EXPLORE: Personal Carbon Footprints

11:00 EXPLAIN: Carbon Cycle Jigsaw Exercise

11:45 EXTEND: Emissions & Climate Calculator

12:00 EVALUATE: Journaling (reflection questions)

12:15 LUNCH

12:45 ENGAGE: Video – Ostrich: “Warming Stopped in 1998”

12:50 EXPLORE: What is a Model?

1:15 EXPLAIN: Modern Climate Models, IPCC, and Future Climate

2:00 EVALUATE: Journaling (reflection questions)

2:10 BREAK

2:20 ENGAGE: Video -- Solar Power Revolution

2:30 EXPLORE: Climate Wedges website and game

2:50 EXPLAIN: Solving the Climate Problem

3:35 EXTEND: Inside/Outside Circle

3:50 EVALUATE: Post-Test

4:05 EVALUATE: Journaling (reflection questions)

4:20 CELEBRATE: Certificates & Farewell

4:30 ADJOURN