Computer-Based Games, Simulations and Virtual Labs for Climate, Weather and Atmospheric Science Education

Games, simulations and animations available on the Spark web site:
- spark.ucar.edu/games
- spark.ucar.edu/interactives

Randy Russell (rrussell@ucar.edu)

The Very, Very Simple Climate Model

Interactives in use on large touchscreen displays in public visitor exhibits in NCAR’s Mesa Lab in Boulder:
- available for use by others (contact us!)
- coming to our website soon
- collaboration with the COMET Program

Also: Atmospheric Chemistry Molecules memory game (tiles shown below):

Carbon Bathtub Model Animations

Virtual Ballooning

Tiles used in Clouds Memory Game:

Everything shown here can be viewed online at:
spark.ucar.edu/ams-2013-games-simulations-poster
(or scan the QR code above!)

Links to numerous games, simulations, and virtual labs from many different sources spanning a broad range of STEM (Science, Technology, Engineering and Math) education topics (including weather, climate, Earth science and atmospheric science topics):
- think of it as a “one-stop shopping” compendium or like a lit review or consumer reports listing
- each entry includes a screenshot, brief description, link, source, and cost (if any... most are free!)
- coming soon: sorting, rating, and commenting features

Example entries:

NOAA Games “Planet Arcade”

Disaster Dynamics: Hurricane Landfall

MANY more available online, including:

- Earth’s Energy Budget
- Climate Sensitivity Calculator
- NOAA Ocean Service Education
- Earth System
- Virtual Ballooning
- Virtual Ocean
- Earth System
- Virtual Sandstorm
- Combinatorics
- Virtual Volcano
- Earth System
- Virtual Ballooning
- Climate Change
- Virtual Sandstorm
- Combinatorics
- Virtual Ballooning