

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





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Games, simulations and animations available on the Spark web site:

- spark.ucar.edu/games
- spark.ucar.edu/interactives

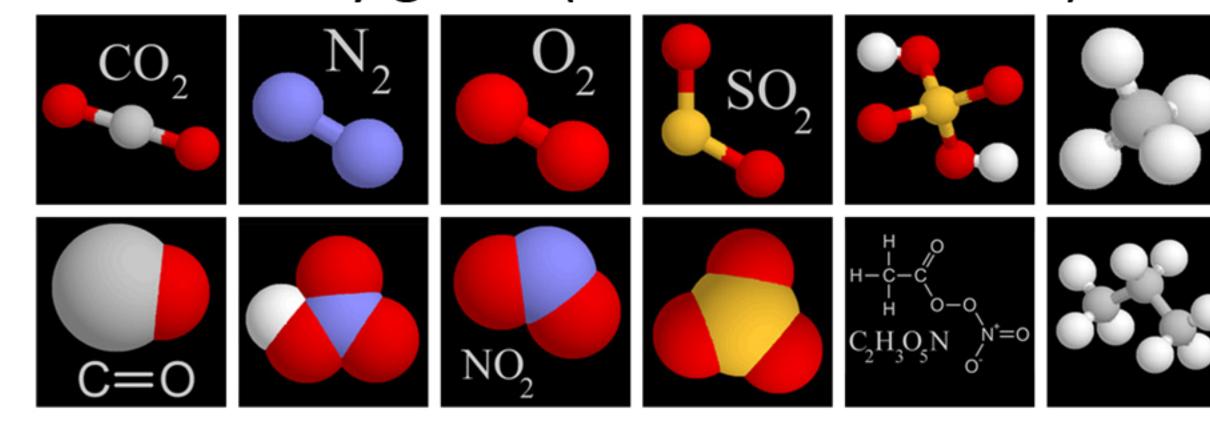
Clouds Memory/Matching Game



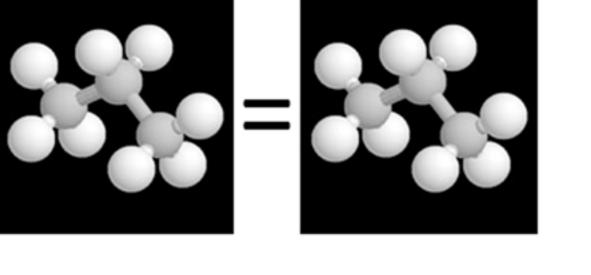
Tiles used in Clouds Memory Game:

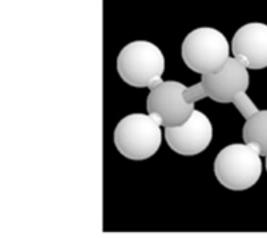


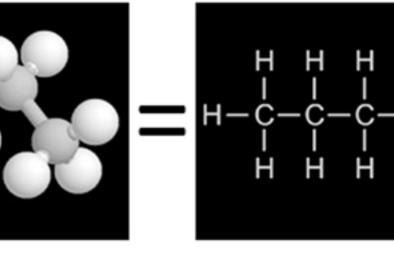
Also: Atmospheric Chemistry Molecules memory game (tiles shown below):

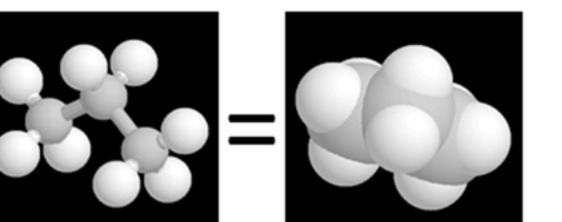


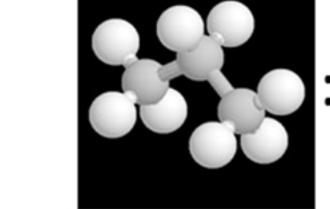
Coming soon: advanced level - player must match equivalent representations, not just identical images (requires thinking!):

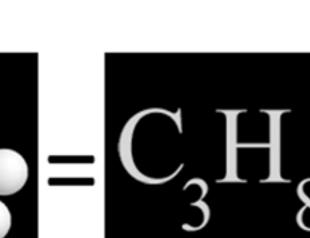


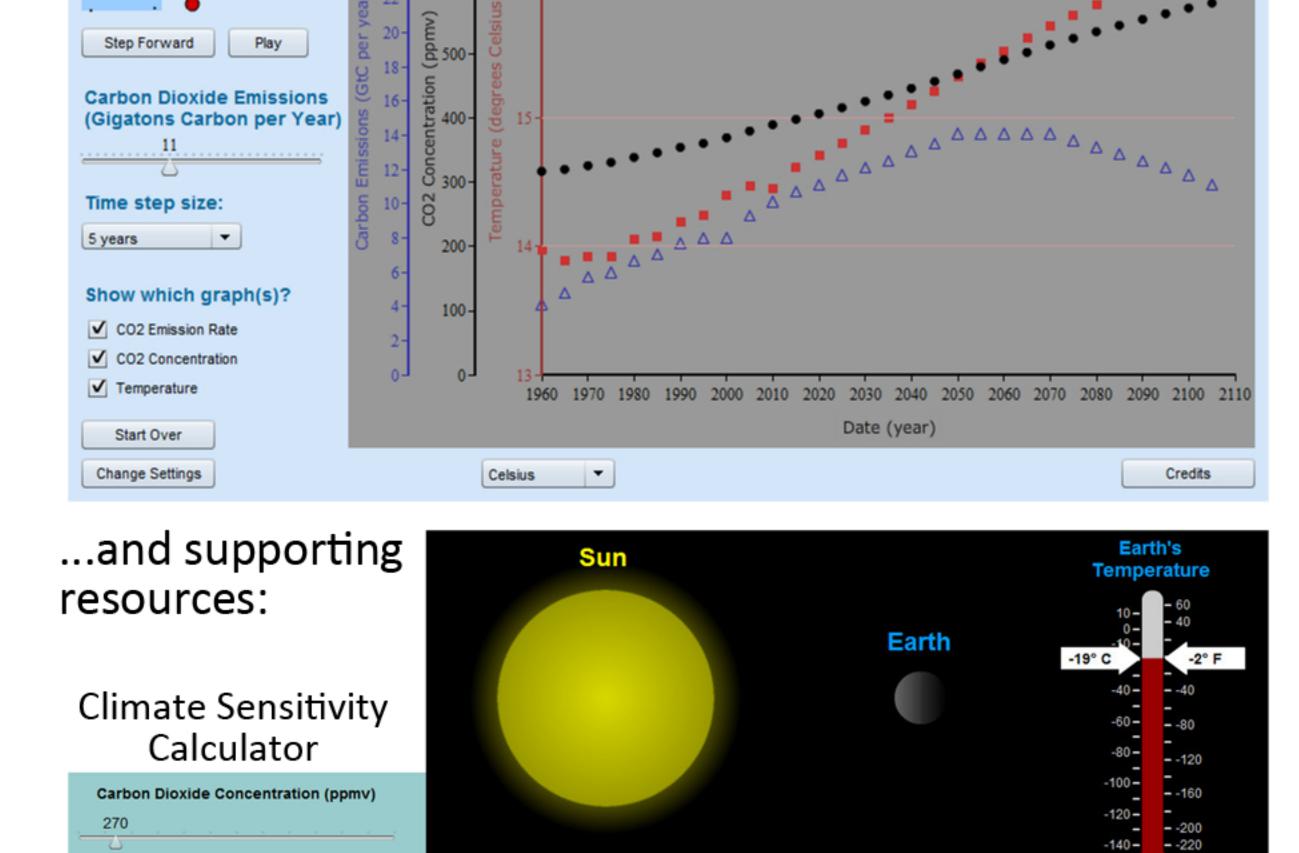








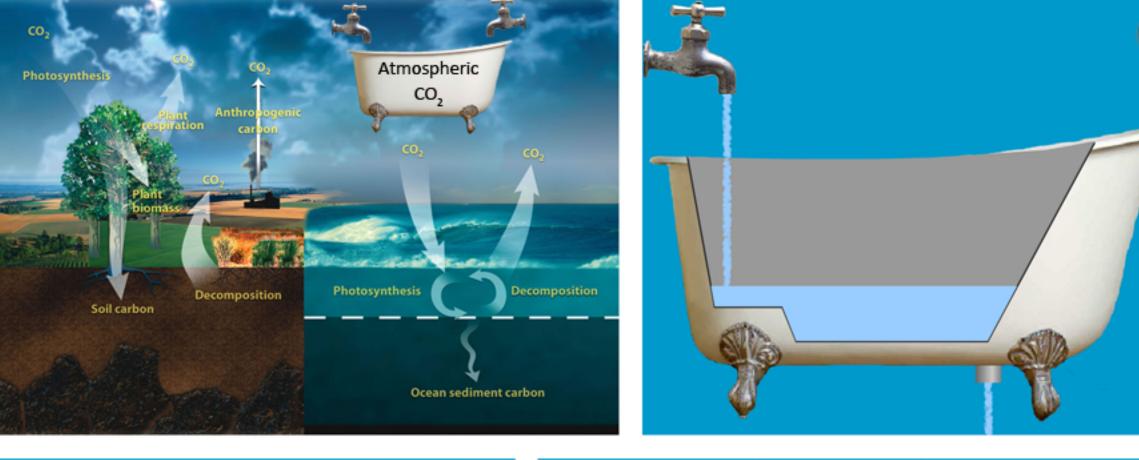


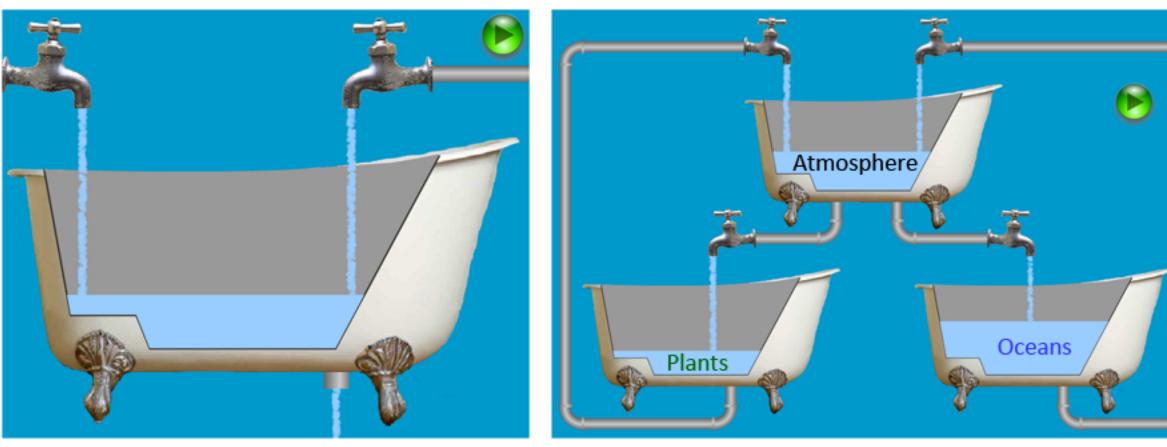


The Very, Very Simple Climate Model

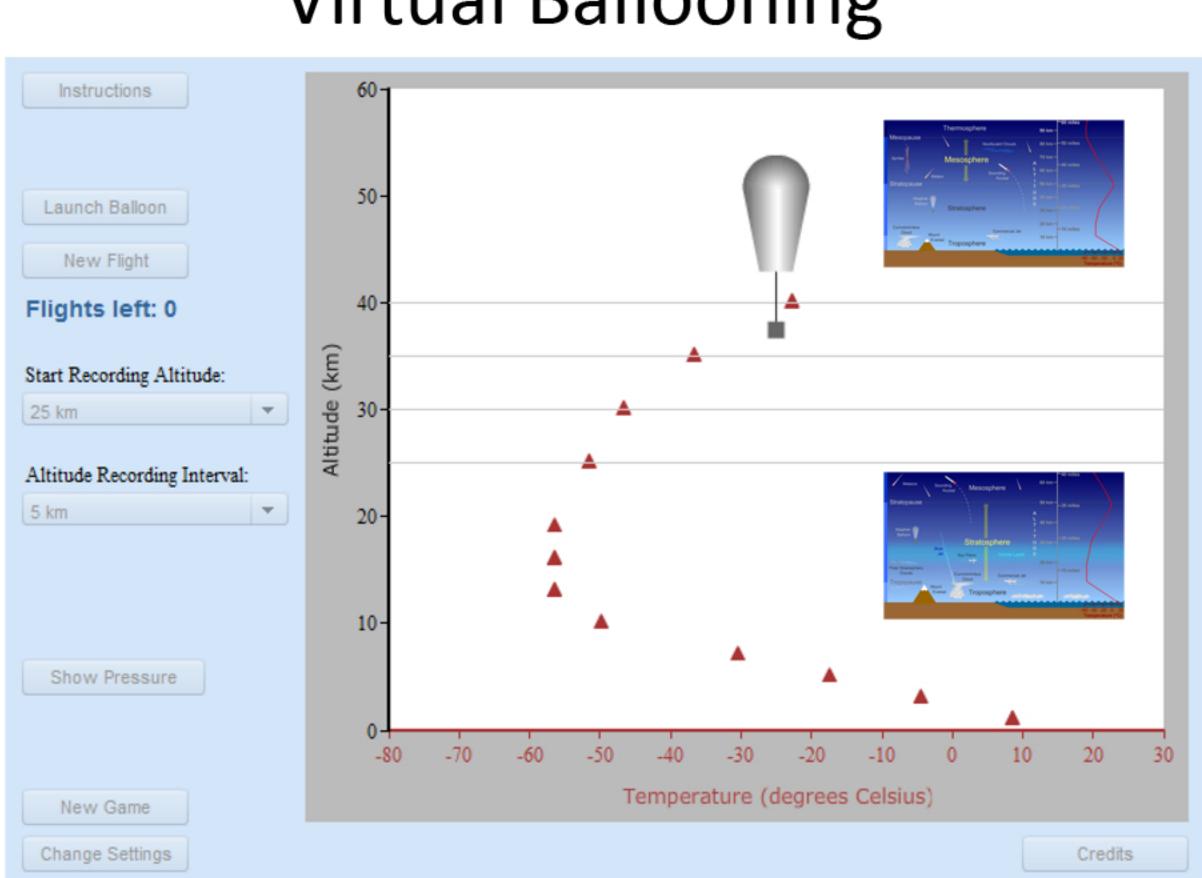
Carbon Bathtub Model Animations

Earth's Energy Budget





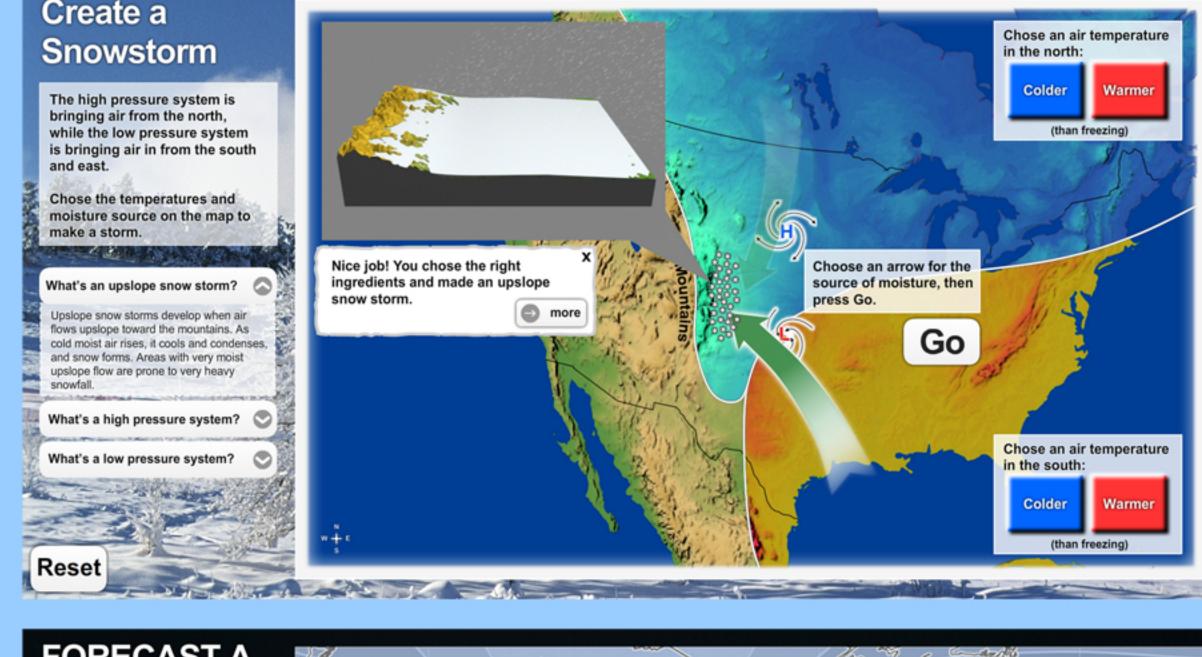
Virtual Ballooning

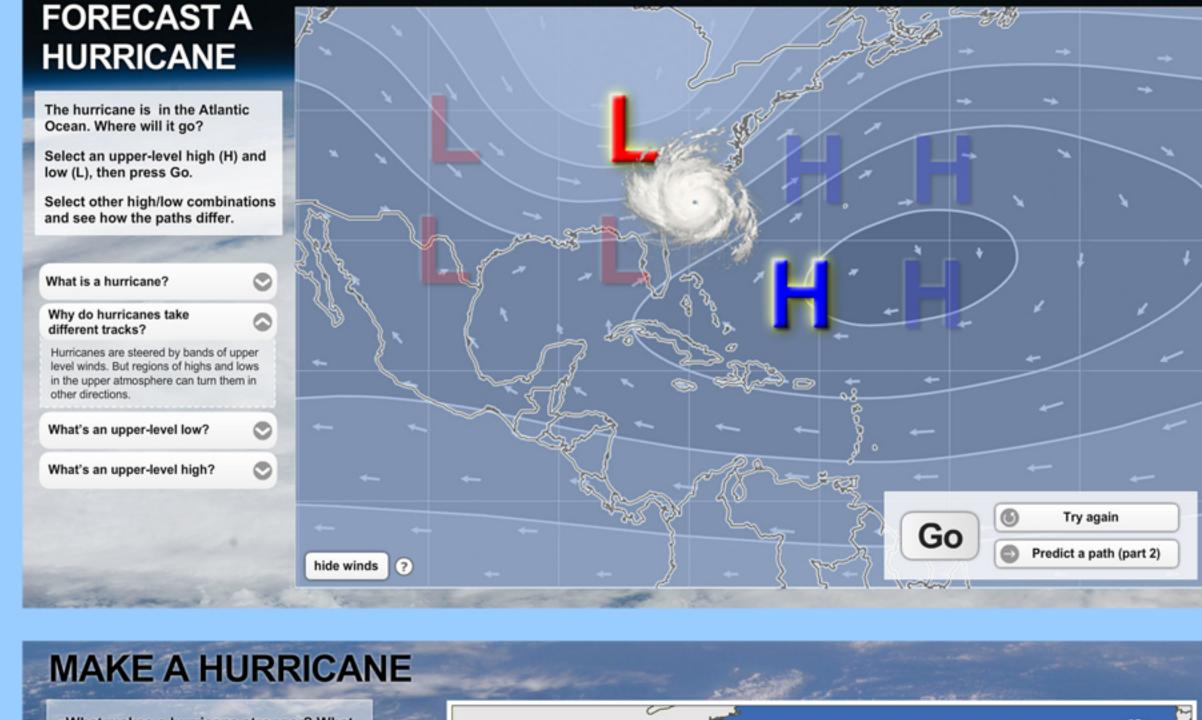


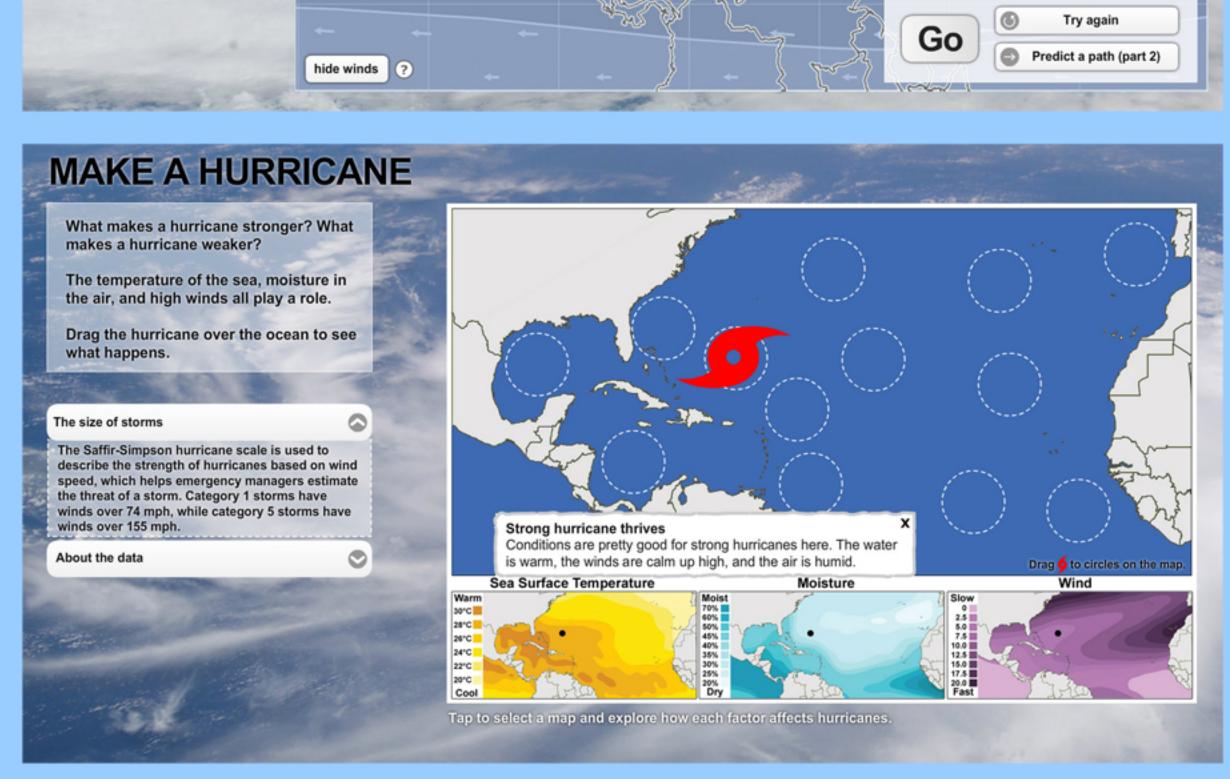


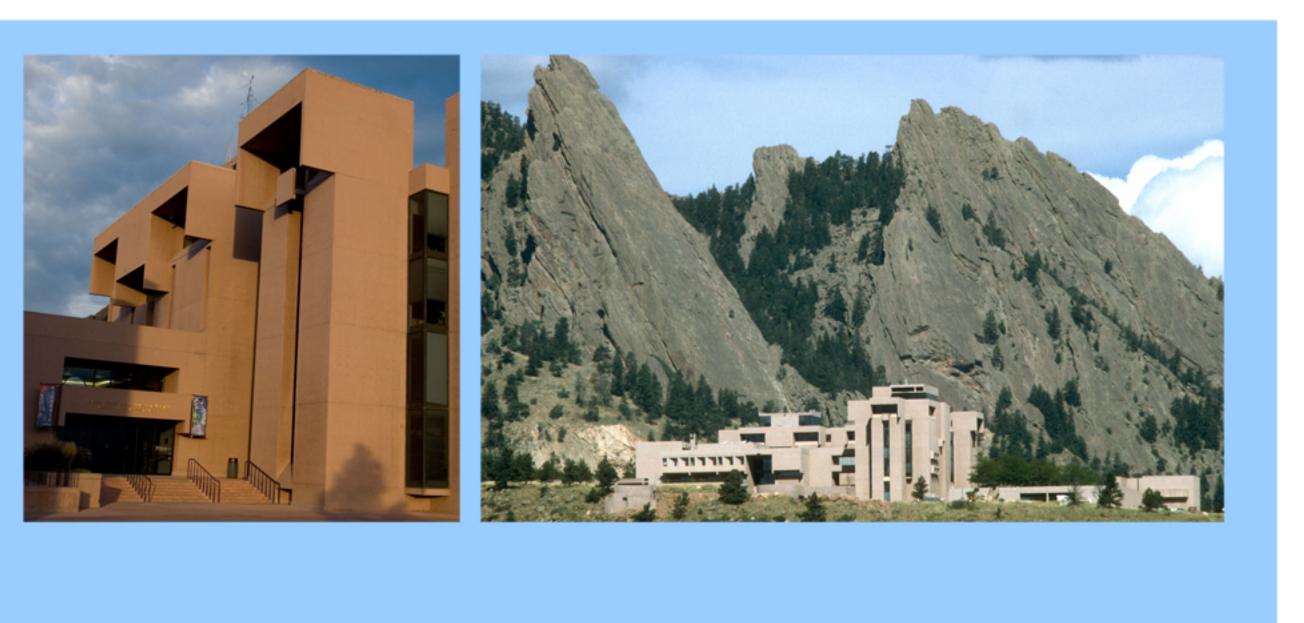
Interactives in use on large touchscreen displays in public visitor exhibits in NCAR's Mesa Lab in Boulder:

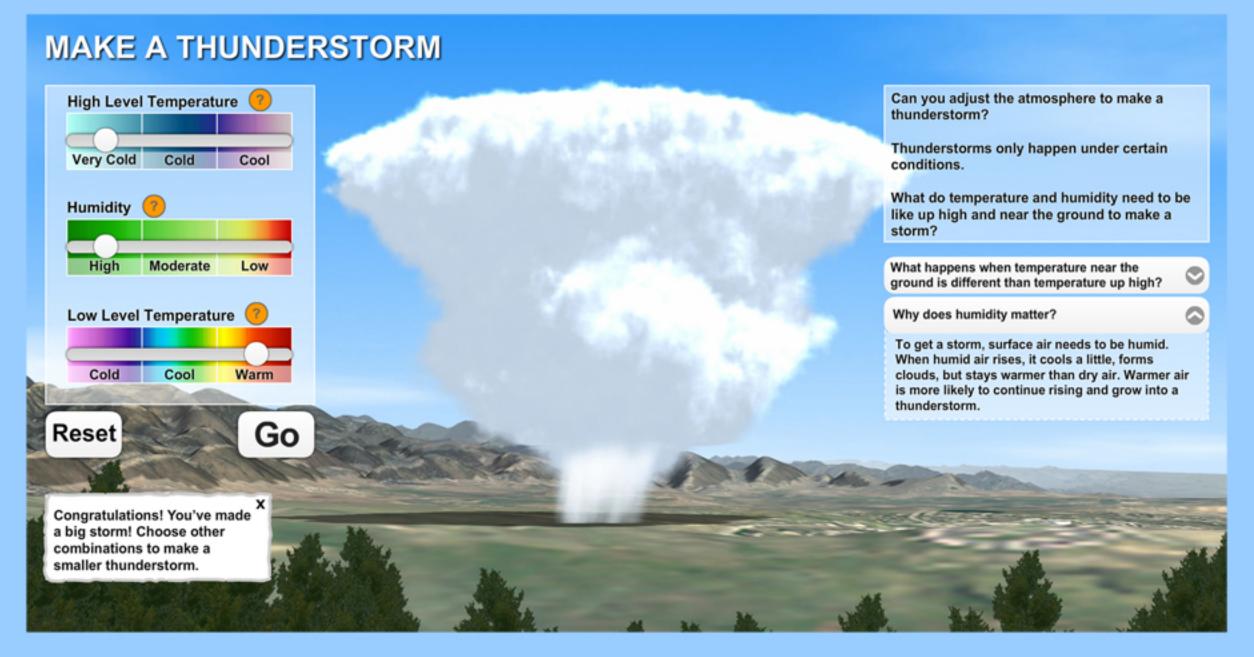
- available for use by others (contact us!)
- coming to our web site soon
- collaboration with the COMET Program

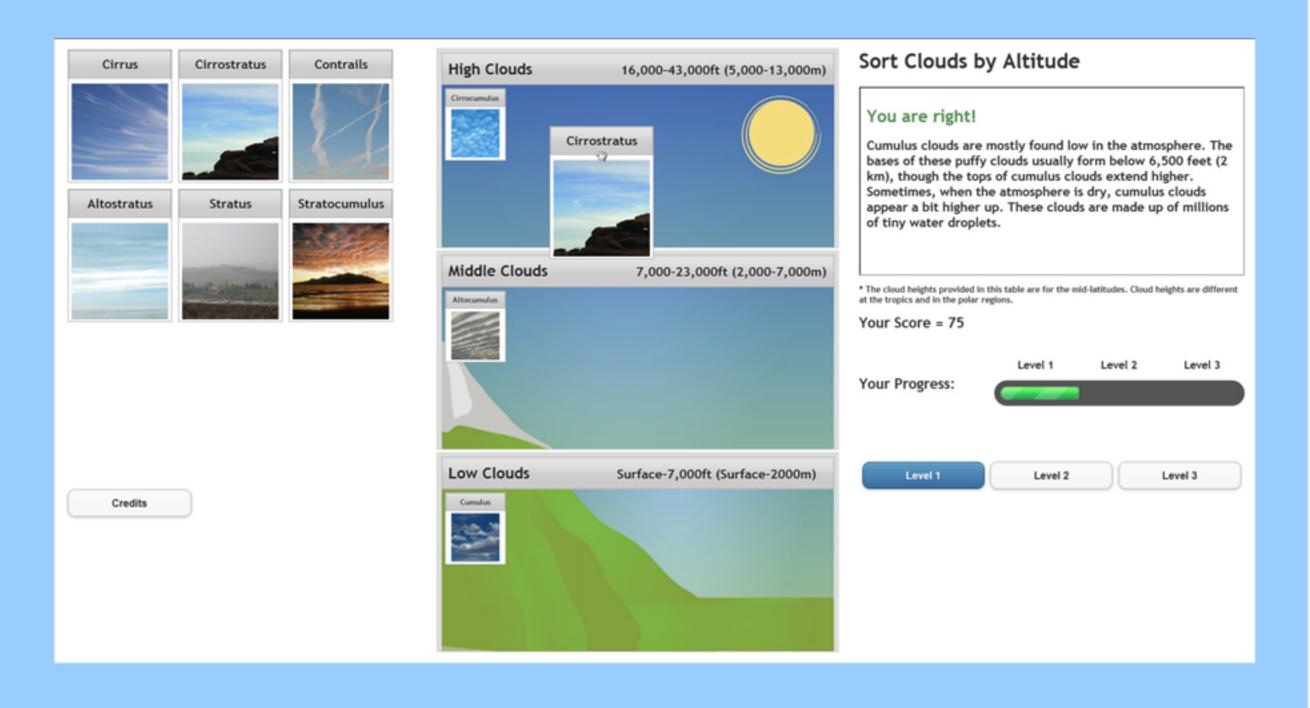


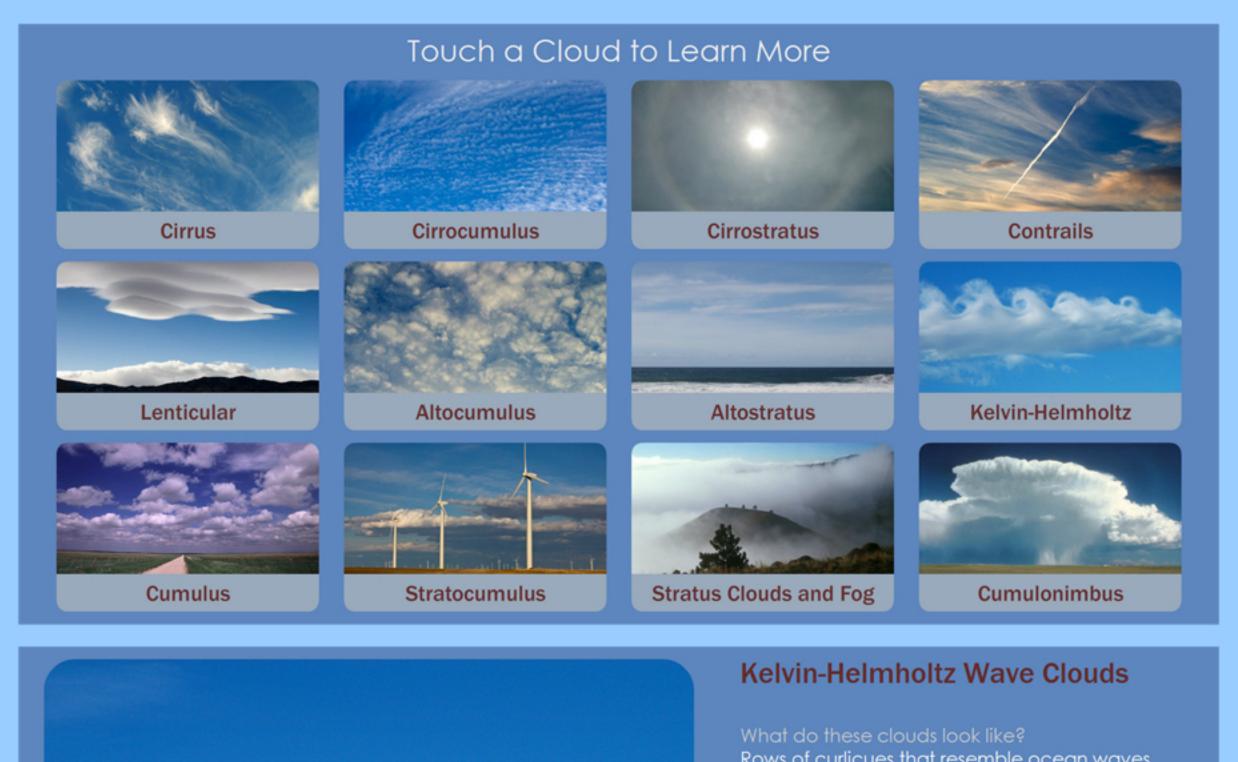














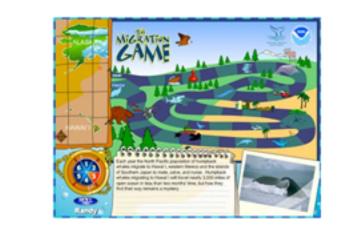
Everything shown here can be viewed online at: spark.ucar.edu/ams-2013-games-simulations-poster (or scan the QR code above!)

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"



Description: a large collection (25 items as of January 2013) of games and puzzles from the U.S. National Oceanic and Atmospheric Administration (NOAA) URL: games.noaa.gov

Creators: NOAA Ocean Service Education

Disaster Dynamics: Hurricane Landfall



Description: role-playing strategy game teaches about interactions between natural hazards and human decisions in a Gulf Coast

Creators: National Center for Atmospheric Research (NCAR)

MANY more available online, including:

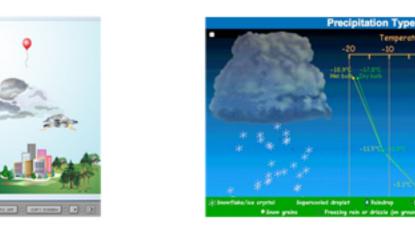


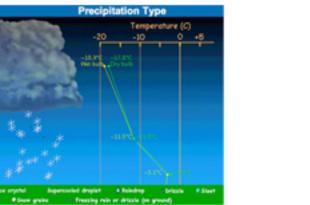
ExploreLearning Gizmos

NASA Climate Kids





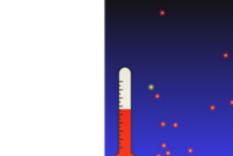




WeatherWise

WikiWatershed









Jason Project: Resilient Planet EPA Recycle City