

# CLIMATE CHANGE ASSIGNMENTS

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## PART ONE: THEMATIC CONSIDERATIONS

**ANALYSIS:** There is no master-key to unlock the mysteries of climate change, and there certainly is no view-finder that provides precise sightings of the future conditions of the planet. However, there has been frenetic data-gathering, statistical tabulating, and modeling related to climate change studies. The implications of this research are equally difficult to tabulate. They result in speculations regarding humanity's role in changing Earth's climate.

*ASSIGNMENT: Activate artistic privilege by choosing one projection of climate change from a credible source and create a work of art that provides your personal interpretation of it.*

*Option one: base your interpretation on human culpability.*

*Option two: base your interpretation on human responsibility.*

**NORMAL:** Stasis exists, but only as an abstract concept or a relative condition. In actuality, all Earthly phenomena flex, flow, and/or fuse. Even the sturdy materials that comprise the Earth's mantle are continually in motion. The term 'rock solid' is misleading. Earthquakes and volcanic eruptions provide dramatic evidence of tectonic plates of rock converging, colliding, and diverging. Mountain-building and ocean trenching are ever-changing occurrences that result from tectonic plates riding on the outermost part of the Earth's interior in response to the Earth's internal heat. This 'rock n' roll' process reveals that Earth has always 'jived'. With regard to climate change data, the policies that are being formulated and the directives that are being issued are determined by this elusive baseline of 'normality'. Some interpret this deviation to be so extreme, it constitutes an emergency that requires radical, bold, and immediate actions.

*ASSIGNMENT: Based on the predictions of a credible source, create a work of art that visualizes 'normal' global temperatures and the anticipated deviations from normal. Utilize the expressive vocabulary of art to convey your subjective response to this situation: Terror? Mild concern? Disbelief? Other?*

**VARIABILITY:** While Earth variability takes many forms, the form dominating recent headlines involves global climate change. But climate change is not a new phenomenon. In the past million years, glaciers have recurred approximately every 100,000 years, with shorter cooling periods in between. The most recent glacier occurred 20,000 years ago. It is the one and only test of humanity's ability to cope with drastic climate change. We survived. Many species didn't.

*ASSIGNMENT: Create a work of art that conveys one tactic that may ensure humanity's survival as a species if dire climate projections are realized.*

**TEMPERATURE:** Melting and freezing, evaporating and condensing offer four ways to monitor the variability of Earth's climate. These processes are made evident by transformations of solids into liquids, liquids into gases, and vice versa. For example, increases of temperature soften butter, melt glass, and make steel molten. Water's responses to temperature account for a multiplicity of states: rain, mist, snow, sleet, slush, hail, ice, vapor, frost, fog, and steam. Artists who cast bronze, paint with encaustics, and solder silver have utilized such phase changes as a means to attain a 'final' material condition. Final conditions, however, do not exist within energetic eco systems. Contemporary eco artists address interconnections between heat and matter thematically, to address climate change.

*ASSIGNMENT: To draw attention to the Earth's fluctuating temperatures, create a work of art that literally melts and freezes or evaporates and condenses.*

**RESTRAINT:** No form of energy production is entirely free of environmental consequences, including renewable energy. For instance, damming rivers and streams for hydropower facilities alters natural stream flows in ways that can endanger aquatic species; wind-turbine generators can make noise and kill birds; biomass generating plants that rely on plantation forestry for fuel can displace natural forest habitat and reduce biological diversity. Among the most significant

environmental effects of energy production and consumption is the emission of greenhouse gases. CO2 is generated whether petroleum, biogas, or branches are combusted. That is why some environmentalists emphasize the need to **reduce demands on energy**. Instead of seeking alternative, they promote restraint.

*ASSIGNMENT: Current systems of production, promotion, marketing, and consumption promote consumption more than efficiency, and indulgence more than restraint. Reducing demand for energy challenges these entrenched conventions. Alter an advertisement that reinforces an economic or cultural convention by reversing its message to promote the benefits of having 'less' (e.g. gain time, save money, etc).*

**NON-MATERIAL ART MEDIUMS:** Non-material art mediums take the form of the attitudes, fears, ideals, and desires. They may actually have a more powerful impact on human environmental impact than massive top loaders and drilling rigs. The behavioral paths that humans traverse are deeply etched by mentalities. Even if they are entrenched, such mental are malleable. They can be treated as artistic mediums and subjected to the same manipulations as physical mediums.

*ASSIGNMENT: create a non-tangible work of art that fosters climate-change responsibility by enacting one of the following concepts:*

- Recycle - revive a strategy dealing with climate change that may have been discarded before it was truly tried.*
- Refurbish - improve a strategy that is not working well.*
- Deconstruct/reconstruct- disassemble the parts of a current strategy and reassemble the pieces to serve a new application.*
- Restore - revive an approach for dealing with weather dangers from an ancient cultural tradition.*

**MENTAL ACTIVISM:** Mental actions enable humans to activate muscles, awaken memories, form intentions, plan strategies, feel emotions, and orchestrate all these components of

consciousness into coherent responses. Such extraordinary powers grant to each human the ability to dominate and destroy, as well as the capacity to cooperate and nurture.

Some brain functions:

- Tabulate
- Seek and store facts
- Establish categories
- Draw comparisons
- Analyze data
- Form subjective opinions
- Form abstractions
- Experience emotions
- Retrieve data.
- Solve problems
- Fantasize
- Prioritize
- Establish moral principles

*ASSIGNMENT: From the partial list of mental functions, select one to utilize as your creative process in creating a work of art that addresses climate change.*

**DIY:** Contemporary society's dependence on coal, oil, gas, and uranium demands massive industrial installations for extraction, combustion, and distribution. They levy heavy tolls on the environment, including global warming. Almost 90 percent of the world's energy is supplied through the combustion of fossil fuels. Burning these fuels releases carbon dioxide into the atmosphere. Carbon dioxide is a principal component of greenhouse gases. Greenhouse gasses warm the planet's temperatures. Thus, energy use must be factored into climate change equations.

*ASSIGNMENT: Select a personal behavior that depends upon fossil fuels. Drying your hair, brushing your teeth, communicating with your friends are some examples. Accomplish that task in a way that does not utilize fossil fuels. Document your behavior change.*

**GLOBAL / LOCAL:** Some environmentalists believe globalization is the solution to climate change because it drives down prices, increases efficiency, lifts nations out of poverty, and contributes to overall global prosperity. Pro-globalization environmentalists assert that prosperous countries can afford to experiment with clean production and waste management strategies. Anti-globalization environmentalists believe that carbon dioxide emitted from shipping and flying goods all over the globe greatly increases overall energy consumption, which accelerates global warming .

Despite the growing trend toward 'buying local', most people survive by purchasing goods produced by multinational corporations and connecting with the global communications and transport network. It is rare for people to survive by depending upon local resources and local conditions.

*ASSIGNMENT: Select something you own that is was produced internationally and sold through the global marketplace. Create a version of this product that performs the same function using only local resources.*

**ALTERNATIVE ENERGY:** Energy is the ability to do work. While our earliest ancestors warmed themselves by sitting in the sun and burning the calories from the foods they ate, they soon began extending and expanding their ability to harvest energy by burning brush, dung, and fuel wood; capturing the power of wind and water; and harnessing animals. Energy generation was a domestic chore for all the millennia prior to the introduction of fossil fuels. That is when energy production became a commercial industry. This upheaval commenced with the shift to natural gas in 1785; coal in the 1880s, petroleum in 1951, and nuclear electric power in 1957.

Alternative energy producing strategies that are currently being explored include:

- Radiant energy (light, radio, solar)
- Thermal energy (heat)
- Motion energy (wind)
- Sound energy (waves)
- Chemical energy (biomass - methanol and ethanol)
- Stored mechanical energy (springs and rubber bands)

- Gravitational energy (hydropower)
- Biological energy (algae, bacteria)

*ASSIGNMENT: Create a kinetic work of art without using fossil fuels, motors, engines, or electricity, to draw attention to alternative sources of energy.*

**CARBON DIOXIDE:** While carbon dioxide is dominating headlines regarding air quality, it is such a small percent of the air we breathe it doesn't even appear on general accountings of the ingredients of air. Air consists of 78% nitrogen, 21% oxygen, 1% argon. Furthermore, carbon dioxide is one of several greenhouse gases associated with rising global temperatures. Greenhouse gases also include methane, chlorofluorocarbons, nitrous oxide, and ozone. Yet carbon dioxide is usually the compound blamed for trapping heat energy and causing an increase in floods, droughts, species extinctions, tropical diseases, and violent storms.

*ASSIGNMENT: Create a work of art that serves as a metaphor or a formal representation of the tremendous influence wielded by a minute entity.*

**RECYLCING:** In cultures around the globe, the phoenix, the lion, the serpent, and the tree are common symbols of rebirth after death, a poignant example of material and energetic recycling.

*ASSIGNMENT: Study a work of art from any culture and any historic period in which such a symbol appears. Reinterpret this work of art from a contemporary, ecological perspective.*

**CURBING GREENHOUSE BUILD-UP:** Common strategies to curb the generation of greenhouse gases include the following:

- remove the government subsidies for fossil fuels
- tax carbon emissions
- provide tax incentives for fuel conservation
- improve fuel efficiency

- fix leaking methane pipelines
- subsidize technologies that lower greenhouse gas emissions
- promote practices that lower greenhouse gas emissions
- other

ASSIGNMENT: Select one of the preceding policies designed to mitigate global warming. Create a work of art that utilizes one of the following persuasive strategies to promote that policy : fear, humor, pedagogy, satire, plea, and protest

## PART TWO: ART AS A MATERIAL PRACTICE

The potential for artists to impact the attitudes and behaviors of their viewers is not confined to observation or interaction with a completed work of art. The activities that transpire during the creative process also factor into the work's meaning and its impact. That aspect of art's contribution to culture has been conveyed by the degree of spontaneity, or the manner of constructing the illusion of space, or the location of the easel (a meadow or a studio). The importance of process was particularly significant when, in the mid 20<sup>th</sup> century, artists adopted the methods of mechanized, industrial production. Since then, the succession of ever more sophisticated technologies has been propelling the evolution of art and its intrinsic meanings.

Currently, the significance of artists' interactions with their mediums has been rising in tandem with today's escalating concerns regarding the faltering state of the physical environment. Since art encapsulates world views, every work of art either confirms a status quo or formulates a new set of cultural principles. Thus, the manner in which artists derive and utilize their mediums serves as a test-case for all of humanity's interactions with the materials they garner, process, use, and discard. Artists are empowered to select a creative process that models ethical material interactions and introduces those that are innovative. In essence, the physicality of the art work embodies pragmatic strategies and sustainable principles.

Such considerations are pertinent to the entire sequence of the creative act:

- Access: acquiring, processing, and transporting the raw materials associated with that medium, and then acquiring, processing, and transporting the medium itself.

- Manipulation: altering that medium as the work of art is being produced.

- Exhibition: presenting, storing, and maintaining the artwork created out of this medium.

The materials involved in each of these aspects of creating are can be subject to interrogation:

Is it a renewable resource?

Is it a recycled resource?

Are the leftovers hazardous?

Are the waste products being cycled into new use?

What distance did it travel to get to you?

What resources are consumed to store it?

How much packaging is used to transport and display it?

What are the effects of cleaning up after using this medium?

What fuel and how much fuel does this medium consume when it is being used?

What fuel and how much fuel do the tools consume when it is being manipulated?

Many current art practices contribute to environmental deficit spending. The challenge confronting today's students and their teachers is to figure out how to make art sustainable. Even if environmentalism is not the focus, environmental impact can be a guiding principle of studio practice. There are three goals:

- Limit harm
- Repair damage
- Enhance the health and vitality of the environment

Artists/ Humans corrupt the environment:

- Locally by littering, using herbicides, raising pets, leaking oil
- Regionally by clearing forests, developing land, harvesting fish and game, plowing, draining wetlands

- Globally through CO2 emissions, acid rain, climate change, sea temperature change

## OUTFITTING AN ECO-ART STUDIO

Tool-related studio requirements include:

- Equipment (easels, cameras...)
- Protections (gloves, goggles...)
- Connectors (rope, glue...)
- Furniture (chairs, storage...)
- Facilities (lights, heat...)
- Cleaners (solvents, rags...)

All of these studio decisions carry ecological significance. The following list enumerates eco-art strategies for satisfying these studio demands:

- Utilize non-manufactured materials like fire, water, plants, stone, wood, wind, and hands....
- Craft new items made out of non-manufactured materials.
- Repair broken manufactured items.
- Make use of discarded manufactured items in their broken condition for a new purpose.
- Promote communal ownership.
- Share access.
- Purchase manufactured items that are produced sustainably.

*ASSIGNMENT: Create a work of art in which the medium, tools, equipment, protections, connectors, furniture, facilities, and/or cleaners all minimize art's footprint. Tell the story of its creation.*

*ASSIGNMENT: Conduct a study of one item that appears on the "Required Materials" list for an art class taught at your school.*

What are the human impacts of this item?

- Producers: compensation, health, dignity, pleasure, effect on local culture, etc.
- Purchasers: affordability, convenience, satisfaction, maintenance regime, etc.

What is its non-human impact?

How were they harvested/mined?

What are the byproducts of harvesting/mining?

What are the byproducts of its manufacture?

What are the byproducts of its use?

*ASSIGNMENT: Create a work of art that shares this information with the instructor and students of that class.*

All art mediums, like all materials on the globe, carry environmental consequences. Artists who depend upon mediums that appear in art supply catalogues share the responsibility of their environmental impact with the manufacturers. Some manufacturing protocols are promoted as 'sustainable' when they merely decrease environmental blights associated with other sources of that medium. They do not eliminate them.

*ASSIGNMENT: Choose a medium that generates no harmful byproducts from its production, does not consume scarce resources, does not promote exploitative labor practices, and does not disrupt local ecosystem services. Create a work of art with this medium. Three goals of conducting an extreme green art practice. These values have been applied to the conventional components of art-making: tools, equipment, mediums:*

Do-no-harm is fine for artists who are Moderate Green. Make-it-better is the mandate for those who are Extreme Green.

*ASSIGNMENT: Utilize a medium to create a work that performs one of the following remedial strategies :*

- improves air, soil, or and water quality*
- enhances the diversity and vigor of the biological communities occupying the watershed.*

ACQUISITION strategies greatly affect the footprint of a work of art. There are many alternatives to purchasing a manufactured item. They include:

- Scavenge
- Barter

- Trade
- Recycle
- Refurbish
- Borrow
- Produce
- Cultivate

*ASSIGNMENT: Create a work of art in which the materials were derived using at least three of the above strategies. Your theme might be to reveal how these mediums were acquired.*

Producing your own mediums can be accomplished by:

- Cultivation: grow crystals, garden, hunt, propagate cells through biotechnologies
- Manufacture: forge metals, grind pigments, tan leather, weave canvas, make paper
- Remediation: harvest litter, remove smudge, recycle consumer waste, etc.

*ASSIGNMENT: Create a work of art that combines all three production strategies.*

The contemporary market place abounds with mediums that are concocted in chemistry labs with the intention of defying the effects of 'natural' environmental variability. Temperature and humidity, for example, can generate mold, rusting, cracking, etc. While the practice of applying 'archival' security against these incursions is a standard art operating procedure, the items on this list of 'dangers' are all essential to healthy ecosystem functioning.

*ASSIGNMENT: Create a work of art that is intentionally responsive to environmental influences of temperature and moisture. Your medium may be biodegradable.*

*ASSIGNMENT: Select a discarded object that is made of a non-biodegradable material such as plastic or stainless steel. Use it to create a work of art that avoids the need for recycling by reusing it in an innovative manner. For example, create twine out of plastic shopping bags by cutting them in strips and twisting them.*

Manufactured mediums favored by eco-artists usually consist of:

- Materials with recycled ingredients
- Discards
- Discarded objects that are dismantled to retrieve useful mediums
- Overruns
- Studio wastes
- Unused stockpiles

*ASSIGNMENT: Select several discarded manufactured objects that consist of different materials. Dismantle them to separate the materials.*

*Utilize this material inventory to create one work of art. For example, a shoe might provide a rubber sole, cloth shoe lace, plastic shoe lace tip, metal rivets, and vinyl uppers. Leave no waste.*

*ASSIGNMENT: The studio art curricula in many schools are organized around medium. Imagine that you have been hired to revise the arts studios at your institution so that only **local mediums** are used in the classroom. Present the mediums you would propose to minimize the art department's environmental footprint.*

#### EVALUATING ECOMATERIALITY

- distance between the user and the source (the closer the source, the less the transport energy consumed)
- effect upon the ecosystems of both the source and the new location
- energy required to create the finished material and the energy required to use the material
- percent of recycled material utilized to create the material
- amount of storage demanded
- amount of packaging required
- production of waste during the manufacture of the material and during the use of the material
- usefulness of these byproducts

- productions of hazardous substances during the manufacture of the material and during the use of the material
- recyclability of the object made from this material
  - cost and profitability
  - user-friendly
  - durability

“Manufactured”

- Recycled materials
  - Discarded materials
  - Overruns in which unused items are discarded
  - Unused items that can be dismantled and sorted
- 
- other . For example, you might present freshwater exposed to contamination by fertilizer, pesticides, herbicides, industrial waste, untreated sewage, and medicines injected and expelled by humans
  - Industrial activity deposits dust and smog particles into the atmosphere, blocking sunlight, cooling the globe, and causing a catastrophic new ice age
  - Burning fossil fuels emits greenhouse gases that trap the heat, warm the globe, melt the ice caps, flood the coasts, and cause pandemics, .

Respond to either of these statements as true, false, or other. What can artists do to address global warming? Some assert preposterous propositions to attract audience attention. Some assert facts to appeal to audience reason. Using one of these opposing approaches, create a work of art about global warming.