



The Pacific Islands Climate Education Partnership (PCEP)

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Photo by Susan Burger

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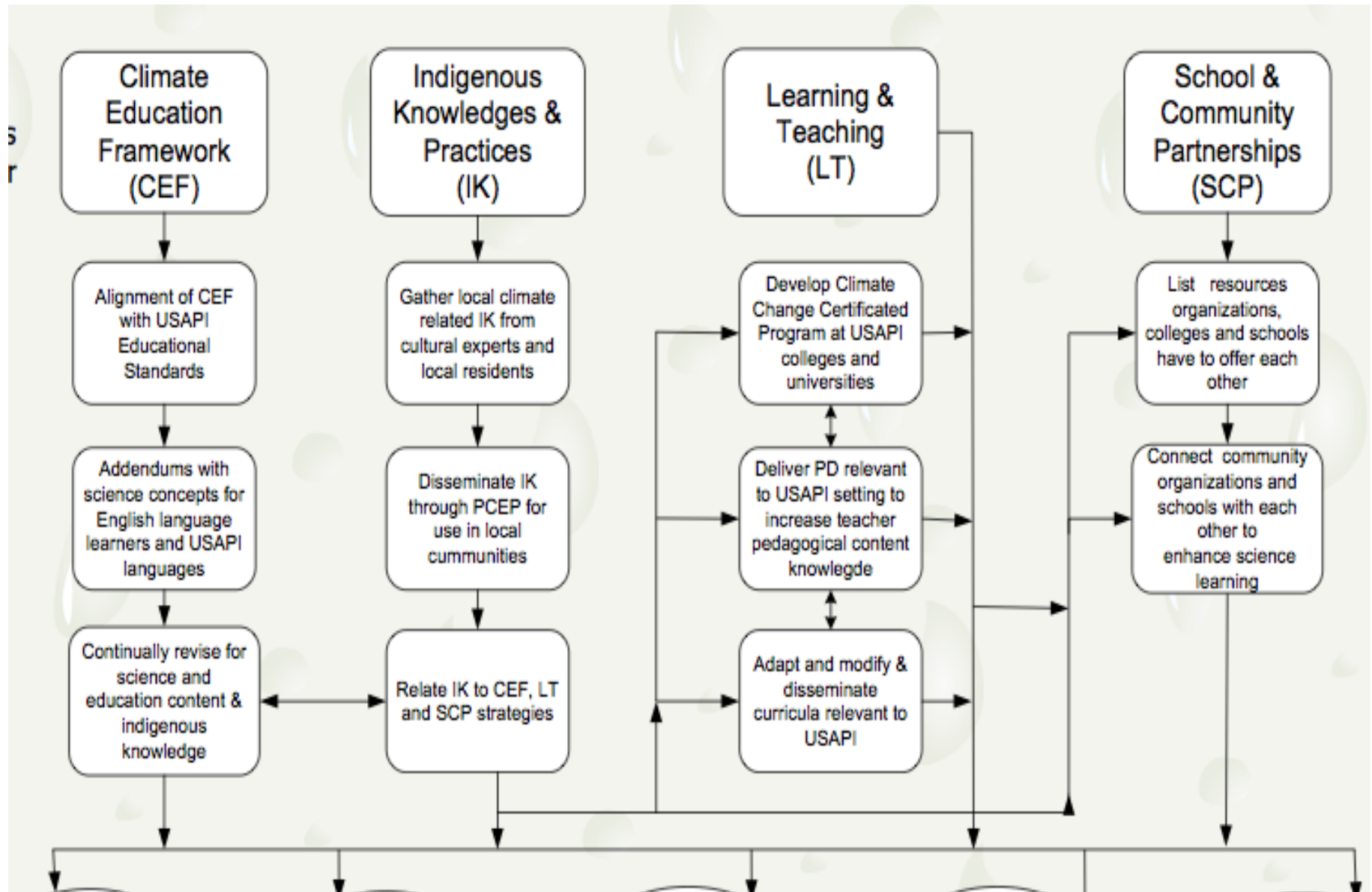
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The PCEP serves the U.S. Affiliated Pacific Islands (USAPI). The PCEP vision is to educate the region's students and citizens in ways that exemplify modern science and indigenous environmental knowledge, address the urgency of climate change impacts, and honor indigenous cultures.

U.S. Affiliated Pacific Islands (USAPI)



PCEP Theory of Action



PCEP Climate Education Framework

- **Draws from *Climate Literacy Principles and Framework for K-12 Science Education***
- **Contextualized for Pacific Island climate, impacts, cultures, education realities**
- **K-2, 3-5, 6-8, and 9-12 Grade Bands**
- **Updated annually re IK, NGSS, new info**
- **Guides PCEP Teaching/Learning and Community School Partnership strands**

Organization of PCEP CEF

- Earth's Matter
- The Biosphere
- Energy and the Earth System
- Earth System Science
- Weather and Climate
- Climate Change Impacts on Human Societies
- Engineering Climate Mitigation and Adaptation
- Scientific and Engineering Practices (grade span descriptions from NGSS draft)
- Crosscutting Concepts (emphasis on systems)

Earth's Matter (6-8)

What key science concepts about matter help us understand climate and its impacts in the Pacific Islands and globally?

Molecular Nature of Matter

Four concept statements

Earth's Biogeochemical Cycles

Three concept statements

Properties of Matter that Directly Relate to Understanding Climate

Four concept statements (two re density; one re properties of substances; one re acid-base balance)

6-8Matter.C Properties of Matter that Directly Relate to Understanding Climate

6-8Matter.C.1a Dissolving salt in water increases its density. A less dense fluid (liquid or gas) floats on top of a more dense fluid. Due to differences in density, freshwater floats on top of salt water.

6-8Matter.C.1b Heating a volume of gas or liquid causes it to expand and become less dense. Warmer air is less dense than colder air and floats above it. Warmer water is less dense than colder water and floats on top of it.

6-8Matter.C.2a Every substance has unique properties. These properties arise from the kinds of atoms that make up the substance and how those atoms are connected to each other.

6-8Matter.C.2b The pH (acid-base balance) is a property of liquid solutions that is particularly important for life. Dissolving of carbon dioxide in water causes the water to become more acidic (lower pH).

The Biosphere (6-8)

What key science concepts about life help us understand climate and its impacts in the Pacific Islands and globally?

Earth's Organisms

Seven concept statements

Pacific Island Ecosystems

Four concept statements

Biodiversity

Three concept statements

Energy and the Earth System (6-8)

What key science concepts about energy help us understand climate and its impacts in the Pacific Islands and globally?

Nature of Energy

Six concept statements

6-8Energy.A.1a Every system has a measurable property that is called its energy. Energy is a number that describes how much change can happen in a system.

Flows of Energy Into, Within and Out of the Earth System

Four concept statements

6-8Energy.B.4 The functioning of planet Earth relies on a constant input of energy from the Sun. The absorbed solar energy circulates within the Earth system and eventually leaves it as heat radiating to outer space. From a systems point of view, Earth is an open system with respect to energy.

Earth System Science (6-8)

How does Earth System Science help us understand climate and its impacts in the Pacific Islands and globally?

Systems

Four concept statements

Earth System Science

Six concept statements

Weather and Climate(6-8)

What major science concepts help us understand weather and climate in the Pacific Islands and globally?

Local Weather and Regional Climate

Four concept statements

Regional and Global Climate Change

Six concept statements

Climate Change Impacts on Human Societies (6-8)

How will climate change impact human societies in the Pacific Islands?

Regional Perspectives on Climate Change Impacts

Seven concept statements

6-8Impacts.A.1b Underground sources of freshwater on Pacific islands float on top of seawater. These freshwater lenses can be shrunken and contaminated by salt as sea level rises or the ocean surges over the land.

Engineering Climate Adaptation and Mitigation (6-8)

What can Pacific Island nations and communities do to reduce the damage caused by climate change?

Climate Adaptation

Two concept statements

Engineering Climate Adaptations

Six concept statements

6-8Adapt.B.2b There are many types of models, ranging from simple physical models to computer models. They can be used to investigate how a design might work, communicate the design to others, and compare different designs. (NRC 5).

Exploring Further

- The CEF and many other PCEP Resources can be accessed from our web-based information platform:

<http://pcep.dsp.wested.org>

http://pcep.dsp.wested.org/content_items/1524587

- Happy to discuss and collaborate with others about organizing K-12 climate education, professional development, climate adaptation, etc.

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