

Climate Change Here and Now: Communicating and Teaching About Climate Change

THE PROCESS OF SCIENCE

Safiya Samman, Ph.D

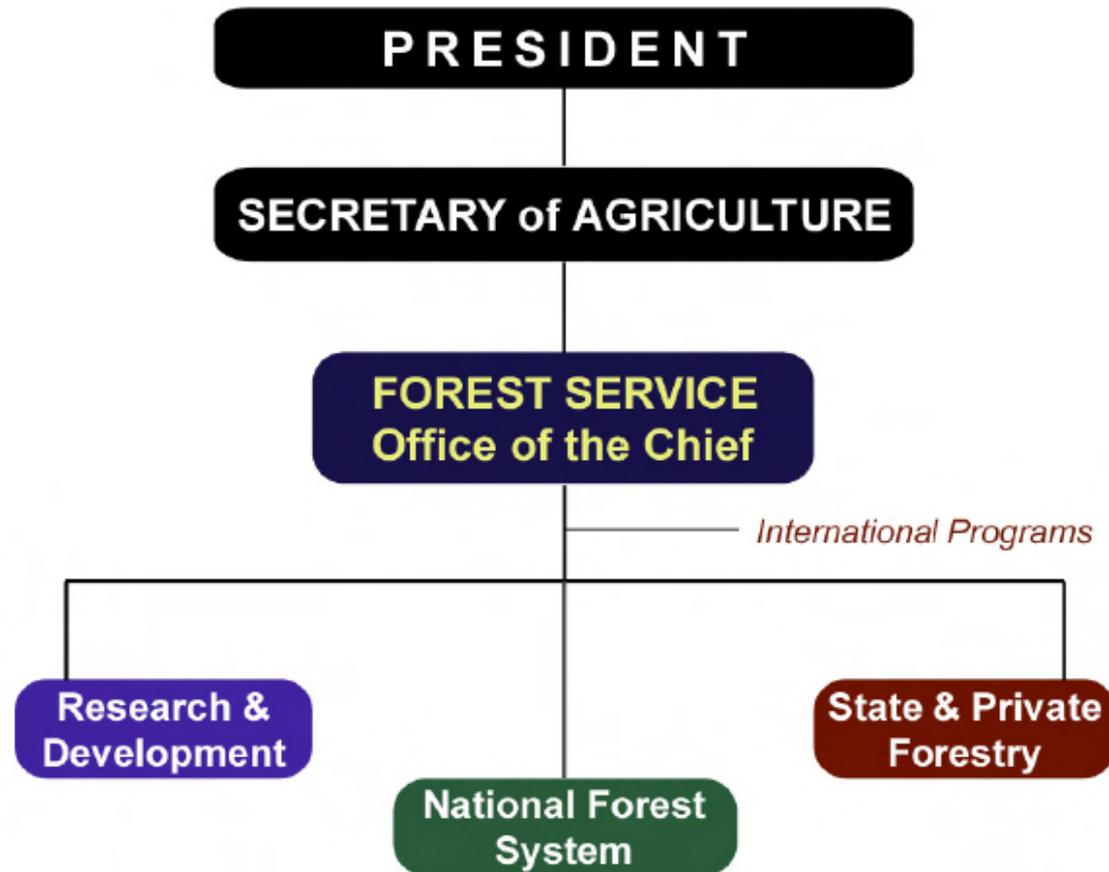
U.S. Forest Service

Director, Conservation Education Program



The Forest Service

MAIN BRANCHES OF THE FOREST SERVICE



Climate Change Here and Now

The image shows the IPCC website homepage. At the top right, the IPCC logo is displayed with the text "INTERGOVERNMENTAL PANEL ON climate change" and logos for WMO and UNEP. Below the logo are dropdown menus for "Languages" and "IPCC web pages", and a search box. On the left is a vertical navigation menu with items: Home, Organization, Working Groups / Task Force, Activities, Calendar of Meetings, Meeting Documentation, News and Outreach, Publications and Data, Presentations and Speeches, IPCC Scholarship Programme, Links, and Contact. The main content area features a large image of terraced rice fields in Bali, Indonesia, with a text box overlay: "Islet in the terraced rice fields of Bali, Indonesia www.yannarthusbertrand.org / www.goodplanet.org". Below the image is the text "IPCC Fifth Assessment Report (AR5) now underway". To the right of the image is a red box titled "Follow up to P-32 Decisions" containing text about the IPCC's 32nd Session and a list of four recommendations: 1) Procedures; 2) Governance and Management; 3) Conflict of Interest Policy; and 4) Communications Strategy. Below this is another text block about discussions in Geneva in February 2011. At the bottom, there are two columns: "AR5 Outline and Reference Material" and "AR5 Lead Author Meetings". The Nobel Prize medal is shown in the bottom left corner with the text "IPCC honoured with the 2007 Nobel Peace Prize".

ipcc
INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP
Languages IPCC web pages Search

Home
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Islet in the terraced rice fields of Bali, Indonesia
www.yannarthusbertrand.org /
www.goodplanet.org

IPCC Fifth Assessment Report (AR5) now underway

Follow up to P-32 Decisions

In October 2010, the IPCC at its 32nd Session welcomed the recommendations of an independent review carried out by the InterAcademy Council (IAC). IPCC member Governments agreed to work in four task groups to take forward the IAC's recommendations on

- 1) Procedures;
- 2) Governance and Management;
- 3) Conflict of Interest Policy; and
- 4) Communications Strategy.

Following discussions in Geneva, February 2011, the Task Groups are consulting with the Members of the IPCC for their initial comments. Revised proposals by the task groups will be submitted for formal consideration by the Panel at its 33rd Session in Abu Dhabi on 10-13 May 2011. These documents will be available four weeks before the Session. You can read more about the remit of the four task groups in [this document](#). Documentation for the May Session Plenary will be posted on this website. **New**

IPCC Fifth Assessment Report (AR5)

AR5 Outline and Reference Material

Key documents approved at the 31st Session of the IPCC, are provided in one **compiled AR5 reference document** (PDF).

AR5 Authors

On 23 June 2010, the IPCC announced that **831**

AR5 Lead Author Meetings

The first AR5 Lead Author meetings are as follows for each Working Group (WG):

- **WG I** First Lead Author meeting, November 8-11 2010, Kunming (China)
- **WG II** First Lead Author meeting, January 11-14 2011, Tsukuba (Japan)

© The Nobel Foundation

IPCC honoured with the 2007 Nobel Peace Prize

Process of Science

Scientific Method (1 serving)

1. Ask a question.
2. Formulate a hypothesis.
3. Perform experiment.
4. Collect data.
5. Draw conclusions.

Bake until thoroughly cooked.

Garnish with additional observ

Too simple!

Science checklist:

How scientific is it?

- Focuses on the natural world
- Aims to explain the natural world
- Uses testable ideas
- Relies on evidence
- Involves the scientific community
- Leads to ongoing research
- Benefits from scientific behavior

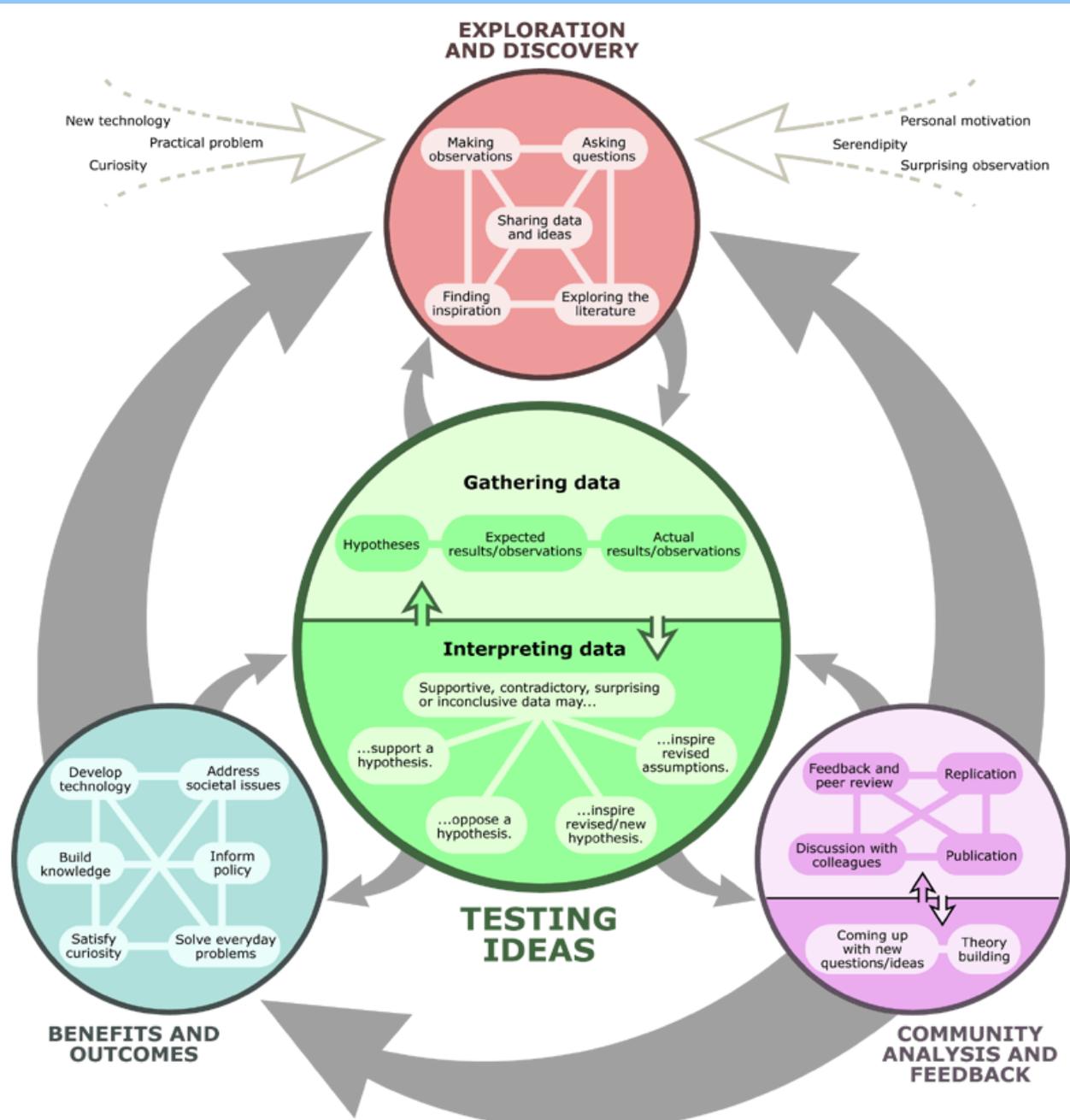


Process of Science

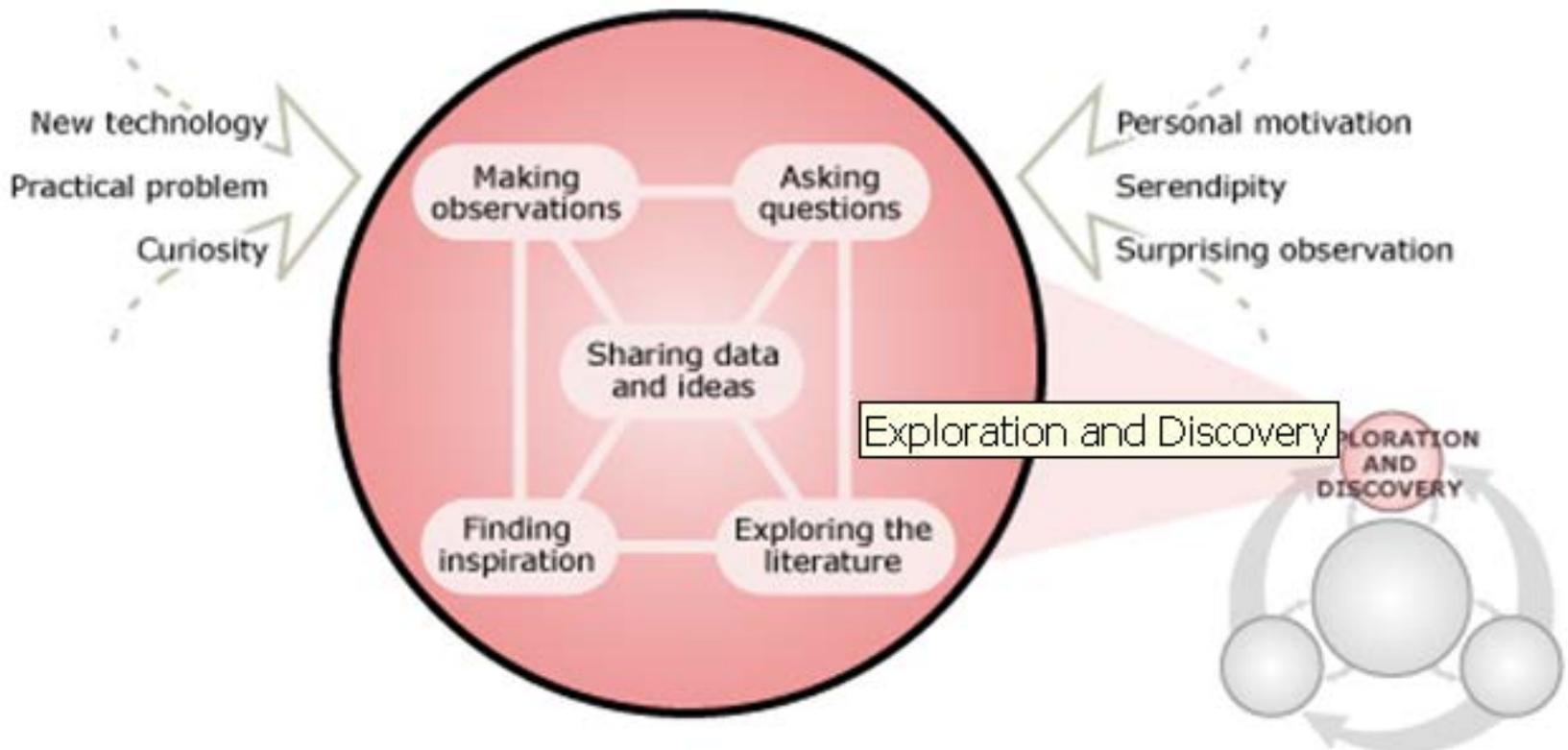
What is Science?

- 1. Science is both a body of knowledge and a process**
- 2. Science is exciting**
- 3. Science is useful**
- 4. Science is ongoing**
- 5. Science is a global human endeavor**

Process of Science



Process of Science – Exploration and Discovery



Expected results/observations

=

Actual results/observations



Lends support

Expected results/observations

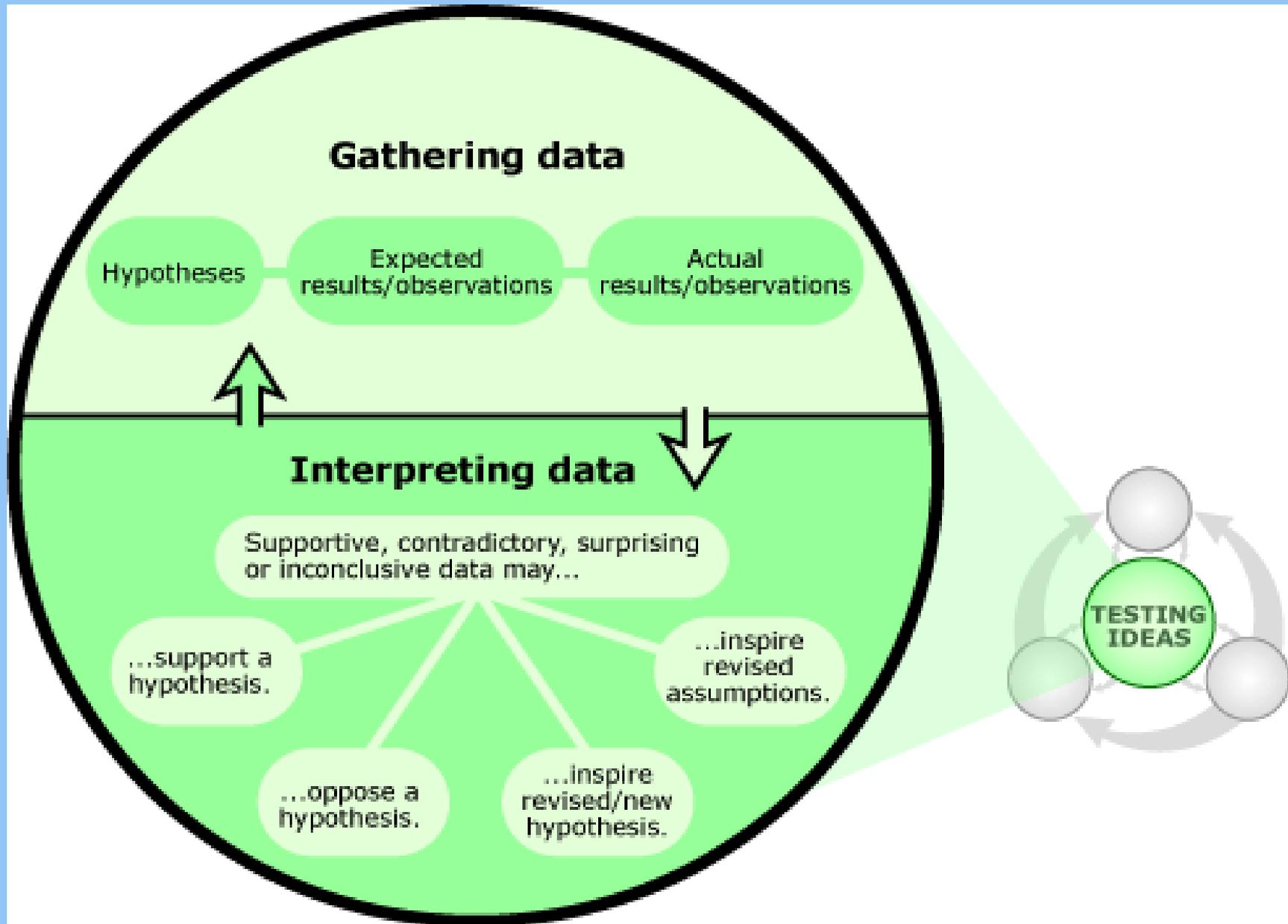
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Actual results/observations

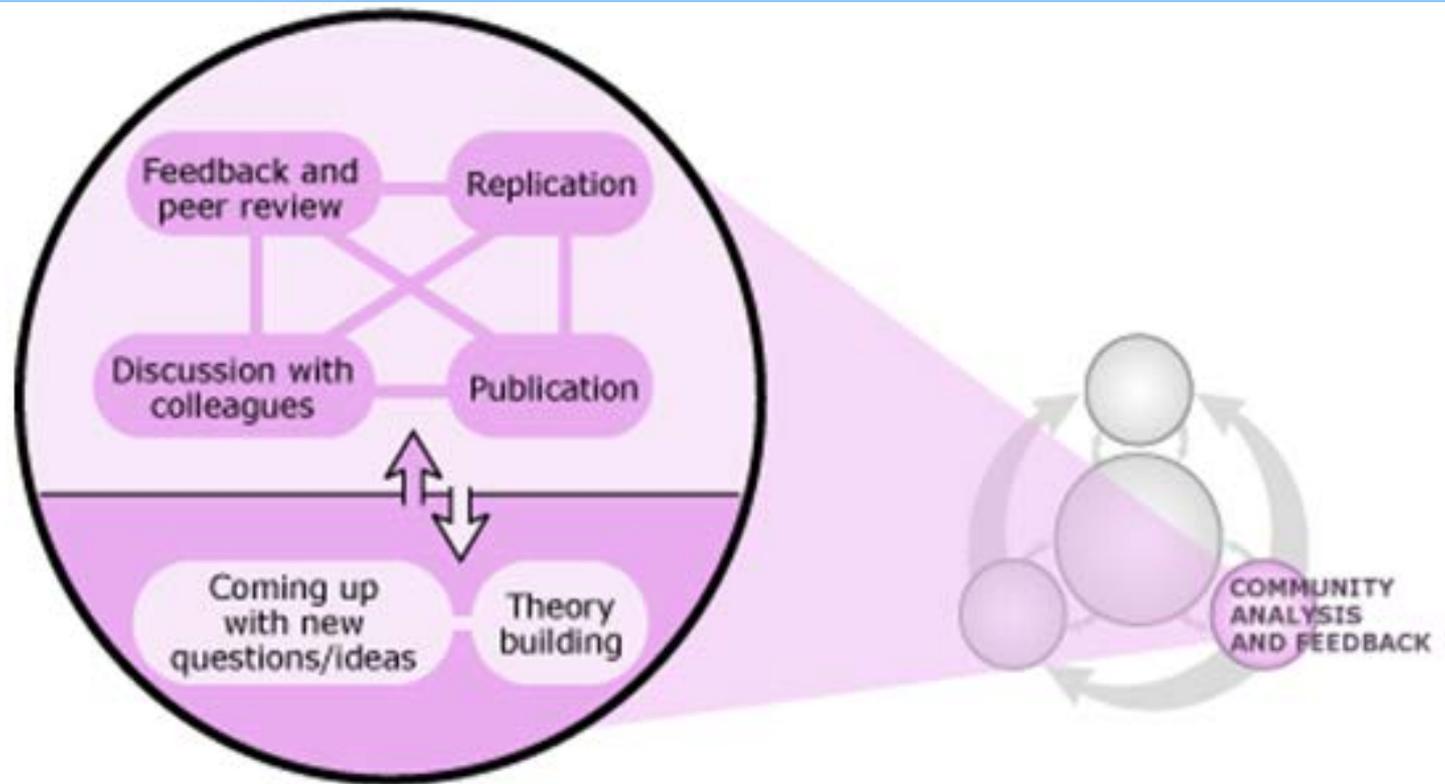


Helps refute

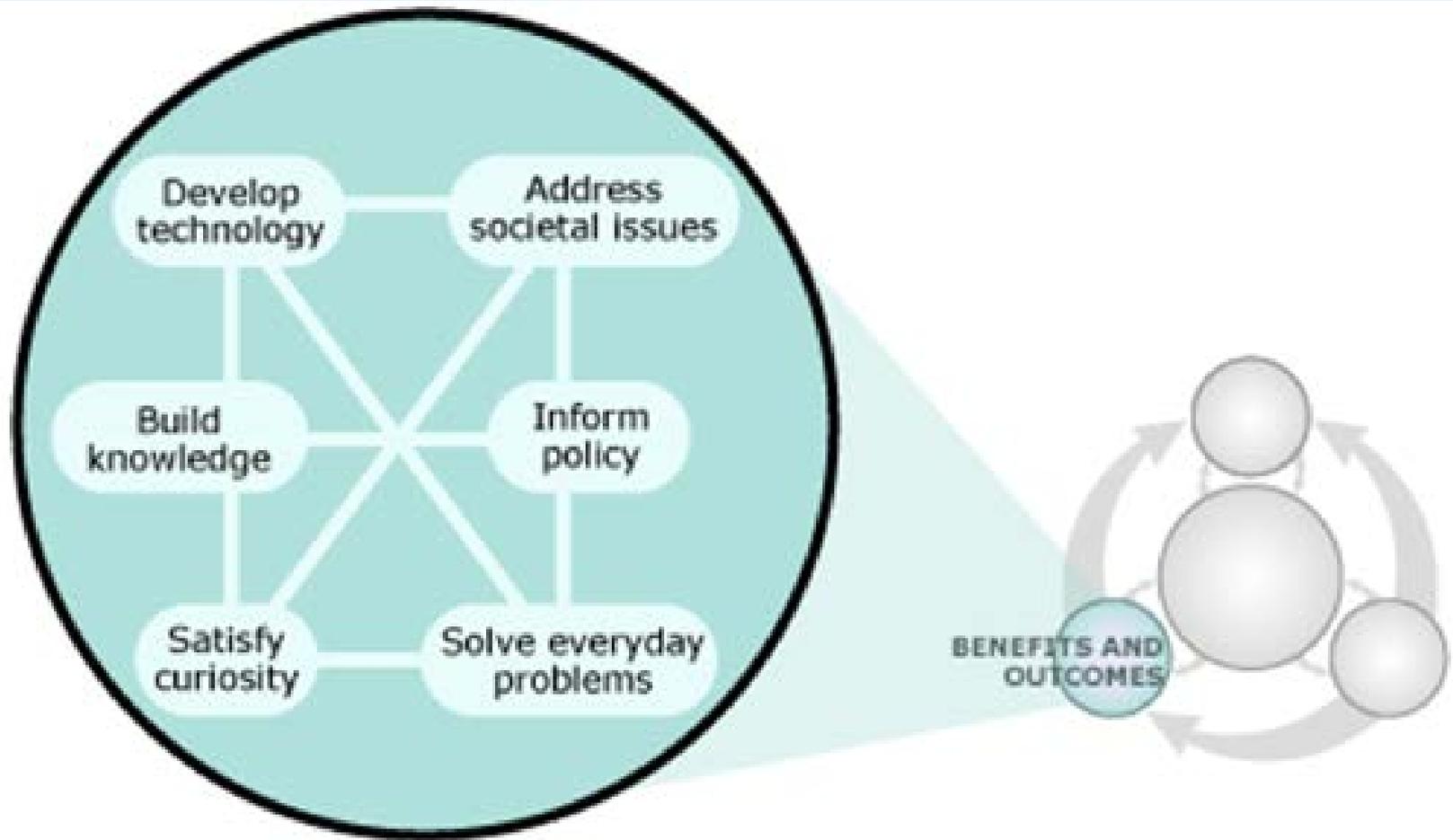
Process of Science—Data Gathering and Interpretation



Process of Science – Analysis and Review



Process of Science - Benefits and Outcomes





Process of Science

How do we evaluate scientific knowledge?

Science checklist:

How scientific is it?

- Focuses on the natural world
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- Involves the scientific community
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Media Literacy

How to critically evaluate evidence and claims presented in the media?



Examining Sources of Evidence

- ◆ **Where does the information come from?**
- ◆ **Are the views of the scientific community accurately portrayed?**
- ◆ **Does the information come from an unbiased source?**
- ◆ **Is the scientific community's confidence in the ideas accurately portrayed?**
- ◆ **How strong is the evidence?**

Selected Climate Change Science Resources



Reports from PEW Center on Global Climate Change National Academies of Science

The image shows a screenshot of the PEW Center on Global Climate Change website and a book cover. The website header includes the PEW CENTER logo and the text "Global CLIMATE CHANGE Working Together ...Because Climate Change is Serious Business". Navigation links include "About", "News", "Order Publications", and "Newsletter". The main navigation bar lists "Policy", "Technology", "Science & Impacts", and "Markets &". The page content is under "Home » Science & Impacts » The Basics". A sidebar menu lists "About Science & Impacts", "The Basics", "FAQs", "Facts & Figures", "Kids Corner", "Climate Change 101", and "Glossary". Below the sidebar is the "Science Publications Library" with two entries: "Degrees of Risk: Defining a Risk Management Framework for Climate Security February 2011" and "Climate Change 101: Overview January 2011". The main content area features a "KIDS CORNER" section with a "Welcome Kids!" message and a photo of penguins on an ice floe. Below this is a "Key Questions" section with four numbered questions. The book cover on the right is titled "UNDERSTANDING AND RESPONDING TO CLIMATE CHANGE: Highlights of National Academies Reports 2008 EDITION". The cover art features a collage of images: a sunset over a field, sand dunes, a stormy sea, and a lightning bolt. The publisher information at the bottom right of the cover lists the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council, along with "THE NATIONAL ACADEMIES Advisors to the Nation on Science, Engineering, and Medicine".

PEW CENTER
Global CLIMATE CHANGE Working Together ...Because Climate Change is Serious Business

About | News | Order Publications | Newsletter

Policy | Technology | Science & Impacts | Markets &

Home » Science & Impacts » The Basics

About Science & Impacts

► The Basics

► FAQs

► Facts & Figures

► Kids Corner

► Climate Change 101

► Glossary

IPCC Summaries

National Security

Adaptation

Events

Science Publications Library

» Degrees of Risk: Defining a Risk Management Framework for Climate Security February 2011

» Climate Change 101: Overview January 2011

KIDS CORNER

Welcome Kids!

Key Questions

1. Do scientists agree about global warming?
2. What is causing global warming?
3. What is the difference between global warming and climate change?
4. What will happen if global warming continues?

UNDERSTANDING AND RESPONDING TO
CLIMATE CHANGE
Highlights of
National Academies Reports
2008 EDITION

National Academy of Sciences
National Academy of Engineering
Institute of Medicine
National Research Council

THE NATIONAL ACADEMIES
Advisors to the Nation on Science, Engineering, and Medicine

<http://www.pewclimate.org/global-warming-basics/kidspage.cfm>
<http://dels-old.nas.edu/climatechange/>



Home

About Us

What We Do

In the Agencies

News

Publications

Resources

Regional Climate Information

Sectoral Climate Information

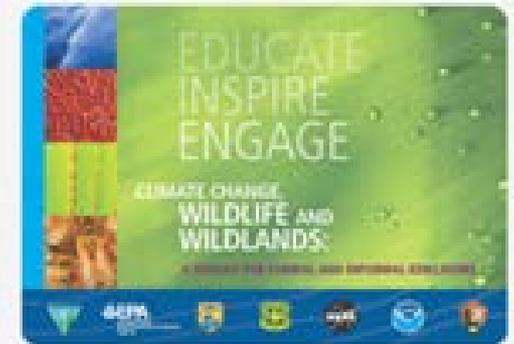


Alaska | Islands | Coasts | Northwest | Southwest | Great Plains | Midwest | Northeast | Southeast



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CLIMATE CHANGE RESOURCE CENTER

CCRC Climate Basics Topics Tools Video Lectures Current Projects Library SHARE

Information and Tools for Land Managers

Wildland Fire and Climate Change >>Read More

Browse descriptions of some of the current Forest Service research projects that study fire and climate change, recommended websites, and fire-related tools for resource managers. (FLICKR / Scott Robinson)

- Wildland Fire and Climate Change
- Adapting in National Forests
- Water, Climate Change, and Forests
- Olympic Peninsula Salmon

Start Here for a climate change primer

Climate Change and...

- Atmospheric Chemistry
- Biodiversity
- Carbon Management
- Disturbances
- Landscape Perspectives
- Urban Environments
- Water & Aquatic Ecosystems

Recent Additions:

Natural Inquirer takes on climate change research

U.S. Forest Service scientists are putting the wonders of climate change into the hands of middle school students through the latest

<http://www.fs.fed.us/ccrc/>



Explore: [ClimateWatch Magazine](#)

[Data & Services](#)

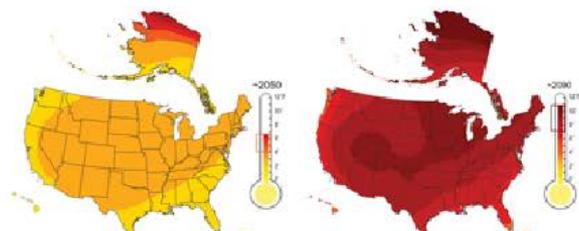
[Understanding Climate](#)

[Education](#)

Featured

Higher Emissions Scenario⁹¹ Projected Temperature Change (°F) From 1961-1979 Baseline

Mid-Century (2040-2059 average) End-of-Century (2080-2099 average)



US Global Change Image Gallery

The US Global Change Research Program provides access to over 850 image files used in its reports. Data visualizations, graphs, and photographs on the site may be used for educational, instructional, or personal uses, provided they include credit to the U.S. Global Change Research Program (www.globalchange.gov).

[U.S. Global Change Research Program Image Gallery >](#)

Sections

Teaching Resources

Student activities, interactive tools, labs, and lesson plans present concepts of climate science. Lessons are correlated to education standards.

Professional Development

Professional development opportunities to support educators in learning and teaching about climate.

Multimedia

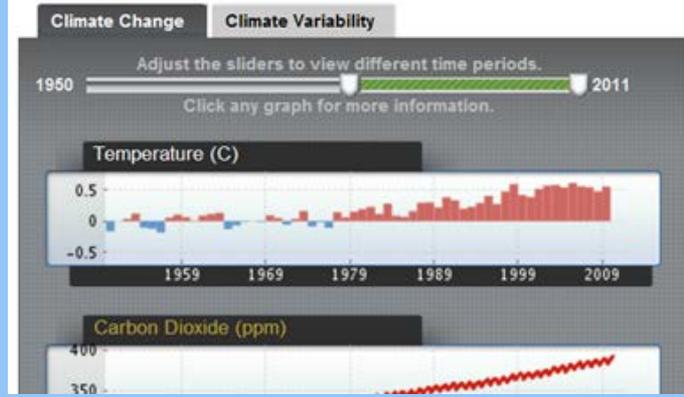
Movies, visualizations, multimedia galleries, interactive media, and educational games about climate science.



Why Teach about Climate?

A climate-literate citizenry is essential for protecting fragile ecosystems and building sustainable communities that are resilient in the face of climate change...

[Climate Literacy Guide](#)



Weather

01-05-2011

Lookup

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Google-climate.gov

The ozone layer - the thin atmospheric band high-up in the stratosphere that protects living things on Earth from the sun's harmful ultraviolet rays, not to be confused with damaging ozone pollution close to the ground - faces potential new challenges even as it continues its recovery from earlier damage, according to a recently released international science assessment.

NOAA: January 2011 Ranked 17th Warmest on Record