

Toward Universal Science Literacy

Adam Bly | Canada School of Public Service | Ottawa | September 2018

Universal science literacy is
necessary to sustainably improve
the state of the world.

Some facts

77% of Americans do not understand what it means to study something scientifically, **up from 74%** in 2014

1 in 3 Canadians (and 3 in 5 Americans) do not know that “the universe began with a huge explosion”

“Alternative Facts”

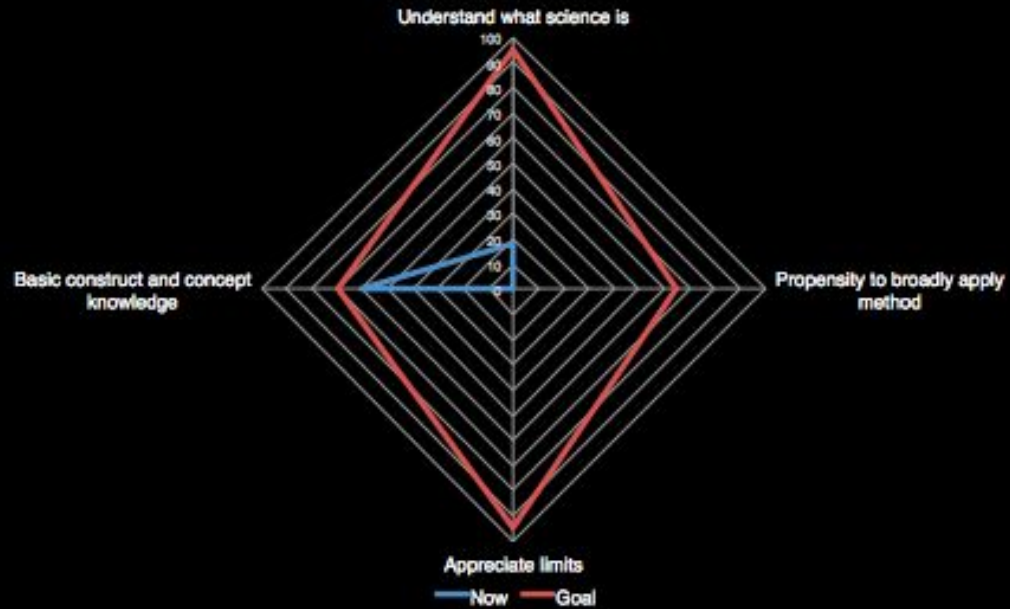
Kellyanne Conway,
Counselor to President
Trump

What is science literacy?

To be scientifically literate is to:

- 1 Understand what science is
- 2 Have the propensity to broadly apply the method of science, to think critically, and argue from evidence
- 3 Appreciate science's limits
- 4 Know certain basic constructs and concepts that are the product of science

Modern Science Literacy



Why does science literacy matter?

A couple of hypotheses:

- It is more difficult to pass legislation based on science when the majority of voters do not appreciate what science is
- We do not leverage science to its full potential in policymaking because the majority of people do not understand what science is

Why does science literacy matter?

- Direct betterment of society
- Informed citizenry in science-dependent times... the richness of the public sphere
- Strength of our democracies
- It is about how we make decisions as a society
- It is about the value we place on knowledge and reason
- Illiteracy is contagious
- Benefits of applying science as lens

Why now? Age of data & AI

- Data is the raw material of science. We now have the capacity to be more scientific (reason-based) about problems which are not superficially scientific.
- Data privacy and security are among the most serious challenges to democracy in our lifetime.
- An AI future needs the checks and balances that come from universal science literacy.

Why now? Age of complexity

- Today we recognize that many, if not most, of the systems that make up our planet – our cities, markets, bodies, environment – are complex.
- Complexity affects every government, business, and person on the planet.
- Managing and leveraging complexity requires data and universal science literacy – systems thinking and problem-solving.

North Star

- Every person on the planet should be scientifically literate
- Every government — and public servant — should be scientifically literate, equipped to seek and reason from data, and conditioned to change their mind with new evidence and think systemically
- Global governance should be reimagined through a scientific lens, recognizing complexity and leveraging data and AI

Some steps toward Universal Science Literacy

- Prioritize scientific thinking over scientific fact in formal and informal education and professional development
- Always work to understand and address the forces that oppose science
- Make science a primary lens — with economics and politics — in all policy-making at national and international levels
- Require open science — to ensure access to the knowledge we need to make informed policies and decisions

Merci
Thank you

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