PORTAL to the Public

**Dennis Schatz**
Senior Fellow: Institute for Learning Innovation
Founding Director: Portal to the Public

# Elements of Effective Science Communication

DOE Science Communication Summit
September 16, 2019

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# PORTAL to the Public

*Portal to the Public developed a proven, scalable framework to engage scientists and the public in face-to-face interactions that promote appreciation and understanding of current scientific research and its application*

iexplora!
Ideas You Can Touch
Ideas que puedes tocar

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NORTH MUSEUM OF NATURAL HISTORY & SCIENCE

DISCOVER PACIFIC SCIENCE CENTER

NSF

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The Portal to the Public approach helps informal education organizations prepare STEM researchers to engage with their local communities at public science events.

*Resources include:*

- *Implementation Manual*
- *Catalog of Professional Development Elements (science communication curriculum)*
- *Train-the-trainer workshops*
- *Network of active practitioners*

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# Connects to Real Scientists and Real Equipment

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# Connects to Real Scientists and Real Equipment

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# Puts A Human Face On Science

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# Provides a Role Model

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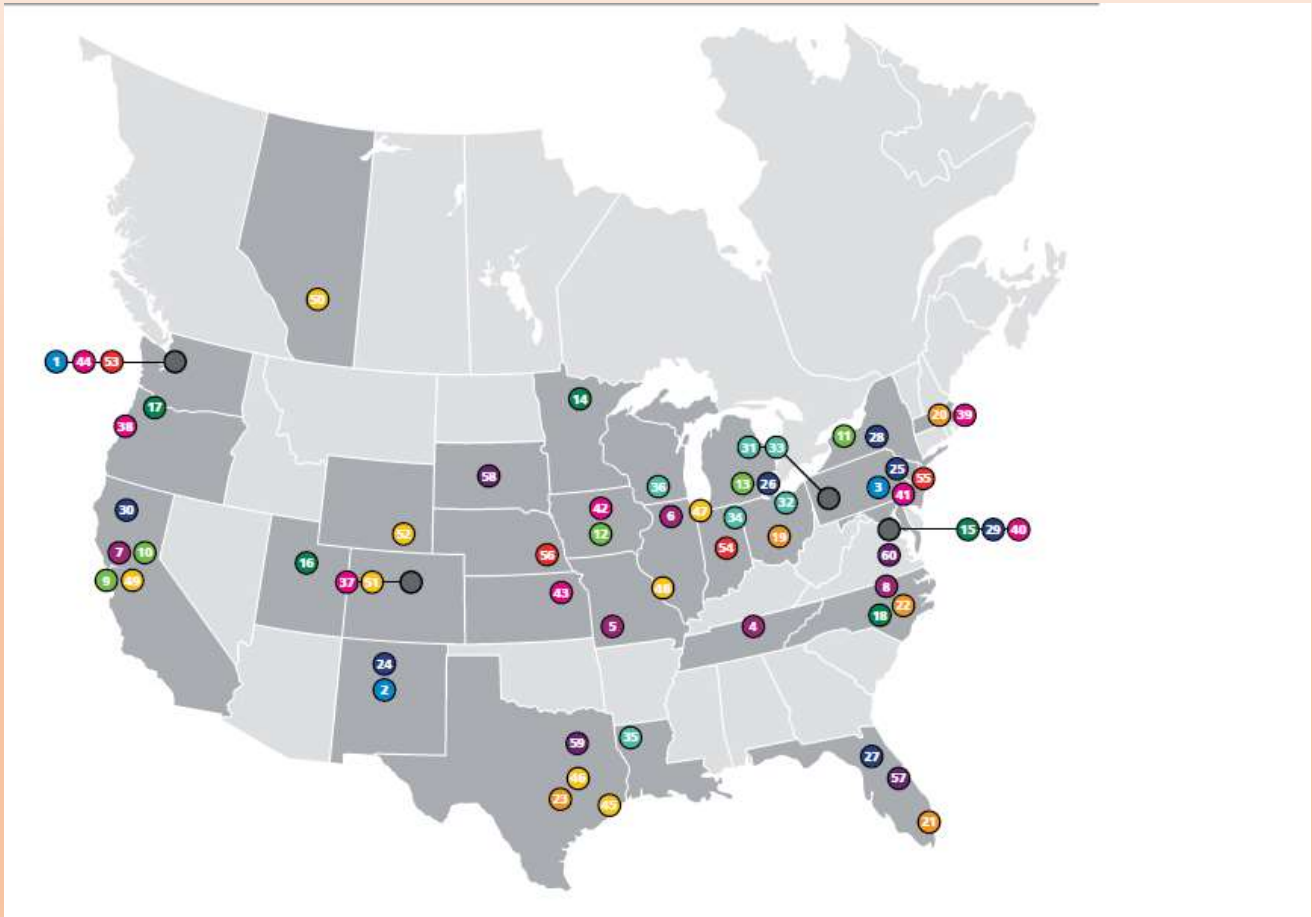

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# Training Priorities

1. How people learn
2. Visitor types and motivations
3. Strategies for working with various age groups
4. Designing experiences that effectively use visuals and other materials
5. Providing a model for effective interactions
6. Opportunities for scientists to practice their new skills
7. Ways to reflect, self-evaluate and get feedback on their interactions

COMPASS

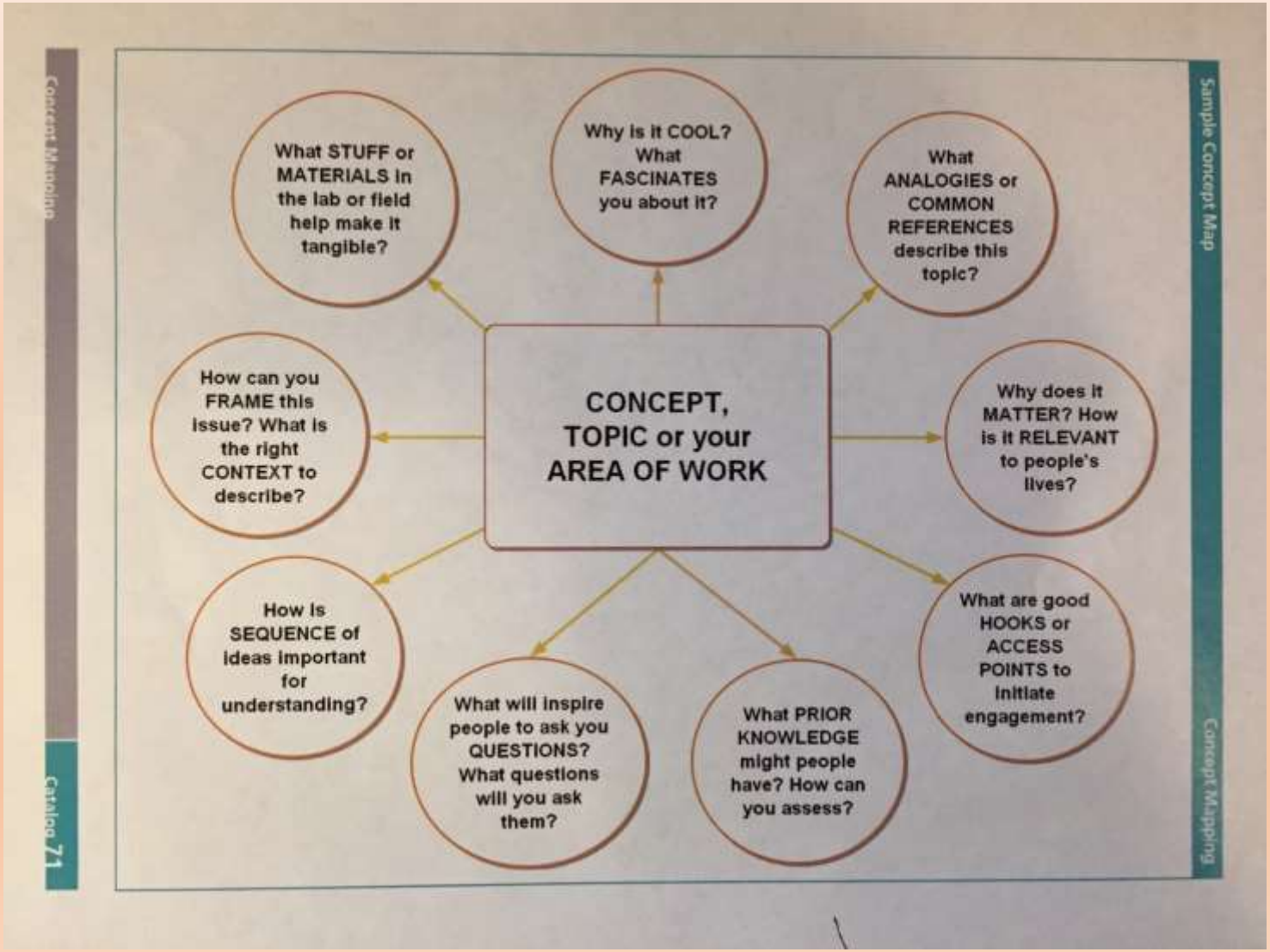
# Training Priorities

1. Know how to be an effective source for journalists
2. Learn to navigate policy opportunities
3. Learn to use social media to access and engage valuable new networks.
4. Develop storytelling, opinion writing, blogging, or other writing and communication skills
5. Learn how to promote an upcoming paper for maximum impact
6. Refine your goals for engagement, and leveraging your networks to help you achieve those goals.

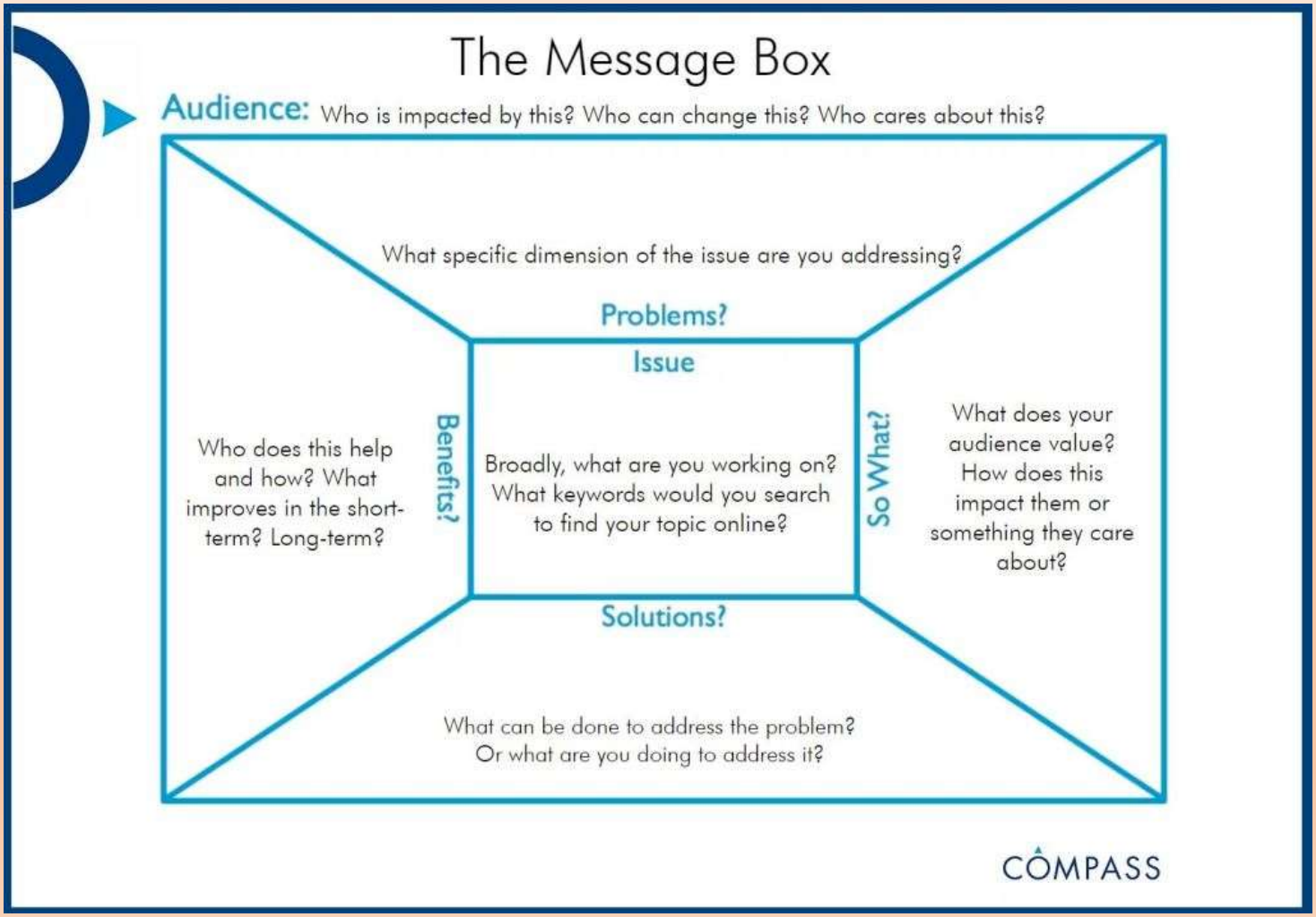

# Training Priorities

1. Develop public engagement and science communication skills through discussion, self-reflection, small-group work and practice sessions
2. Focus on the importance of effective, two-way communication
3. Enable scientist to engage in meaningful, reciprocal dialogue with diverse audiences
4. Identify a public engagement goal
5. Define a relevant audience
6. Craft and rehearse messages tailored to that audience.

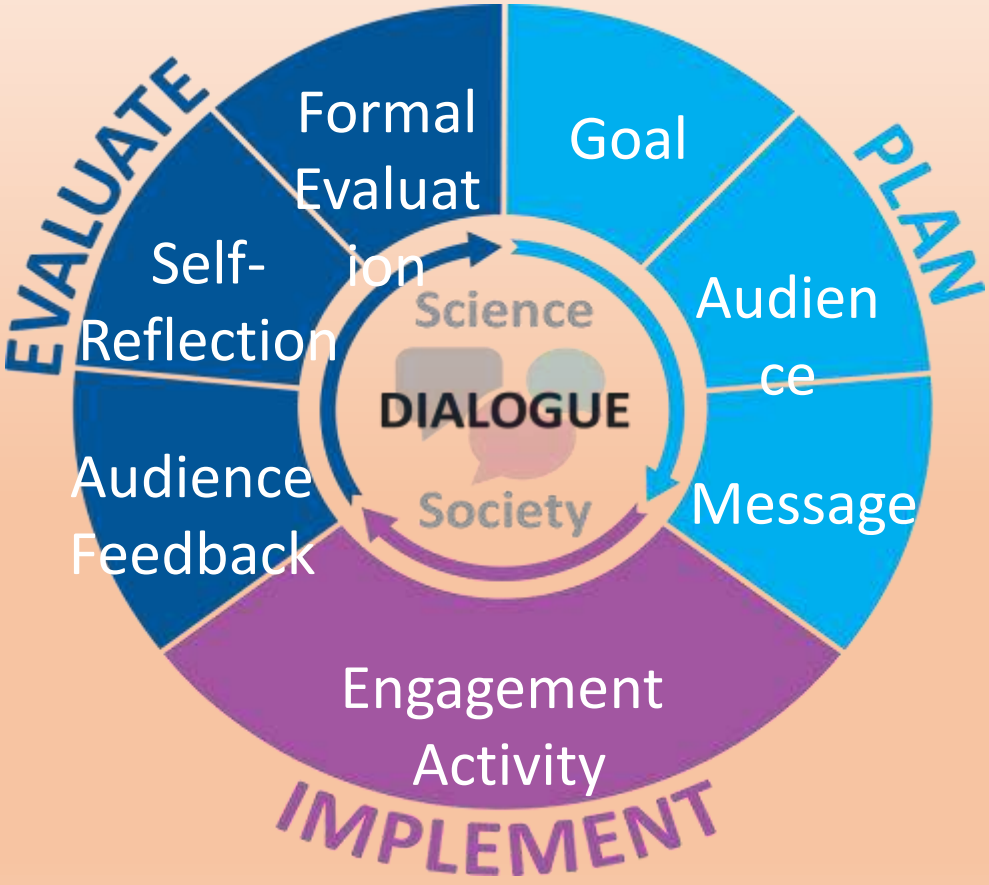
# Portal to the Public Concept Map



# COMPASS Message box



# AAAS Public Engagement Framework




From the AAAS Center for Public Engagement with Science and Technology

# STEMAP Public Engagement Map

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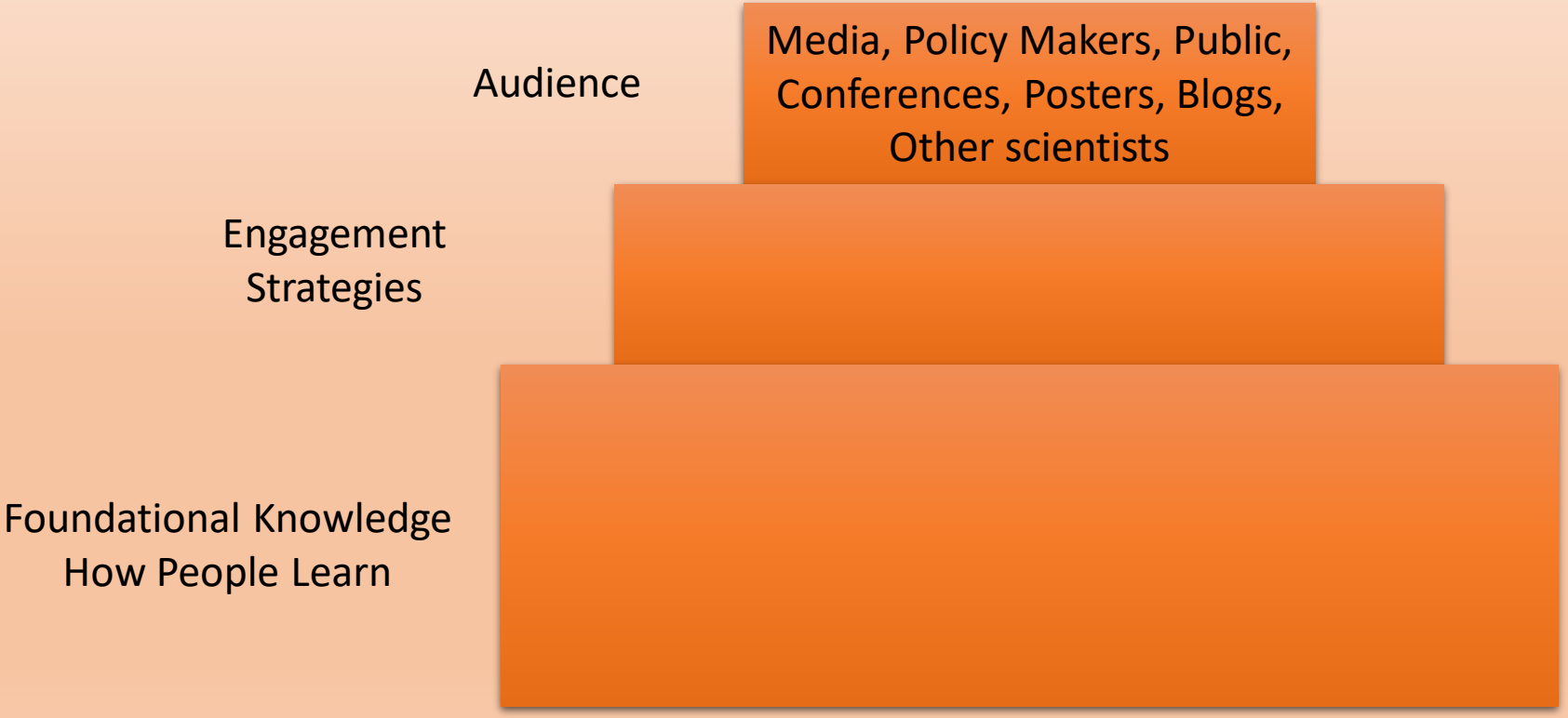
# Engagement Pyramid



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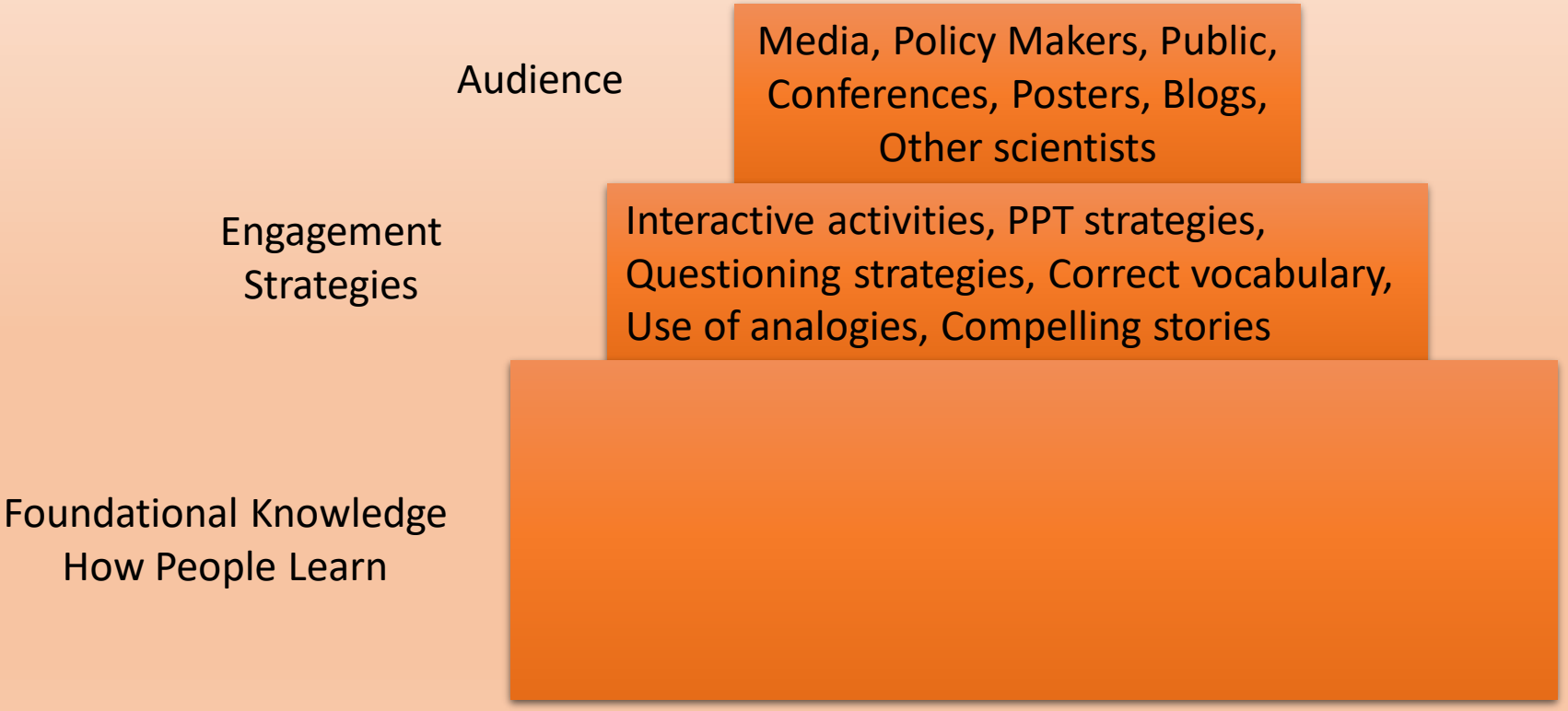
# Engagement Pyramid



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# Engagement Pyramid

Audience

Media, Policy Makers, Public, Conferences, Posters, Blogs, Other scientists

Engagement Strategies

Interactive activities, PPT strategies, Questioning strategies, Correct vocabulary, Use of analogies, Compelling stories

Foundational Knowledge How People Learn

Build from preconceptions, Learning is culturally based, Make personal and relevant, Provide time to reflect, Learning occurs multiple exposures to topic, Move from concrete topics to more abstract topics, Focus on no more than a few main ideas (James Carville – I you say more than three things, you've said nothing)

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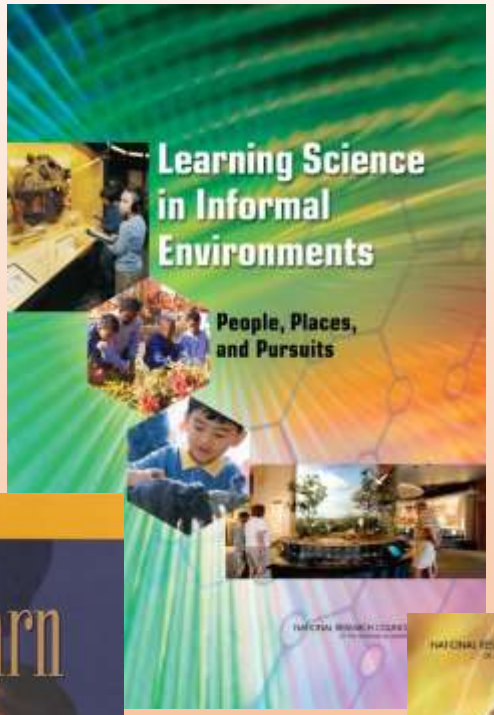


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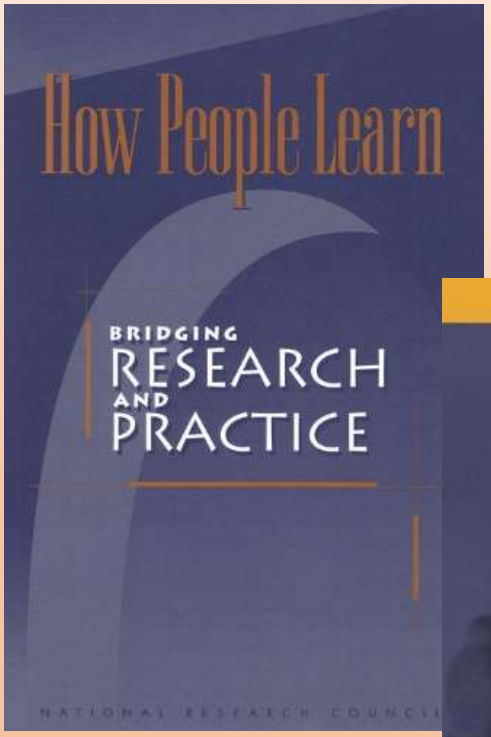


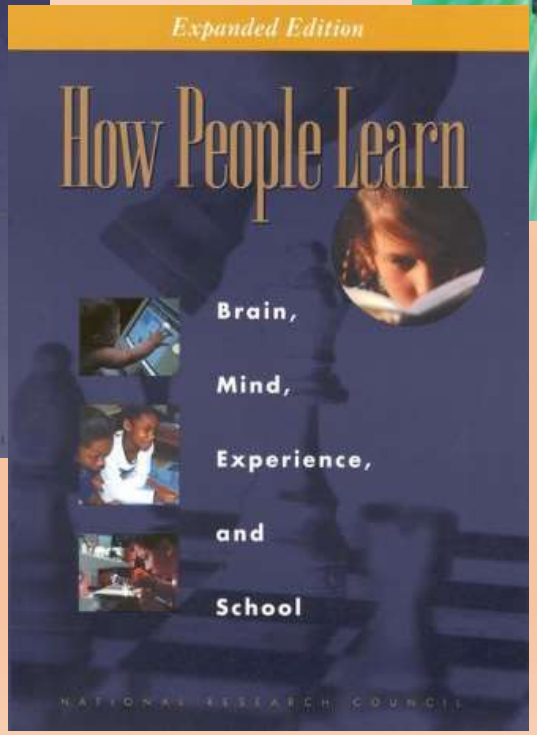


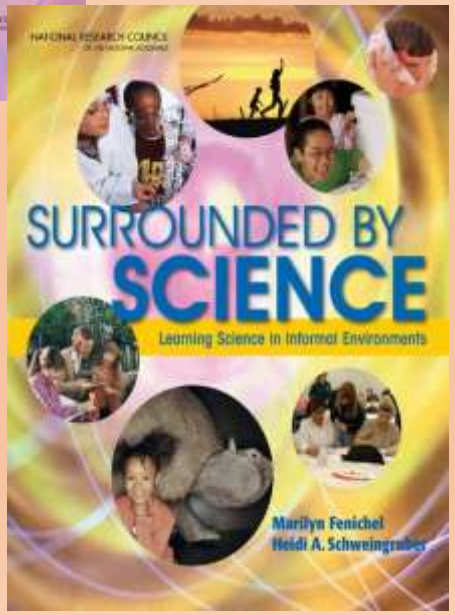

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The Mind Is Not A Blank Slate
It Comes With Many Preconceptions
And is Based on Past Cultural-Based Experiences and Interest

Need To Build From These Preconceptions
And Past Experiences and Interests

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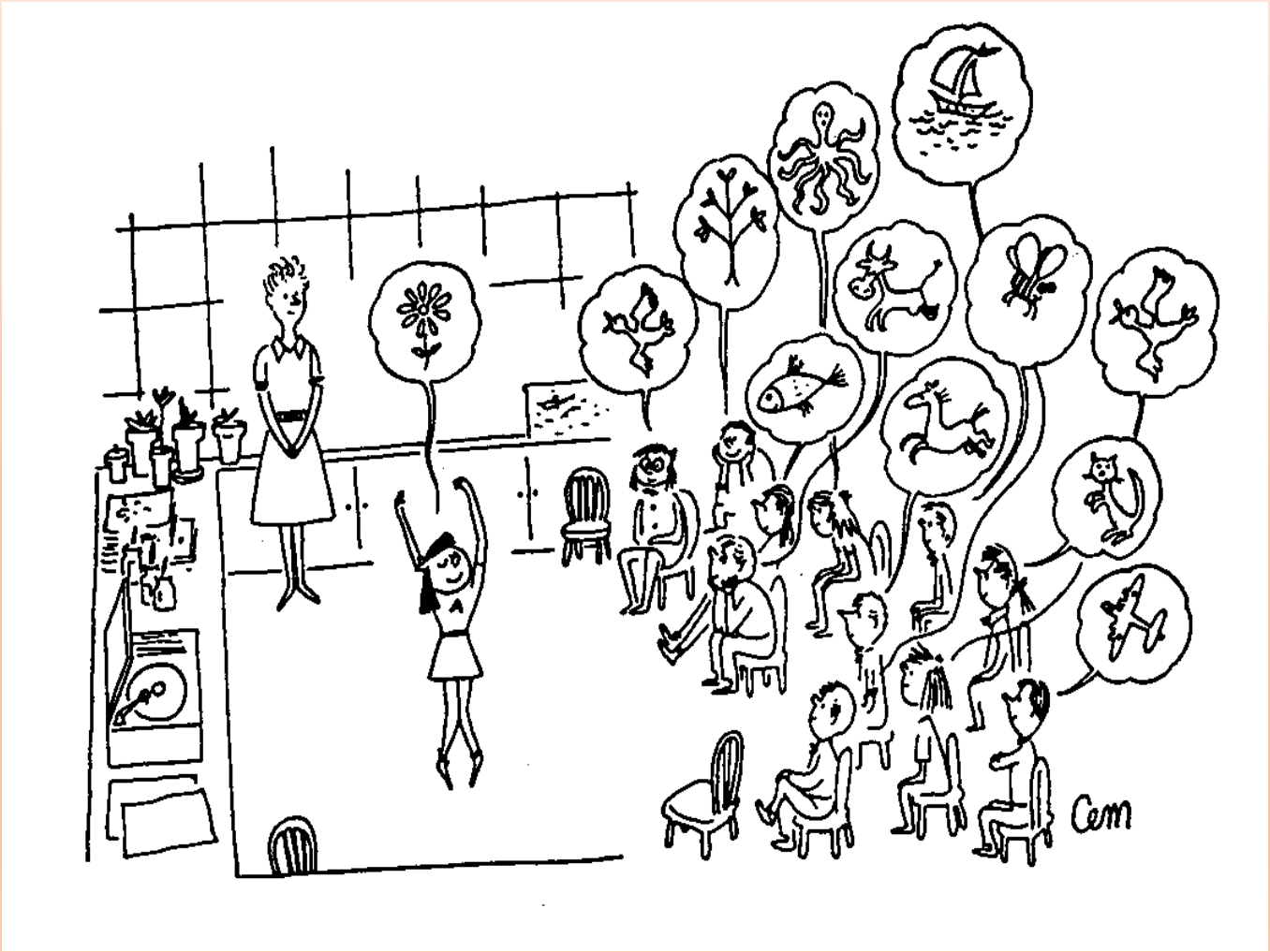

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Learning is not one stop shopping

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People learn concepts over an extended period of time through multiple experiences

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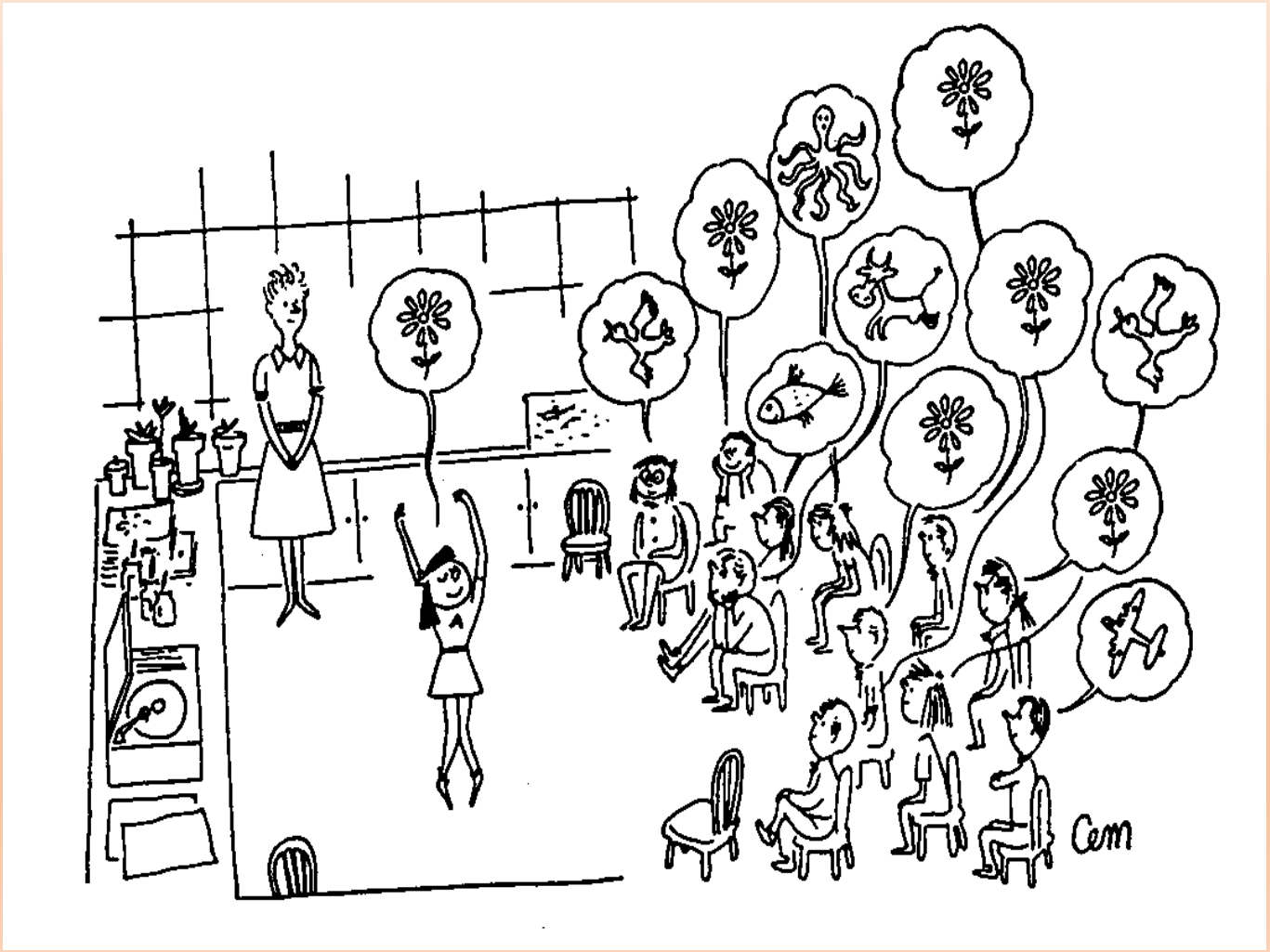

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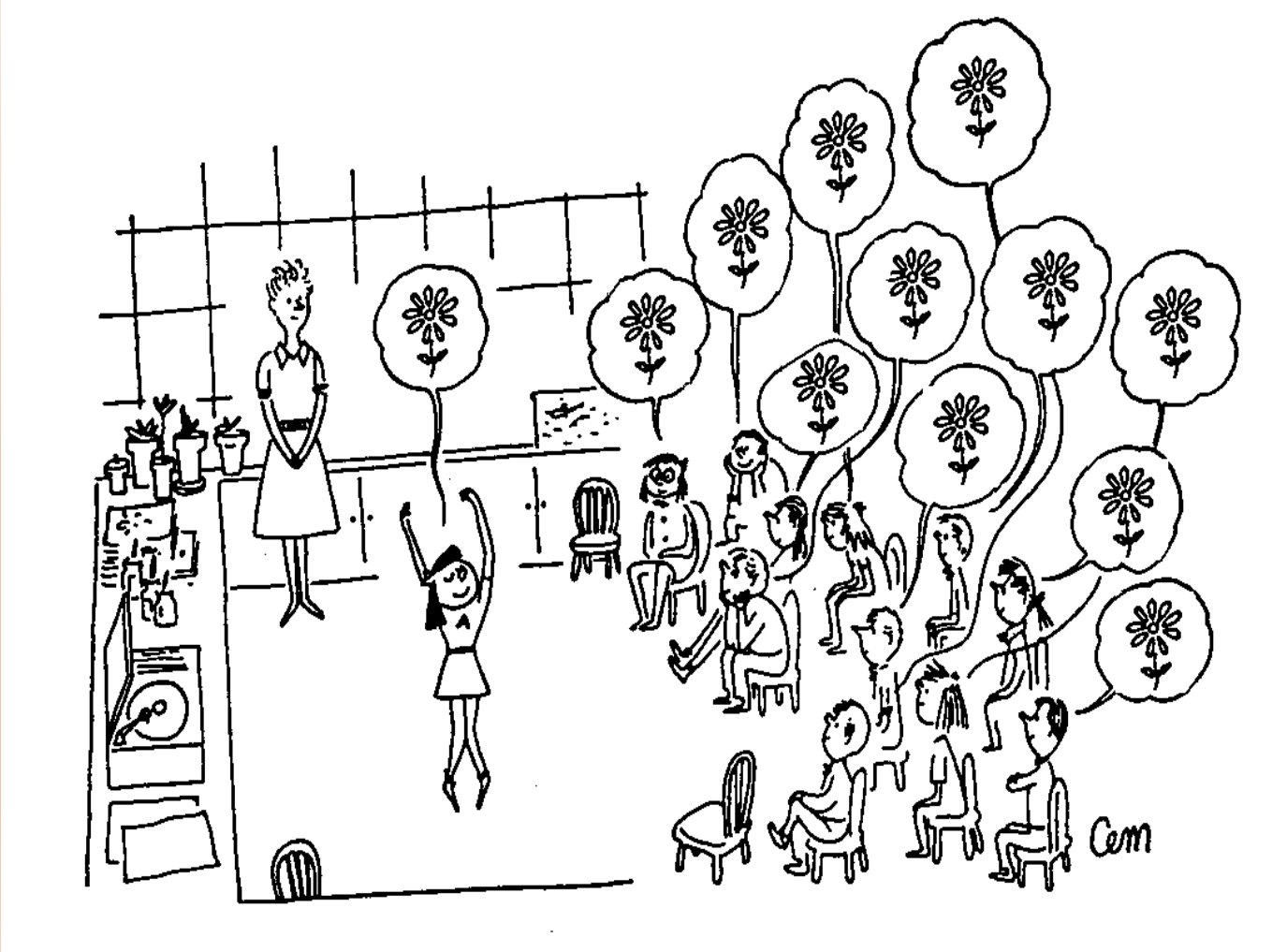

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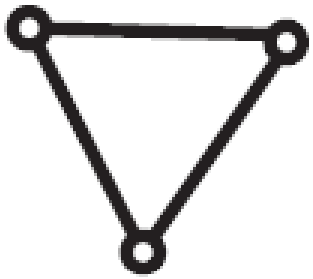
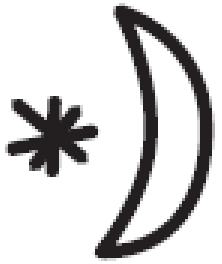
# Do Building a Common Vision

Getting Past Your Expert Blind Spot
Putting the Scientist in the Position of Being a Learner

## Activity Instructions

1. Pair up with “learner’s” back to the screen and the learner having piece of blank paper for drawing
2. Each “scientist” will have a few minutes to convey the image visible on the screen
3. No questions from the “learner” is allowed. Only the scientist can talk. No drawing with your hands





# Lessons from How People Learn:

## Getting Past your Expert Blind Spot

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1. Ask questions to understand individual's pre-conceptions, and build from these pre-conceptions
2. Provide a community/individual-centered approach that considers community/individual norms, culture and setting
3. Use appropriate terminology and effective analogies
4. Start with concrete (simple) concepts and move to abstract (complex) concepts
5. Provide reflection time by audience to provide for them to mean making of what you are saying, including time for participants to compare their understanding
6. Ask questions and other strategies to gauge understanding and interests, and adjust presentation based on answers

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# Foundational Skills for Science Communication

## A Preliminary Framework

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American Association for the Advancement of Science

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# Foundations Skills for Science Communication

1. Goals and Objectives
2. Adapting to a Communication Landscape and Audience
3. Messaging
4. Language
5. Narrative
6. Design
7. Nonverbal Communication
8. Writing Style
9. Creating Space for Dialogue: Listening, Empathy, and Audience Engagement

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**Updated Portal to the Public Implementation Manual and Catalog of Professional Development Elements a*vailable as a free downloadable pdf file for a limited time at:***
*https://popnet.instituteforlearninginnovation.org/resources/*

**Learn more on our website:**

https://popnet.instituteforlearninginnovation.org/

**To view Portal to the Public overview video:**

https://popnet.instituteforlearninginnovation.org/about/

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