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Presenting EarthScope to the public in parks and museums

Interpretive themes and strategies for the
Colorado Plateau – Rio Grande Rift

Allyson Mathis

Grand Canyon National Park



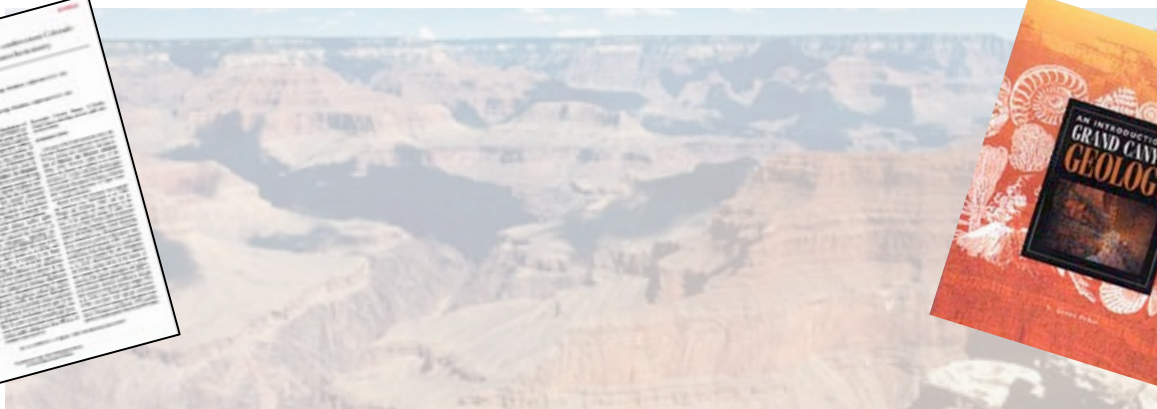
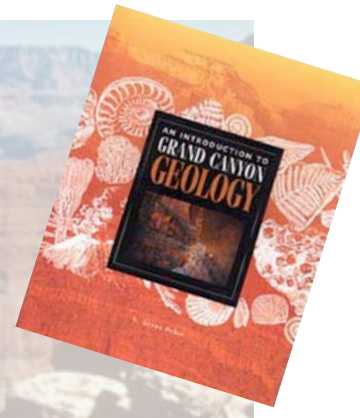
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Challenges of Interpreting Geology

- Interpreters and public are less familiar with geology than most other interpretive topics
- Geology is “foreign”
- Geologic Time
- “Grand Canyon-sized” gap between technical and popular literature



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Opportunities in Interpreting Geology

- Scenery = Landscape = Geology
- Compelling stories
- Increase science literacy in the public
- Excite the public about major research initiatives such as EarthScope

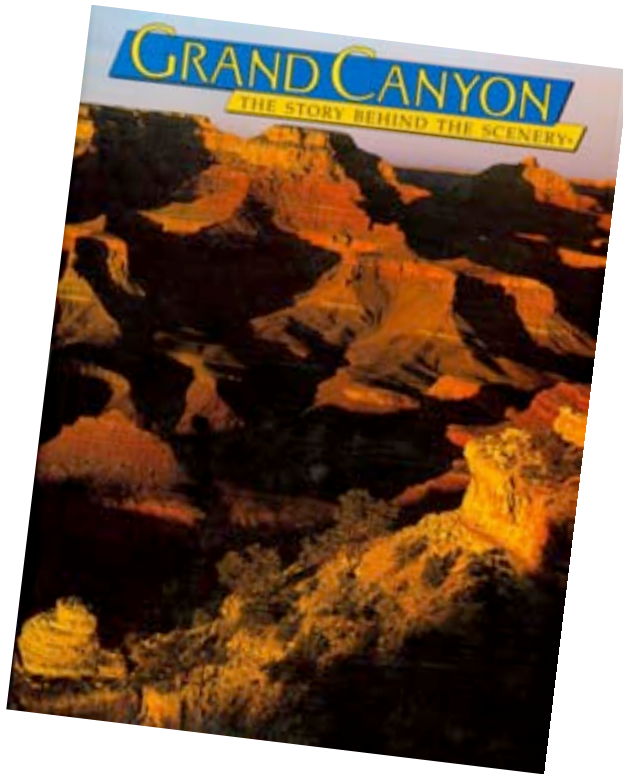


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EarthScope helps tell “*the story behind the scenery*”



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“Elk Jam”

“Bear Jam”



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“Geology Jam”



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Interpretation (“textbook definition”)

an educational activity which aims to reveal meanings and relationships through the use of original objects, by first-hand experiences, and by illustrative media, rather than simply to communicate factual information.



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Interpretation (NPS definition)

facilitates a connection
between the interests of the
visitors and the meanings of
the resource.



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Successful Interpretation

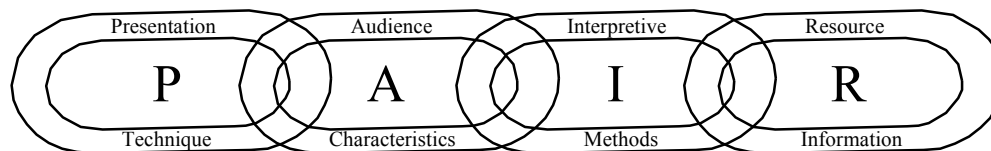
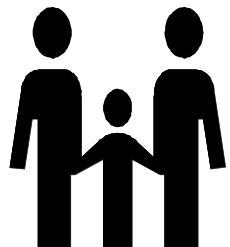
4 Components

- Presentation Techniques
- Audience Characteristics
- Interpretive Methods
- Resource Information





The PAIR Model



Chains form lasting, strong connections

Anchors

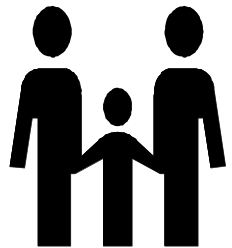
Flexible

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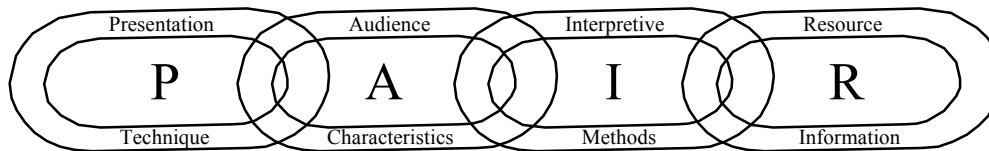


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The PAIR Model



People



Resource

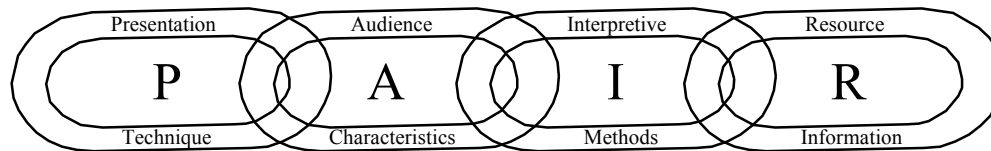
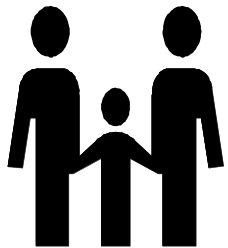


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4 Components

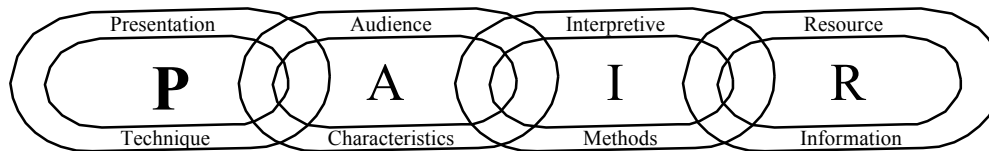
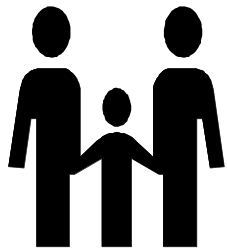


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Presentation Techniques

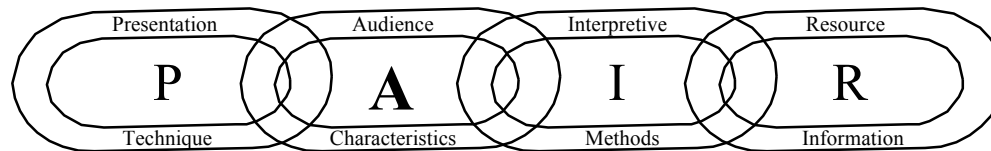
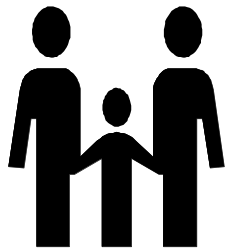


•delivery





Audience Characteristics

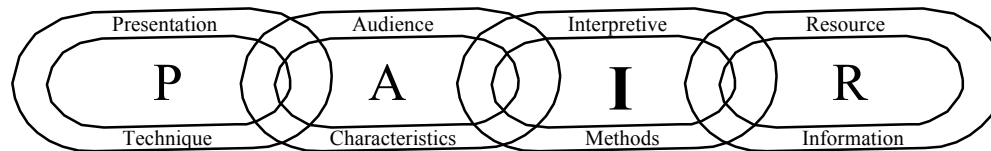
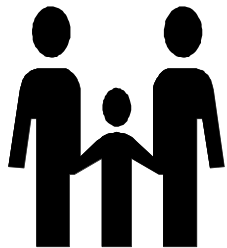


- focus interpretive message
- diverse





Interpretive Methods



- revelation step
- message

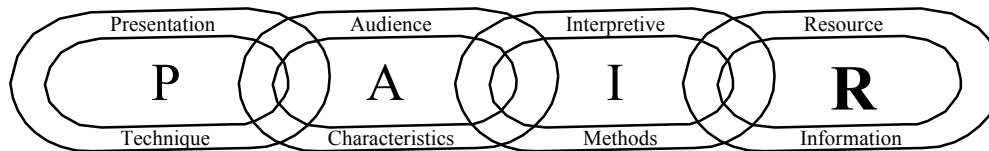
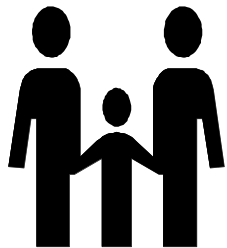


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Resource Information

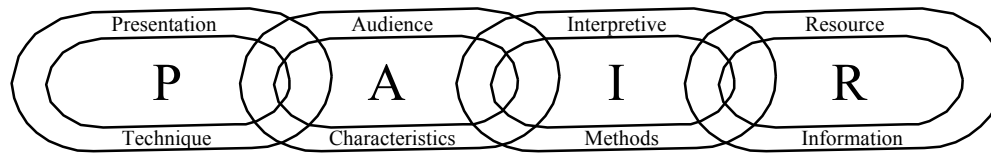
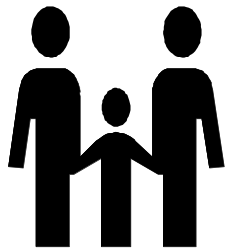


- building blocks
- park significance
- context





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PAIRing People with Parks

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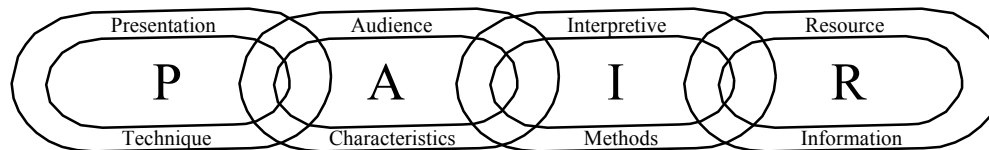
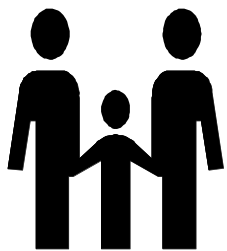
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Two models

The Interpretive Equation

$$(KR + KA) + AT = IO$$

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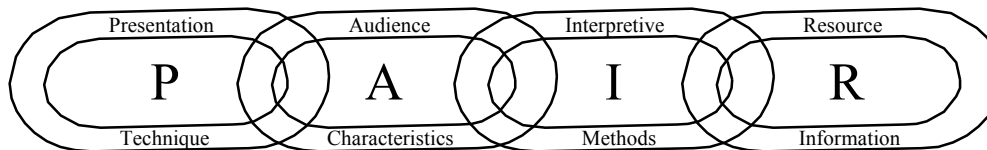
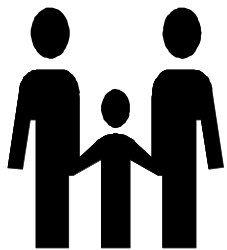


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$$(KR + KA) + AT = IO$$

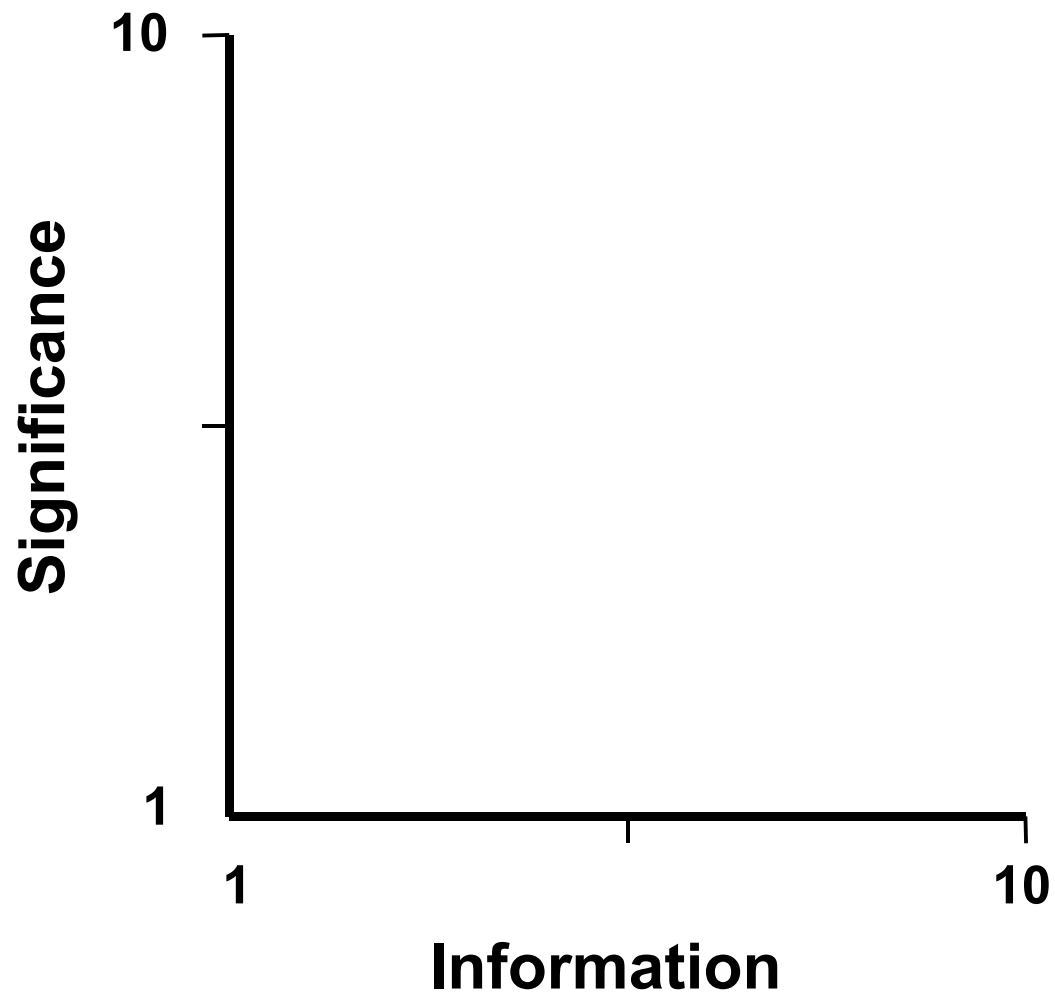


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Revelation based on information



Relative scale

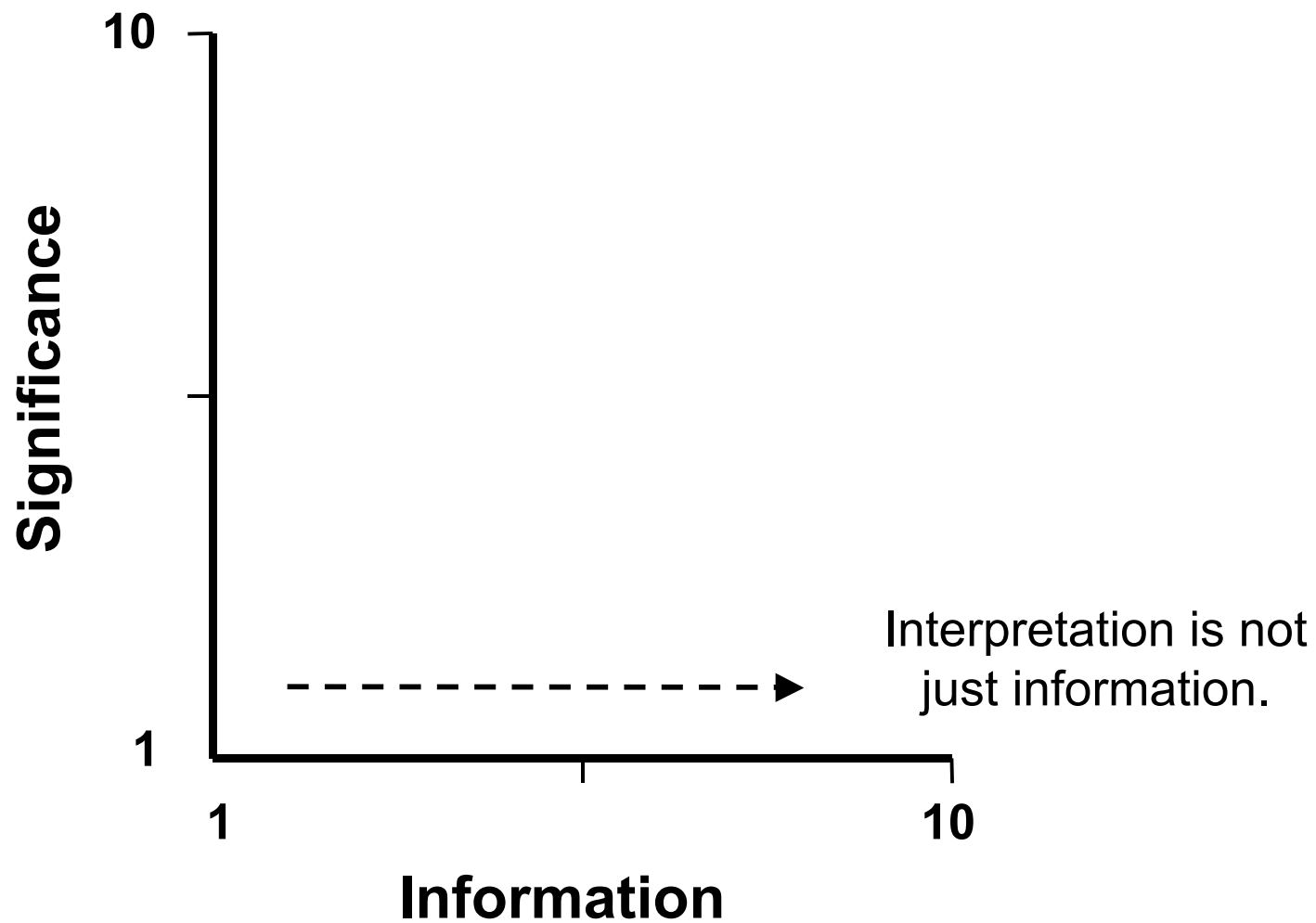
1 (low)

10 (high)

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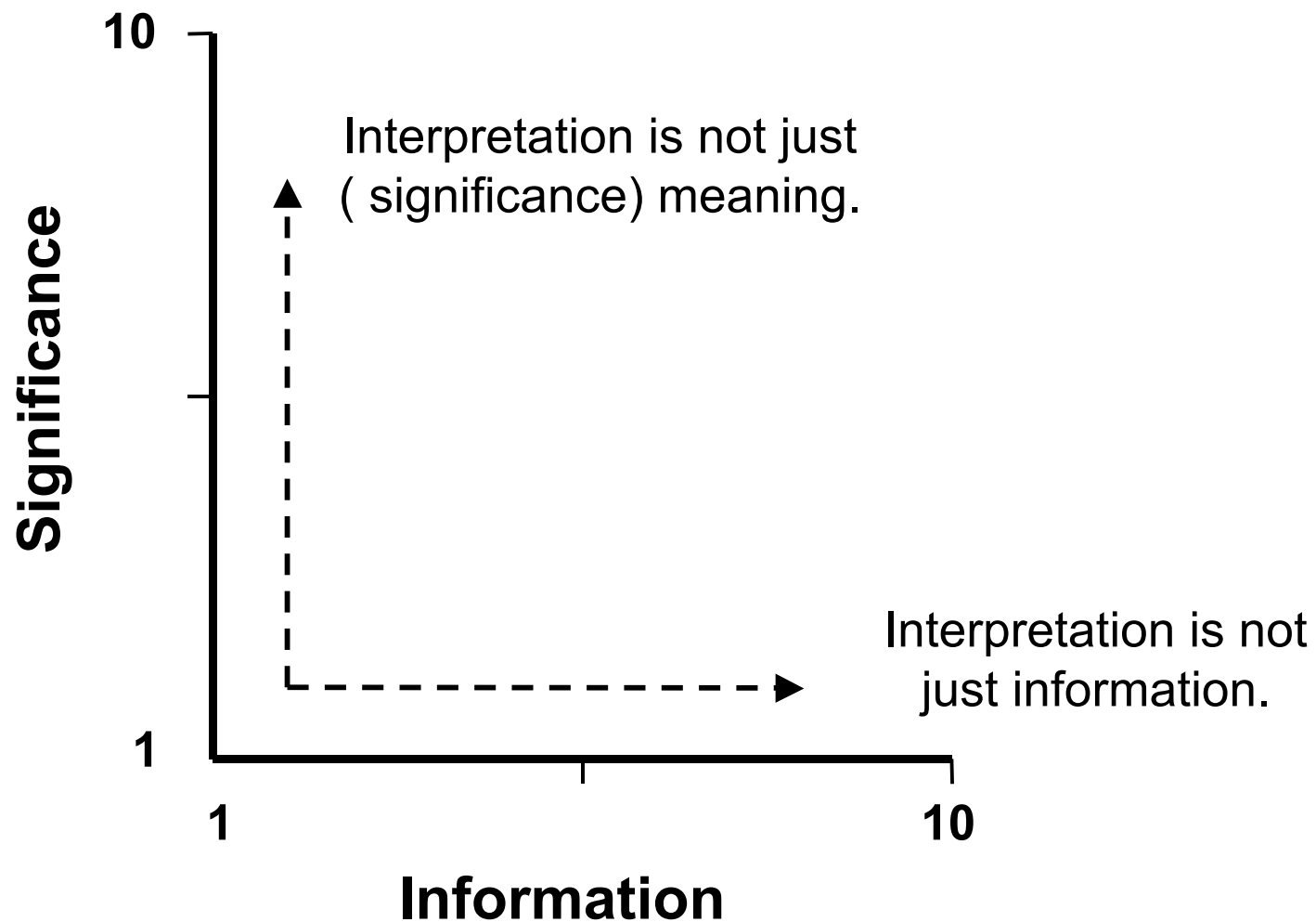
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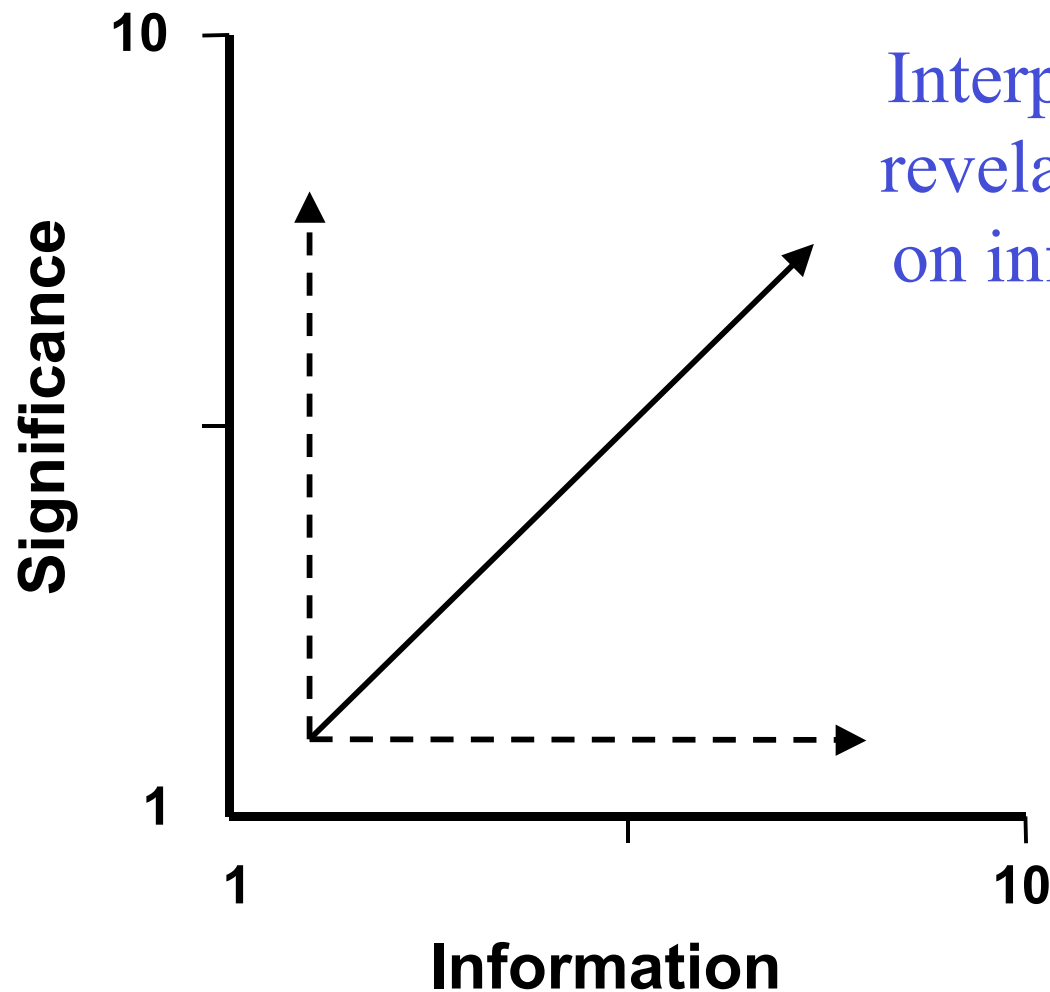
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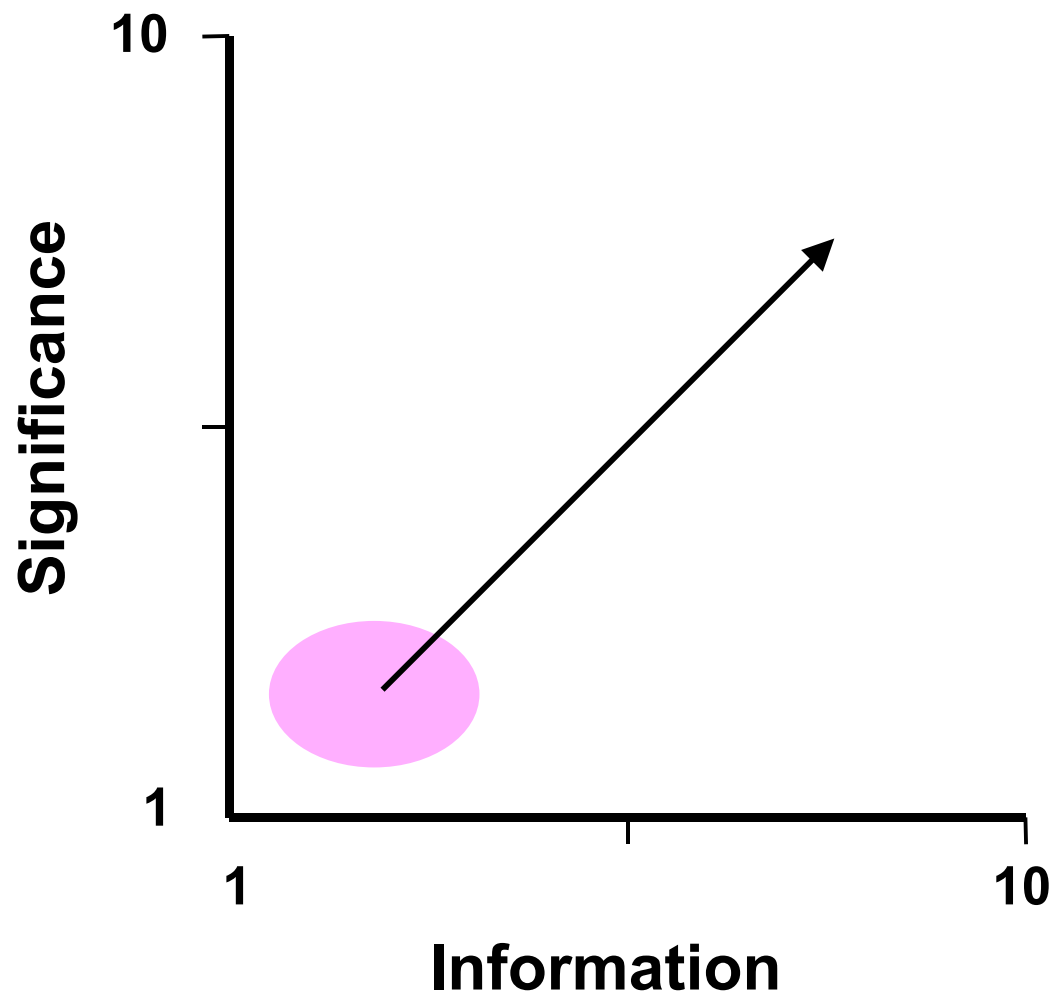


Interpretation is
revelation based
on information.

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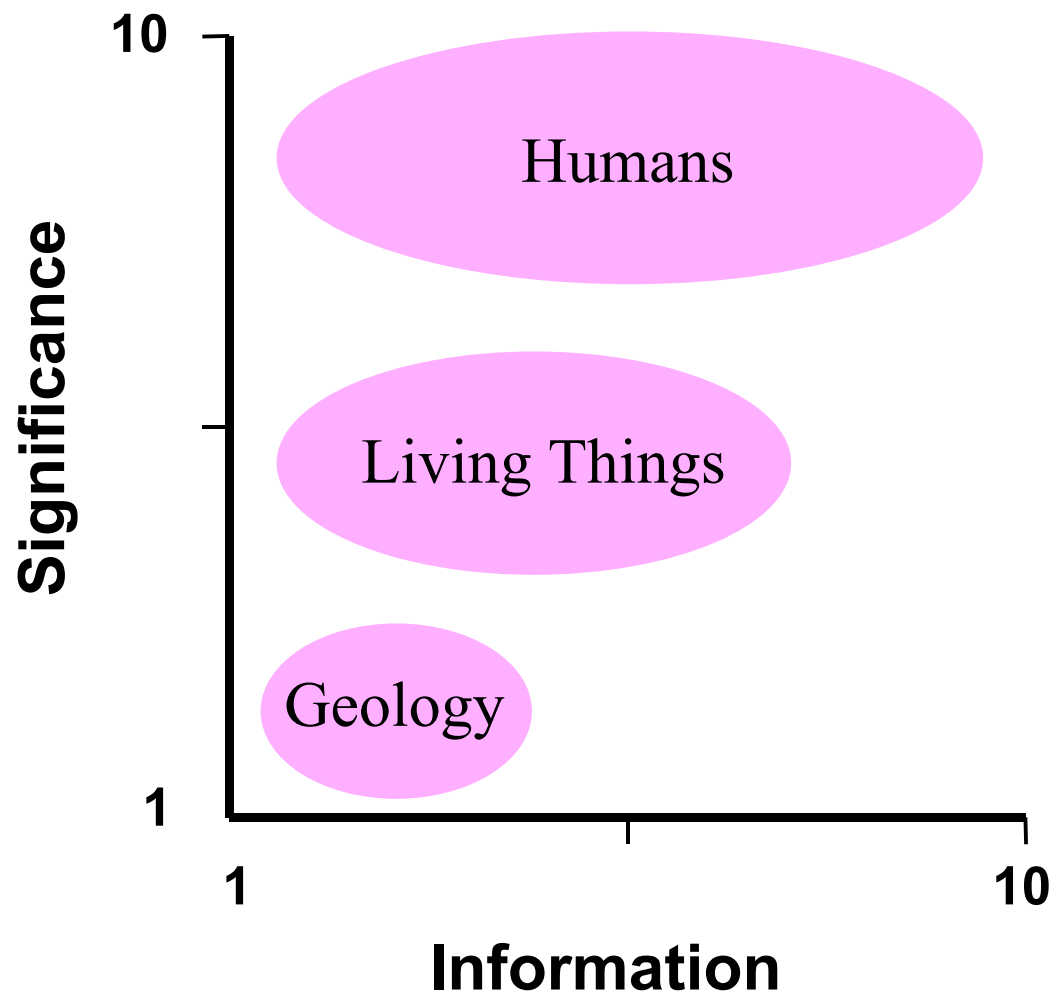


Audience
prior to start
of program

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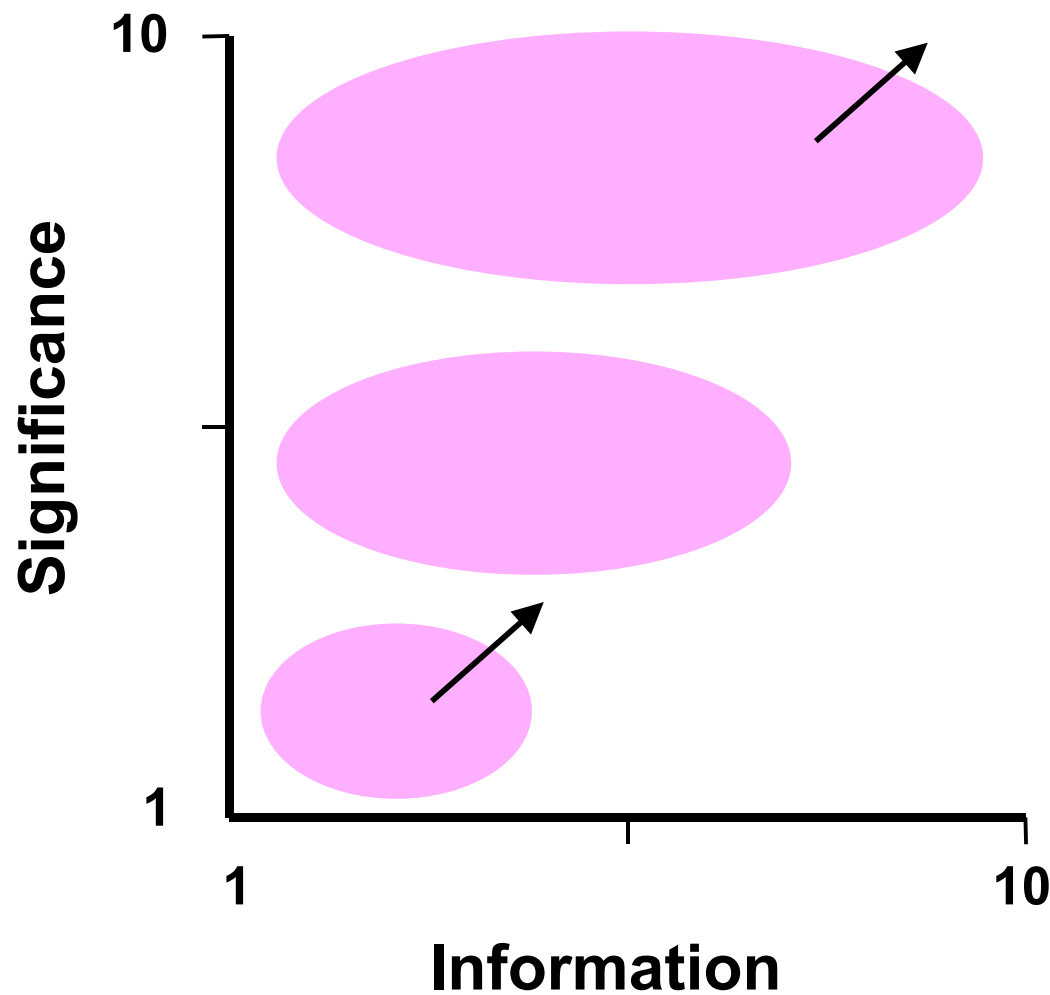
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Net change
is key

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Interpretive Themes



- Are tools for cohesive development of interp programs.
- Flow from park significance statements.
- Link tangibles to intangibles.
- Express significance and meaning.
- Are specific.
- Answers questions “so what?” and “who cares?”

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Tangible Resources:

- Objects, places, people, events
- Can be discerned with physical senses



“Capable of being exactly understood”

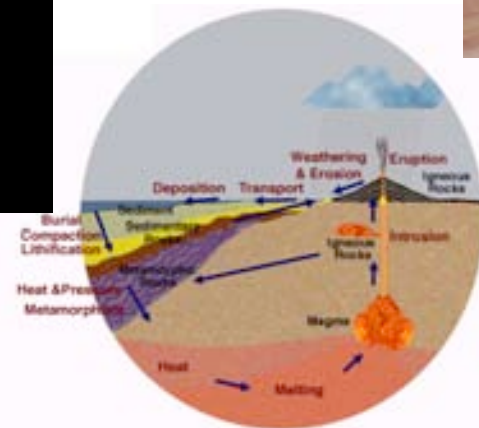
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Intangible Resources:

- Systems, processes, relationships, feelings, values, ideas, and beliefs



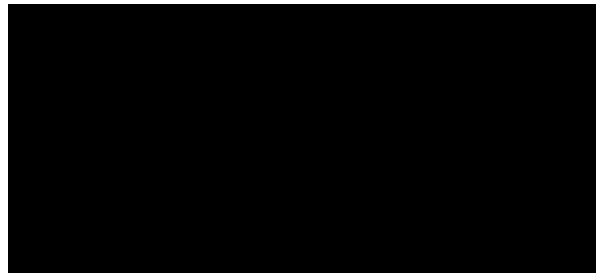
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Intangible Resources:

- Systems, processes, relationships, feelings, values, ideas, and beliefs



Universal Concepts: Intangibles that relate to almost everyone.



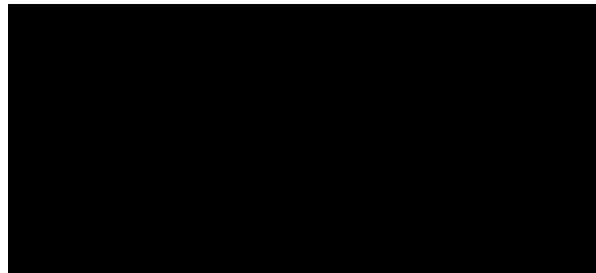
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Intangible Resources:

- Systems, processes, relationships, feelings, values, ideas, and beliefs



Universal Concepts: Intangibles that relate to almost everyone.

“reveal the extraordinary”

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Interpretive Themes



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El Malpais National Monument Significance Statement

Repeated episodes of volcanic activity at El Malpais have created an unusually diverse and well preserved basaltic lava field featuring:

- One of the longest lava tube systems
- Ice caves
- Flow top features
- Cinder features
- Tree molds



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El Malpais National Monument Theme Statement



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The complex geological history (specifically volcanism) at El Malpais has created an unusually diverse landscape with unique ecosystems, which have yielded significant scientific discoveries and promise more.



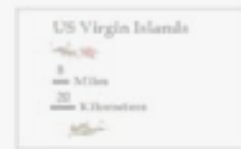
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NPS – EarthScope Primary Interpretive Themes

- The EarthScope experiment – the most comprehensive exploration to date of the structure, dynamics, and geologic history of the North American continent – exemplifies the insatiable human drive to learn.



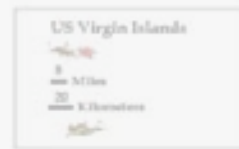
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NPS – EarthScope Primary Interpretive Themes

- EarthScope encourages a feeling of national interconnectedness – a continental sense of place – by openly inviting communities to actively participate in the experiment, and by fostering an understanding that their local environment and culture interact with other components within the larger, dynamic Earth system.



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A potential Basin and Range EarthScope Theme

The Basin and Range is a land of faults and fire and whose stark landscape whose origin clearly reveals the dynamic Earth processes that shape our planet and our lives.

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A potential Colorado Plateau EarthScope Theme

The high elevation of Colorado Plateau, and hence its stunning canyon scenery, is a result of complex tectonic processes that have shaped the western United States and the people who live and have lived there.

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A potential Colorado Plateau-Rio Grande Rift EarthScope Theme

EarthScope's scientific instruments—seismometers and GPS stations—provide insight into the Earth processes that are still shaping the Colorado Plateau and Rio Grande Rift landscapes and have provided real time data that we live on a dynamic planet.

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Interpreting EarthScope Scenery

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*The role of the interpreter is to
undermine the complacency with which
most people approach the landscape.*

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Interpreting EarthScope

Dynamic Earth – earthquakes, volcanic eruptions



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To say that something is solid as the ground under one's feet is not to say much: that ground may be lifted miles into the air. Forests and grasslands and deserts flow like rivers.

--Joseph Wood Krutch

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Interpreting EarthScope

Geology on a human timescale



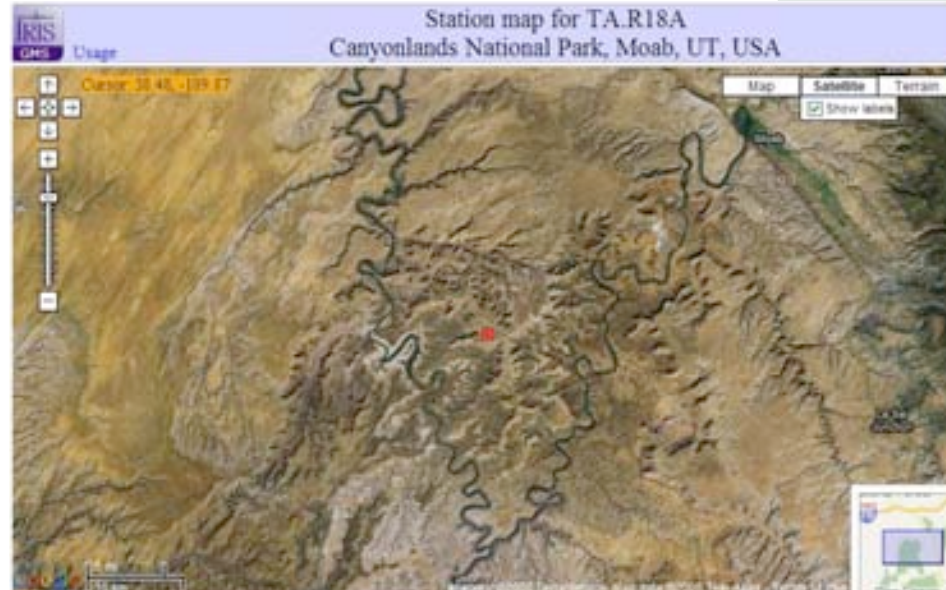
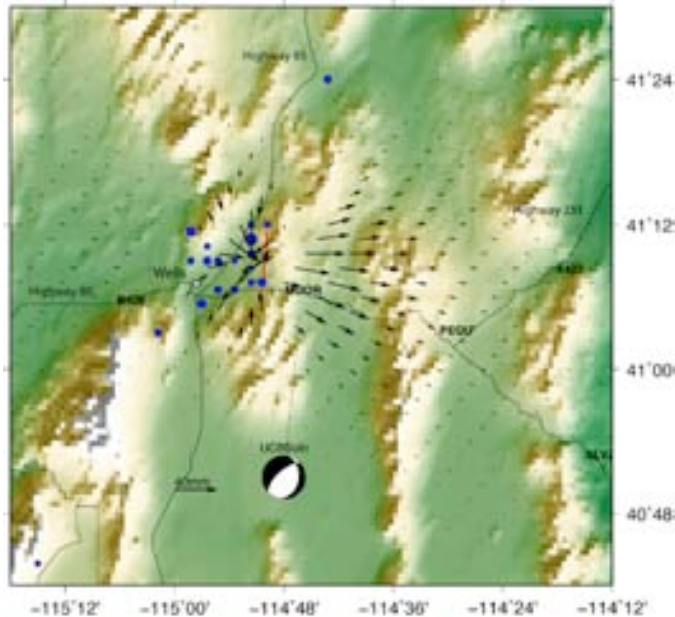
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Interpreting EarthScope

Link to current research and current scientific events



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Interpreting EarthScope

Think like a visitor



Novice

Expert

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Interpreting EarthScope

Avoid unnecessary big words



~~supracrustal~~

~~hyaloclastite~~

~~diktytaxitic~~

~~phreatomagmatic~~

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Interpreting EarthScope Demystify geology

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Tips for interpreting geology

Interpret *genius loci* of the park



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Tips for interpreting geology

Tell geologic stories



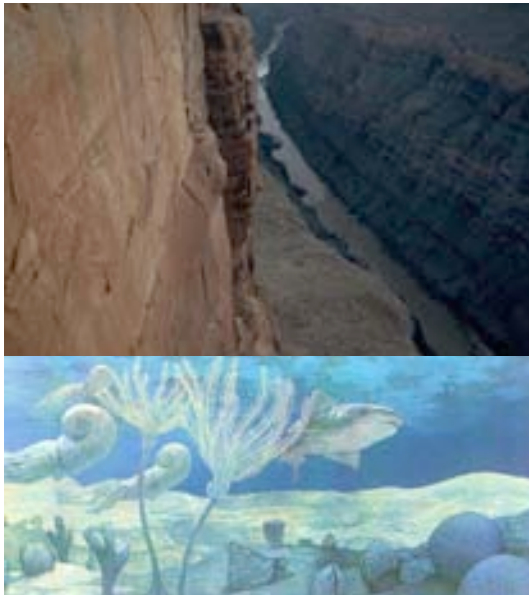
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Tips for interpreting geology

Separate parts of the geologic story



*The here and now versus
the there and then*

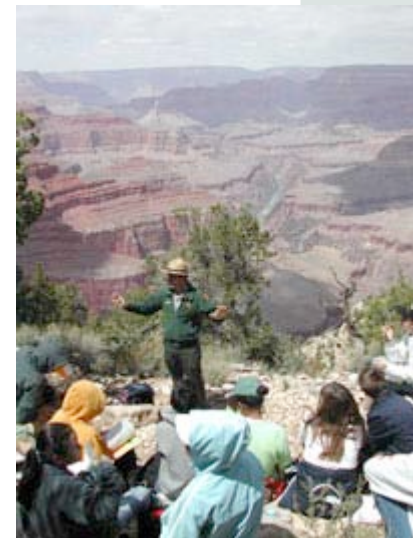
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Tips for interpreting geology

Don't do it all in one program



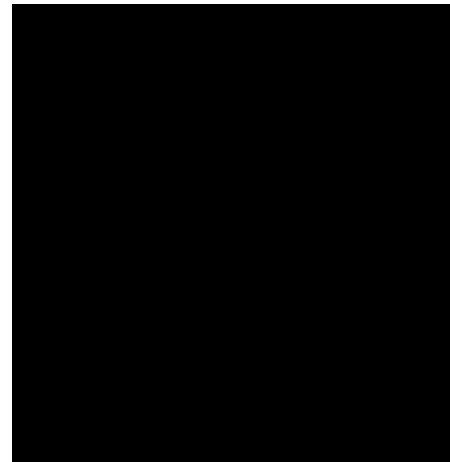
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Tips for interpreting geology

Interpret deep time



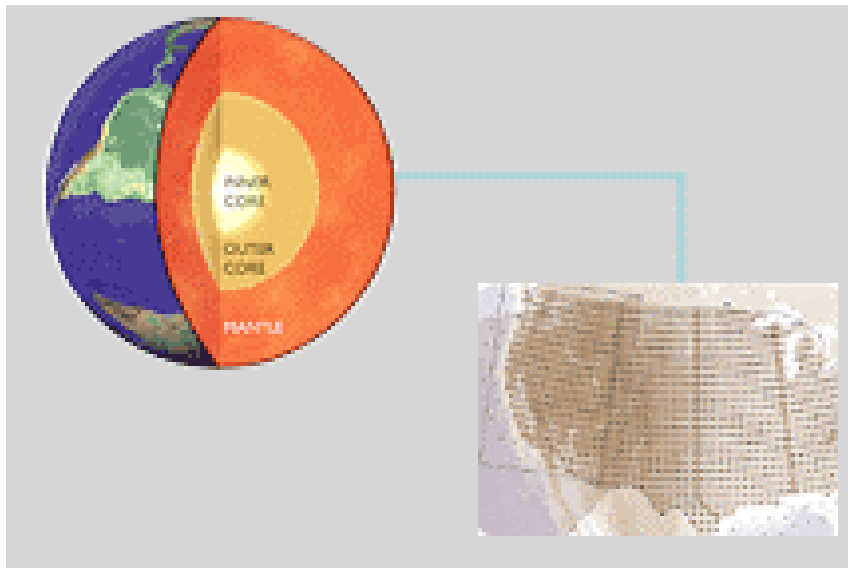
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Tips for interpreting geology

Interpret the nature of science



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Unfortunately, stone has an undeserved reputation for being uncommunicative. The expressions stone deaf, stone cold, stony silence, and simply, stoned reveal much about the relationship most people have to the rocks beneath their feet.

– Marcia Bjornerud

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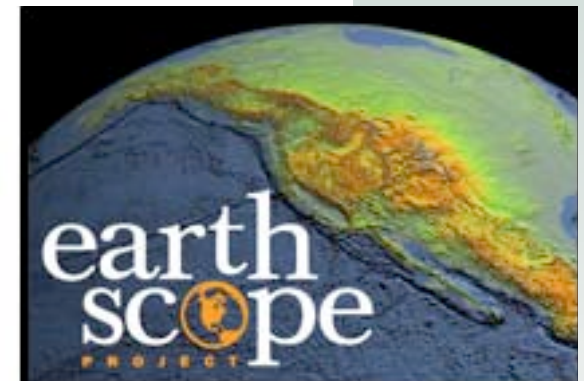
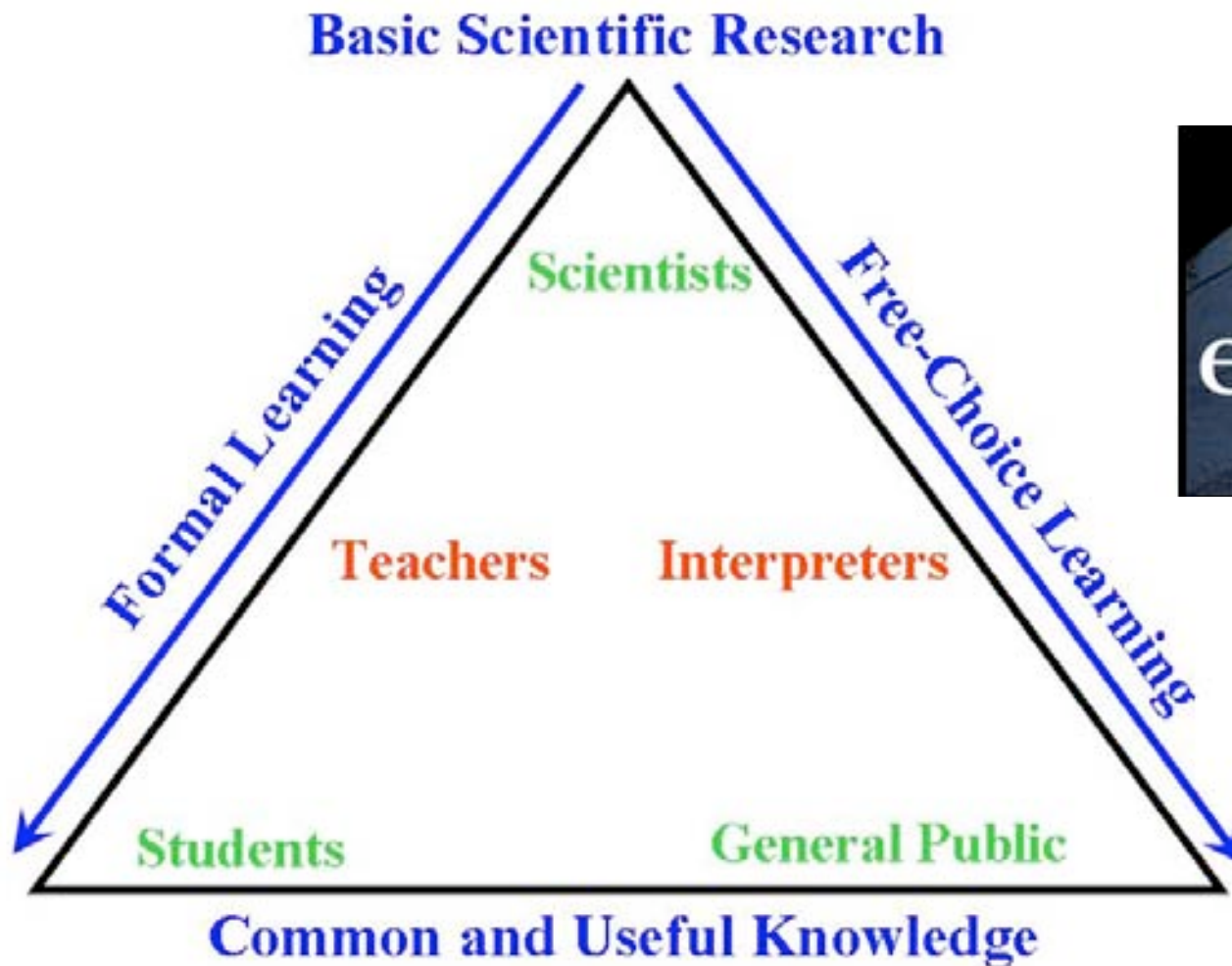
The purpose of interpretation is to stimulate the reader or hearer toward a desire to widen his horizon of interests and knowledge, and to gain an understanding of the greater truths that lie behind any statement of facts.

--Freeman Tilden

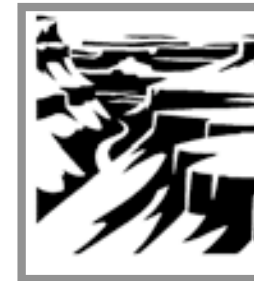
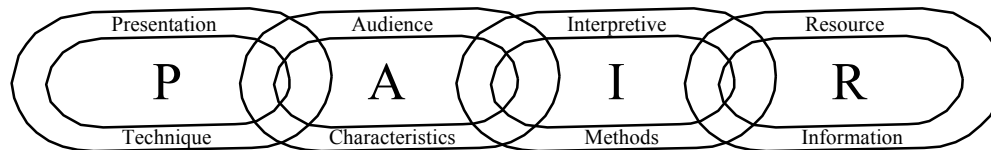
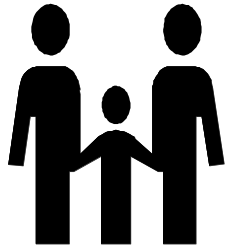
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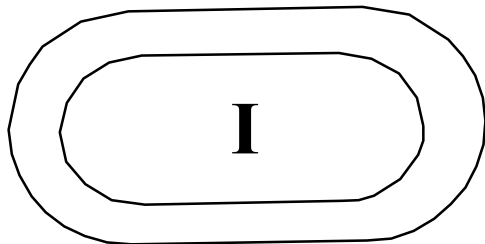


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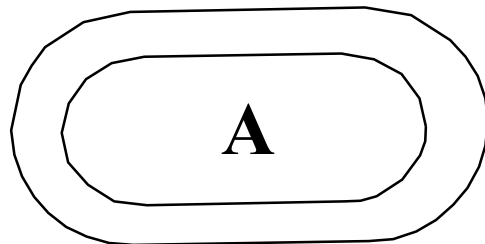


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Strengths of Professional Interpreters

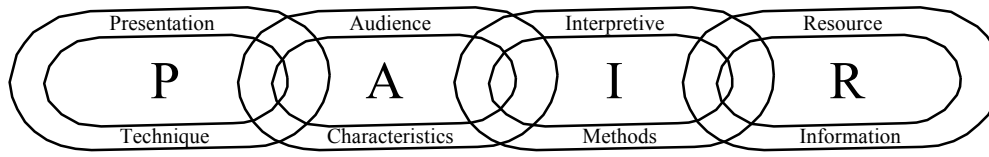
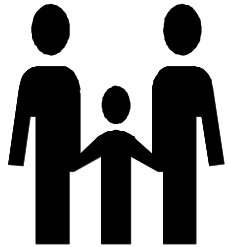


Interpretive Methods



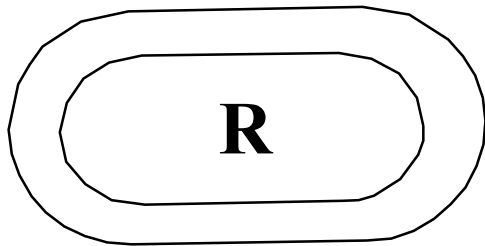
Knowledge of Audience
Characteristics

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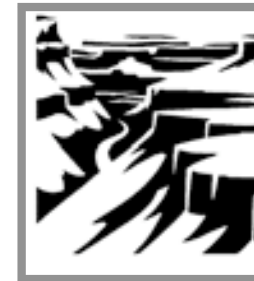
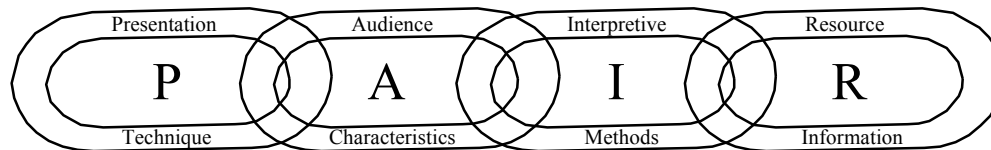
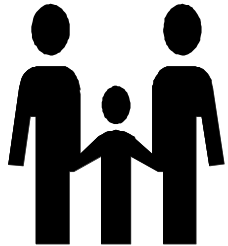
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Strengths of Professional Geologists



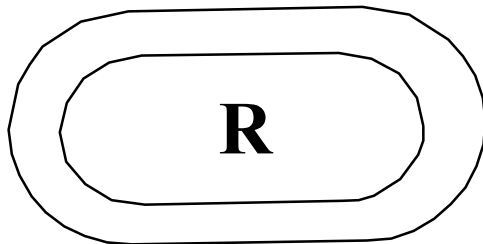
Resource Information

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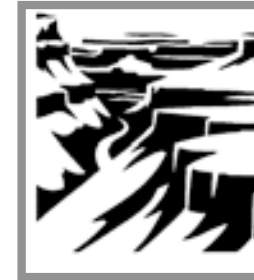
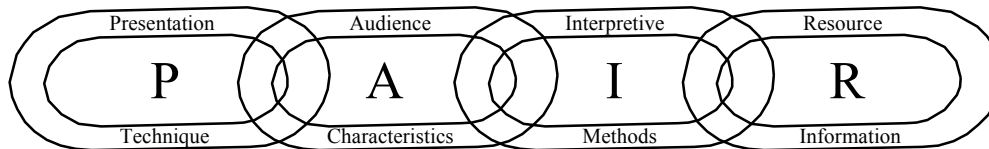
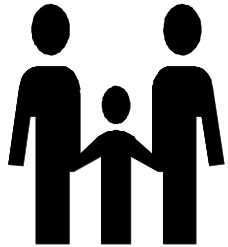
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Challenges for Professional Interpreters



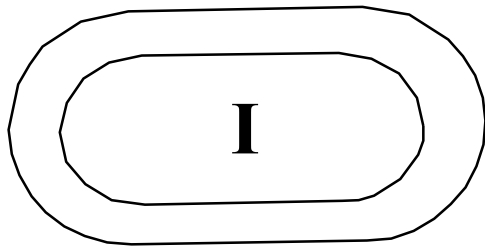
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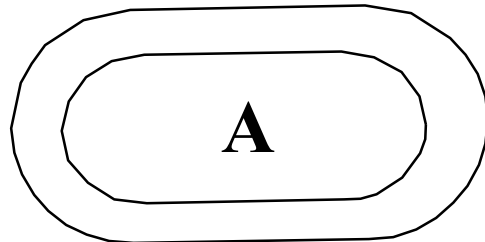


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Challenges of Professional Geologists



Interpretive Methods



Knowledge of Audience
Characteristics

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The moral I labor toward is that a landscape as splendid as that of the Colorado Plateau can best be understood by poets [interpreters] with their feet firmly planted in concrete data; and by geologists whose heads and hearts have not lost the capacity for wonder.

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Any good poet [interpreter], in our age at least, must begin with the scientific view of the world; while the scientist must be something of a poet [interpreter], must possess the ability to communicate to the rest of us his sense of love and wonder at what his work discovers.

--Ed Abbey

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Let's work together



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