



MAKING MEANING

Developer:

Pacific Science Center

Category:

How People Learn

Approximate length:

20 – 30 minutes

Format:

Workshop

MAIN IDEA:

Throughout our lives, meaningful and memorable learning experiences occur in a variety of settings. This activity encourages scientists to reflect on informal learning experiences from their own lives, and to identify specific qualities that made those memories meaningful. Scientists will feel empowered to facilitate similarly meaningful experiences for science center visitors. This activity also reinforces notions related to how people learn and generates an appreciation for the power of informal science education.

RELEVANT OBJECTIVES:

- Scientists understand the importance to learning of developing personal connections with audiences based on shared experiences.
- Scientists develop a broader understanding of how people learn and the nature of informal learning environments.

HOW THIS RELATES TO OTHER PROFESSIONAL DEVELOPMENT ELEMENTS:

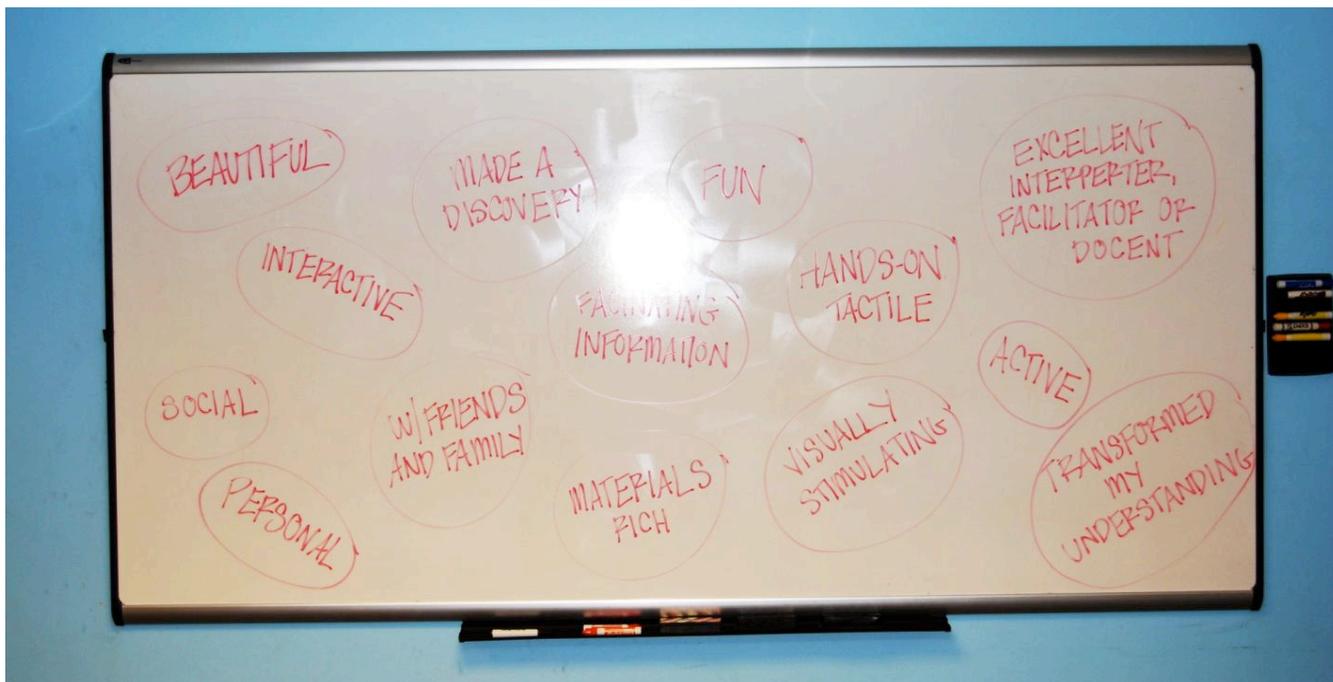
This element helps scientists understand the value of informal learning experiences, so it is often best to place it early in scientists' professional development experiences. This element can also be used as an icebreaker, as it helps scientists get to know each other and feel comfortable in the workshop setting. This element can serve as an introduction to concepts that are further explored in elements such as *Personal Learning* and *The Pleasure of Finding Things Out*.

ASSUMED PRIOR KNOWLEDGE AND EXPERIENCE:

We assume the scientists have experienced positive and meaningful learning experiences in informal environments and are willing to share and discuss their memories openly.

ROOM SETUP AND MATERIALS PREPARATION:

Before the workshop begins, write the words or phrases listed below on poster paper or a large whiteboard. The words should be large enough to be read from a distance and scattered across the space. Draw larger ovals around each word, leaving space for check marks to be inserted in each oval, as in the photo below.



Words/phrases to use:

- Beautiful
- Made a discovery
- Inspired curiosity
- Fun
- Personal
- Excellent interpreter or docent
- Visually stimulating
- Hands-on or tactile
- Materials-rich
- Interactive
- Active
- With friends and family
- Social
- Novel experience
- Fascinating information

PROCESS:

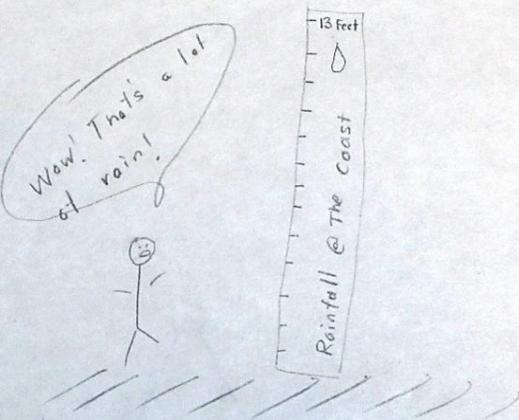
Part 1: Introduction and activity (5 - 10 minutes)

- Hand out Making Meaning Worksheets. Ask each scientist to recall a meaningful informal learning experience he or she has had at some point. Now ask the scientists to describe that memory through words or pictures on the worksheet.
- Explain that experiences may have happened at an art museum, science center, park, historical site, aquarium, zoo, at home, or any other site of informal learning. The memory could be from early childhood or could be as recent as yesterday. Note that "meaningful" can be defined by the participant. Participants may define meaningful as learning something new, building a strong emotional memory, or having a fun and social experience with their family, among other aspects.
- Here is an example of a worksheet:

Identify a memorable learning experience that took place in an informal environment (i.e. out of school). Maybe it happened at a museum, park, zoo, historical site, outdoors, abroad or on a tour.

Describe it below through words or pictures.

A.)



This might be a fabricated memory...? The facts are true though.

There was an outdoor nature trail and a giant ruler showing the total amount of coastal rainfall ~13 feet. Later on that trip, we visited Sequim where I learned rainfall was only 17 inches, also on a nature trail.

Why was this experience meaningful?

B.)



Thinking about geographic variability.

Part 2: Partner reflection (10 minutes)

- Ask each scientist to share his or her memory with a partner, taking the time to highlight the specific qualities of the experience that made it meaningful. Ask them to consider the following points: Was it the people with you, the fascinating information, an enthusiastic docent, a personally relevant discovery, or the first time seeing something new that made your experience meaningful? Explain that once sharing is complete, both members of the team will walk up to the whiteboard or poster to make check marks next to the meaningful words or phrases written there that resonate with their own memories. Note that they also are welcome to write new elements up on the chart and add check marks to those. They should select as many words or phrases as they like.
- In this section, be especially conscious of timing, as participants can often talk about their stories for much longer than five minutes! Give a warning when it is time for the second partner to share, and also when pairs should be getting up to make their check marks on the board. (This should happen during the last two to three minutes of the exercise.)



Part 3: Discussion and reflection (5 - 10 minutes)

- Ask for one to three volunteers (depending on the available time) to share their memorable experiences with the entire group. Once a volunteer has completed the story, ask him or her to call out the words or phrases that they checked off on the board. What exactly made their experience meaningful?
- Lead a large-group reflection considering the group's collective experiences, as described by the marked-up wall chart. Reflection questions might include:
 - What did our experiences have in common?
 - Does anything on the board surprise you?
 - How many experiences involved some type of interaction with another person?
 - How do you think these qualities relate to the experiences you will create and facilitate at the science center?
- Remind the scientists that these experiences don't just "happen," though when you are the learner, it often feels as if this is so. More often, such experiences are carefully constructed and designed by some type of informal science education professional.
- Comment on the idea that the scientists can and will create these types of meaningful experiences for science center visitors. This doesn't mean that every interaction with a visitor will be as memorable as the ones you have just recounted. But you never know when that magic moment between you, the materials or activity, and the visitor will occur.
- Also remind the scientists that, because learning is inherently personal, the real meaning-making happens within the individual learner. As facilitators, we can support this learning by working on these qualities [point to board], and paying attention to the unique needs and interests of the learners in front of us.

Note: A good reference for the facilitator regarding topics highlighted in this element is: Falk, J.H. and Lynn D. Dierking, *Learning from Museums: Visitor Experiences and the Making of Meaning* (Walnut Creek, CA: AltaMira Press, 2000)

MATERIALS:

- o Making Meaning Worksheet
- o Pens
- o Whiteboard or poster paper
- o Dry erase or poster pens

Making Meaning Worksheet

Making Meaning

Identify a memorable learning experience that took place in an informal environment (meaning outside of school). This could be something that happened at a museum, park, zoo, historical site, outdoors, on a tour, or at home.

Describe it below through words or pictures.

Why was this experience meaningful?