

The Sacred in Science

Session 1 – *Light*

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1. **Telling: How to Create a Sacred Science Demonstration** - *Tell, Show, Repeat, ... then Reflect*
“Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.” Chinese Proverb

- *Tell* what is coming by setting the mood, not explaining concepts, yet.
- *Show* so that students can mindfully attend the experience, without too much explanation.
- *Repeat* the experience in your mind, still not analyzing and naming. Just re-create it with your imagination, like a movie.
- *Reflect* on what happened. Perhaps within the lesson, or perhaps later – even the next day. If the students took it in mindfully, perhaps in the last night’s sleep, they may have had depth added to their perspective. These reflections can include descriptions of what happened physically, why it happened, how we can use or control it, or even how to make money from it. But these reflections might also transcend the mechanical explanation to honor the *wonder* and *awe* in an event.
- **Take Away Mindfulness Demonstration: “Three Bowls”**
[all ages, especially useful with adults and higher ed to recapture youth]
Part I. Put your hands in cold or hot water, then in room temperature water. First just allow for pure observations. Then, when ready to reflect, instead of saying that you can’t trust your senses, note how your body is quite sensitive to the differences in heat.
Part II. Now put the hot and cold water in separate vases that can balance on each other, mouth to mouth. Put yellow food coloring in the hot, blue in cold. Place the hot on top and tell the story of the Sun causing warmth as the Earth was first formed. The blue is the cool waters of Earth. Note that while hot is above and cold below, they do not mix because heat goes up and cold goes down. Continue story ... but the Sun did not stay above, it came down in rays of light and heat. Now turn over vases carefully. Slowly the mixing of Sun’s light and Earth’s waters make the green plants that we see everywhere today.

2. **Showing: Making an “O/A” - Observing vs. Analyzing**

- Can you tell when you are completely mindful, observing and paying quality attention? When do you stop paying attention? What stops you?

3. **Repeating: How to Stay as the Observer - Mindfulness through Science**

- Take Away Mindfulness Demonstration: “Seeing Exercises”

Color in Gray / Color on hole in card / Color in

Shadows (Van Gogh) / Color in the Sun & Sky using frosted glass & crystal [all ages]

Part I. Tell about shadows as the gray part of what we see. Then start showing various gray swatches. As an exercise, note how one is more toward red, another toward blue, or yellow, or green and so on.

Part II. Look at the shadows in the surrounding immediate environment, whether indoors or outdoors. Punch small holes (about 1/4 inch) in cards or paper pieces. Hold the cards at arm's length and look at the hole as if it is a mark on the card. Resist looking through it since we know it is a hole. Use this aid to disengage the left hemisphere of the brain and simply observe the color in any subtle color differences such as two walls of a room or a building, or a mountain range at a distance.

Part III. Note that artists often exaggerate the hues in shadows and subtle areas of color. Show samples from Van Gogh or others.

Part IV. Simulate the cyan to blue-purple of the Sky and the yellow to red of the Sun with a foggy crystal or frosted glass or milky water.

- using the senses before scientific instruments
- experiencing without yet talking
- feeling relationship without reflecting
- engaging before labeling

4. **Reflecting: Time to Think – Move from Observing to Analyzing**

As long as time is given to mindfully observe, conclusions and descriptions can naturally follow. This is how to teach scientists not to jump to conclusions.

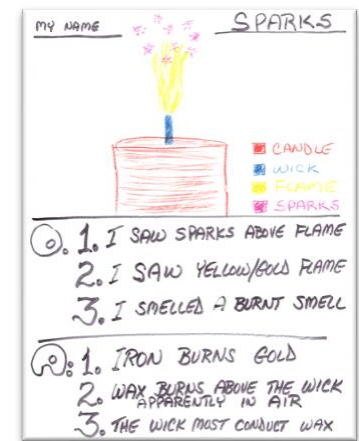
- Take Away Mindfulness Demonstration: “Mixing Colors”

physical materials vs. light beams [all ages]

Part I. Mix tempera yellow, magenta, and blue as fairly close primaries. As mud appears, reflect after observing that physical materials subtract light and tend toward darkness and black. (Other ways: crayons, pastels, pencils, paints, or inks.)

Part II. Then mix lights by spinning a disc of red, green, and blue-purple, reflecting after observation that mixing light tends toward more light and white. (Other ways: projectors, computer paint apps, flashlights with colored plastic sheets.)

- naming, labeling, categorizing
- describing, conceptualizing, articulating
- talking about, remembering, reviewing



- analyzing, concluding, theorizing

5. **All Together Now ... How to Use Science to Measure Your Mindfulness** - *Increasing Presence*

- Take Away Mindfulness Demonstration: “Color in After Images”

(Johann Wolfgang von Goethe, 1840/1970) [all ages]

Part I. Look mindfully at color swatches, then shift gaze to white background. Produce after image of complimentary color from within.

Part II. ‘Pick up’ after image with will power and place it over another color swatch.

Can you mix the two light beams? If you mix an after image with its original swatch can you produce white?

- Take Away Mindfulness Demonstration: “Test Yourself”

[all ages]

What color is a red rose in green light? What color are shadows in a green light?

Quotes

“He who knows the Tao does not speak about it; he who is ever ready to speak about it does not know it.” (Tzu, 2012/circa 500 BC, Verse 56)

“Words that are strictly true seem to be paradoxical.” (Tzu, 2012/circa 500 BC, Verse 78)

“No compulsory learning can remain in the soul. . . In teaching children, train them by a kind of game, and you will be able to see more clearly the natural bent of each.” (Plato, Ferrari, & Griffith, 2000/circa 400 BC, Book VII)

“To see a World in a Grain of Sand
And a Heaven in a Wild Flower
Hold Infinity in the palm of your hand
And Eternity in an hour

A Robin Red breast in a Cage
Puts all Heaven in a Rage

...

God Appears & God is Light
To those poor Souls who dwell in Night
But does a Human Form Display
To those who Dwell in Realms of day” (William Blake)

I believe a leaf of grass is no less than the journeywork of the stars,
And the pismire is equally perfect, and a grain of sand, and the egg of the wren,

And the tree-toad is a chef-d’oeuvre for the highest,
And the running blackberry would adorn the parlors of heaven,
And the narrowest hinge in my hand puts to scorn all machinery,
And the cow crunching with depressed head surpasses any statue,
And a mouse is miracle enough to stagger sextillions of infidels,
And I could come every afternoon of my life to look at the farmer’s girl boiling her iron tea-kettle and baking shortcake.

I find I incorporate gneiss and coal and long-threaded moss and fruits and grains and esculent roots,
And am stucco’d with quadrupeds and birds all over,
And have distanced what is behind me for good reasons,
And call anything close again when I desire it. (Whitman, Morley, & Daniel, 1940)

For a reference to *current writers on the hoped for, next version of humankind*, go to “Good Reading” on <http://www.bickart.org/>.

References

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