

Other Voices:

Gerard Manley Hopkins and Science Instruction

John D. Mays



Integrating the arts in science instruction: Essential, not just a nice idea

- ◆ Broader appeal to students (including those uninterested in science/math)
- ◆ Enrichment of context (thus making lessons memorable and fun)
- ◆ Education is not about training in your narrow curriculum (modern view); it is about developing wisdom and virtue (classical view). This requires the paideia.



Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins

As kingfishers catch fire, dragonflies draw flame;

As tumbled over rim in roundy wells

Stones ring; like each tucked string tells, each hung bell's

Bow swung finds tongue to fling out broad its name;

Each mortal thing does one thing and the same:

Deals out that being indoors each one dwells;

Selves — goes itself; *myself* it speaks and spells,

Crying *Whát I dó is me: for that I came.*

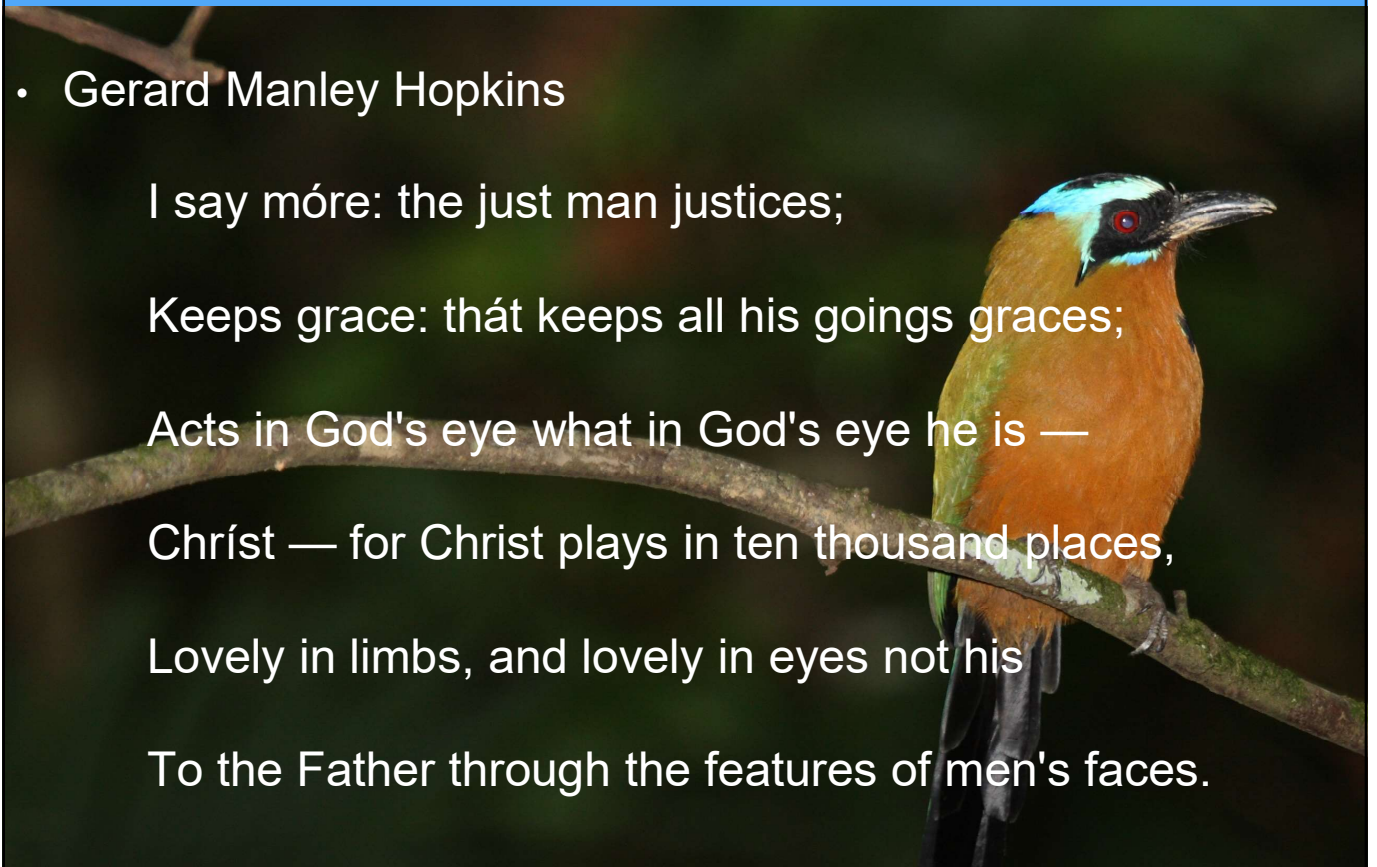


Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins

I say móre: the just man justices;
Keeps grace: thát keeps all his goings graces;
Acts in God's eye what in God's eye he is —
Chríst — for Christ plays in ten thousand places,
Lovely in limbs, and lovely in eyes not his
To the Father through the features of men's faces.



Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins

—I am like a slip of comet

Scarce worth discovery, in some corner seen

Bridging the slender difference of two stars,

Come out of space, or suddenly engender'd

By heady elements, for no man knows;

Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins

But when she sights the sun she grows and sizes

And spins her skirt out, while her central star

Shakes its cocooning mists; and so she comes

To fields of light; millions of travelling rays

Pierce her; she hangs upon the flame-cased sun,

And sucks the light as full as Gideon's fleece:

Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins

But then her tether calls her; she falls off,

And as she dwindles shreds her smock of gold

Between the sistering planets, till she comes

To single Saturn, last and solitary;

Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins

And then she goes out into the cavernous dark.

So I go out: my little sweet is done:

I have drawn heat from this contagious sun;

To not ungentle death now forth I run.

Encountering Creation through the Mediation of Artists

The Poets

- Gerard Manley Hopkins
 - ◆ As kingfishers catch fire
 - ◆ I am like a slip of comet
 - ◆ God's Grandeur
 - ◆ Pied Beauty
 - ◆ The Starlight Night

Encountering Creation through the Mediation of Artists

The Poets

- ◆ Richard Wilbur: Worlds (Geography, Isaac Newton)
- ◆ Richard Ryan: Galaxy
- ◆ William Blake: The Tyger, Auguries of Innocence

Encountering Creation through the Mediation of Artists

The Composers

- Antonio Vivaldi: *The Four Seasons*
- Ferde Grofe, *Grand Canyon Suite*
- Gustav Holst, *The Planets*

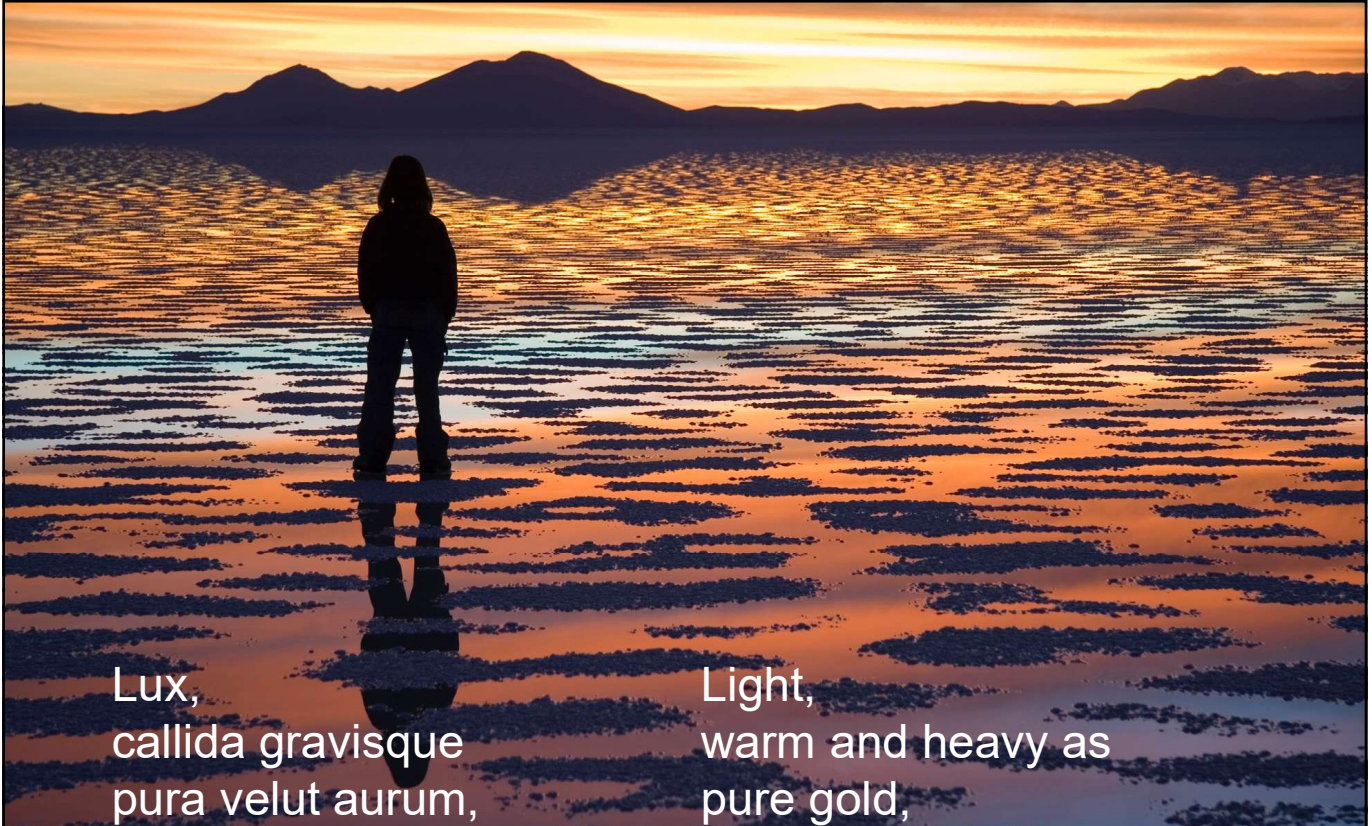
Encountering Creation through the Mediation of Artists

The Composers

- Eric Whitacre
 - ◆ Lux Arumque
 - ◆ Water Night
 - ◆ Cloudburst
 - ◆ Leonardo Dreams of His Flying Machine

All found on

Eric Whitacre, The Complete A Cappella Works, 1991-2001,
Brigham Young University Singers, ARSIS AUDIO, arsisaudio.com



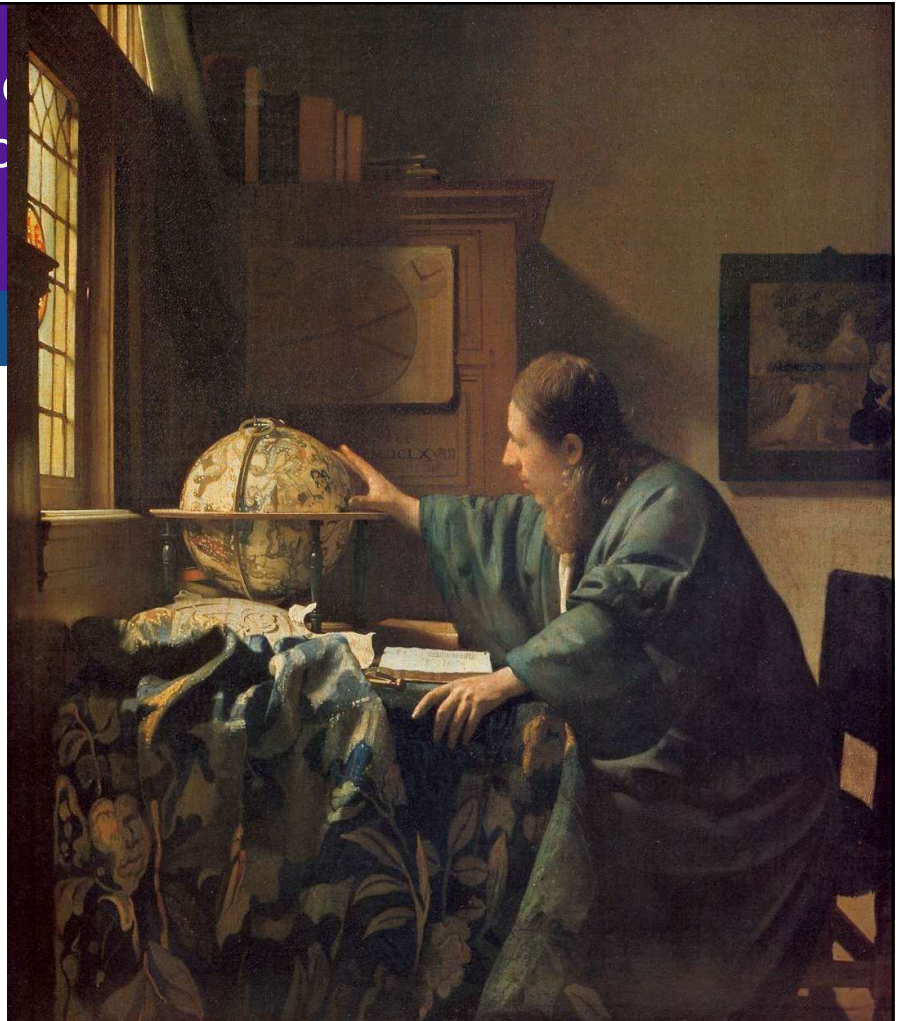
Lux,
callida gravisque
pura velut aurum,
et canunt angeli molliter
modo natum

Light,
warm and heavy as
pure gold,
and the angels sing softly
to the newborn babe

Encountering Creativity through the Mediation of Artists

The Painters

- Johannes Vermeer:
The Astronomer (1668)



Encountering Creation through the Mediation of Artists The Painters

- Jan Matejko: Astronomer Copernicus—Conversation with God (1872)



Encountering Creation through the Mediation of Artists

The Painters

- Vincent van Gogh: Starry Night (1889)



Encountering Creation through the Mediation of Artists The Painters

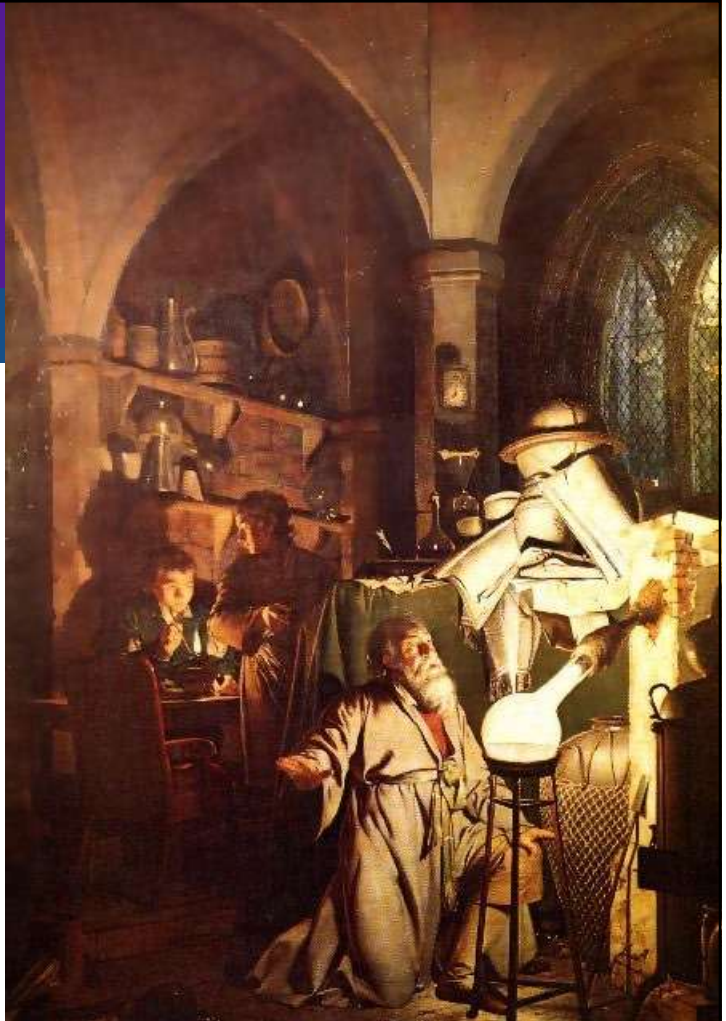
- Joseph Wright: An Experiment on a Bird in an Air Pump (1768)



Encountering Creation through the Mediation of Artists

The Painters

- Joseph Wright:
The Alchemist Discovering
Phosphorous, or
The Alchemist in Search of the
Philosopher's Stone (1761)



Encountering Creation through the Mediation of Artists The Painters

- J.M.W. Turner: Rain, Steam and Speed—The Great Western Railway (1844)



Encountering Creation through the Mediation of Artists

The Writers—Literary Classics

- Annie Dillard, *Pilgrim at Tinker Creek* (1975 Pulitzer)
- Edward Abbey: *Desert Solitaire*
- John Graves: *Goodbye to a River*
- Aldo Leopold: *A Sand County Almanac*
- Konrad Lorenz: *King Solomon's Ring*
- John Muir: *The Mountains of California, My First Summer in the Sierra*

Encountering Creation through the Mediation of Artists

The Writers

From Annie Dillard, *Pilgrim at Tinker Creek* (1975 Pulitzer);

I am no scientist. I am a wanderer with a background in theology and a penchant for quirky facts. As a thinker I keep discovering that beauty is itself as much a fact, and a mystery, as the most gruesome parasitic roundworm. I consider nature's facts—its beautiful and grotesque forms and events—in terms of their import to thought and their impetus to the spirit. In nature I find grace tangled in a rapture with violence; I find an intricate landscape whose forms are fringed in death; I find mystery, newness, and a kind of exuberant, spendthrift energy.

Encountering Creation through the Mediation of Artists

The Writers—Really Fun Science

- Sam Kean, *The Disappearing Spoon*
- Le Couteur & Burreson, *Napoleon's Buttons*

Encountering Creation through the Mediation of Artists

The Writers—Books I included in my physics class

- John Gribbin: In Search of Schrodinger's Cat
- Michael Frayn: Copenhagen

Encountering Creation through the Mediation of Artists

The Writers—The sacred in our encounters with nature

- Annie Dillard, *Holy the Firm; Teaching a Stone to Talk; For the Time Being*
- Vigen Guroian, *Inheriting Paradise*
- Wendell Berry: *Sex, Economy, Freedom and Community; Life Is a Miracle*

Encountering Creation through the Mediation of Artists

The Writers: For Young Readers

- Kathryn Lasky: The Librarian Who Measured the Earth (On Eratosthenes)
- Charles Ludwig: Michael Faraday, Father of Electronics
- James Daugherty: Of Courage Undaunted
- John Tiner: Samuel F.B. Morse
- James Daugherty: Poor Richard (On B. Franklin)

Encountering Creation through the Mediation of Artists

The Writers: More and more

- David Haskell: *The Forest Unseen*
- Edwin Teale: *The Strange Lives of Familiar Insects*
- Rutherford Platt: *The Great American Forest*
- Stephanie Mills: *In the Service of the Wild*
- Hugh Aldersey-Williams: *Periodic Tales*

Encountering Creation through the Mediation of Artists

The Hymnists

- Joseph Seiss (trans): Fairest Lord Jesus
- St. Francis of Asissi: All Creatures of Our God and King
- Maltbie Babcock: This Is My Father's World

Encountering Creation through the Mediation of Artists

The Hymnists

This Is My Father's World—Maltbie Babcock

This is my Father's world, and to my listening ears

All nature sings, and round me rings the music of the spheres.

This is my Father's world: I rest me in the thought

Of rocks and trees, of skies and seas;

His hand the wonders wrought.

Encountering Creation through the Mediation of Artists

The Hymnists

This is my Father's world, the birds their carols raise,
The morning light, the lily white, declare their Maker's praise.
This is my Father's world: He shines in all that's fair;
In the rustling grass I hear Him pass;
He speaks to me everywhere.

Encountering Creation through the Mediation of Artists

The Hymnists

This is my Father's world. O let me ne'er forget

That though the wrong seems oft so strong, God is the ruler yet.

This is my Father's world: the battle is not done:

Jesus Who died shall be satisfied,

And earth and Heav'n be one.

Serious about science.
Serious about faith.

Come visit our booth!

