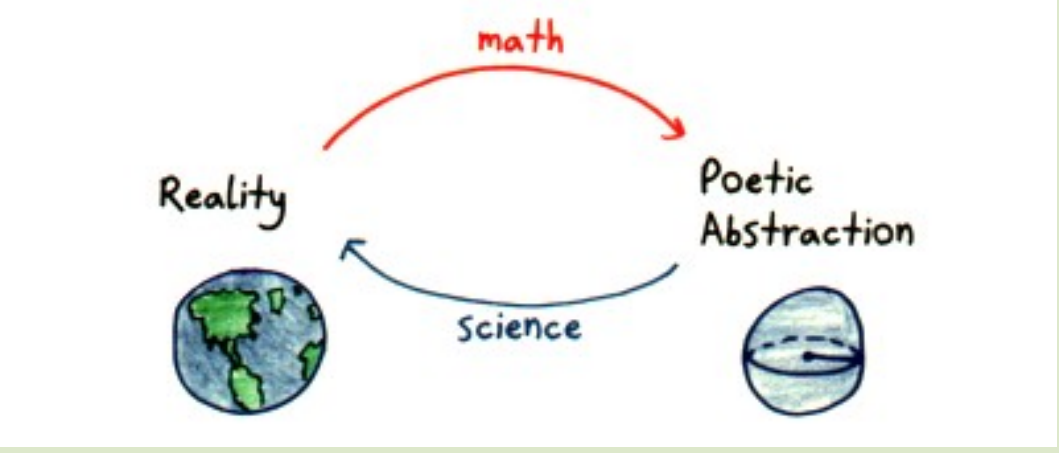
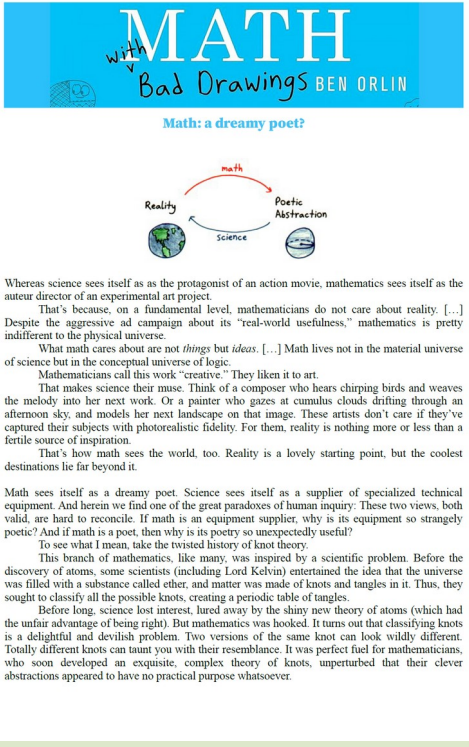
Maths as a Dreamy Poet



Maths as a Dreamy Poet



MATH with Bad Drawings BEN ORLIN

Math: a dreamy poet?

Whereas science sees itself as as the protagonist of an action movie, mathematics sees itself as the auteur director of an experimental art project.

That's because, on a fundamental level, mathematicians do not care about reality. […] Despite the aggressive ad campaign about its "real-world usefulness," mathematics is pretty indifferent to the physical universe.

What math cares about are not *things* but *ideas*. […] Math lives not in the material universe of science but in the conceptual universe of logic.

Mathematicians call this work "creative." They liken it to art.

That makes science their muse. Think of a composer who hears chirping birds and weaves the melody into her next work. Or a painter who gazes at cumulus clouds drifting through an afternoon sky, and models her next landscape on that image. These artists don't care if they've captured their subjects with photorealistic fidelity. For them, reality is nothing more or less than a fertile source of inspiration.

That's how math sees the world, too. Reality is a lovely starting point, but the coolest destinations lie far beyond it.

Math sees itself as a dreamy poet. Science sees itself as a supplier of specialized technical equipment. And herein we find one of the great paradoxes of human inquiry: These two views, both valid, are hard to reconcile. If math is an equipment supplier, why is its equipment so strangely poetic? And if math is a poet, then why is its poetry so unexpectedly useful?

To see what I mean, take the twisted history of knot theory.

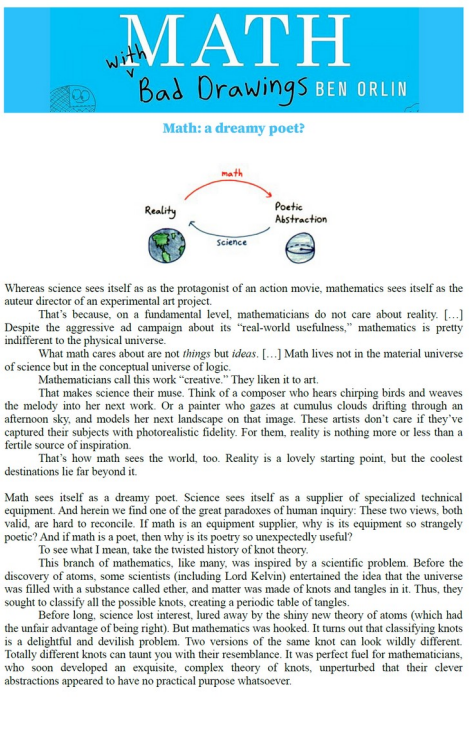
This branch of mathematics, like many, was inspired by a scientific problem. Before the discovery of atoms, some scientists (including Lord Kelvin) entertained the idea that the universe was filled with a substance called ether, and matter was made of knots and tangles in it. Thus, they sought to classify all the possible knots, creating a periodic table of tangles.

Before long, science lost interest, lured away by the shiny new theory of atoms (which had the unfair advantage of being right). But mathematics was hooked. It turns out that classifying knots is a delightful and devilish problem. Two versions of the same knot can look wildly different. Totally different knots can taunt you with their resemblance. It was perfect fuel for mathematicians, who soon developed an exquisite, complex theory of knots, unperturbed that their clever abstractions appeared to have no practical purpose whatsoever.

Read Ben Orlin's text about the relationship between science and math.

Pay attention to style: what are Orlin's strategies to popularize his ideas? In other words, how does he catch his readers' attention and make his point easy to understand?

Maths as a Dreamy Poet



MATH with Bad Drawings BEN ORLIN

Math: a dreamy poet?

Whereas science sees itself as as the protagonist of an action movie, mathematics sees itself as the auteur director of an experimental art project.

That's because, on a fundamental level, mathematicians do not care about reality. […] Despite the aggressive ad campaign about its "real-world usefulness," mathematics is pretty indifferent to the physical universe.

What math cares about are not *things* but *ideas*. […] Math lives not in the material universe of science but in the conceptual universe of logic.

Mathematicians call this work "creative." They liken it to art.

That makes science their muse. Think of a composer who hears chirping birds and weaves the melody into her next work. Or a painter who gazes at cumulus clouds drifting through an afternoon sky, and models her next landscape on that image. These artists don't care if they've captured their subjects with photorealistic fidelity. For them, reality is nothing more or less than a fertile source of inspiration.

That's how math sees the world, too. Reality is a lovely starting point, but the coolest destinations lie far beyond it.

Math sees itself as a dreamy poet. Science sees itself as a supplier of specialized technical equipment. And herein we find one of the great paradoxes of human inquiry: These two views, both valid, are hard to reconcile. If math is an equipment supplier, why is its equipment so strangely poetic? And if math is a poet, then why is its poetry so unexpectedly useful?

To see what I mean, take the twisted history of knot theory.

This branch of mathematics, like many, was inspired by a scientific problem. Before the discovery of atoms, some scientists (including Lord Kelvin) entertained the idea that the universe was filled with a substance called ether, and matter was made of knots and tangles in it. Thus, they sought to classify all the possible knots, creating a periodic table of tangles.

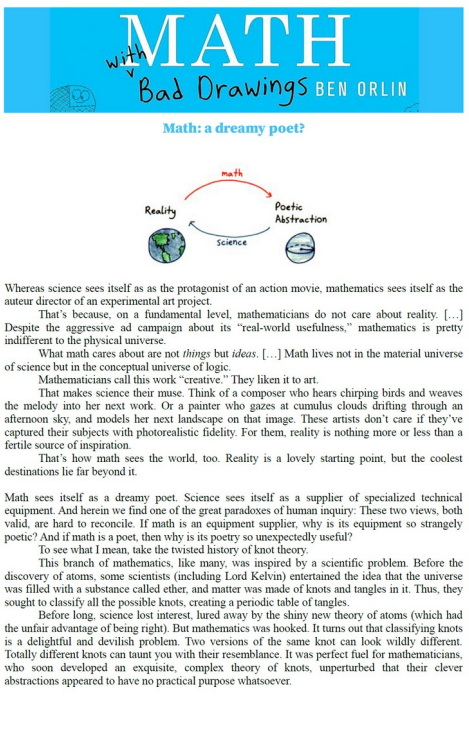
Before long, science lost interest, lured away by the shiny new theory of atoms (which had the unfair advantage of being right). But mathematics was hooked. It turns out that classifying knots is a delightful and devilish problem. Two versions of the same knot can look wildly different. Totally different knots can taunt you with their resemblance. It was perfect fuel for mathematicians, who soon developed an exquisite, complex theory of knots, unperturbed that their clever abstractions appeared to have no practical purpose whatsoever.

Pay attention to style: what are Orlin's strategies to popularize his ideas?

Since math is a "dreamy poet", Orlin's language must be poetic

- **Figurative language and images:**
  Ex. reference to sight "To see what I mean" "visualize math" comparisons and metaphors people can notably relate to Ex. "They liken it to art" "starting point, but the coolest destinations" "Christmas lights"
- **Regular rhythm and internal rhyming** Ex. "To see what I mean, take the twisted history of knot theory"
- **Personifications** Ex. "science sees itself" "That makes science their muse" "Mathematics cried"
- **Sound patterns** Ex. "this mature creature"
- **Exclamations**
- **(Rhetorical) Questions** involving the reader
- **Detailed and refined expression** (adjectives, adverbs) Ex. "aggressive ad campaign" "photorealistic fidelity" "fertile source of inspiration"

Maths as a Dreamy Poet



MATH with Bad Drawings BEN ORLIN

Math: a dreamy poet?

Whereas science sees itself as as the protagonist of an action movie, mathematics sees itself as the auteur director of an experimental art project.

That's because, on a fundamental level, mathematicians do not care about reality. […] Despite the aggressive ad campaign about its "real-world usefulness," mathematics is pretty indifferent to the physical universe.

What math cares about are not *things* but *ideas*. […] Math lives not in the material universe of science but in the conceptual universe of logic.

Mathematicians call this work "creative." They liken it to art.

That makes science their muse. Think of a composer who hears chirping birds and weaves the melody into her next work. Or a painter who gazes at cumulus clouds drifting through an afternoon sky, and models her next landscape on that image. These artists don't care if they've captured their subjects with photorealistic fidelity. For them, reality is nothing more or less than a fertile source of inspiration.

That's how math sees the world, too. Reality is a lovely starting point, but the coolest destinations lie far beyond it.

Math sees itself as a dreamy poet. Science sees itself as a supplier of specialized technical equipment. And herein we find one of the great paradoxes of human inquiry: These two views, both valid, are hard to reconcile. If math is an equipment supplier, why is its equipment so strangely poetic? And if math is a poet, then why is its poetry so unexpectedly useful?

To see what I mean, take the twisted history of knot theory.

This branch of mathematics, like many, was inspired by a scientific problem. Before the discovery of atoms, some scientists (including Lord Kelvin) entertained the idea that the universe was filled with a substance called ether, and matter was made of knots and tangles in it. Thus, they sought to classify all the possible knots, creating a periodic table of tangles.

Before long, science lost interest, lured away by the shiny new theory of atoms (which had the unfair advantage of being right). But mathematics was hooked. It turns out that classifying knots is a delightful and devilish problem. Two versions of the same knot can look wildly different. Totally different knots can taunt you with their resemblance. It was perfect fuel for mathematicians, who soon developed an exquisite, complex theory of knots, unperturbed that their clever abstractions appeared to have no practical purpose whatsoever.

Pay attention to style: what are Orlin's strategies to popularize his ideas?

- **Humour, puns, irony and asides**
  Ex. "Take the twisted history of knot theory" "(which had the unfair advantage of being right)"
- **Direct address** to the reader Ex. "Think of a composer" "As you know"
- **Name-dropping and use of common references or authority figures**
- **Quotations**
- **Numbers and data**
- **Concrete examples of applications or consequences**
- **Visual expression and illustrations: "bad drawings"**

Maths as a Dreamy Poet

Each group will write the name of a theory or scientific concept on a piece of paper (the subject may come from an oral presentation).

The group which picks it up will have to use effective strategies and images in order to explain it clearly to the class.