Comics, Storyboards and Video: Scaffolding Essential Writing Skills for the 21st Century Student
Comics, Storyboards and Video: Scaffolding Essential Writing Skills for the 21st Century Student

• Teaching the Relationships Between Reading, Writing, Sequential Art and Video
Questions?

• How can sequential art help students learn, and learn more rapidly?
• How can sequential art help improve instruction for teachers with a broad curriculum?
• How do we prepare students to communicate in the video medium of the 21st century?
Brain Basis

**Between Minds**

An ongoing taxonomy of team dynamics

**Left Brain**
- Process info in a linear manner
- Important facts
- Move in a sequential order
- Use logic to solve problems
- Info processing
- Project engagement
- Perception
- Workflow
- Problem solving

**Right Brain**
- Process info holistically
- See end result with clarity
- Move randomly from task to task
- Use intuition to solve problems

**Mindjet & JESS3**
Novak – Concept Mapping

• The material to be learned must be conceptually clear and presented with language and examples relatable to the learner’s prior knowledge.

• Propositional statements

![Diagram showing the relationship between Creative Productions, Meaningful Learning, A Continuum, Rote Learning, and the requirements for each level.]

1. Well organized, relevant knowledge structures
2. Emotional commitment to integrate new with existing knowledge

1. Little or no relevant knowledge
2. No emotional commitment to relate new with existing relevant knowledge
For the last hundred years, if you wanted to communicate, you needed to know how to type. In the next hundred years, it is possible that video medium is the primary force of communication. To be successful in that medium, students need to know how to storyboard to communicate their ideas.
This presentation helps you to create comics or storyboards to tell a story.

Writing has justifiably held a position of prominence as being the “flip side” of reading, a critical survival skill in our era.

In considering writing, though, educators often fall short of helping students developing writing skills that will enable them to be successful in our digital age.
This presentation intends to help educators close the gap between what students currently learn and what they need to learn by outlining a process for early introduction of visual writing skills.
This presentation will discuss and offer suggestions for:

1) Developing student’s visual literacy skills
2) Using online comic and video creation sites for scaffolding video development skills
3) Explore the relationship between writing, sequential art, and storyboards
4) Explain why drawing skills are no longer a necessary prerequisite to developing effective storyboards
Developing Visual Literacy through Sequential Art

- Exposure to a wide variety of Sequential Art helps the student see different visual styles as well as different writing styles.
- Movies are time constrained, Sequential Art are not. This CAN allow for more reflection on how the images work with the text.
- Movies have difficulty displaying thinking. Sequential Art do not - shows richer motivations.
What is Sequential Art?

Will Eisner who initiated the term Sequential Art, said they are “Sequential Art...the arrangement of pictures or images and words to narrate a story or dramatize an idea.”
What are they?

Graphic Novels:
Book length, complete story told through a combination of text and sequential art. They encompass many genres; biography, action, horror, drama, sci-fi, comedy, non-fiction, etc.

DON’T WAIT to get started!!
Sequential Art Helps Students:

- Develop an increased interest in reading
- Increase literacy in the broad sense of the word
- Develop language skills and a rich and varied vocabulary
- Foster interest in a variety of literary genres
- Foster interest in a broad range of topics

High Interest Low Level
Sequential Art Helps Students:

• Stimulate a creative imagination
• Develop an appreciation of art
• Develop the ability to discuss and critique art and writing
• Increase understanding of how meaning is found in visual phenomena
• Enhance understanding of the video production process
Sequential Art Addresses Current, Relevant, Complex Issues

Nonconformity
Prejudice
Coming of Age
Social Injustice
Personal Triumph Over Adversity
Sequential Art appeals to highly motivated readers. Gifted kids are captivated by the believable details of well-crafted imaginary worlds portrayed in words and pictures.

Michael Lavin
And, Stephen Krashen notes in his book *The Power of Reading*, that comic books often serve as an intermediary, helping readers become more linguistically proficient before moving on to heavier reading.
John McCourt, who teaches non-native English speakers at Chula Vista High School, recently incorporated Sequential Art into his lessons. "A lot of the vocabulary is college level," he said. "A lot of the words are SAT words. And it's incredible how fast these kids will read through these. They're like, 'When are you going to get new ones, Mr. McCourt?' "
The average comic book introduces children to twice as many new words as the average children’s book and more than 5 times as many as the average child-adult conversation.

from a 1993 study in The Journal of Child Language
Using Them

• They inspire writing assignments
• They bring new life to what might otherwise be considered “bland” content
• Offer subject matter that students might never consider
Use them to teach:

- Discrete Language Skills
- Colloquial Language
- Prediction
- Sequencing
- Literary Genres
- Character Analysis
- Identifying Themes
- Creative Writing
- Impact of Visuals
The teenage audience is comfortable with “reading” the combination of words and pictures. They may not understand the connections between the two.

Visual learners seem to connect with Sequential Art in a way they cannot with text-only books.
Lesson Plans

http://www.teachingcomics.org

Author and Book Sites

DON’T WAIT! USE IN EVERY SUBJECT AREA!

Being perfect is not the goal, getting better at it and enjoying it more can be.
Teaching Resources

Exercises

Visual Storytelling
- As Easy as Changing the Film
- Basic Storytelling... Lights, Camera, Action!
- Definition of Comics
- Editing
- Show Time Passing

Technique Exercises
- Describing the Complex World
- Expressive Lettering and Balloons
- Intro to Inking
- Intro to Lettering

Communication & Theme
- Autobiography: Do and Don't
- Comic Strip: Character/Place/Situation
- Comics and Poetry
- Iconographic Language in Comics
- Scenes as Building Blocks
- Silent Gag Cartoon Exercise
- The Irony of Humor
- Think Before You Ink
Youtube had more content in five years than NBC, CBS & ABC combined did in their previous 75 years.

To be successful in that medium, students need to know how to storyboard to communicate their ideas.

We don’t need ALL of our students to be Steven Spielberg, BUT - We do need to teach them how to communicate effectively using video in the 21st Century.
CHOICE OF MOMENT

Deciding which moments to include in a comics story and which to leave out.

CHOICE OF FRAME

Choosing the right distance and angle to view those moments -- and where to trim them.
CHOICE OF IMAGE

RENDERING THE CHARACTERS, OBJECTS AND ENVIRONMENTS IN THOSE FRAMES CLEARLY.

CHOICE OF WORD

PICKING WORDS THAT ADD VALUABLE INFORMATION AND WORK WELL WITH THE IMAGES AROUND THEM.
CHOICE OF FLOW

Guiding readers through and between panels on a page or screen.

These are the five arenas where your choices can make the difference between clear, convincing storytelling and a confusing mess.

- Choice of moment
- Choice of frame
- Choice of image
- Choice of word
- Choice of flow
Higher Order

Combination of images and text provides an excellent opportunity for critical analysis.

Increased understanding of how meaning is found in visual phenomena.

Enhance understanding of popular culture and other media.
After dinner he took me into my old room...

Come, we'll talk while I pedal...

It's good for my heart, the pedaling. But, tell me, how is it on you? How is going the comics business?

I still want to draw that book about you...

The one I used to talk to you about.

About your life in Poland, and the war.

It would take many books, my life, and no one wants anyway to hear such stories.

I want to hear it. Start with mom. Tell me how you met.

But, if you want, I can tell you... I lived then in Częstochowa, a small city not far from the border of Germany...

Better you should spend your time to make drawings. What will bring you some money.

I was in textiles-buying and selling. I didn't make much, but always I could make a living.
After dinner he took me into my old room...

IT'S GOOD FOR MY HEART, THE PEDALING. BUT, TELL ME, HOW IS IT BY YOU? HOW IS GOING THE COMICS BUSINESS?

COME-WE'LL TALK WHILE I PEDAL...

I STILL WANT TO DRAW THAT BOOK ABOUT YOU...

THE ONE I USED TO TALK TO YOU ABOUT...

ABOUT YOUR LIFE IN POLAND, AND THE WAR.

IT WOULD TAKE MANY BOOKS, MY LIFE, AND NO ONE WANTS ANYWAY TO HEAR SUCH STORIES.
It would take many books, my life, and no one wants anyway to hear such stories.
Copper Activity

Piecing together the pictures

Credit & Thanks:
IRA World Congress 2010
Sandy Gandy
Copper, this is ridiculous.

If we had walked, we would be there by now.

This turtle's been covering one pretty difficult terrain, Fred.

It's not like we're that out of shape.

Ah, much better!

Face yourself, Fred.

This is such great everyone!

We can handle this.

Hey, how long is this trail anyway?

We're almost half way.

Still later...

Much later...

Copper.

I can't.

I can't.

Huh?

Augh! I'm seeing things again.

Augh!

I'm seeing things again.

Augh!

Ah! Don't touch me!

Hold still, Fred. Calm down.

You know, sometimes it takes things slow.

Sure, Fred.
<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moment to Moment</td>
<td>A single action portrayed in a series of moments.</td>
</tr>
<tr>
<td>Action to Action</td>
<td>A single subject (person, object, etc.) in a series of actions.</td>
</tr>
<tr>
<td>Subject to Subject</td>
<td>A series of changing subjects within a single scene.</td>
</tr>
<tr>
<td>Scene to Scene</td>
<td>Transitions across significant distances of time and/or space.</td>
</tr>
<tr>
<td>Aspect to Aspect</td>
<td>Transitions from one aspect of a place, idea or mood to another.</td>
</tr>
<tr>
<td>Non Sequitur</td>
<td>A series of seemingly nonsensical, unrelated images and/or words.</td>
</tr>
</tbody>
</table>

* See Understanding Comics pages 70-89 for more information about the six transitions.
I. MOMENT TO MOMENT

A single action portrayed in a series of moments.
2. ACTION TO ACTION

A SINGLE SUBJECT (PERSON, OBJECT, ETC...) IN A SERIES OF ACTIONS.
3. SUBJECT TO SUBJECT

A SERIES OF CHANGING SUBJECTS WITHIN A SINGLE SCENE.
4. SCENE TO SCENE

TRANSITIONS ACROSS SIGNIFICANT DISTANCES OF TIME AND/OR SPACE.
5. ASPECT TO ASPECT

TRANSITIONS FROM ONE ASPECT OF A PLACE, IDEA OR MOOD TO ANOTHER.
CAREFUL THIS COULD BE DANGEROUS

I THINK I HEAR SNAKES

LOOK! THE TREASURE

LOOK SNAKES

THEY HAVE ESCAPED

I WILL USE MY WHIP TO BRING DOWN THIS STAGE

CAREFUL, INDY

LOOK OUT BELOW

I HOPE I CRUSHED SOME SNAKES
The comics medium can be a powerful educational tool. I discovered this personally while teaching an Algebra class several years ago.

My duties as the school's educational technologist required that I miss a couple days of class every two or three weeks. To make up for it, I drew "comics lectures" and asked my sub to pass them out to the students.

It was a hit.

I really like those comics, Mr. Yang! Better than when you're here in person, even!

By combining image and text, graphic novels bridge the gap between media we watch and media we read.

Gene Yang
Graphic presentation: An empirical examination of the graphic novel approach to communicate business concepts (2013)

• In the study, the participants who had read the graphic novel excerpt were better able to recognize direct quotes than those who read the textbook.
Curricula Focus

ComicLife

- Create "comic book" summaries of literature
- Re-write textbooks into narrative format that contains the core content
ComicLife – at Jack Swigert Aerospace Academy in Colorado Springs

The Thing about the Rock Cycle

*The Thing About Rocks Is....*

**WITH THIS NEW ENHANCED RAY GUN, NO ONE WILL BE ABLE TO STOP ME. NOT EVEN THE THING!**

**MEANWHILE ON EARTH, THE THING IS HELPING CHILDREN WITH VOLUNTEER SOCCER WORK....**

**THE WORLD WILL BE MINE! HA HA HA**

**“ME GUSTA JUGAR AL FUTBOL!”**

**HEYYYY WHAT IS THIS, I FEEL FUNNY....**

**AHHHHHHHHHHHHHHHHHHH**
ComicLife – The Thing about the Rock Cycle

Ugh, where am I?

I have brought you here to Mars!

Nice to see you again thing...

It's you!... Doctor Destroyer, I am finally going to stop you for good!

I don't think so thing. You see, with the help of science, I have developed a new weapon that will finally destroy even you!

Ha, don't make me laugh! You know I am made from 100% metamorphic rock. I am made from layers of crystal, and over time heat and pressure made me super hard and strong.
ComicLife -

The Thing about the Rock Cycle

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**Did you know?**
There are two different types of weathering: mechanical and chemical. Mechanical physically breaks down rocks, while chemical involves some sort of reaction that breaks or decays rock into smaller pieces; also known as decomposition.
ComicLife -

The Thing about the Rock Cycle

YES, YOU ARE NOW THE WEAKEST FORM OF ROCK (SEDIMENTARY.) YOU ARE SOFT, BRITTLE, AND NO LONGER HARD AND STRONG!

YOU WILL NEVER GET AWAY WITH THIS...

CRUNCH! POW! SMASH!

DR. DESTROYER KICKS THING INTO POOL OF STEAMING HOT LAVA.

AHHHHH!

YOU SHOULD HAVE STUDIED THE ROCK CYCLE. MWUHHAH!
ComicLife – The Thing about the Rock Cycle

Lucky for me, I did. The lava melted me from sedimentary form. I then cooled and became a hard, glossy Igneous Rock. I rose to the Earth's surface through a process called Uplift!

And now... It's clobberin' time!!!

**DID YOU KNOW?**

Melted rock material is present both on and below Earth's surface. When lava cools and crystallizes on Earth's surface, the igneous rock that forms is called Extusive. When magma cools and crystallizes inside Earth, an Intrusive Rock is formed.

An easy way to remember is Intrusive is Inside.
ComicLife -

The Thing about the Rock Cycle

**Wham!**

**Pow!**

**Kaboom!**

**Ouch...**

 WELL HE WON'T BE A PROBLEM ANYMORE, GOOD
THING THE ROCK CYCLE IS A NEVER ENDING PROCESS.

Better get back to soccer with the kids!

Goal!

Objetivo!
ComicLife - The Thing about the Rock Cycle

Practice your rock cycle terms with the online games:

- Fling the Teacher
- Spelling City
- ClassTools.net
- Who Wants To Be A Millionaire
The End.

Created by:
Cody Linneweber
Stephanie Kruggel
Sarah Chapman
Cassie Penney

Who knew rocks could be so exciting?
WebKinz Studio

- Great tool for introducing video to 2nd graders.
- Copy video with Windows Media Encoder
1. I wish I knew how to play softball.
2. I can teach you!
3. Keep your eye on the ball.
4. Palm it!!
5. Good hit!!
6. Aim for the middle.
7. Can I pitch to you?
8. Now we will play catch.
9. That was fun.
10. Can we do that again?
11. Of course some time next week.
12. You did awesome!!
Leaving for lunch...

I'm so hungry, I can't wait for lunch.

Me too.

Oh no, I forgot my drink. Can you please watch my sandwich while I go grab something to drink.

Who took a bite of my sandwich...?
Um... I don't know who could have ate it.....

That was the only thing I had to eat for lunch...now I have nothing.

The teacher's office

What is wrong Kara?

Someone took a bite of my sandwich at lunch...
Do you know who it could've been?

...no... I don't....

Well, don't you worry... we'll figure out who it is during class. But for now let's get you something else to eat.

Thank you so much.

Here is another drink and some pizza you can have for lunch.
In the classroom...

Class, would whoever took a bite of Kara’s sandwich please come talk to me after class, otherwise the whole class will be in trouble.

After class...

Teacher, I was the one who took a bite of Kara’s sandwich.

Thank you for telling me. You need to apologize to Kara because that made her very sad. We don’t eat other’s lunches, just our own.

I understand, thank you.

Kara, I’m really sorry for taking a bite of your sandwich, I guess I was just really hungry. But I’ll never do it again. I promise.

Thank you, I forgive you.
XtraNormal.com

- Creates movies from text
- If you can type, it can talk
- http://www.xtranormal.com/watch/6320537
- Collaborative Planning
EXT. SHILO LEANING AGAINST THE DOOR CATCHING HIS BEARINGS.

He walks off, turning once or twice to look over his shoulder at the Payne house.

INT. OF HOUSE WE SEE CALIE SNAPPING BEANS AGAIN

CORA

(o.s)Mamaw

yes

Cora turns to her mother and smiles the smile she gave Stoney. Both begin to laugh, calie through her annoyance.

CALIE

Why do you do that? Now you know you gotta get at least one of em. Get em and keep em.

CORA

I ain't makin' no more of a snappin’ bee. Mamaw, Daddy already bought em' for me.

CALIE

Now Cora...

Number 2
Animoto

• Combine Wordsift.com and Visual Thesaurus to make vocabulary videos in Animoto
• Animoto produces 30 second videos from images, with a WIDE selection of music
Reverse Storyboarding

Another way of establishing the relationship between Video and text is through a process I call “Reverse Storyboarding”. This is where you take a movie clip, and make it a story.
Select a clip from YouTube, then download using Any Video Converter, or similar tool.
Once downloaded, the movie will need to be converted into a format Adobe Premiere Elements can read (or use Cartoonize.net)

I use .wmv on my PC
Welcome to Cartoonize.net!

Our website allows you to make a cartoon of yourself. You can cartoonize your photo in one click. It is very easy and totally free!

You need simply to select your photo from the button below, and in the second step you choose the cartoon effect, and click on “Cartoonize Now” button.

Note: All uploaded photos are automatically deleted from the server after the conversion process. For more information, please take a look at our Privacy page.

Image Cartoonizer

version 3.0.1!
Now you can cartoonize your photos from your windows desktop with our new Software for windows!
- Cartoonize your personal photos!
- Convert more quickly!
- Convert large photos for best result!
- Convert multiple photos in one click!
- Crop function to remove unwanted parts of an image!
- Edit your photos before cartoonize them, and add some adjustments!

Download Free Trial

1) Click the Download button
2) This will take you to our website
3) Download the product
Anderson Movie
Import the movie into Adobe Premiere Elements
Get your media
Put it in the timeline
Go to effects, and Apply NewBlue Cartoon Plus
To Adobe Premiere and Comic Life

Making Connections

Text to Text

Text to Self

Text to World
To Adobe Premiere and Comic Life

Making Connections

Scott McCloud uses the term, “Identification through obfuscation”

Video is time constrained
Comics are space constrained
With Effect, the image looks like

The Graphic Novel
Story Builder – Emotional Hook

Topic
Ex: Dog

Funny

Scary

Mad

Sad
Photostories

• Used to create movies from pictures that have been taken from a digital camera, scanned in, downloaded from the Internet or clip art, or created

• You can add narration, motion, and music to the pictures

• Used to reinforce learning – multimedia expression of ideas
Photostory 3 – Free is Good!

Download from Microsoft

Search for Photostory 3
Photostory 3 – What can it do?

Edit and add motion to Pictures

Allows for Text and Narration

Has built in music generator

Digitales and Rubistar can help you evaluate
Steps to Building a Photostory

1. Import and Order your digital pictures. Hold shift key for multiple selections. You may want to create an all black jpg in paint for intros and credits, but this is not necessary. You can do basic cropping, remove red eye, and remove black borders (not usually recommended) here as well, but any in-depth photo editing is better left to another program before you import. Select NEXT.
Step 2 - Adding Text

On this screen you can add text and photo effects. I do not recommend the photo effects, but text, carefully chosen and placed, may add to your project. Notice you can make the text appear in the right, left, top, bottom or middle of your picture. This is also a good place to Save Project. Remember the name of your file, and where on the hard drive you saved it to. Select NEXT.
Step 3 – Add Narration & Motion

On this screen, you can add narration and customize motion. I recommend you add narration first, as that usually will dictate how long the photo is displayed. Preview your narration. If you do not like it, you can delete it and start over.

Click “Customize Motion” to select the motion and duration of your photos. You can add transitions here, as well, but I do not recommend it to begin with. Later, a cross fade transition may be desirable. Use the rest with caution. Select NEXT.
Step 4 – Add Music

Here you can add music by either selecting Create Music. Select your Genre from the drop down box. Then Style from the next drop down. Then select your preferred Band, Mood, Tempo and Intensity. This can take a lot of experimentation, but the default classical Amadeus, piano, sentimental frequently works well. IMPORTANT: After selecting music, be sure to REDUCE the VOLUME to slightly above LOW, or 1/8th of total volume. This will keep you from drowning out narration with music. Preview your Photostory. Select NEXT.
Step 5 – Export to .wmv Movie

• Select “Save story for playback on computer”
  Browse to the folder you created at the beginning of this project. Select that folder. The movie file will be the same name as your project file. A descriptive filename is better than the default “Photostory”.
  Quality Settings are generally set to “Profile for Computers 2 - 640 x 480”. Save Project. Select NEXT.

• Your movie, with narration, pictures, and music is created!

• White Water Rafting by Jack Geary
Poetry

• It’s [Dark in Here](#) by Shel Silverstein

• UCLA film school uses poetry to teach their film students the principals of timing in the video creation process

• Poetry, especially rhyme and verse, are essential 21st Century technology and writing skills!
Hemingway - “the best story I ever wrote was “For sale, baby shoes, never worn”

- Create a backstory video
Baby Shoes

Hemingway - “the best story I ever wrote was “For sale, baby shoes, never worn”

• Create a backstory video
Photostory 3 – Caveats

Keep music VERY low if there is narration

Can convert to AVI for DVD playing, but not in PS3 - Use MovieMaker Live on a PC

Great for making booktrailers & booktalks
Photostory 3 – Caveats

Use big pictures
- You can shrink, but not expand digital pictures

Create a blank all black or all white picture for intro or closing text

Go to the tutorial!
Food for Thought

"On the basis of my personal experience and the research available, I would go so far as to say if you have a child who is struggling with reading, connect him or her with comics. If an interest appears, feed it with more comics."

~ Jim Trelease
Author and Educator
"Sequential Art are terrific in that they have a good story but they have pictures and images that teens can relate to and enjoy. So you get the combination of the words and the images that help pick up on the power of images in teens' lives."

~ Maurice Freedman, President American Library Association
"Readers in the 21st century need to be able to analyze what they read and understand the motive of the author and the accuracy of the reading. They need to see themselves as active users, not merely vessels to be filled. Sequential Art offer a forum for these essential discussions."

~ Nancy Frey
Educator and Author
The 101 Best Sequential Art by Stephen Weiner

Developing and Promoting Graphic Novel Collections (Teens @ the Library Series) by Steve Miller

Getting Graphic: Using Sequential Art to Promote Literacy with Preteens and Teens by Michele Gorman

http://noflyingnotights.com/
Writing Visually TEXTS

Understanding Comics by Scott McCloud

Making Comics by Scott McCloud

Back of the Napkin by Dan Roam

Comics and Sequential Art by Will Eisner

Graphic StoryTelling and Visual Narrative by Will Eisner

http://scottmccloud.com/
Suggested Skills Sequencing

Kamishibai w KidPix  K-1st

Webkinz Studio  2nd -3rd

Photostory/Online Comics  4th on up

XtraNormal/Adobe Story  6th-7th on up

Adobe  Premier Elements - High School
Story Builder – Emotional Hook

Funny

Mad

Topic

Your content area here

Scary

Sad
Monica Fights the Flu

VIRAL COMBAT:
Monica Fights the Flu

Dedicated to everybody who has been sick in bed with the flu...
Monica Fights the Flu

The flu virus is searching for something. It travels with a gang of others just like it, and they are looking to grow fast.

There's not much time. They cannot live on their own for long; they are puny things. To copy themselves, they need to use a human.

Each virus carries all the instructions to copy itself on its inside, coiled like a snake, hidden away in its special coat. The human's healthy cells can provide the tools the virus needs to carry out those instructions.

The flu virus can rest on all kinds of things as it waits to be picked up by a human...

? So one time I had a stomach ache and was told that it was the “stomach flu.” Is that the same thing?

No, it is not the same thing! The “stomach flu” is still often caused by viruses, but those viruses are totally unrelated to the influenza virus that causes “the flu.”

? The snake-like set of instructions that the virus uses to copy itself is called RNA. Because the virus cannot make copies of itself alone, it is not considered to be “living.”

? So how long can the flu survive on surfaces like the grocery cart?

Generally between 2 and 6 hours.

- Illustrated words in the main text are defined in the glossary at the back of the book.
Monica Fights the Flu

...like Monica.

When Monica grabs onto the handle of the grocery cart, the flu virus, which was lying in wait, hops onto her hand. The next time Monica bites her nails, the virus eagerly enters her body through her mouth.

The flu virus then looks for an unsuspecting cell in the mouth, nose, or lungs to infect.
Monica Fights the Flu

The virus joyfully grabs a cell with its arm-like extensions. When the two meet, the virus sneaks its instructions into the cell.
Are all flu viruses the same?

No. Sometimes you might hear various names for different kinds of flu, such as H1N1. The letters H and N refer to different forms of the arm-like automotives that allow the virus to enter the healthy cell. Changes in these automotives can affect how dangerous and contagious that strain—or version—of flu will be.

Normally, a healthy cell works like a factory. It has its own set of special instructions, called DNA, for making products that the body needs to live.

After the virus inserts its instructions into a healthy cell, the virus can take over the control center (inside the nucleus) of the factory. The instructions order the cell to make new viruses instead of the products it was making before. The newly made viruses burst out of the cell and go on to hijack other healthy cells.
Monica Fights the Flu

The newly made viruses hijack more cells, forcing those cells to make even more viruses. Soon, many of the cells of the lungs, nose, and throat are infected by viruses.

Luckily, the cells have a way to fight back. Even though the viruses have taken over the factory control centers, the cells can still send out help signals that alert the body’s immune system.

The immune system is the body’s police force. It can hunt down viruses and destroy them before they have the chance to infect another cell. It does this by making antibodies. The antibodies are like handcuffs that only work against a certain type of virus. Every time a new type of virus invades, the body needs to make a new type of handcuffs.

These antibodies are very powerful and help the immune police find and destroy the viruses, but it takes time to make them.

The immune police remember what the virus looks like so that they can respond more quickly if the virus tries to invade again.
Monica Fights the Flu

The fight between the immune system and the viruses isn’t easy. While the police are busy making antibody handcuffs, the viruses have time to spread to more and more cells, making the infection worse.

Sadly, there’s nothing the immune system can do to save the cells that are already infected. The immune system has to kill these cells so that the virus factories inside cannot produce more new viruses. This destruction of infected cells is why the flu makes Monica feel so horrible. She has a fever, a headache, and a cough and feels really, really tired.

Some other symptoms of the flu may be a sore throat, a runny nose, body aches, and chills. Not everyone with the flu will have a fever.

What should I do if I get the flu?

If you think you have the flu, it is a good idea to consult your doctor to figure out what is going on. If you do have the flu, it is important to drink lots of water and to stay home and get rest. If you need to, you can use cough and fever medicines from the drugstore to help with the symptoms. Wash your hands often and try to avoid contact with people around you.
Monica Fights the Flu

With the immune system police cracking down on the viruses, some of the viruses try to escape and find someone else to infect. Every time Monica coughs or sneezes, viruses are released into the air, hoping to land on another person and start a new infection.

Some of these viruses will do just that. Others will have the bad luck of landing on a person who has gotten a flu shot...

- A sneeze can travel up to 8 feet away! Coughing or sneezing can spread the flu to others very quickly.

- If I don't want to get my friends sick, how long do I need to stay home?

- It is usually recommended that you should stay home for at least 24 hours after your fever has gone away. Taking medicines can lower your fever, but you could still be contagious. You should wait until you are fever-free for 24 hours without medicine.

EW! That's nasty.
Monica Fights the Flu

The flu shot is made of dead viruses whose snake-like instructions have been destroyed. Without working instructions, the viruses can't take over any of the cell's factories, so they can't make a person sick. Instead the dead viruses wait harmlessly in the body until a patrolling immune police officer comes along.

The immune police can tell that the dead viruses are foreign invaders. So even though the dead viruses don't make the person sick, the police force will create antibodies to destroy the dead viruses and remember what the viruses look like.

I don't like shots. Do I have to get one to be vaccinated?

There are actually two main forms of the flu vaccine: the flu shot and a nasal spray. The flu shot injects a dead form of the virus. The body recognizes the dead virus and builds antibodies against it. The nasal spray vaccine is a mist of very weak flu virus. The body recognizes it in the same way and builds antibodies against it. This form of the virus is too weak to cause any infection in healthy people, but it should not be given to people with weak immune systems.

Why do some people not get the flu vaccine?

Everyone 6 months or older should get a flu vaccine. The flu can be more dangerous for some people, so it is especially important for them to get the vaccine. These groups include pregnant women, children younger than 5 years old, adults over 50 years old, and people with any chronic medical conditions. Some people, especially if they are healthy, don't get the flu shot because they think getting the shot is not a big deal. However, it's still important for them to get vaccinated so they don't pass the flu on to friends or neighbors at higher risk.

Some people believe that the flu vaccine may be dangerous or might give you the flu. The flu shot cannot give you the flu because it is made with a dead form of the virus. The nasal spray might cause infection in certain people, so it's not for everyone.
Monica Fights the Flu

The boy Monica sneezed on had already gotten his flu shot earlier in the year. When the flu virus entered the boy’s body, it didn’t find the friendly environment it had hoped for. Instead, the immune system recognized the virus right away and immediately began producing antibodies against it. Because he had gotten the flu shot, his body was able to kill the virus way faster than Monica’s body could.

In fact, his immune response was so fast that the boy never even knew it happened and never felt sick.

My mom says that sometimes when she gets the flu shot she feels sick afterward. Why would she feel sick?

It is true that some people have mild symptoms for a very short time after getting the flu shot. This is because the immune system is responding to the vaccine and making antibodies to remember the real flu later on. Some of that immune system activity can make you feel sick!

Does the flu shot work immediately?

No, the flu vaccine may take up to 2 weeks to become fully effective, so it is a good idea to get it early! Also, children getting the vaccine for the first time may need 2 doses to build full immunity.
Monica didn’t want to get the flu again next year. She asked her parents if she could get a flu shot and they agreed. Even though it hurt a little, it was totally worth it to have fun instead of lying sick in bed.
Because getting the flu is definitely NOT fun.
Monica Fights the Flu

**glossary**

**Antibody or “handcuffs”**
It is a small structure that binds to foreign invaders in the body and marks them for destruction. It is produced by a special type of immune cell called a B cell.

**Cell**
It is the smallest unit of life. It has the ability to reproduce and pass along its genetic information to its own offspring. simpler such as a virus can do this. There are many types of cells within a single person. Your immune cells look different from your skin cells, which look different from lung cells, and so on.

**Contagious**
When a person with the flu is contagious, he or she can spread the virus to others. Others can get the flu by direct contact like kissing, inhaling stuff that is sneezed or coughed up, or by touching contaminated objects with virus on them, such as the shopping cart that Monica touched.

**DNA (Desoxyribonucleic Acid)**
It is the genetic information used by cells and viruses to store important instructions. These instructions are used to make the products they need to live and reproduce. Some viruses, like the flu virus, use RNA to store this information.

**Infection**
It is the presence of a foreign invader, such as a virus, inside your body. All living things, even plants, can get infections.

**Nucleus or the “control center”**
It is a structure inside human cells that holds DNA.

**RNA (Ribonucleic Acid) or the “instructions”**
See definition for DNA.

**Vaccine**
It is a shot or spray that gives you immunity or protection against a particular foreign invader. It contains harmless versions of the invader so that your body learns how to fight off the real thing without actually getting sick.

**Virus**
It is a tiny infectious particle with a coat of DNA or RNA (its instructions) surrounded by a protective protein coat. It can infect living things, and sometimes causes diseases, like the flu. A virus is technically not considered living because it needs to hijack cells and use their machinery to live and reproduce.

**References:**

**About the Authors:**
Marie, Susan, and Alexa are a group of medical students at the University of Chicago who believe that science and medicine can be fun, useful, and easily accessible. Their aim is to disseminate important health information in a way that is both artistic and informative.

**About the Artist:**
Clare is an MFA student at the University of Chicago who loves to make art that is good clean fun.
Monica Fights the Flu

VIRAL COMBAT: Monica Fights the Flu

Monica was invincible...or so she thought. She had gone for years doing all the things adults told her not to do—picking her nose, playing in the mud, not dressing warm—and she was fine.

Until one day, a virus attacks! Monica gets sick. Really sick. Because this isn’t just some virus, it’s the flu. But Monica’s body isn’t giving up. This means war, on the molecular level. See how the police force of Monica’s body—the immune system—fights back.
For my pet rock Sharon

Your strength and resilience are an inspiration.
Fortunately,
I am a Rock. I have been many places and seen many things. I am constantly changing through a process called the Rock Cycle. I used to live on top of a tall mountain. Every day I was able to look out and gaze upon the beautiful Earth. I was the luckiest Rock in the entire world!
Unfortunately,
It was really windy, cold and wet on top of the mountain. For years and years I was weathered. Raindrops pelted me, ice tried to crack me and the wind kept whipping at me. One day, the wind blew so hard that it finally pushed me right off of the mountain.
Fortunately,
I landed in a small stream. I rode with the current, skipping and swimming along, as the stream carried me for miles and miles.
Unfortunately,
The stream turned into a raging river!! I was thrown here and there, tossing and tumbling about. In all of this jumble, pieces of me kept breaking off until I was no longer a whole Rock, but just a bunch of sediments.
Unfortunately,

Fortunately,
The river flew into the ocean. I was finally able to settle down and take a rest on the ocean floor.
Unfortunately,
The river continued to push more and more sediments on top of me, so things started to get pretty crowded. After a while, I could no longer see the ocean and all of the sediments upon me were getting very heavy.
Fortunately,
After being pushed and smashed together for many years, something strange began to happen. All of the sediments compacted together to form a new type of rock. I was now a Sedimentary Rock. I had many layers of different colors. I was the most beautiful Rock in the entire world!
Unfortunately,
There was a terrible landslide so even more rocks and sediments were piled on top of me. I was now deep inside the Earth. It started to become very hot and there was so much pressure from the weight of the Earth pushing down on me.
Fortunately,
The heat and pressure began to change me. Like a butterfly, I went through a metamorphosis. I emerged as a Metamorphic Rock. I was a tough Rock with a solid crystal structure. I was deep within the Earth where no wind or water could weather me. I was the strongest Rock in the entire world!
Unfortunately,
The Earth began to tremble and shake. EARTHQUAKE!!! Pieces of me started to break and crumble as I was pushed even further into the depths of the Earth.
Fortunately,
It was extremely hot this deep inside the Earth. In fact, it was so hot that I melted into magma. I had been a solid Rock for so long that I forgot how fun it was to freely flow around.
Unfortunately,
I began to be thrust upwards against my will. I was pushed and shoved until the next thing I knew, I burst right out of a volcano and into the sky. I flew for hundreds of feet until I started hurtling toward the ground.
I'm feeling sad because of the problems I'm facing.

Unfortunately,
I finally landed in a cozy spot on the top of a mountain. It was much cooler out here on the Earth and I quickly began to harden. I am now an Igneous Rock. I am black and very glossy. I am the shiniest Rock in the entire world!
Unfortunately,
It was really windy, cold and wet on top of the mountain. For years and years I was weathered. Raindrops pelted me, ice tried to crack me and the wind kept whipping at me. One day, the wind blew so hard that it finally pushed me right off of the mountain.
Fortunately,
I am a Rock. I have been many places and seen many things. I am constantly changing through a process called the Rock Cycle. I wonder where my next journey will take me. Do you?
Not

The End
Fortunately, I am a Rock:

Tantalizing Tales of the Rock Cycle.

By

Sarah J. Miller
Recommendations

• Ditch the textbook for experienced teachers
• Pay them to develop their own materials
• Look for the emotional engagement of the new content
• Refer them to the IERG.net website for planning frameworks
• Use sequential art as a resource for ALL subjects

mark.geary@dsu.edu
TO LIVE A CREATIVE LIFE WE MUST LOSE OUR FEAR OF BEING WRONG

joseph chilton pearce

BOTN
Dan Roam
The 4 steps of visual thinking:

1. Look
   - What is out there?
   - What am I looking at?
   - What are the limits?
   - Which way is up?

2. See
   - What do I see?
   - Have I seen this before?
   - What patterns emerge?
   - What stands out?
   - What seems to be missing?

3. Imagine
   - How can I manipulate these patterns?
   - Can I fill in the gaps?
   - Have I seen enough – or do I need to go back and look at more?
Step 5

Now draw in a corkscrew, and give it 5 twists...
Meet the SQVID… a.k.a ‘The 5 focusing questions’.
SQV.. examples:

Simple

Elaborate

Qualitative

Quantitative

How the Brain works:

Neocortex (mammal's Brain)

Reptile's Brain

Behavior

Senses

LUNAR MODULE CONTROLS AND DISPLAYS

Getting to the moon
Develop booster
Simulate flight
Launch spacecraft
Test booster
Launch
..ID examples...

Individual

Comparisons

- Southwest airlines route map
- American Airlines around 1960
- Continental Airlines around 1960
- Braniff Airlines around 1960
The 6 ways we see:
Framework 1: “Portraits” for WHO / WHAT problems
Framework 2: “Charts” for HOW MUCH / HOW MUCH problems

How many
+ How much

Percent responded:
- No: 20%
- Maybe: 40%
- Yes: 40%

Breakdown:
- Pro
- Con

Quantity comparison:

That kind
This kind

Numeric comparison:

Amount consumed:

Bar chart:
- A
- B
- C

Likely:
- Normal

Amount:

Setting:

Histogram:
Framework 3: “Maps” for WHERE problems

- Where
- Perfect position
- Some assembly required

- Land map
- Concept map

- Coffee
- Sugar
- Cream
- Heaven
- Shire
- Helm's Deep
- Mordor
- Fun
- Happy
- Smile
- Enjoyable
- Pleasure
Framework 4: “Timelines” for WHEN problems

`When`

- Timeline
- Process map (linear)
- Lifecycle
- Swim lanes
- Linear progression
- Gantt chart
Framework 5: "Flowcharts" for HOW problems
Framework 6: “Multiple-variable Plots” for WHY problems

[drawing of a graph with variables like quantity, quality, and time]
Step 7

Done: our very own visual thinking universal problem solving tool kit!
Hindenburg

Stick
Figure
Theatre
presents
BF Skinner
Michael Jordan on Failure
Questions?  

• How can sequential art help students learn, and learn more rapidly?
• How can sequential art help improve instruction for teachers with a broad curriculum?
• How do we prepare students to communicate in the video medium of the 21\textsuperscript{st} century?

MARK.GEARY AT DSU.EDU