

# INTE 6710 ~ Creative Designs for Instructional Materials

## Project 2: Graphic Novel Handout Design Document

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### 1. Significant Purpose

2011-2012 is The Year of the Bat! This year, Bat Conservation International and bat societies around the globe are celebrating bats with an intensive year-long program of education, outreach, and research. *Max & Bart*, an instructional comic, will teach children bat basics, from physiology to their role in the ecosystem. The purpose of the handout is to introduce children to the extraordinary nature of bats, fill gaps in their knowledge of bats, and inspire them to actively contribute to bat protection, education, and conservation. After reading *Max & Bart*, children will understand elements of how a bats' body functions, what bats need to survive, how bats contribute to the well-being of other animals and plants, environmental and man-made threats to bats, and what they can do to help bats survive.

Bats are mysterious creatures: we rarely see them, and when we do, they often frighten us. Their movement appears erratic and they appear suddenly out of the darkness, only to vanish just as quickly. With their unusual shape and strange wings, bats are not immediately "cuddly", lacking the gentle smile of a Beluga whale or the Alpaca's docile face. Bats are associated with scary things: rabies, Halloween, witches, spiders, and The Dark. But bats are absolutely amazing animals! And bats help us survive by eating disease-carrying insects and they are vital to the success of fruit crops. Today, bats are in peril due to White Nose Syndrome, a fungus that is killing bats in astounding numbers. Wind turbine farms pose an enormous threat to bats as well. Wide use of pesticides destroys the food bats eat and poisons the water they drink. Careless or ignorant people go into cave where

bats live and sleep, spreading disease and fatally disturbing hibernating bats. Each year, more bat habitat is lost to development, threatening bats ability to live safely.

How can we help bats overcome these threats? First, we have to dispel ignorance and learn about bats, and by doing so, we will care about them. Once we know and care for bats, we can take steps to ensure their survival. Because most adults don't know much about bats, children may receive little or no valid instruction about them. *Max & Bart* will teach children basic information about bats, which they can then share with their friends and adults. The comic will also deliver instruction on ways to help bats in a "do & don't" format and actions people can take to help bats.

The learning audience for *Max & Bart* is school-age children, roughly grades 2-4, male and female. Children of this age are engaged in discovering the world around them, learning about relationships and how things work. It's a wonderful time of learning, as their fresh little brains soak up information and learn from new experiences. It's a time when knowledge builds rapidly, and as children construct meaning from new experiences they begin to form opinions. This is an excellent age for children to become bat allies, while their minds are open and not completely full of erroneous information.

The comic format is well-suited to children of this age. Instructional materials they encounter in the classroom use a lot of images with words, and they will have recent experience with the picture-book format. The content will be visually interesting and the story will move quickly. The character Max is a little boy, and Bart is an adolescent bat. Bart plays the role of teacher, and as an adolescent, communicates with authority and passion... Both characters give readers someone to relate to: children will relate to Max as a child, older readers may relate to him as a younger brother, or identify with Bart. Adults may relate to Max as their child and Bart as a parent or teacher.

Children may access this handout via the Colorado Bat Society website. They may use this handout to present a talk on bats for their class or scout troop, or they may take their families to a natural area containing bat habitat and teach their families about bats.

Ultimately, the handout will include vocabulary activities and other learning activities, and learners may print out pages to color.

## 2. A Picture of the Future

The goals of the graphic novel, *Max & Bart*, are to help children understand bats, motivate them to care about bats, and take action to protect and provide for bats. Ideally, the instruction will make bat-crusaders out of every young learner, educate adults (via children) about bats, and result in more people building bat houses, staying out of caves where bats live, and participating on some level in efforts to protect bats and end White-Nose Syndrome.

### Learning Objectives & Assessments

1. Learning Objective: After reading the comic *Max & Bart*, learners will be able to name three things people can do to help bats.  
Assessment: Given a list of five actions, learners will be able to select three actions people can take that will help bats.
2. Learning Objective: After reading the comic *Max & Bart* learners will be able to define echolocation hibernation, nocturnal, and mammal.  
Assessment: Given a list of definitions, learners will be able to match the definitions with the following terms: echolocation, hibernation, nocturnal, mammal.
3. Learning Objective: After reading the comic *Max & Bart*, learners will be able to name three things bats need in order to survive.  
Assessment: Given a list of five things, learners will be able to identify three things bats need in order to survive.
4. Learning Objective: After reading the comic *Max & Bart*, learners will be able to name three ways bats help people and other plants and animals.  
Assessment: Given a list of five things, learners will be able to select the three ways bats help people.

### 3. Clear Design Values

#### Design Decision #1: Surprise/Unexpected

The graphic novel, *Max & Bart*, begins with element of surprise when a boy becomes a bat. According to Heath & Heath, “surprise gets our attention” (Heath & Heath, 2008, p. 65), and David S. Rose, in *Presentation Zen*, advises “...begin with something dramatic and memorable that will have the audience want to follow along with you for the rest of the presentation.” (Reynolds, 2009, p. 56) Medina, writing in *Brain Rules*, notes “...novel stimuli-the unusual, unpredictable, or distinctive-are powerful ways to harness attention in the service of interest.” (Medina, 2008 p. 76) The story of Max and Bart is an imaginary adventure, wherein the little boy, Max becomes very interested in bats. He drifts off to sleep while reading a book about bats. In his dream, Max “awakens” in a dark cave surrounded by other living things. He soon finds he has become a bat, and paired up with the slightly older and very knowledgeable bat, Bart, embarks on a night’s adventure into the world of bats.

The subject of bats is inherently rife with surprises. Most people know very little about bats, and their knowledge is often derived from ill-founded myths. Much of what Max learns about being a bat is surprising: bats can fly, but they aren’t birds, bats, like people and elephants, are mammals, bats wings are just like human hands, bats eat an amazing amount of food every night, and ultimately, bats are important to people, plants, and other animals.

#### Design Decision #2: Emotion/Care

The goals of the graphic novel, *Max & Bart*, are to help children understand bats and to motivate them to care about bats. (McCloud, 2006, p.53) Information about bats is presented in the form of a story, providing “stimulation (knowledge about how to act) and inspiration (motivation to act).” (Heath & Heath, 2008, p. 206) Through the relationship between Max the student and Bart the teacher, Max is able to learn how bats live, what they do, what they need to live, and how they are threatened. Their relationship is friendly: Bart is a willing teacher, and Max is an eager student. These are roles children can identify with, and by relating to these characters and roles, they may engage emotionally with bats via Max and Bart. As the story develops, Bart first creates a connection between bats and

people, both mammals, by citing similarities in physiology, and then extraordinary differences (echolocation, heartbeats per minute, hibernation). Once Max feels an emotional relationship with bats he is eager to learn why bats are important, how they are threatened, and what people can do to help bats. The character, Max, as both a human child and a bat, provides children with an *entrée* into life as a bat. Once children identify with Max and trust Bart, they care about bats.

#### Design Decision #3: Curiosity/Gap Theory

Throughout the story of *Max & Bart*, gaps in Max's knowledge of bats are used to convey instruction. Max, like most people, knows very little about bats, and what he learns is constantly surprising! (Max is a means personifying the knowledge gap that exists in regard to bats.) Early on, the comparison between a bat wing and a human hand paves the way for readers to wonder "what else is don't I know?" and arouses curiosity. This active interest helps to make the messages "stick". (Heath & Heath, 2008, p. 84) By asking questions, Max propels the story forward: the questions act as "forward-looking hooks" (Medina, 2008, p. 91)

#### Design Decision #4: Vision Trumps All Senses

Reynolds stresses the importance of vision as "our most powerful sense" (Reynolds, 2009, p. 97) and the power of images to make the instruction memorable and meaningful. McCloud notes the importance of selecting the right image to convey the message. (McCloud, 2006, p. 37) Medina states, "the more visual the input becomes, the more likely it is to be recognized-and recalled." (Medina, 2008, p. 233) As a graphic novel, *Max & Bart* uses images with story to convey instruction. It was important from the start of the process to think of the instruction in pictures first, narrative second. The first challenge was how make each bat distinguishable. I considered marking each bat with a letter or symbol, but that wasn't effective and just caused clutter and confusion: plus, working with tiny pictures, the symbols were hard to see. The *aha* moment came when I thought of Max and Bart as younger/older, smaller/larger. Thus, Bart is always larger than Max. In this instance, the meta-messages of small and big convey Max's innocence/vulnerability and Bart's knowledge/strength.

I used images of an actual little boy (my great-nephew, Max), which immediately provides young readers with a person to relate to. From that point, finding the balance between the narrative and instructional images became a series of hard decisions. In the case of graphic novels, story and picture are equally important. I strove to maintain continuity, make the story easy to comprehend, and keep it moving along. For much of the story, Max and Bart are in the cave or in the sky: the setting serves as context. Because I didn't (couldn't) draw Max & Bart and the bat characters have no option for different expressions, I wasn't able to use facial expressions to show emotion. I had to use language to express interest, outrage, fear, etc. To deliver the instruction, I chose to build the story up to a point, and then use an illustration to reinforce and expand understanding (pages 4,5,6,7,9,10,11,12.) The images are never used as ornamentation (Reynolds, 2009, p. 98)

#### Design Decision #5: One Thought at a Time/ One Action per Panel

Both McCloud and Reynolds suggest limiting instruction (or story) to “one point per slide” (Reynolds, 2009, p. 110), or one action per slide (McCloud, 2006, p. 14). Reynolds tells us our brains need time to absorb information, so it's good to limit the information to small bits delivered individually. McCloud's perspective is more story-based, noting that in comics, the story is a series of actions.

I strove to deliver one piece of information in each panel. There are two exceptions: page 6: Echolocation. I may revise the comic to break the instruction in the first 2 panels into 4 panels, and page 11: White-Nose Syndrome: I may revise the information in the first panel and use two panels. Otherwise, the story moves along well, from one action to the next and from one idea to the next.

#### 4. Formative Evaluation Response

The peer review process is an important and valuable part of the design process. I, for one, can get so immersed in creating a product I fail to see errors and design flaws that are obvious to others not so embedded in the process. It's important for me to understand how others see and experience the product. In the case of the graphic novel assignment, the evaluations were immensely beneficial.

Question #1. Are you able to read all the text easily? If not, please tell me where you had difficulty.

*I asked this question because although I thought the font I selected was cute and had a strong comic-like quality, I found it difficult to read. I wanted to know if others had difficulty reading the text.*

Reviewer A. I do think the font is difficult to read at times. If this is for children, which I assume it is, I can see them having even more difficulty, especially if they are beginning readers. Sometimes the letters appeared to almost touch each other making it hard to decipher the word, especially the number 3 on page 10. For a second I thought it was a mistake and could not figure out what letter it was. There were also some words that I had to enlarge the page to figure out the word. It is also strange that sometimes the letters are all capitals, and sometimes there are some lowercase stuck in there. I noticed it with the letter i. It's too bad, because I like the font. I am a fan of "funky" fonts. Kids love them too. I always try to find a font that has letter styles they are familiar with though. For example, fonts that have an 'a' the way they learn to write it.

Reviewer B. I had a hard time with the font type at first. I got used to it as I read on, but it was hard to read in places, especially when it was a smaller size – for example, on page 3, the frame that starts "At night it's cooler..." was difficult to read. The lower left frame on page 6 was really difficult to read as well. I would suggest using this font in a larger size or a clearer font type to improve its legibility.

Revisions: I changed the font to Segoe UI, a sans-serif that is easy to read. The comic program I used allows you to select the font size; however, the size seems to adjust automatically to the size of the balloon. I used size#16 throughout, but in some instances it appears the font is smaller. The only way to work around this is to increase the size of the panel, which I may do if necessary.

Question #2. Do the illustrations on page 9 integrate well with the rest of the comic? If not, do you have any suggestions for making this information more accessible?

*I asked this question because I wanted to learn how readers experienced the mix of comic images and photographs.*

Reviewer A. I like the pictures on page 9 and think they are integrated well. It does not negatively impact the story, and adds some great information. Since it's factual, the use of photographs is beneficial to the learning. I was confused about which page you meant though, because you said illustrations and there aren't any illustrations on page 9. Is this the page you meant, or are you referring to the bats? Either way, I think this page is done well. On a side note, I had no idea that wind turbines were so bad for bats! It made me hurt to think about that actually happening to the poor little guys, and I keep thinking about the wind turbines on 120<sup>th</sup> and 93 by the foothills. It's horrible!

Reviewer B. I think the information on page 9 could be presented better through additional dialog between Max and Bart. The dialog between the two was engaging and I stayed engaged until page 9. When I got to the blocks of text, I immediately wanted to skim them and jump back to the dialog between the bats. I would suggest adding in additional frames where Max summarizes the information with Bart and learns the additional information through a continued adventure!

Revisions: I broke the large panels on page 9 into smaller panels with less information in each, and continued a conversational mode.

Question #3. Was it easy or difficult to follow the conversation between Max and Bart? If you saw a problem, please tell me where it is.

I asked this question because I wanted to learn how easily readers followed the conversation.

Reviewer A. I love how you transitioned from Max as a boy, to Max as a bat in his dream. The conversation between them is a great way to tell the information and I think kids will really enjoy it, and be able to follow it. One suggestion I have is to make the speech bubble where Bart thinks "What a strange kid", to make it a thought bubble instead, with the little



circles to indicate that he is not saying it out loud. That was the only part of the conversation that I thought was a little distracting and took away from the conversation.

Reviewer B. For the most part, I thought it was easy to follow the conversation between Max and Bart. There were only two places where I read the wrong bubble first...page 3, frame 1 was the first time I did it – I read the whole left side first instead of reading in a Z pattern. I think the way you have it laid out is correct, but for some reason, I just read it that way. On the bottom of page 4, I read Bart’s bubble before Max’s (reading left to right) which didn’t follow the flow of the conversation. I would just suggest changing the frame on page 4, flipping those two bubbles around so that the conversation flows a little better.

Revisions: I changed the “what a strange kid” text to a thought bubble. I revised frame 1 on page 3 into two frames, and on page 4, the bottom frame into two frames.

Question #4. Page 9 has a lot of information. Is the information on this page easy or hard to comprehend?

*I asked this question because I was afraid I’d bunched too much information into the 3 panels on page 9.*

Reviewer A. I thought the information was easy to comprehend, but I’m curious what age group it is for. I assumed it was for kids Max’s age, but it seems a little too advanced for that age. The facts are really interesting, and I can see my third graders being able to follow it and be really engaged, but having taught first grade, this would be something I would have to read with them, so I could stop and discuss it with them to make sure they were understanding everything.

Reviewer B. The information on page 9 is easy to comprehend – it makes sense and is well written – I do think it could be presented in a different way to better hold the reader’s attention. I would suggest (same as #2 above) adding in additional frames where Max summarizes the information with Bart and learns the additional information through a continued adventure!

Revisions: I broke the instruction on page 9 into several frames-continuing from page 9-11, with less information in each frame.

5. Do you feel the comic comes to a natural conclusion, or do you think it ends abruptly?

*I asked this question because I felt I hurried the end and wanted to know if readers felt the end was abrupt.*

Reviewer A. It does end rather abruptly, especially since it goes straight from “Max, wake up it’s time for breakfast”, to him eating breakfast. If you can, you should have more of a separation between the two slides, and make the middle slide bigger. I know this is tough because it’s the end of the page, but my first thought was, he’s already eating breakfast. I think the tent is a great addition, but I didn’t even notice it at first, because of the layout. My eyes went straight to Max eating breakfast.

Reviewer B. I think the conclusion that you came to is natural and it fits well with the story. The only think that seems abrupt is the presentation. I would suggest spanning the last frame out over 2-3 frames so that it doesn’t feel like such an “abrupt” end; otherwise, it fits in perfectly!

Revisions: I divided the ending into three distinct panels.

## References

Heath, C., & Heath, D. (2008). *Made to Stick: Why Some Ideas Die and Others Survive*. New York: Random House.

McCloud, S. (2006). *Making Comics: Storytelling Secrets of Comics, Manga and Graphic Novels*. New York: Harper.

Medina, J. (2008). *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. Seattle, WA: Pear Press.

Reynolds, G. (2009). *Presentation Zen Design: Simple Design Principles and Techniques to Enhance Your Presentations*. Berkeley, CA: New Riders.