ZOMBIE GEOGRAPHY SOCIETY

DEAD RECKON

#1

HUNTER
MALDONADO
BLANCO

Illustrated and Lettered by Francisco Maldonado
Colored by Oscar Blanco
Created and Written by David Hunter

Dead Reckon © 2013 by David Hunter

Can you survive the Zombie Apocalypse?

Dead Reckon makes sure you will.

You see, Dead Reckon is part graphic novel, part apocalypse survival tutorial, all zombie-outbreak-awesomeness!

In this first issue, you will experience the challenges of an impending zombie outbreak. Is it possible to increase your chances of survival by preparing for the outbreak? You're darn right it is!

And Dead Reckon will show you how.

Read on, try to keep up, and if you're up for the challenge, check out the projects at the end of this book. If you do, show off your survival skills by emailing us photos or files of your project at survive@ZombieBased.com.

Remember, keep calm and always think before you act,

David Hunter

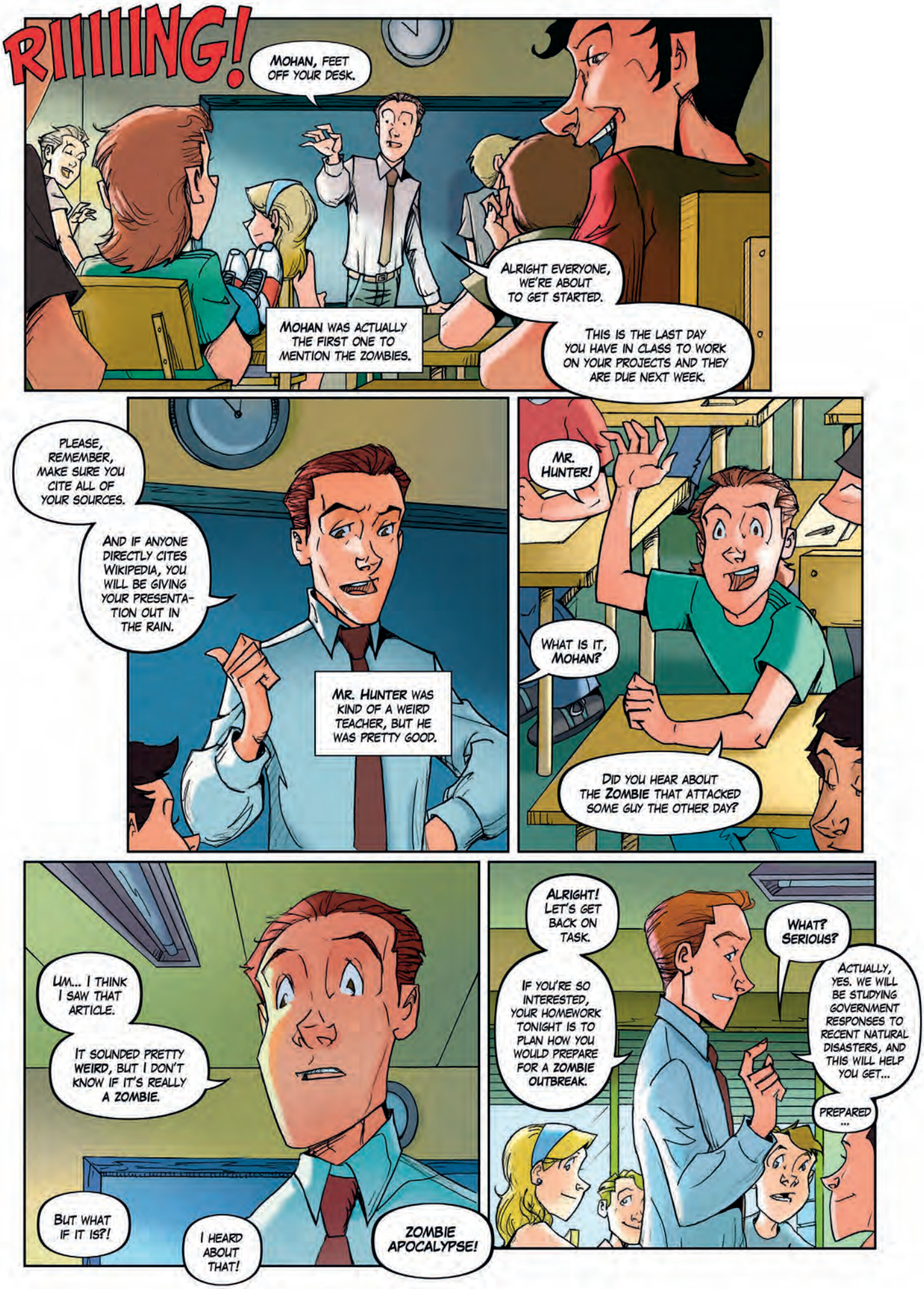
Make sure you get your parent or guardian's permission before you email.

Did you know that you could be learning about zombie survival in school? Dead Reckon and Zombie-Based Learning are based on the Geography Standards your teachers are supposed to use. Show this comic to your Social Studies teacher, tell them they're really cool, and direct them over to www.ZombieBased.com.

Show them any of the projects you do too! I bet they'd be super impressed.

THIS USED TO BE MY SCHOOL.
ALL THE THINGS I USED TO WORRY ABOUT, NOW SEEM SO POINTLESS.
MAKING FRIENDS. MY PARENTS, BEING ON MY CASE. GRADES!
NOW I HAVE TO WORRY ABOUT EVERYONE I MEET--
--FINDING MY PARENTS--
--AND ZOMBIES.

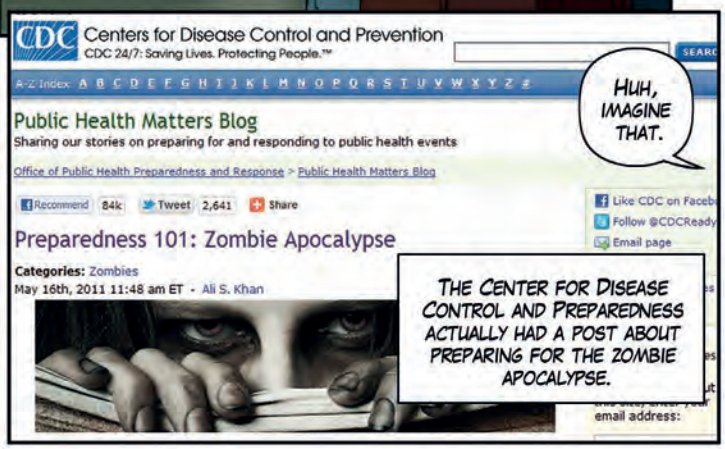
IT WASN'T ALWAYS LIKE THIS. THE ZOMBIE VIRUS SPREAD PRETTY QUICKLY--
--THERE WERE EVEN PLENTY OF SIGNS--
--IF YOU KNEW WHERE TO LOOK.
OH, CRAP!

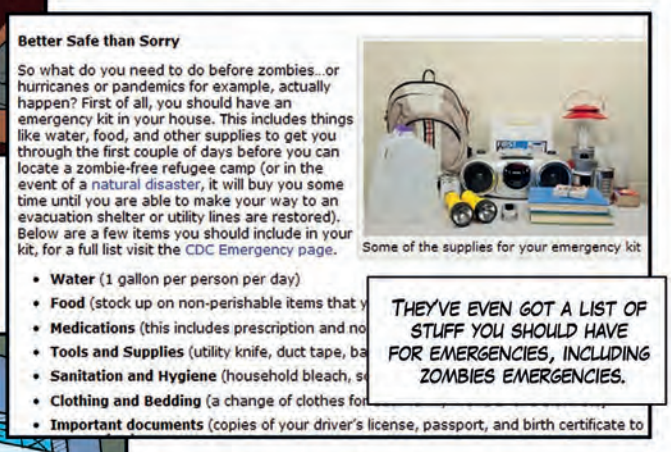

RIIIIING!
MOHAN, FEET OFF YOUR DESK.
ALRIGHT EVERYONE, WE'RE ABOUT TO GET STARTED.
THIS IS THE LAST DAY YOU HAVE IN CLASS TO WORK ON YOUR PROJECTS AND THEY ARE DUE NEXT WEEK.
MOHAN WAS ACTUALLY THE FIRST ONE TO MENTION THE ZOMBIES.
PLEASE, REMEMBER, MAKE SURE YOU CITE ALL OF YOUR SOURCES.
AND IF ANYONE DIRECTLY CITES WIKIPEDIA, YOU WILL BE GIVING YOUR PRESENTATION OUT IN THE RAIN.
MR. HUNTER WAS KIND OF A WEIRD TEACHER, BUT HE WAS PRETTY GOOD.
MR. HUNTER!
WHAT IS IT, MOHAN?
DID YOU HEAR ABOUT THE ZOMBIE THAT ATTACKED SOME GUY THE OTHER DAY?
UM... I THINK I SAW THAT ARTICLE.
IT SOUNDED PRETTY WEIRD, BUT I DON'T KNOW IF IT'S REALLY A ZOMBIE.
BUT WHAT IF IT IS?!
I HEARD ABOUT THAT!
ZOMBIE APOCALYPSE!
ALRIGHT! LET'S GET BACK ON TASK.
IF YOU'RE SO INTERESTED, YOUR HOMEWORK TONIGHT IS TO PLAN HOW YOU WOULD PREPARE FOR A ZOMBIE OUTBREAK.
WHAT? SERIOUS?
ACTUALLY, YES. WE WILL BE STUDYING GOVERNMENT RESPONSES TO RECENT NATURAL DISASTERS, AND THIS WILL HELP YOU GET...
PREPARED ...

I CAN'T BELIEVE IT!!
YOU'RE CRAZY! ZOMBIES?!
THAT'S WHAT HE SAID!
PEOPLE CONTINUED TO SAY THAT IT WASN'T ZOMBIES, RIGHT UP TO THE END.
SOME THOUGHT IT WAS JUST RUMORS.
SOME THOUGHT IT WAS JUST A BIG INTERNET HOAX.
MY PARENTS NEVER ACCEPTED THE IDEA OF ZOMBIES.
I WAS INTERESTED BY THE IDEA, BUT I NEVER THOUGHT IT WOULD EVER HAPPEN.
THEY'RE TOO LOGICAL FOR THAT.

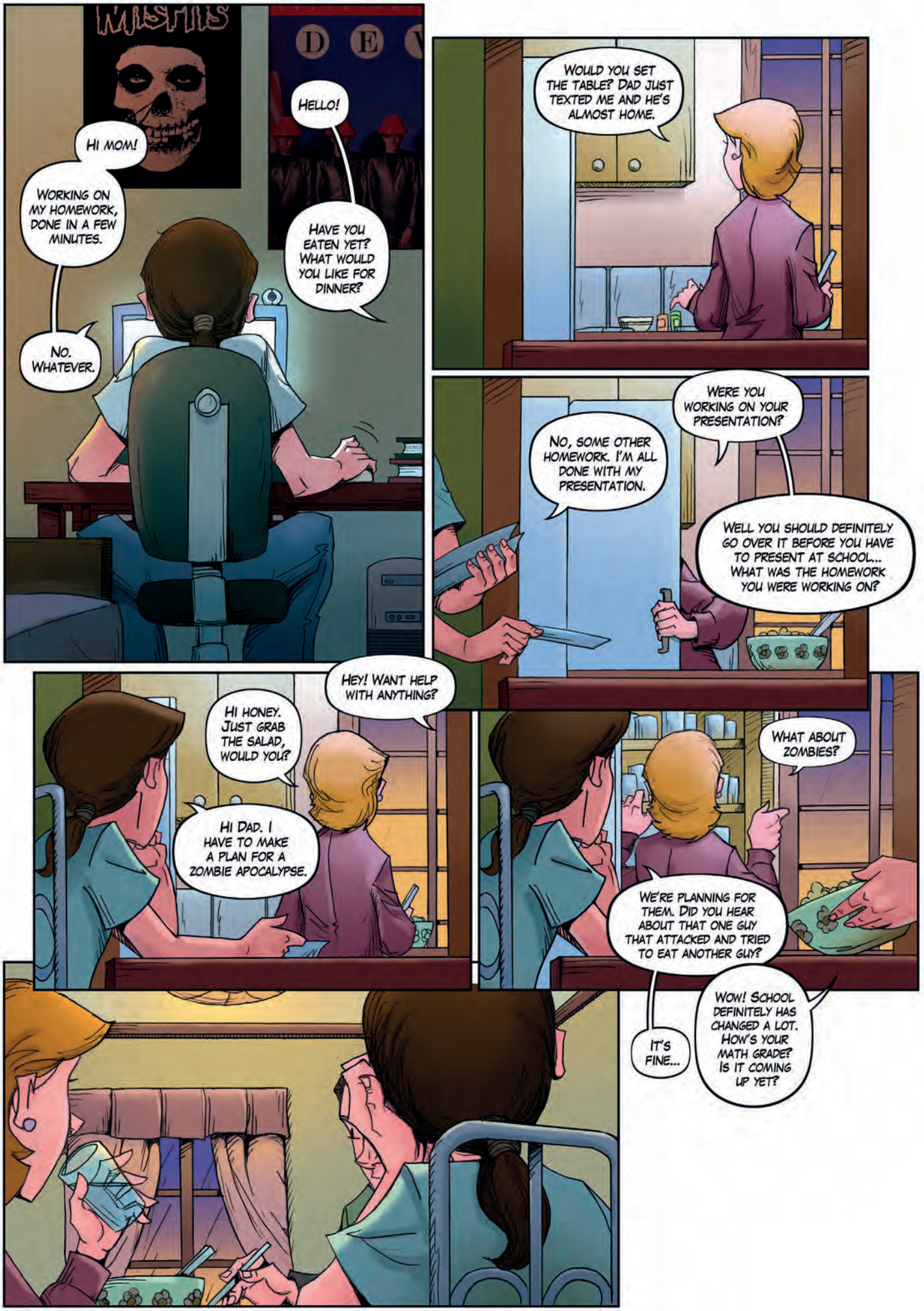
I GOT STARTED ON MY PREPAREDNESS HOMEWORK AS SOON AS I GOT HOME.

SEARCH ING
prepare for a zombie apocalypse
GO
I KIND OF THOUGHT THESE PROJECTS WERE FUN.


CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™
Public Health Matters Blog
Sharing our stories on preparing for and responding to public health events
Office of Public Health Preparedness and Response > Public Health Matters Blog
Recommend 84k Tweet 2,641 Share
Like CDC on Facebook
Follow @CDCReady
Email page
Preparedness 101: Zombie Apocalypse
Categories: Zombies
May 16th, 2011 11:48 am ET - Ali S. Khan
email address:
HUH, IMAGINE THAT.
THE CENTER FOR DISEASE CONTROL AND PREPAREDNESS ACTUALLY HAD A POST ABOUT PREPARING FOR THE ZOMBIE APOCALYPSE.


Better Safe than Sorry
So what do you need to do before zombies...or hurricanes or pandemics for example, actually happen? First of all, you should have an emergency kit in your house. This includes things like water, food, and other supplies to get you through the first couple of days before you can locate a zombie-free refugee camp (or in the event of a natural disaster, it will buy you some time until you are able to make your way to an evacuation shelter or utility lines are restored). Below are a few items you should include in your kit, for a full list visit the CDC Emergency page.
Some of the supplies for your emergency kit
Water (1 gallon per person per day)
Food (stock up on non-perishable items that y
Medications (this includes prescription and no
Tools and Supplies (utility knife, duct tape, ba
Sanitation and Hygiene (household bleach, s
Clothing and Bedding (a change of clothes fo
Important documents (copies of your driver's license, passport, and birth certificate to
THEY'VE EVEN GOT A LIST OF STUFF YOU SHOULD HAVE FOR EMERGENCIES, INCLUDING ZOMBIES EMERGENCIES.

DOCUMENT 1
Supplies to be prepared for the zombie apocalypse
Water: 3 gallons per day (1 for each person),
Food: canned,
Meds: remind parents,
Tools: knife, duct tape, hand-crank radio.
BETTER CITE THIS OR MR. HUNTER WILL GO CRAZY.


MISFITS
HELLO!
HI MOM!
WORKING ON MY HOMEWORK, DONE IN A FEW MINUTES.
HAVE YOU EATEN YET? WHAT WOULD YOU LIKE FOR DINNER?
NO. WHATEVER.
WOULD YOU SET THE TABLE? DAD JUST TEXTED ME AND HE'S ALMOST HOME.
WERE YOU WORKING ON YOUR PRESENTATION?
NO, SOME OTHER HOMEWORK. I'M ALL DONE WITH MY PRESENTATION.
WELL YOU SHOULD DEFINITELY GO OVER IT BEFORE YOU HAVE TO PRESENT AT SCHOOL... WHAT WAS THE HOMEWORK YOU WERE WORKING ON?
HEY! WANT HELP WITH ANYTHING?
HI HONEY. JUST GRAB THE SALAD, WOULD YOU?
HI DAD. I HAVE TO MAKE A PLAN FOR A ZOMBIE APOCALYPSE.
WHAT ABOUT ZOMBIES?
WE'RE PLANNING FOR THEM. DID YOU HEAR ABOUT THAT ONE GUY THAT ATTACKED AND TRIED TO EAT ANOTHER GUY?
IT'S FINE...
WOW! SCHOOL DEFINITELY HAS CHANGED A LOT. HOW'S YOUR MATH GRADE? IS IT COMING UP YET?

Police Stop Man Attacking, Biting Another Man

Police are still not providing information on the man they apprehended Saturday afternoon. Local surveillance footage shows the police arriving on the scene while two men struggle on the ground. Police tackled the aggressor who showed no signs of calming down, even as the police handcuffed the man and placed him in the squad car. The victim claims he was attacked by the man who came out of nowhere. The victim suffered from minor head wounds, bruises, and was severely bitten. He is currently in the hosp being treated for his wounds. Police believe the man they arrest was under the influence of illegal substances, but toxicology reports won't be available for two weeks.

OVER THE YEARS, I'VE GAINED SOME READERS. MOSTLY OTHER BLOGGERS.

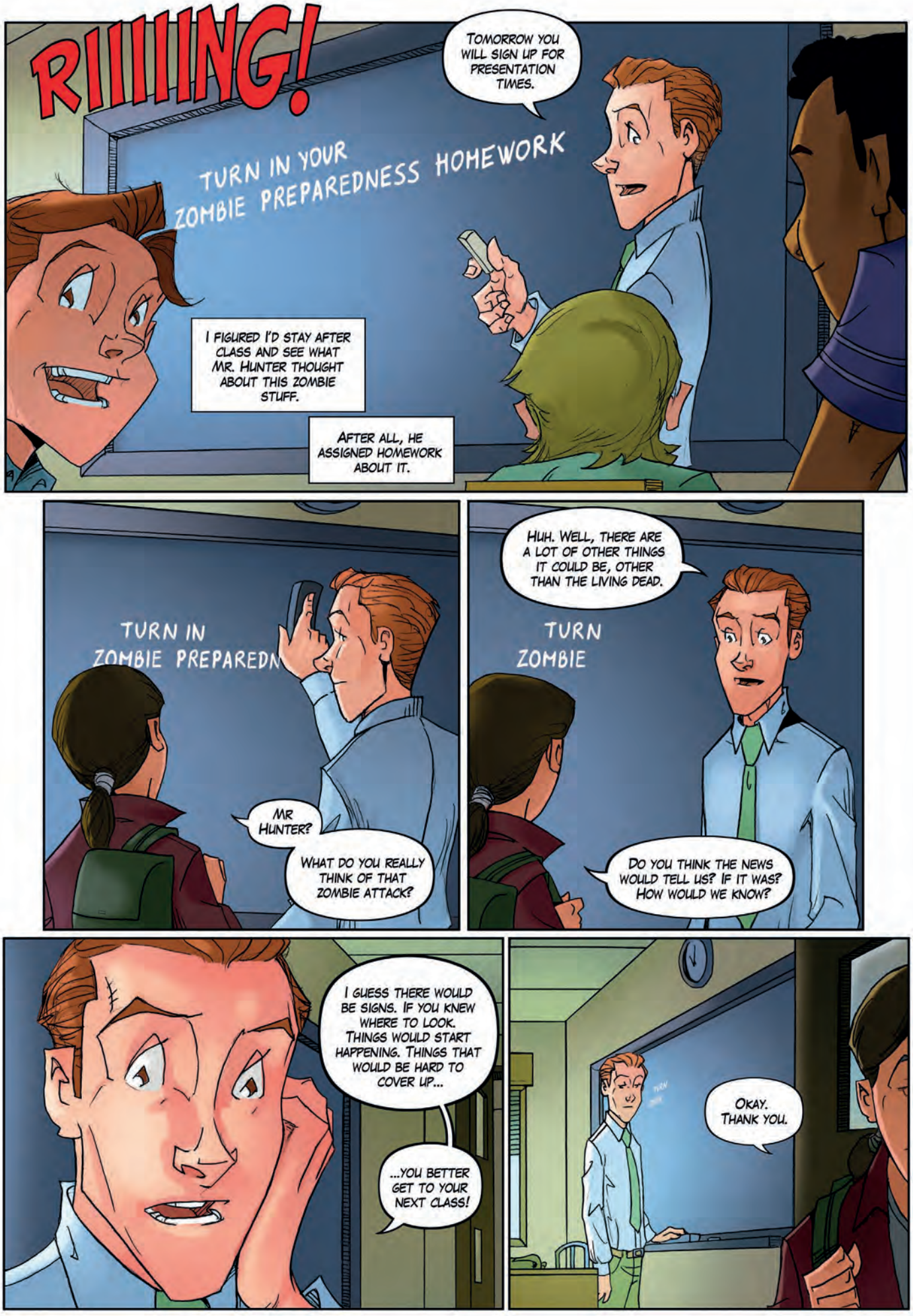
What if there really was a zombie apocalypse? What would you do to be prepared? What are the warning signs and where would you want to be when it happened? I've been putting together some ideas.

Here is a link to a strange article.
Is this the start of a zombie apocalypse?
Police Stop Man Attacking, Biting Another Man

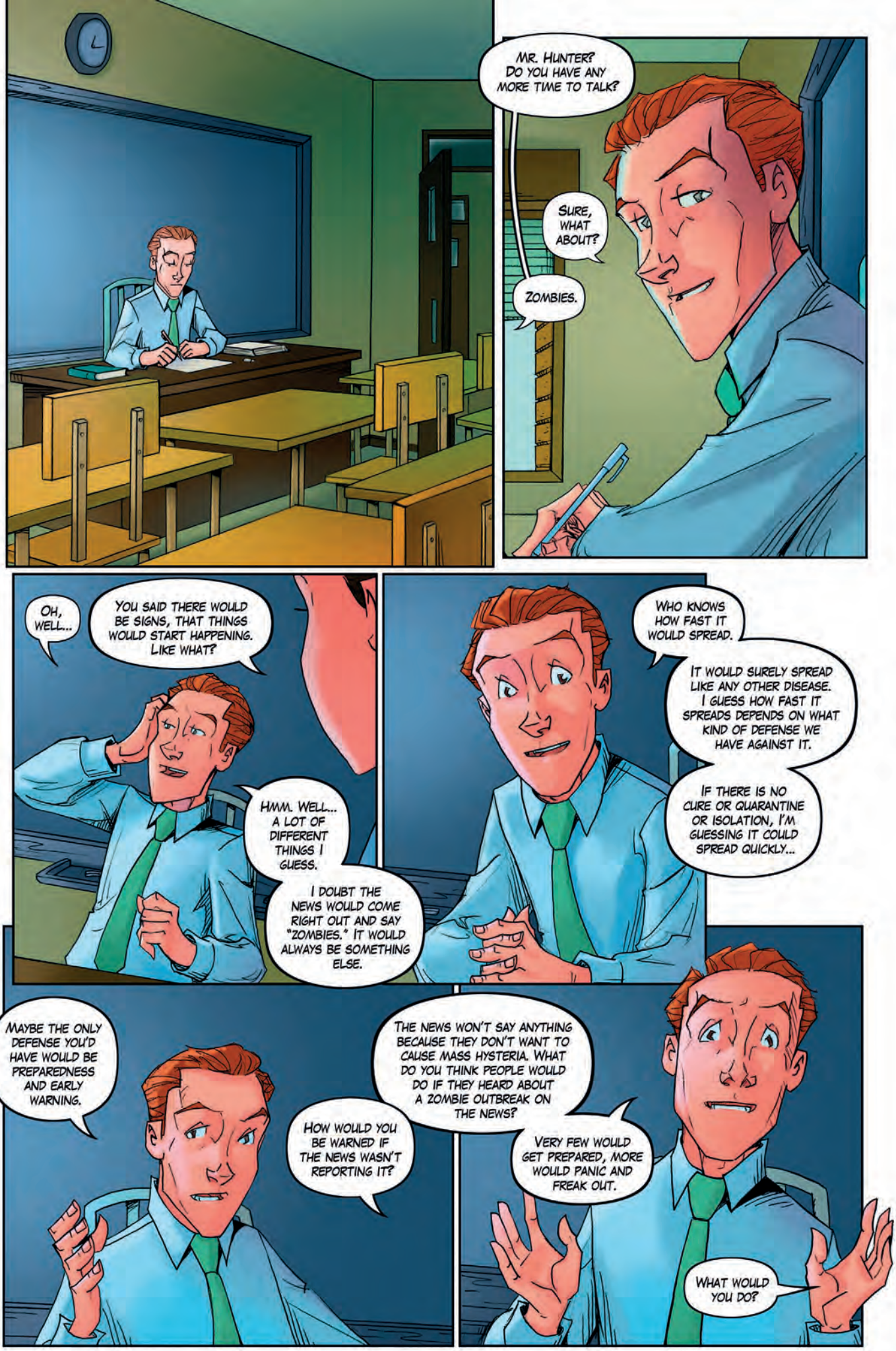
Prev

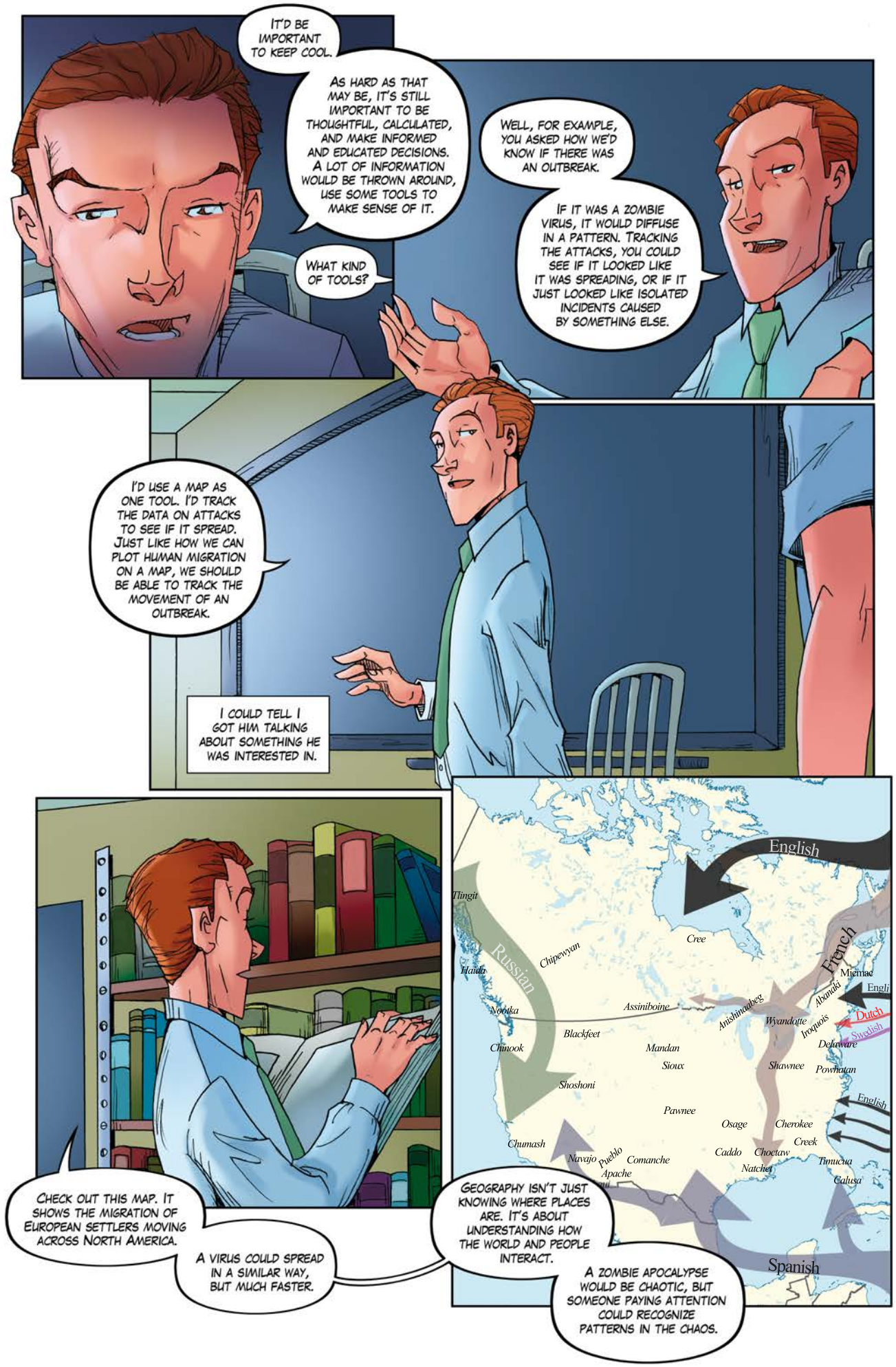
Post

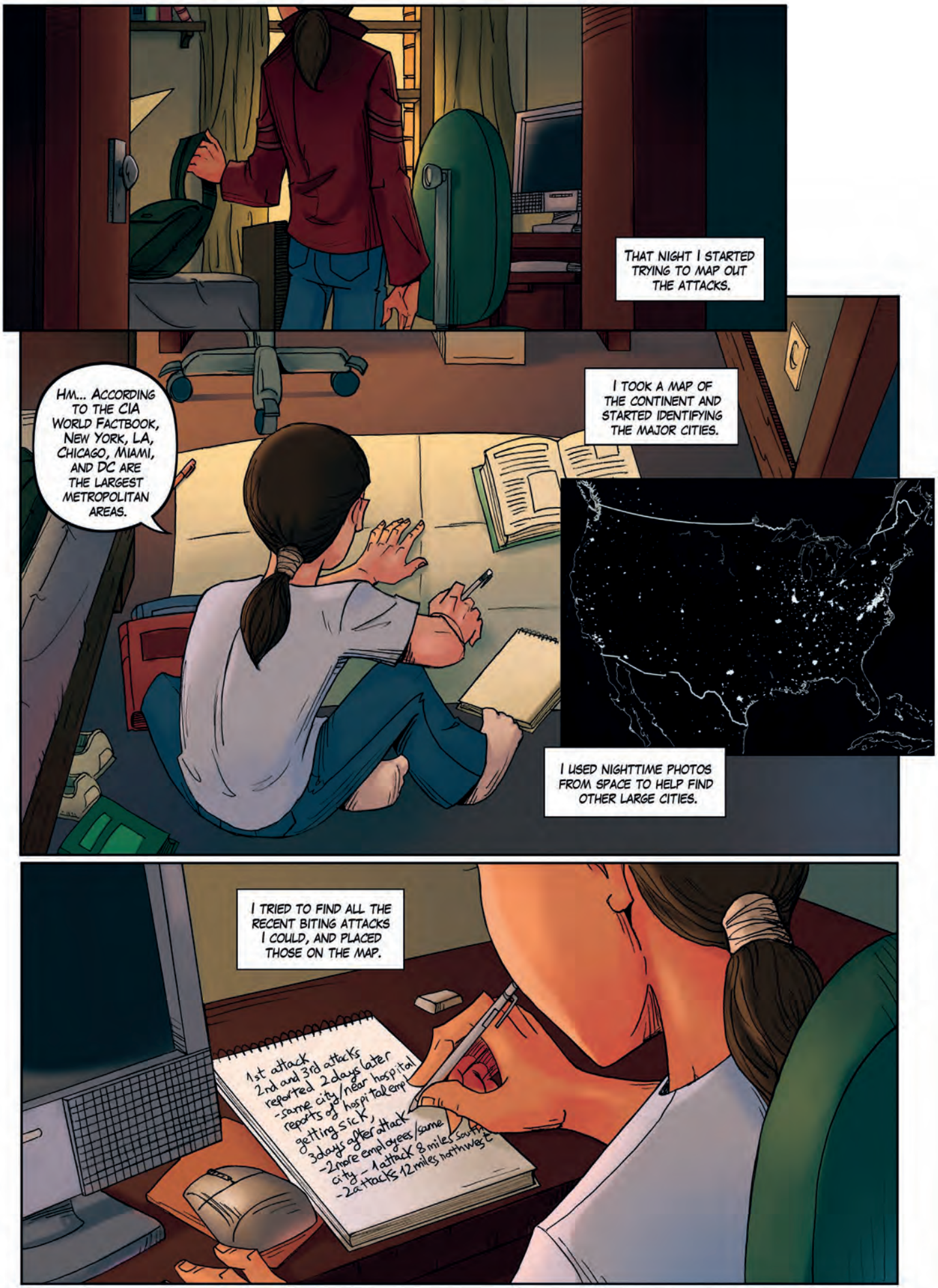
CLICK

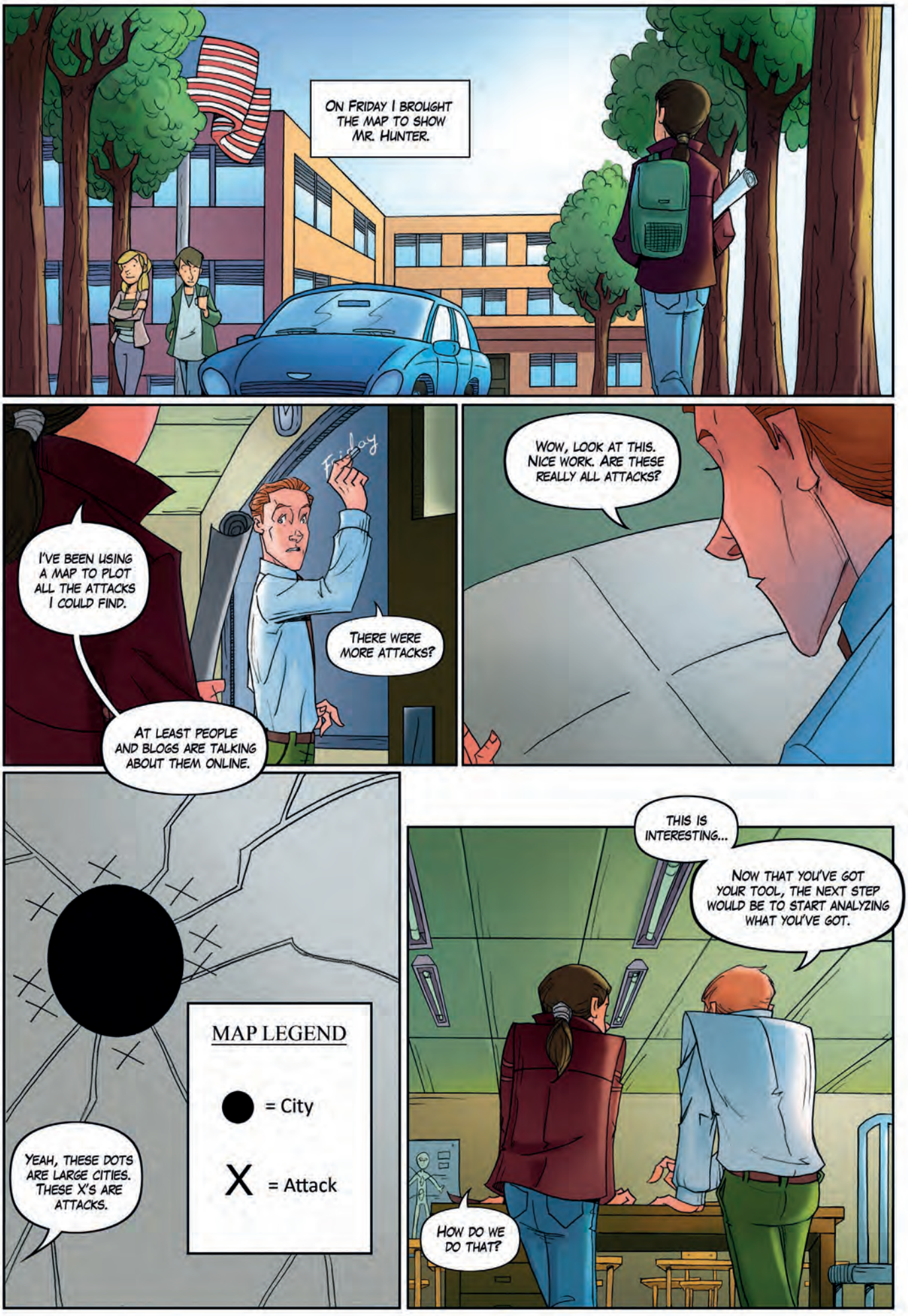

RIIIIING!
TURN IN YOUR ZOMBIE PREPAREDNESS HOMEWORK
TOMORROW YOU WILL SIGN UP FOR PRESENTATION TIMES.
I FIGURED I'D STAY AFTER CLASS AND SEE WHAT MR. HUNTER THOUGHT ABOUT THIS ZOMBIE STUFF.
AFTER ALL, HE ASSIGNED HOMEWORK ABOUT IT.
TURN IN
ZOMBIE PREPAREDN
MR HUNTER?
WHAT DO YOU REALLY THINK OF THAT ZOMBIE ATTACK?
HUH. WELL, THERE ARE A LOT OF OTHER THINGS IT COULD BE, OTHER THAN THE LIVING DEAD.
TURN
ZOMBIE
DO YOU THINK THE NEWS WOULD TELL US? IF IT WAS? HOW WOULD WE KNOW?
I GUESS THERE WOULD BE SIGNS. IF YOU KNEW WHERE TO LOOK. THINGS WOULD START HAPPENING. THINGS THAT WOULD BE HARD TO COVER UP...
...YOU BETTER GET TO YOUR NEXT CLASS!
OKAY. THANK YOU.

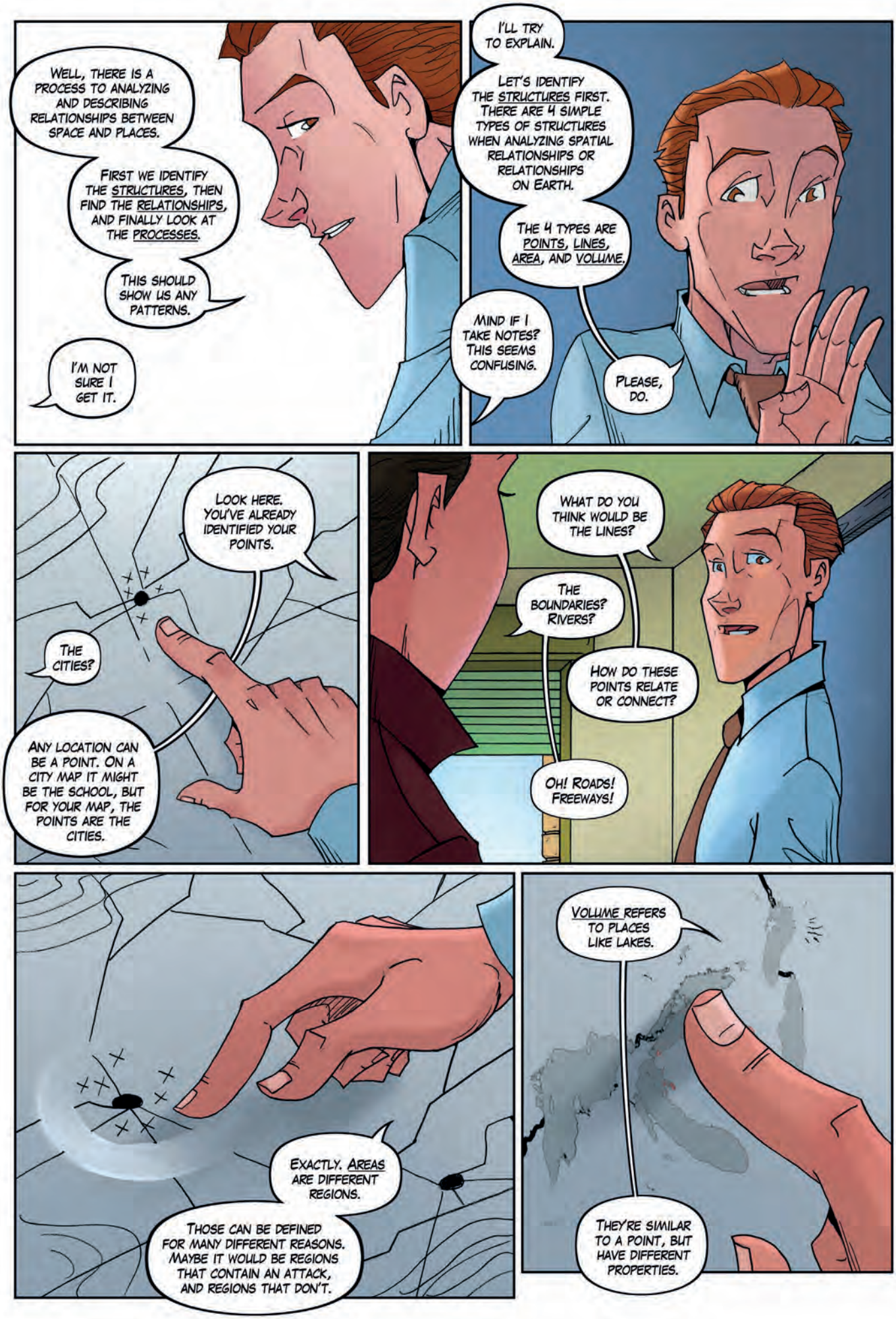
MY BLOG POST ABOUT THE ZOMBIE KEPT GETTING MORE COMMENTS.
BZZZ
New Comment on your Post:
Posted by: Adsum at 10:35am
Anyone hear what happened to the guy who got bit?
10:37
BZZZ
11:15 am
New Comment on your Post:
Posted by: Strabo at 11:14am
Nice post. I think it is important to always be prepared. Don't know if I believe it is a zombie, but there have been new attacks in that same city.
This blog has more info: http://www.cityinthe...
12:42 pm
New Comment on your Post:
Posted by: anonymous at 12:18pm
@Strabo There was also a biting attack about 8 miles from there.
Check out this link:
Are We Seeing A Rise in Violent Biting?
2:46 pm
New Comment on your Post:
Posted by: teramiles92 at 2:01pm
Supposedly THIS INTERVIEW is with an eyewitness to one of the attacks this weekend. Sounds a lot like a zombie attack to me! Creepy!

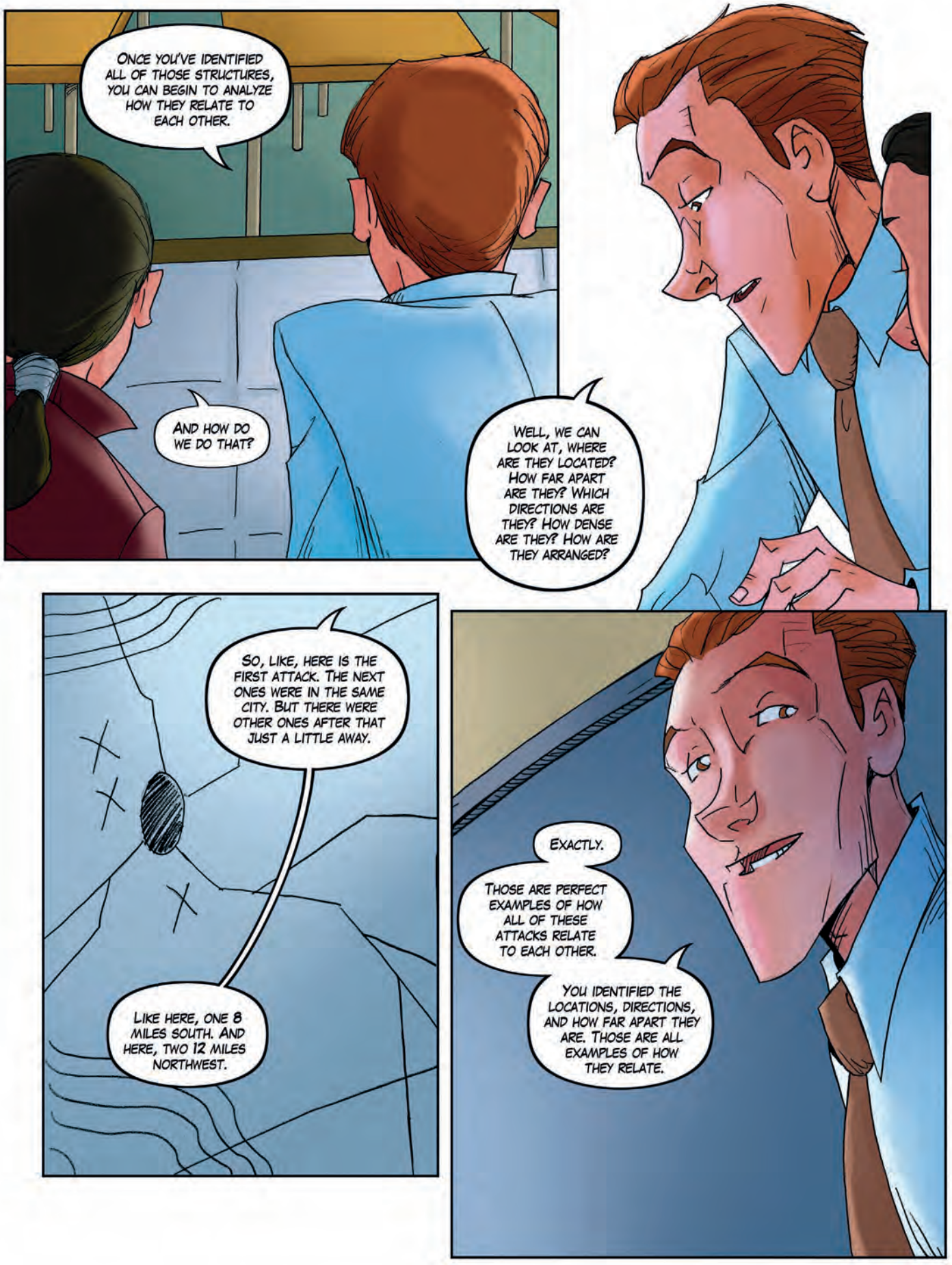

MR. HUNTER? DO YOU HAVE ANY MORE TIME TO TALK?
SURE, WHAT ABOUT?
ZOMBIES.
OH, WELL...
YOU SAID THERE WOULD BE SIGNS, THAT THINGS WOULD START HAPPENING. LIKE WHAT?
HMM. WELL... A LOT OF DIFFERENT THINGS I GUESS.
I DOUBT THE NEWS WOULD COME RIGHT OUT AND SAY "ZOMBIES." IT WOULD ALWAYS BE SOMETHING ELSE.
WHO KNOWS HOW FAST IT WOULD SPREAD.
IT WOULD SURELY SPREAD LIKE ANY OTHER DISEASE. I GUESS HOW FAST IT SPREADS DEPENDS ON WHAT KIND OF DEFENSE WE HAVE AGAINST IT.
IF THERE IS NO CURE OR QUARANTINE OR ISOLATION, I'M GUESSING IT COULD SPREAD QUICKLY...
MAYBE THE ONLY DEFENSE YOU'D HAVE WOULD BE PREPAREDNESS AND EARLY WARNING.
HOW WOULD YOU BE WARNED IF THE NEWS WASN'T REPORTING IT?
THE NEWS WON'T SAY ANYTHING BECAUSE THEY DON'T WANT TO CAUSE MASS HYSTERIA. WHAT DO YOU THINK PEOPLE WOULD DO IF THEY HEARD ABOUT A ZOMBIE OUTBREAK ON THE NEWS?
VERY FEW WOULD GET PREPARED, MORE WOULD PANIC AND FREAK OUT.
WHAT WOULD YOU DO?

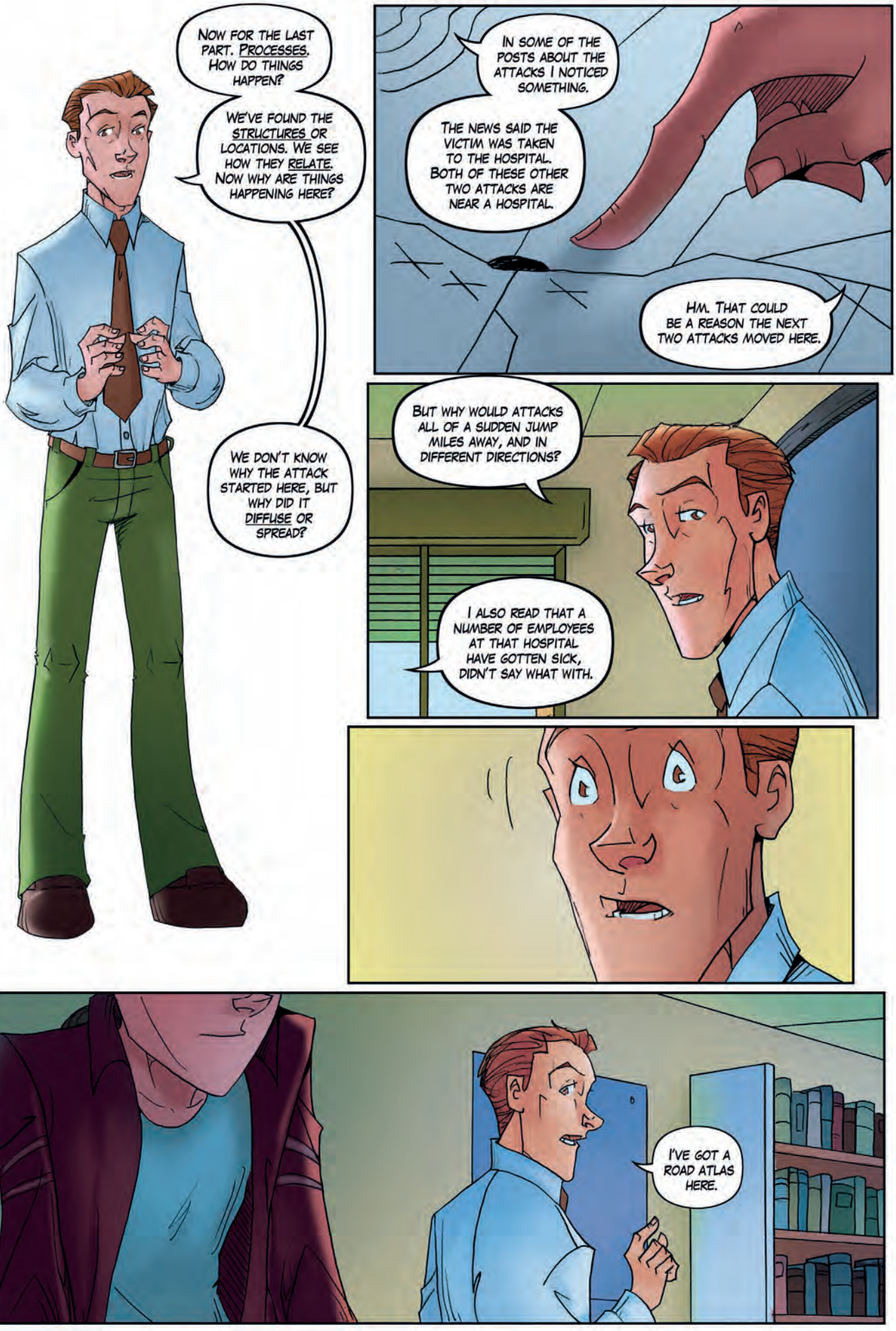

IT'D BE IMPORTANT TO KEEP COOL.
AS HARD AS THAT MAY BE, IT'S STILL IMPORTANT TO BE THOUGHTFUL, CALCULATED, AND MAKE INFORMED AND EDUCATED DECISIONS. A LOT OF INFORMATION WOULD BE THROWN AROUND, USE SOME TOOLS TO MAKE SENSE OF IT.
WHAT KIND OF TOOLS?
WELL, FOR EXAMPLE, YOU ASKED HOW WE'D KNOW IF THERE WAS AN OUTBREAK.
IF IT WAS A ZOMBIE VIRUS, IT WOULD DIFFUSE IN A PATTERN. TRACKING THE ATTACKS, YOU COULD SEE IF IT LOOKED LIKE IT WAS SPREADING, OR IF IT JUST LOOKED LIKE ISOLATED INCIDENTS CAUSED BY SOMETHING ELSE.
I'D USE A MAP AS ONE TOOL. I'D TRACK THE DATA ON ATTACKS TO SEE IF IT SPREAD. JUST LIKE HOW WE CAN PLOT HUMAN MIGRATION ON A MAP, WE SHOULD BE ABLE TO TRACK THE MOVEMENT OF AN OUTBREAK.
I COULD TELL I GOT HIM TALKING ABOUT SOMETHING HE WAS INTERESTED IN.
CHECK OUT THIS MAP. IT SHOWS THE MIGRATION OF EUROPEAN SETTLERS MOVING ACROSS NORTH AMERICA.
A VIRUS COULD SPREAD IN A SIMILAR WAY, BUT MUCH FASTER.
GEOGRAPHY ISN'T JUST KNOWING WHERE PLACES ARE. IT'S ABOUT UNDERSTANDING HOW THE WORLD AND PEOPLE INTERACT.
A ZOMBIE APOCALYPSE WOULD BE CHAOTIC, BUT SOMEONE PAYING ATTENTION COULD RECOGNIZE PATTERNS IN THE CHAOS.
English
French
Russian
Spanish
Dutch
Swedish
Tlingit
Haida
Chipewyan
Cree
Micmac
Abanaki
Engli
Nootka
Assiniboine
Anishinaabeg
Wyandotte
Iroquois
Blackfeet
Chinook
Mandan
Sioux
Delaware
Shawnee
Powhatan
Shoshoni
Pawnee
Osage
Cherokee
Chumash
Creek
Caddo
Choctaw
Navajo
Pueblo
Comanche
Apache
Natchez
Timucua
Calusa

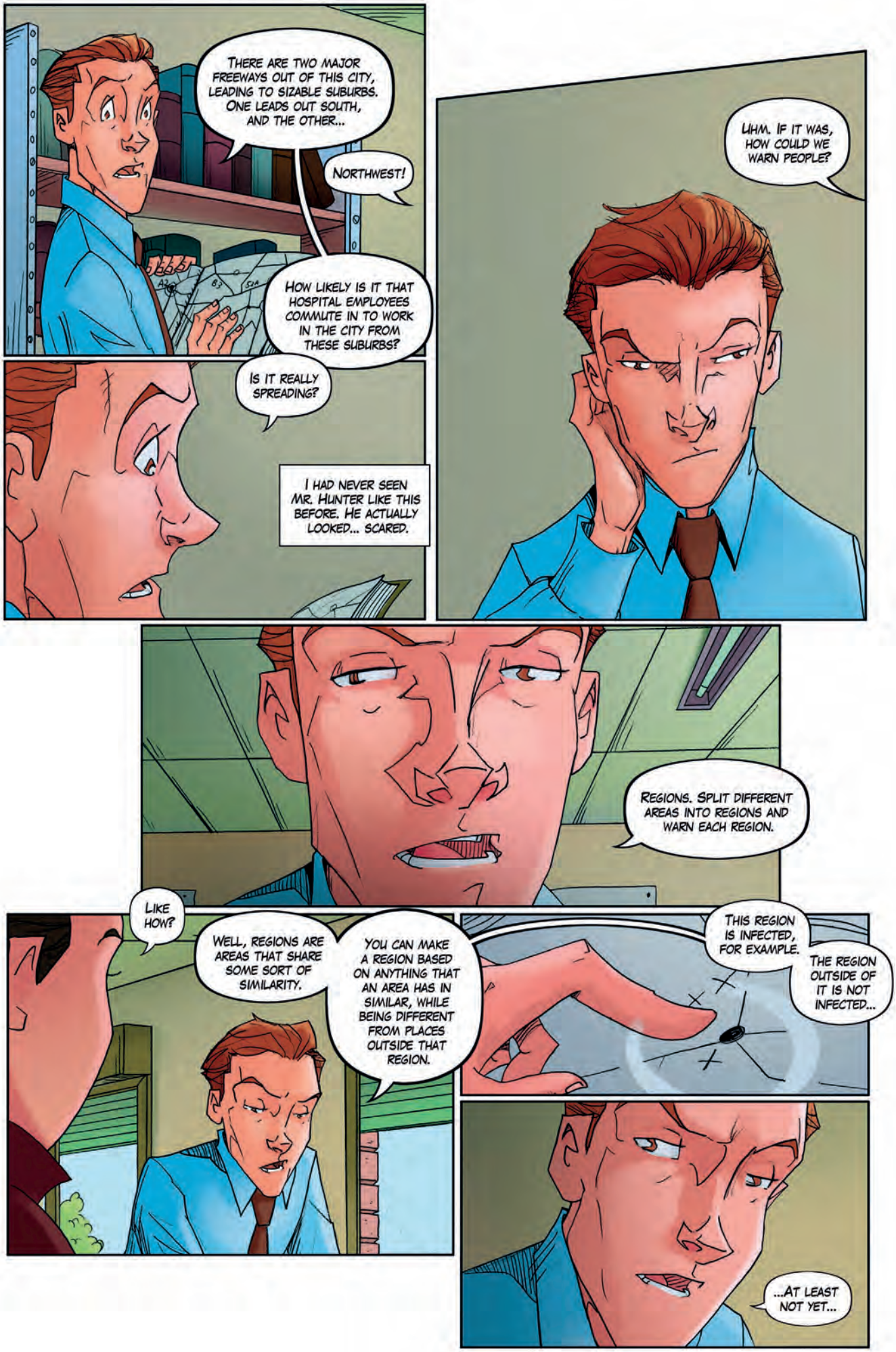

That night I started trying to map out the attacks.
Hm... According to the CIA World Factbook, New York, LA, Chicago, Miami, and DC are the largest metropolitan areas.
I took a map of the continent and started identifying the major cities.
I used nighttime photos from space to help find other large cities.
I tried to find all the recent biting attacks I could, and placed those on the map.
1st attack
2nd and 3rd attacks later reported 2 days later
-same city/near hospital
reports of hospital employees getting sick,
3days after attack
-2 more employees/same city - 1 attack 8 miles
-2 attacks 12 miles northwest

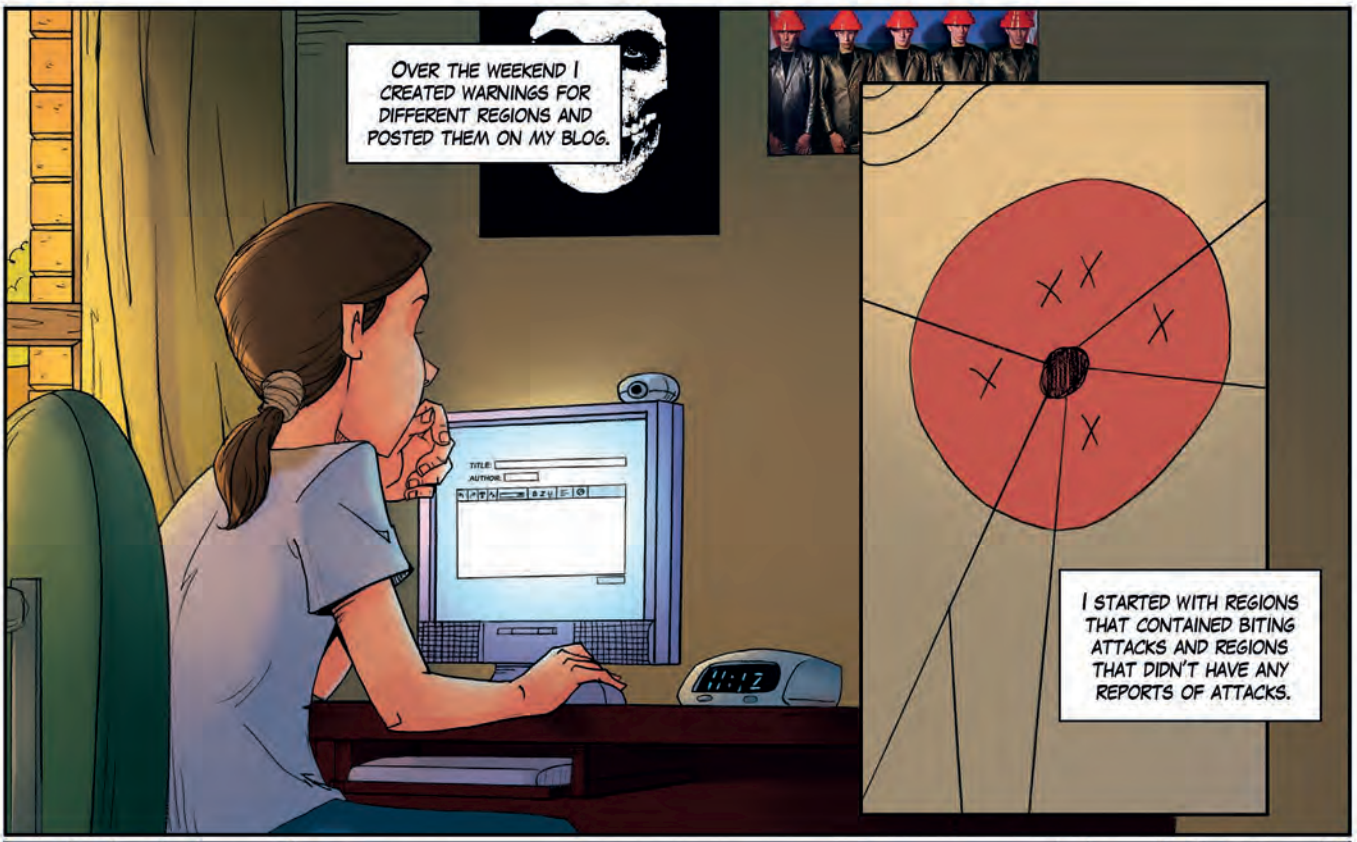

On Friday I brought the map to show Mr. Hunter.
Friday
I've been using a map to plot all the attacks I could find.
There were more attacks?
At least people and blogs are talking about them online.
Wow, look at this. Nice work. Are these really all attacks?
MAP LEGEND
= City
= Attack
Yeah, these dots are large cities. These X's are attacks.
This is interesting...
Now that you've got your tool, the next step would be to start analyzing what you've got.
How do we do that?

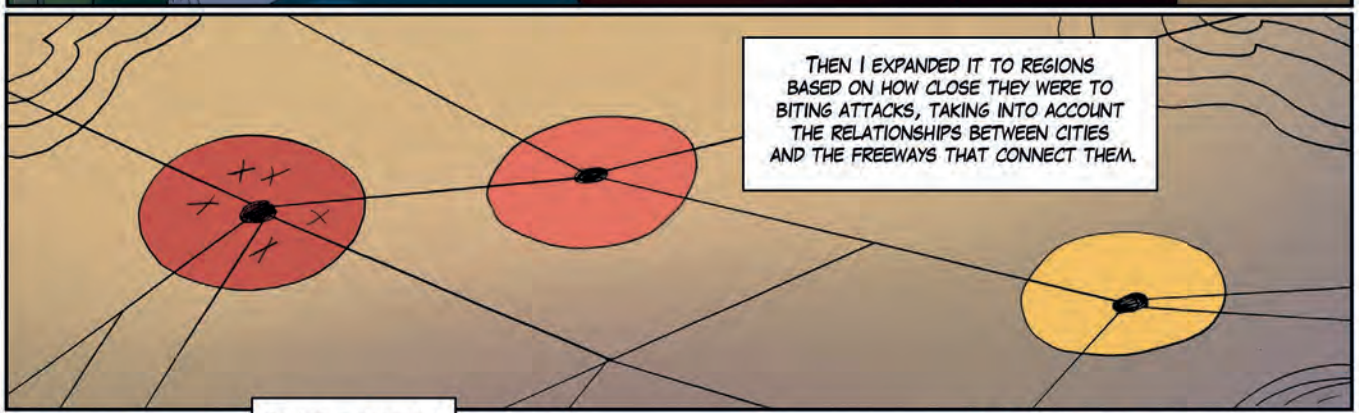

Well, there is a process to analyzing and describing relationships between space and places.
First we identify the structures, then find the relationships, and finally look at the processes.
This should show us any patterns.
I'm not sure I get it.
I'll try to explain.
Let's identify the structures first. There are 4 simple types of structures when analyzing spatial relationships or relationships on Earth.
The 4 types are points, lines, area, and volume.
Mind if I take notes? This seems confusing.
Please, do.
Look here. You've already identified your points.
The cities?
Any location can be a point. On a city map it might be the school, but for your map, the points are the cities.
What do you think would be the lines?
The boundaries? Rivers?
How do these points relate or connect?
Oh! Roads! Freeways!
Exactly. Areas are different regions.
Those can be defined for many different reasons. Maybe it would be regions that contain an attack, and regions that don't.
Volume refers to places like lakes.
They're similar to a point, but have different properties.

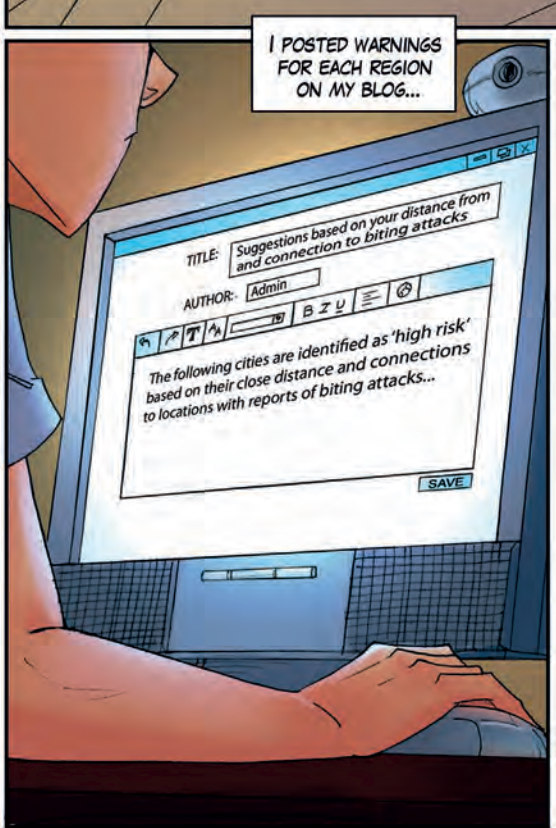

Once you've identified all of those structures, you can begin to analyze how they relate to each other.
And how do we do that?
Well, we can look at, where are they located? How far apart are they? Which directions are they? How dense are they? How are they arranged?
So, like, here is the first attack. The next ones were in the same city. But there were other ones after that just a little away.
Like here, one 8 miles south. And here, two 12 miles northwest.
Exactly.
Those are perfect examples of how all of these attacks relate to each other.
You identified the locations, directions, and how far apart they are. Those are all examples of how they relate.

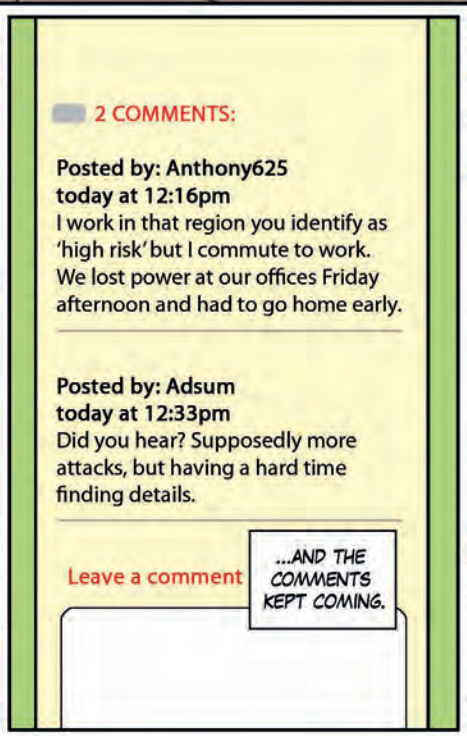

Now for the last part. Processes. How do things happen?
We've found the structures or locations. We see how they relate. Now why are things happening here?
We don't know why the attack started here, but why did it diffuse or spread?
In some of the posts about the attacks I noticed something.
The news said the victim was taken to the hospital. Both of these other two attacks are near a hospital.
Hm. That could be a reason the next two attacks moved here.
But why would attacks all of a sudden jump miles away, and in different directions?
I also read that a number of employees at that hospital have gotten sick, didn't say what with.
I've got a road atlas here.

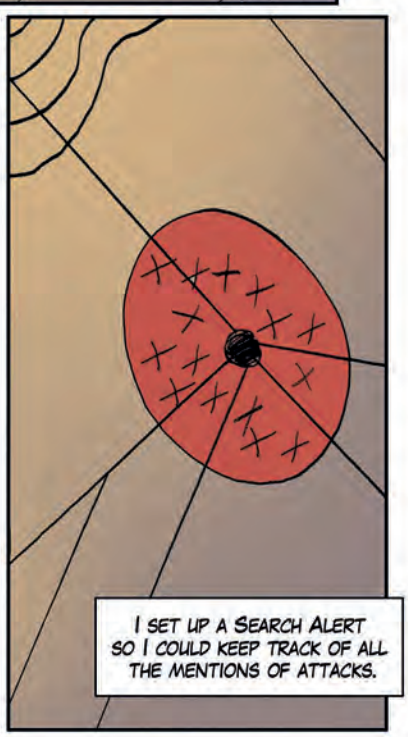

There are two major freeways out of this city, leading to sizable suburbs. One leads out south, and the other...
Northwest!
How likely is it that hospital employees commute in to work in the city from these suburbs?
Is it really spreading?
I had never seen Mr. Hunter like this before. He actually looked... scared.
Uhm. If it was, how could we warn people?
Regions. Split different areas into regions and warn each region.
Like how?
Well, regions are areas that share some sort of similarity.
You can make a region based on anything that an area has in similar, while being different from places outside that region.
This region is infected, for example.
The region outside of it is not infected...
...At least not yet...


OVER THE WEEKEND I CREATED WARNINGS FOR DIFFERENT REGIONS AND POSTED THEM ON MY BLOG.
I STARTED WITH REGIONS THAT CONTAINED BITING ATTACKS AND REGIONS THAT DIDN'T HAVE ANY REPORTS OF ATTACKS.


THEN I EXPANDED IT TO REGIONS BASED ON HOW CLOSE THEY WERE TO BITING ATTACKS, TAKING INTO ACCOUNT THE RELATIONSHIPS BETWEEN CITIES AND THE FREEWAYS THAT CONNECT THEM.


I POSTED WARNINGS FOR EACH REGION ON MY BLOG...
TITLE: Suggestions based on your distance from and connection to biting attacks
AUTHOR: Admin
The following cities are identified as 'high risk' based on their close distance and connections to locations with reports of biting attacks...
SAVE

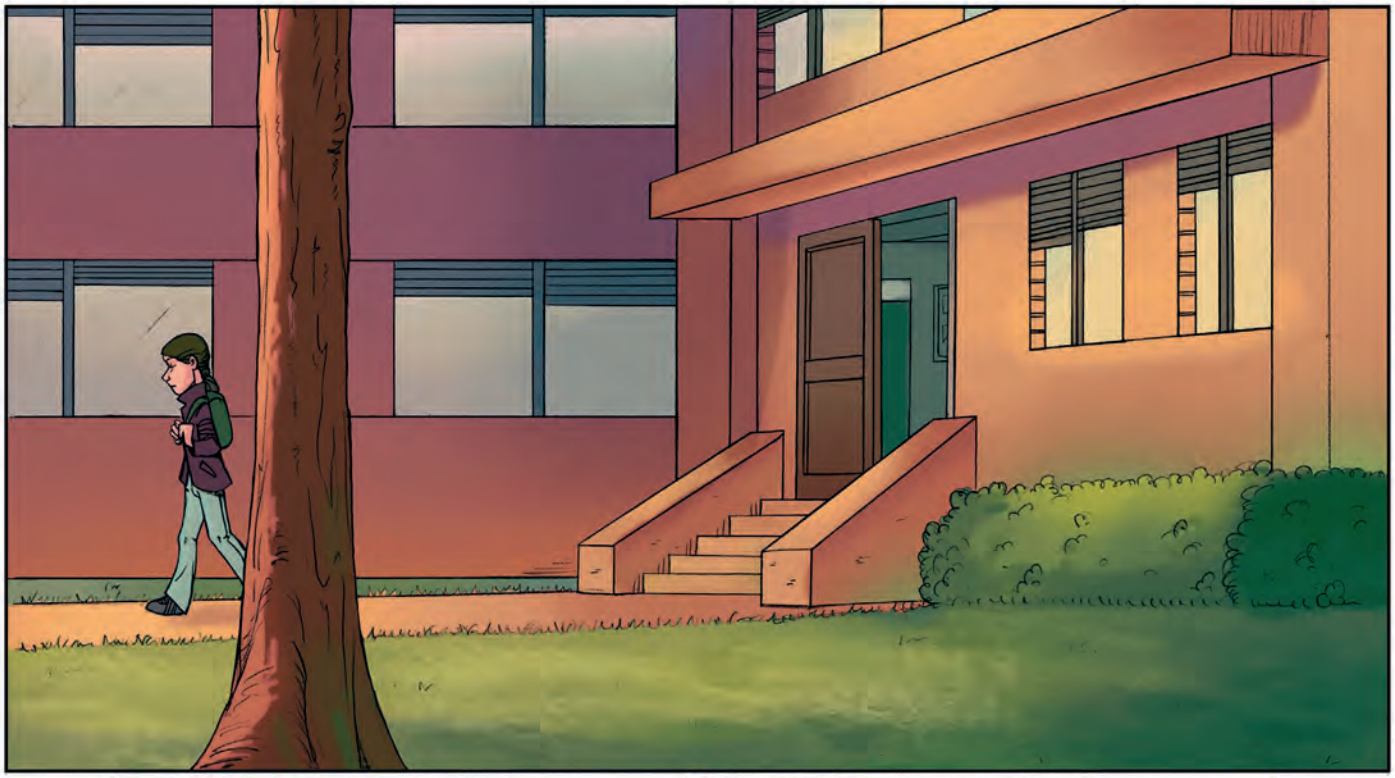

2 COMMENTS:
Posted by: Anthony625
today at 12:16pm
I work in that region you identify as 'high risk' but I commute to work. We lost power at our offices Friday afternoon and had to go home early.
Posted by: Adsum
today at 12:33pm
Did you hear? Supposedly more attacks, but having a hard time finding details.
Leave a comment
...AND THE COMMENTS KEPT COMING.


I SET UP A SEARCH ALERT SO I COULD KEEP TRACK OF ALL THE MENTIONS OF ATTACKS.

GOODS-THEO
THEO
I DECIDED I'D BETTER FOLLOW THROUGH WITH MY PREPAREDNESS PLAN.
I MADE SURE TO TRY AND GET ALL THE SUPPLIES I LISTED.
GALLONS OF WATER, CANNED FOOD, BATTERIES, UTILITY KNIFE, DUCT TAPE, HAND SANITIZER, FIRST AID KIT...
THEY WERE SHORT ON SOME STUFF--
GROCE
WE HAVEN'T GOTTEN ANY SHIPMENTS IN THIS WEEK.
--AND COMPLETELY OUT OF OTHERS.
I ALSO MADE PLANS WITH MY PARENTS.
IF FOR SOME REASON THERE IS EVER AN EMERGENCY IN OUR HOME, WE'LL MEET AT THE MAILBOX.
IF THERE IS AN EMERGENCY THAT KEEPS US FROM GETTING HOME, WE'LL MEET AT MY SCHOOL.
SOUNDS FINE, HONEY.
DAILY-NEWS
Power Failures Plague Region
New Violent Crime Epidemic

THE WEEKEND DIDN'T DO TOO MUCH TO MAKE ME FEEL ANY BETTER ABOUT THESE ATTACKS.
WHAT NETWORK DO YOU HAVE?
I'M NOT GETTING ANY RECEPTION.
MONDAY GOT WORSE.
I WANTED TO BELIEVE IT WASN'T HAPPENING.
HECK, I STILL TRY TO BELIEVE THAT.
WOAH!
BECAUSE THE POWER IS NOT BACK ON, ANYONE WHO HAD A DIGITAL PRESENTATION WILL BE MOVED TO TOMORROW.
NICE! I LIVE ANOTHER DAY!
NONE OF THE WATER WORKS.
DON'T USE THE TOILETS EITHER
2:03 pm
NO SIGNAL
BY THE END OF THE SCHOOL DAY, NOBODY HAD CELL PHONE SERVICE.

I STAYED A LITTLE BIT AFTER SCHOOL TO TALK TO MR. HUNTER.
WHAT DOES YOUR DATA SHOW?
IT'S SPREADING, FAST. AND GETTING CLOSER.
IF THIS KIND OF VIRUS WASN'T STOPPED AT THE BEGINNING, THEN IT WOULD SPREAD EXPONENTIALLY. IT'D SPREAD FASTER AND FASTER.
THE ATTACKS ARE ALL OVER THE PLACE, THEY'RE GETTING CLOSER TO US.
GET HOME. IF THE POWER COMES BACK ON, WATCH THE NEWS.
IF IT DOESN'T COME BACK ON, I SUGGEST YOU STAY HOME.
REMEMBER, KEEP CALM. AND ALWAYS THINK BEFORE YOU ACT.
THAT DAY, WALKING HOME, WAS THE FIRST TIME I SAW A ZOMBIE.



WHAT THE..?!

GOSH DANGIT!

I JUST STEPPED IN SOME DOG CRAP! THESE DARN PEOPLE DON'T PICK UP AFTER WALKING THEIR DOGS! I'M SICK OF IT!
OH!
I'M SORRY, IT'S JUST ANNOYING...
RUSTLE
RUSTLE!

AAAAGH!!!

AAAGGGH!!
AAAH!!
AAALLGHH!
MMFF..!!
RAAHGH!
RUN!
RUN!
RRRGGHH!

GOODS - THEO

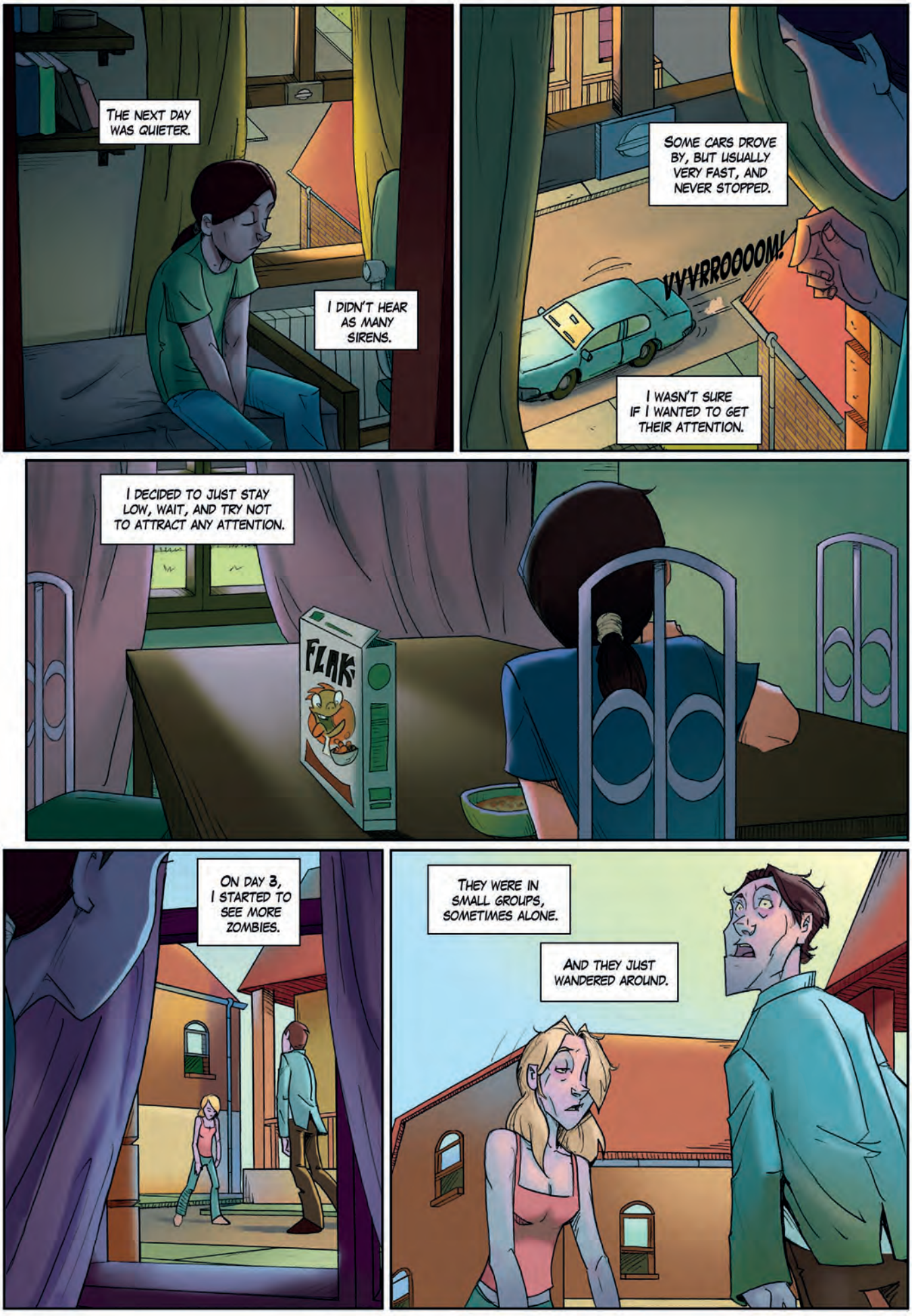
AT FIRST I THOUGHT THEY WERE ZOMBIES TOO. BUT THEY ALL LOOKED HUMAN. JUST ANGRY.

OFFICER! OFFICER!

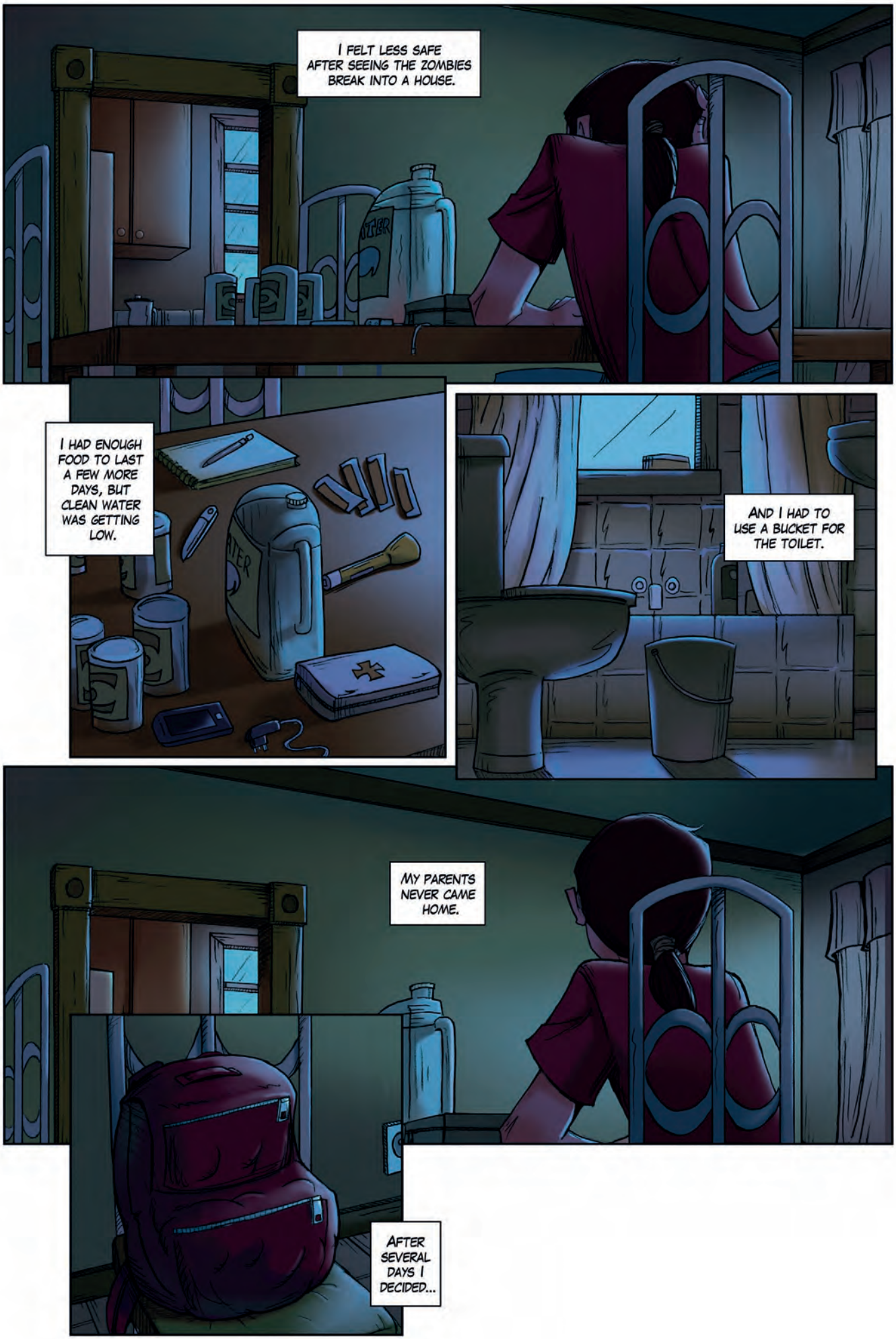
THERE WAS AN ATTACK! OVER BY THE MIDDLE SCHOOL. IT WAS...
IT WAS... A ZOMBIE!

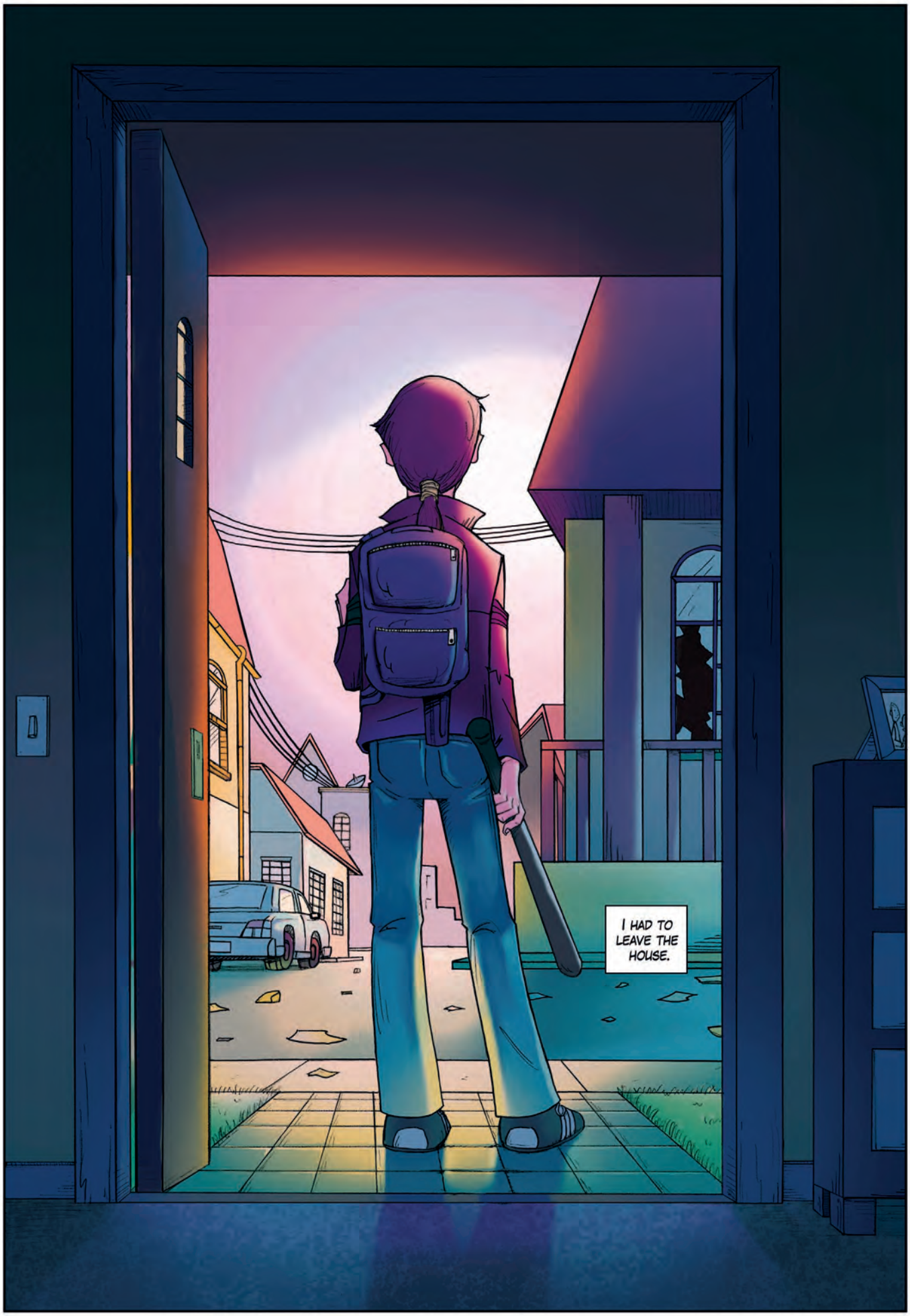
WE'VE GOT ANOTHER ATTACK. REPORTED NEAR THE MIDDLE SCHOOL. OVER.
COPY THAT. ALL OFFICERS CURRENTLY DISPATCHED. ANY OFFICERS IN THE AREA, PLEASE PATROL CAUTIOUSLY.

I'M SORRY! LIKE I SAID, WE ARE CLOSED! I CAN'T LET YOU IN!
CLOSED
WITH THE POWER OUT, WE CAN'T MAKE ANY TRANSACTIONS!
THIS IS AN EMERGENCY! YOU MUST LET US IN!
YOU BETTER GET HOME KID. WE'VE GOT TO DISBURSE THIS CROWD.
I GOT HOME, LOCKED THE DOORS AND CHECKED ALL THE WINDOWS.
THE POWER NEVER CAME BACK ON.
EEEEEEE!!!
AND MY PARENTS DIDN'T GET HOME FROM WORK.


THE NEXT DAY WAS QUIETER.
I DIDN'T HEAR AS MANY SIRENS.
SOME CARS DROVE BY, BUT USUALLY VERY FAST, AND NEVER STOPPED.
VVVRROOOOM!
I WASN'T SURE IF I WANTED TO GET THEIR ATTENTION.
I DECIDED TO JUST STAY LOW, WAIT, AND TRY NOT TO ATTRACT ANY ATTENTION.
FLAK
ON DAY 3, I STARTED TO SEE MORE ZOMBIES.
THEY WERE IN SMALL GROUPS, SOMETIMES ALONE.
AND THEY JUST WANDERED AROUND.

BARK, BARK!
BARK!
DAY 4, I COULD HEAR A DOG BARKING IN A HOUSE DOWN THE STREET.
BARK! GRRRR!
BARK, BARK!
SMASH!
BARK, BARK, BARK!
THE ZOMBIES HEARD IT TOO.
BARK!
GRRR!
BARK, BARK...


I FELT LESS SAFE AFTER SEEING THE ZOMBIES BREAK INTO A HOUSE.
I HAD ENOUGH FOOD TO LAST A FEW MORE DAYS, BUT CLEAN WATER WAS GETTING LOW.
AND I HAD TO USE A BUCKET FOR THE TOILET.
MY PARENTS NEVER CAME HOME.
AFTER SEVERAL DAYS I DECIDED...


I HAD TO LEAVE THE HOUSE.

If there was a zombie outbreak, would you be ready?

Being able to keep calm and think during the chaos of a zombie outbreak is challenging! Test your skills to see if you would be ready.

Included on the following pages are some of Mr. Hunter's handouts for designing maps and creating regions. Take a look at them and see if you can complete any of the following challenges.

0) ZOMBIE PREPAREDNESS

Create your own plan for zombie preparedness. ***Create a list*** of items you think would be helpful to have on hand for an outbreak.

1) MAPPING THE OUTBREAK

Create a high quality map and plot where you think the zombies would spread. Use all of the map elements.

2) CREATING REGIONS

Not all places are going to get affected by zombies in the same way. Split up a location into regions so that you can better inform everyone. Display those regions on your map.

4) WARNING THE REGIONS

Write a warning to one of your regions. What should this region be aware of? Try to inform your readers about what they should do.
Practice using the writing process to make your warning clear.

- ☐ Brainstorm all the information you need to tell your readers.
- ☐ List the information in the order you think you should tell them.
- ☐ Turn your list into sentences and paragraphs.
- ☐ Check your wording. Do the ideas make sense?
- ☐ Check your spelling and grammar.
- ☐ Publish! Warn those people before it is too late!

How'd you do?

- ☐ Complete Projects 1 + 2 = You're a cartographer (specializing in zombies).
- ☐ Complete all Projects = You're a survivor and a leader (at least for now).

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MAPPING THE ZOMBIE OUTBREAK

ZOMBIE OUTBREAK DATA MAP

BEFORE THE OUTBREAK: PROJECT 01

If the zombie virus was spreading, wouldn't you want to ***know where it was going***? You can create your own map and ***use geographic tools*** to track the spread of the zombie apocalypse.

DRIVING QUESTION

How are ***geographic tools*** used to ***make predictions*** and ***find solutions***?

WHAT YOU'LL PRODUCE

Create a high quality map and plot where you think the zombies would spread.

YOUR MAP WILL

•Include important **map features** (direction, symbols, legend, index, scale)
•Identify **major cities**
•Show the **spread** of zombie attacks
•Show the **connections** between cities which help the zombie virus spread

INSTRUCTIONS

1.Choose a ***location*** you want to make a map of. Maybe it is where you live, but make sure the map is large enough that it contains quite a few cities.
2.Use ***satellite images*** to help inform your map (easy to find on Google Earth).
3.***Read*** through the following handouts to learn about the parts of a map.
4.***Create*** a map with all of the elements.
5.***Choose*** a location to start the zombie outbreak.
6.Use Spatial Analysis (see handout) to identify how the zombies will spread.

Continue on to the next project to start creating regions to inform how you'd identify people about the zombie outbreak!

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GEOGRAPHY TOOLS:

WHAT ARE THE DIFFERENT TYPES OF TOOLS GEOGRAPHERS USE?

BEFORE THE OUTBREAK: PROJECT 01

Geographers use all sorts of tools to help them investigate their questions. They commonly use ***maps, globes, atlases, aerial photographs, satellite photographs, information graphics,*** and a computer program called ***GIS***. Read below to learn about different tools.

SOME **TOOLS** GEOGRAPHERS USE

© Wikimedia Commons, File:1-12_Political_Color_Map_World.png, CC BY-SA

MAPS

A *map* is a flat representation of a part of Earth.

Geographers use many different types of maps. Maps can show lots of different information including the location of places on the world.

Maps use **projection** to try and display a round object (Earth) on a flat surface (a map). **Cartographers** (map-makers) have long struggled with trying to find the most accurate projection to make maps with.

This image is in the public domain. Map by Anselmo Banduri 1675-1743

ATLAS

An *atlas* is a book of maps.

An atlas contains maps of the world or a region of the world. Some atlases also include more information about the places they include in the maps.

Atlases can be very helpful for traveling. Instead of brining many maps, you can bring one atlas.

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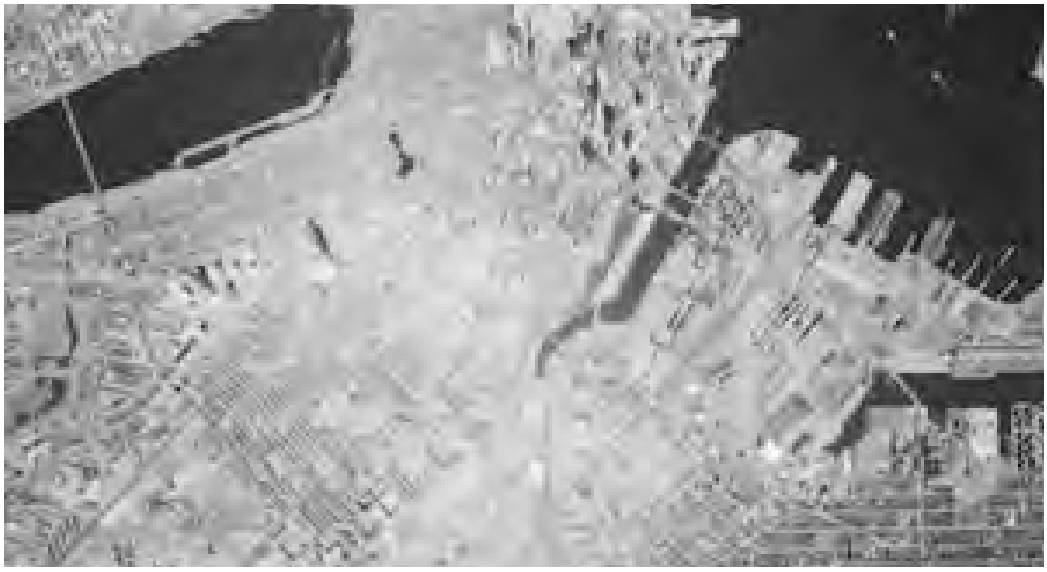
© Wikimedia Commons, File:GEO_Globe.jpg, CC BY-SA

GLOBE

A *globe* is a model of the Earth, used to **avoid distortions** in spatial relations on the world.

Maps of the world are distorted from trying to make a round object fit on a flat surface. The globe is round, so it remains accurate.

The globe provides an accurate scale of how far apart locations are. You can also use a globe to get a comparison of the size of different locations.



This image is in the public domain. Provided by the U.S. Geological Survey

AERIAL PHOTOGRAPHS

Aerial photographs are photographs taken from the sky and used to take measurements or create maps.

Aerial photographs can be taken from airplanes, balloons, or even kites.

*The image on the left is an **aerial photo of South Boston, MA**. It was taken in 1978. You can download aerial photos at:*
http://earthexplorer.usgs.gov

NASA Earth Observatory image created by Jesse Allen, using EO-1 ALI data provided courtesy of the NASA EO-1 team and the United States Geological Survey

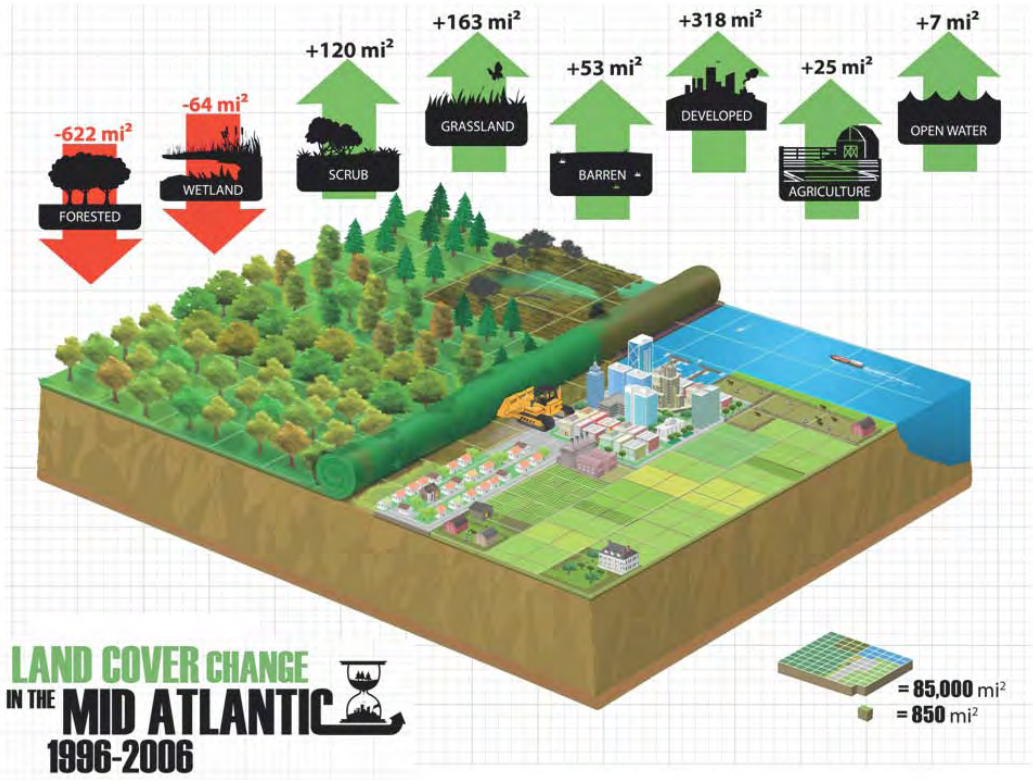
SATELLITE PHOTOGRAPHS

Satellite photographs are like aerial photographs, but they are taken from space.

Satellite photographs can capture large areas of the Earth, but they can also zoom in pretty close.

*The image on the left is a **satellite photo of Marion Island, South Africa**. Marion Island is a protected land and is only inhabited by researchers studying the island.*

© 2012 Zombie-Based Learning

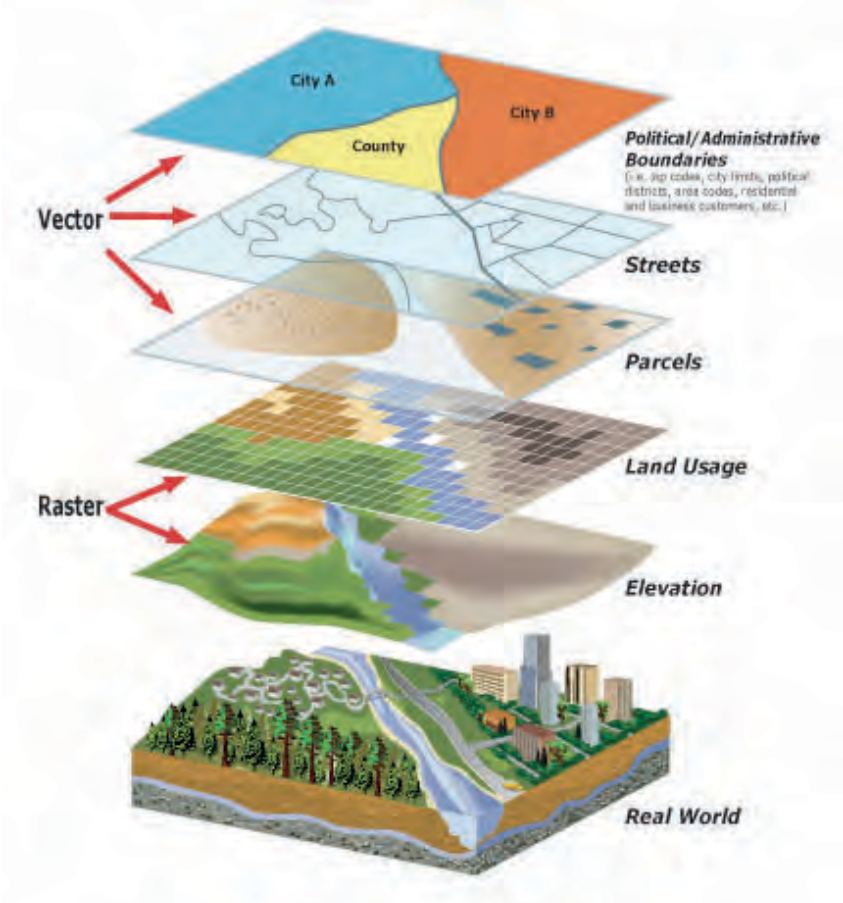


This image is in the public domain. Provided by the National Oceanic and Atmospheric Administration (NOAA)

INFORMATION GRAPHICS
Information Graphics or Infographics are visual symbols of data. They are images that show information using pictures or symbols.

Information graphics can be as simple as a **bar graph** or as complex as the image to the left.

*The infographic on the left is a **display of land cover change in the Mid-Atlantic between 1996-2006**. This graphic shows that over 10 years, forests and **wetlands** have decreased, while other types of land cover, including **developments** have increased. The graphic does not represent actual locations of land cover, just numbers representing it.*



This image provided by the San Bernardino County Information Services Department

GIS (Geographic Information System)
GIS is a computer based program used to store, manage, and analyze data

A GIS map is more than a map because it can pull up a lot of information. Geographers use GIS to help make decisions. Imagine that you wanted to make sure schools were not near any factories that might pollute the air. With a GIS map, geographers can use the **database** (place that stores information) to show where all the schools are. They can then use the database to also show where all the factories are. The GIS helps geographers see all kinds of information and how it relates to locations.

The image to the left is an example of how GIS layers information.

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MAP ELEMENTS:

WHAT ARE THE IMPORTANT PARTS OF A MAP?

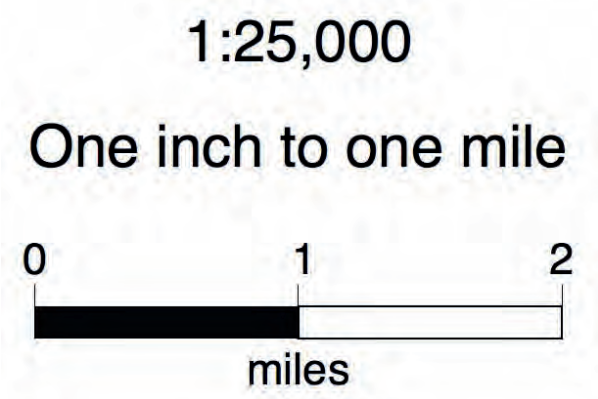
BEFORE THE OUTBREAK: PROJECT 01

Maps are very helpful tools. ***Map elements*** are the parts of a map that make it easier to read. Almost all maps use most of these elements. The basic elements of a map are ***direction***, ***scale***, ***symbols and legend***, ***labels***, *and* ***grid and index***.

COMMON **MAP ELEMENTS**

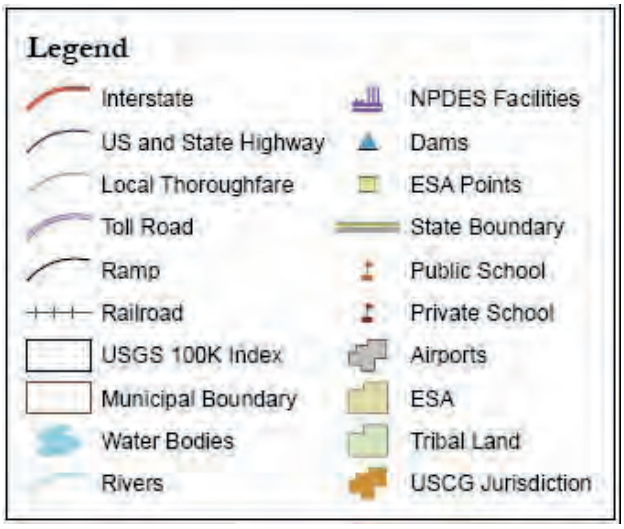
DIRECTION
Direction is shown on a map by using a *compass rose*. The compass rose shows the directions of the map so that map readers can relate those directions to the real world.

Sometimes a compass rose will just show *North*. If you know which way North is, you can figure out *East, West,* and *South*.



SCALE
Scale shows the *distance* measurements on the map. If a map is *to scale*, map readers can measure parts of the map to calculate accurate distances in the real world.

Scale can be displayed *numerically, verbally,* or *graphically.*



Map Legend produced by the EPA Region 1 GIS Center on April 20th, 2006.

SYMBOLS and LEGEND
Symbols are graphics that represent something on a map. They can be a dot, a line, shape, or an icon that looks similar to what it represents.

Symbols are identified in the *legend*. The legend is usually a small box in a corner or on the side. It includes the symbols and their meaning. It is also referred to as the ***key***.

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© Wikimedia Commons, File:ClimateMap_World.png, CC BY-SA

LABELS

Labels are the words that identify a location. They may show something with a specific name (streets or rivers).

Labels can also be used to represent something if there is only one of it, instead of making up a symbol to just represent one thing.

INDEX

Española - C3
Fernandina - A2
Genovesa - C1
Isabela - B2
Marchena - B1
Pinta - B1
San Cristobal - D2
San Salvador - B2
Santa Cruz - C2
Santa Fe - C2
Santa Maria - C3

©Original Map from Wikimedia Commons, File:Galapagos_Simple_Map.png, CC BY-SA

GRID and INDEX

Not all maps use a *grid and index*, but it is very useful if the map will be used to find locations. A grid and index is common in an atlas and on road maps.

A *grid* is a series of horizontal and vertical lines running across the map. Sometimes maps will use *latitude and longitude*, but smaller maps use a more basic grid with numbers and/or letters.

The *index* helps the map reader find a specific location, by following the numbers and letters in the grid.

Notice that the index is in *alphabetical order*, so it is easy to look up the name of the place.

Follow the *coordinates* (A2, B3, etc) next to the location's name to find the location on the map.

Galápagos Islands

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DIRECTION:

HOW TO REPRESENT DIRECTION

BEFORE THE OUTBREAK: PROJECT 01

The ***compass rose*** shows how the direction on a map relates to the direction in the real world. The compass rose uses such as North, South, East, and West. A compass rose is very important when maps are used to travel or find directions to somewhere.

EXAMPLE

A compass rose may show the four cardinal points of North, South, East, and West. Sometimes they will show intermediate points, such as Northeast, Southeast, Southwest, and Northwest.

Sometimes only North will be given on a map. For this reason, it is very important for us to be able to determine which directions are West, East, and South, based on just North.

Some ***important things*** to keep in mind when making a compass rose:

- It needs to be accurate
- North is not *always* "up" on a map
- Display of scale should be clear
- As you plan your map, think where you will place the compass rose
- Consider the design of your compass rose
- Look at other compass roses for ideas

A ***quality*** compass rose is easy to find and clear to read. It is also accurate.

A ***high quality*** compass rose will often not just be clear, but creative as well. The style of the compass rose may match the style of the map.

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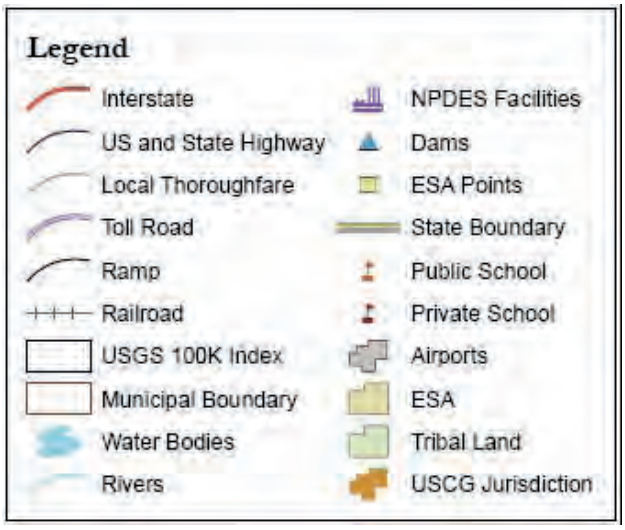
KEY and LEGEND:

HOW TO CREATE A QUALITY KEY AND LEGEND

BEFORE THE OUTBREAK: PROJECT 01

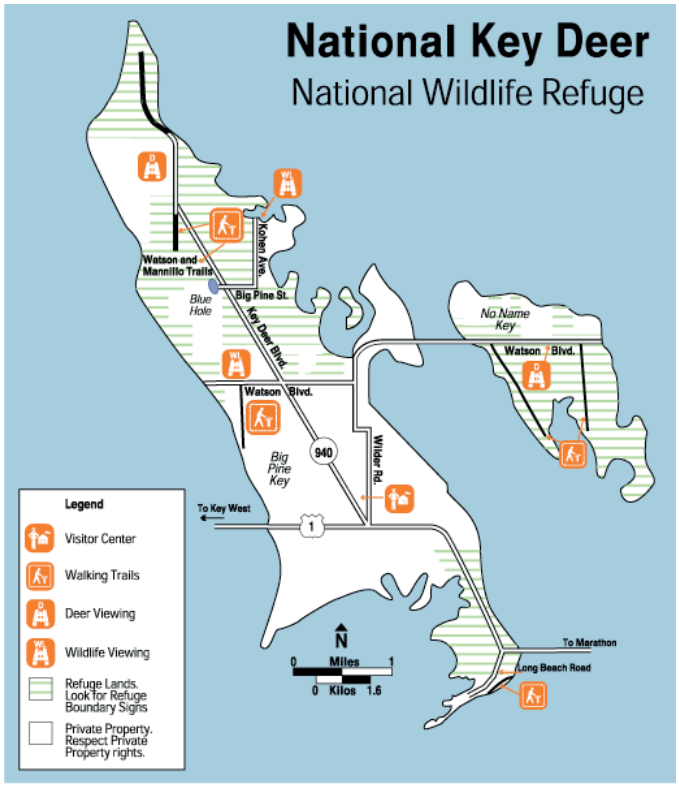
The ***legend*** or ***key*** is the place on the map that shows the important information needed to be able to understand the map. The legend most often includes the definitions of ***symbols*** used on the map, but sometimes it will also include the scale or compass.

EXAMPLES



Map Legend produced by the EPA Region 1 GIS Center on April 20th, 2006.

Without a *legend* or *key*, a map reader may have a very difficult time understanding what all of the symbols mean.



U.S. Fish and Wildlife Service

Some ***important things*** to keep in mind when making a legend or key:

- Be clear
- Include examples of the symbols
- Label as “Legend” or “Key”
- Consider using a small border to separate it from the rest of the map
- Remember to include all the symbols your map uses
- As you plan your map, think about the space you will need for a legend
- Consider typing the text in your legend

A ***quality*** legend or key is easy to find and clear to read. It shouldn’t be so large that it distracts from the rest of the map, but it shouldn’t be so small that it is hard to find or read.

A ***high quality*** legend or key will often not just be clear, but creative as well. The style of the legend might match the overall style of the map.

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MAP GRID:

HOW TO CREATE A QUALITY MAP GRID

BEFORE THE OUTBREAK: PROJECT 01

The ***map grid*** is a set of vertical and horizontal lines overlaid on the map. Not all maps use a *grid and index*, but it is very useful if the map will be used to find locations. A grid and index is common in an atlas and on road maps. Sometimes maps will use *latitude and longitude*, but smaller maps use a more basic grid with numbers and/or letters.

EXAMPLES

A location on a map can be identified by following the intersection of the rows and columns. If a map maker wants to display where *San Salvador* is, the map maker would look at the top and side of the map to see that it is in the grid where B and 2 intersect. In the *index*, San Salvador would be listed as *B2*.

©Original Map from Wikimedia Commons, File:Galapagos_Simple_Map.png, CC BY-SA

Some ***important things*** to keep in mind when making a legend or key:

- Be clear
- Make the grid lines light enough to still be able to read the map
- Consider using a lighter color for the grid lines
- Label the top, bottom, and sides of the grid
- Use a ruler to measure out the grid spacing before drawing the lines

A ***quality*** grid is easy to understand and clear to read. It shouldn't be so large that it distracts from the rest of the map.

A ***high quality*** grid will have appropriate spacing between grid lines. The lines will also be straight, even, and not distracting.

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SCALE:

HOW TO REPRESENT SCALE

BEFORE THE OUTBREAK: PROJECT 01

The ***scale*** shows the map reader how the distance on the map compares to the distance in the real world. If a map is *to scale*, real world distances can be calculated using the map. If a map is *not to scale*, you could use a map to find where something is, but not exactly how far. For example, on a map of stores in a mall, you may not care how many feet away your favorite store is, you probably just care about going in the right direction.

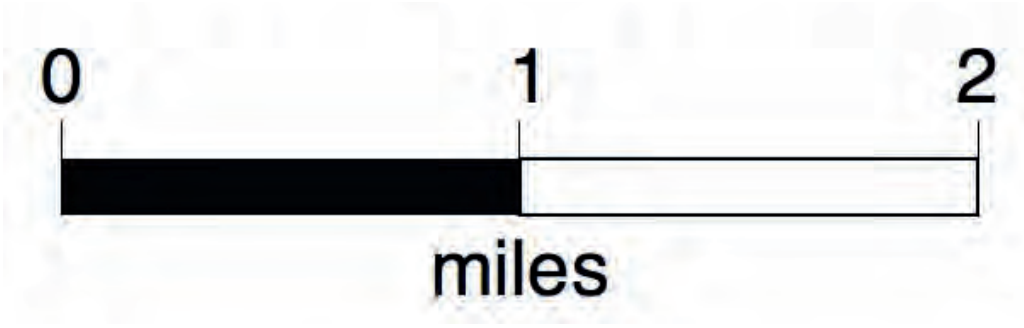
EXAMPLES

1:25,000

Numerical
Scale is shown as a ratio. In this scale, every 1 foot on the map equals 25,000 feet in the real world. Maps that show large areas (world maps) often use numerical.

One inch to one mile

Verbal
This scale tells you how the measurements on the map match the real world. If you measure 3 inches on the map, it is 3 miles in reality.



Graphical
With a graphical scale, a distance is placed on the map and converted to real world distance.

Some ***important things*** to keep in mind when making scale:
- It needs to be accurate
- Include the unit of length if using verbal or graphical (miles, feet, etc)
- If a map is going to be "to scale" it must match the real world
- Display of scale should be clear
- As you plan your map, think of the space you will use to place your scale
- Consider typing the scale or use a ruler when making a graphical scale

A ***quality*** scale is easy to find and clear to read. It is also accurate.

A ***high quality*** scale will often not just be clear, but creative as well. The style of the scale might match the overall style of the map.

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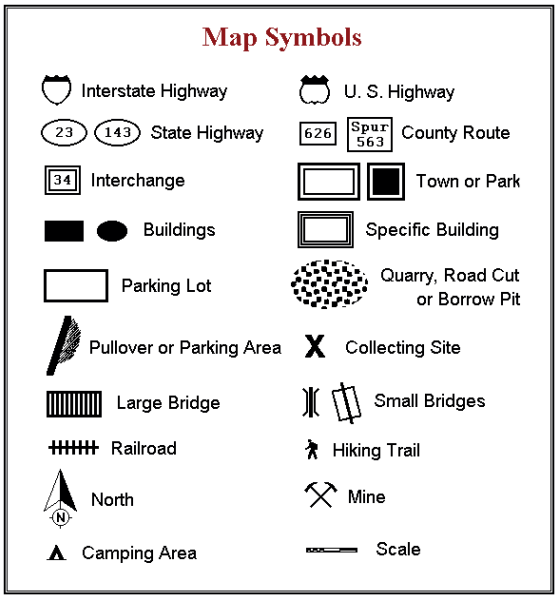
SYMBOLS and LABELS:
HOW TO REPRESENT PLACES

BEFORE THE OUTBREAK: PROJECT 01

Symbols and ***labels*** help the reader to identify important locations or information on a map. *Symbols* are graphics that represent something on a map. Symbols can be simple shapes, colors, patterns, or icons. *Labels* are words that identify something. Labels can show the name of a street, city, or river. Sometimes symbols have a label.

EXAMPLE



New Jersey Department of Environmental Protection

The map maker decides on what symbols are used on the map, but they are explained in the *key* or *legend*.

A *label* simply provides the words to identify a specific place on a map. When there are multiple cities, rivers, or other places, labels are helpful.

Some ***important things*** to keep in mind when making a compass rose:
- Symbols and labels should be clear
- Symbols should be distinct enough that they aren't confused with other symbols
- Only provide labels and symbols for parts of the map that are important to the reader
- As you plan your map, think of what you need to label or identify
- Look at other maps for symbol ideas

Quality symbols and labels are easy to spot and clear to understand.

High quality symbols and labels will often not just be clear, but creative as well. The style of the symbols may match the style of the map.

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ANALYZING SPATIAL RELATIONSHIPS:

HOW DO WE UNDERSTAND HOW PALCES RELATE?

BEFORE THE OUTBREAK: PROJECT 01

Analyzing means to look at something very closely, within the details, in orders to understand it more.
Spatial Relationships are how different spaces relate.
We *analyze spatial relationships* so that we can better understand how different places affect each other. There are ***three steps*** to analyzing spatial relationships.

3 STEPS TO ANALYZE SPATIAL RELATIONSHIPS
1. Structures
2. Relationships
3. Processes

STEPS TO ANALYZING SPATIAL RELATIONSHIPS

1) STRUCTURES

Structures means the places or things that you are analyzing.

The first step is to ***choose the two places*** you will analyze. These might be two cities, countries, neighborhoods, schools, parks, or anything on the map.

You will often choose your structures based on the geographic question you are asking.

If you are asking "How did the zombie virus spread from this city, to that city?" you have already chosen your two structures.

2) RELATIONSHIPS

Relationships are what connects the two structures.

The ***second step*** is to ***identify any connections*** between the places. If it is two cities, maybe the relationship is a highway, river, or maybe they are right next to each other and share a border.

Relationships are the actual connection that exists between the two structures.

When researching zombies, maybe there is a busy highway between two cities. Could a zombie or infected person easily travel on that connection?

3) PROCESSES

Processes are the patterns that happen across that relationship.

The ***third step*** is to ***analyze what happens*** across that connection. If it is a highway, maybe people commute from one city to the other for work. Processes or patterns can include geographic concepts such as *migration*.

It is helpful to ask questions when analyzing processes. What commonly happens along this connection between these two points? Do people, goods, or ideas move? How?

If you are analyzing zombie outbreaks, try to think about the patterns that are helping zombies travel and move along this relationship.

TO SIMPLIFY:

1) Find a place and find the other. 2) What connects them? 3) What moves and how?

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CREATING REGIONS

WARNING DIFFERENT LOCATIONS ABOUT THE OUTBREAK

BEFORE THE OUTBREAK: PROJECT 02

Regions are a helpful for anyone studying the world around us. Regions are created to help us ***better understand*** and ***think*** about the complexity of our environments, both ***physical*** and ***human***. In this project, you'll split areas of your map up into different regions, so that you can warn them about zombie attacks.

DRIVING QUESTION

*How are **regions** created and how can they help **inform** our decisions?*

WHAT YOU'LL PRODUCE

You'll create regions that are based on the zombie outbreak map from project 01. This will help you to decide how you want to warn different regions about the outbreak.

YOU WILL

•Understand why we use regions
•Understand different types of regions
•Create regions
•Display regions

INSTRUCTIONS

1.***Think about*** how you might need to inform ***different locations*** on your outbreak map. Are some places higher risk? Are some places cities and some countryside?
2.***Read*** through the following handouts to learn about regions.
3.***Create*** regions.
4.***Display*** regions on a map.

The next project is a bonus writing project! Continue on to write a warning to inform one of the regions you made about the outbreak.

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REGIONS:

WHAT IS A REGION AND WHAT ARE SOME EXAMPLES?

BEFORE THE OUTBREAK: PROJECT 02

Geographers use ***regions*** to help them think about the world around them. Read on below to learn about ***region*** and some examples.

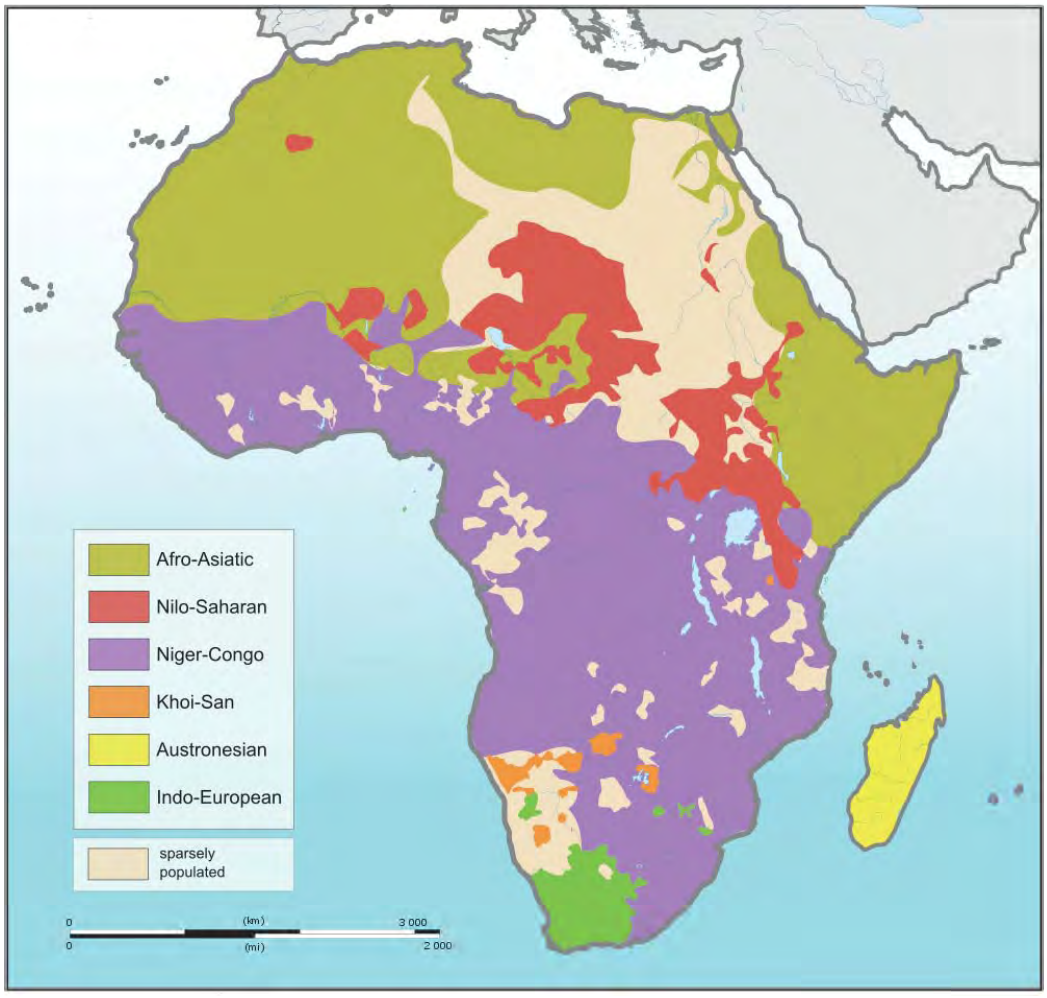
DEFINITION

A ***region*** is an area of the world that has definable characteristics but not always fixed boundaries.

SIMPLER DEFINITION

A ***region*** is an area that shares similarities and might not have set borders.

EXAMPLES



© Wikimedia Commons, File:Languages_of_Africa_map.svg, CC BY-SA

REGION BASED ON LANGUAGE

Regions can be created based on the popular languages people speak in different areas.

This map of Africa shows that languages are not necessarily contained within the boundaries of countries.

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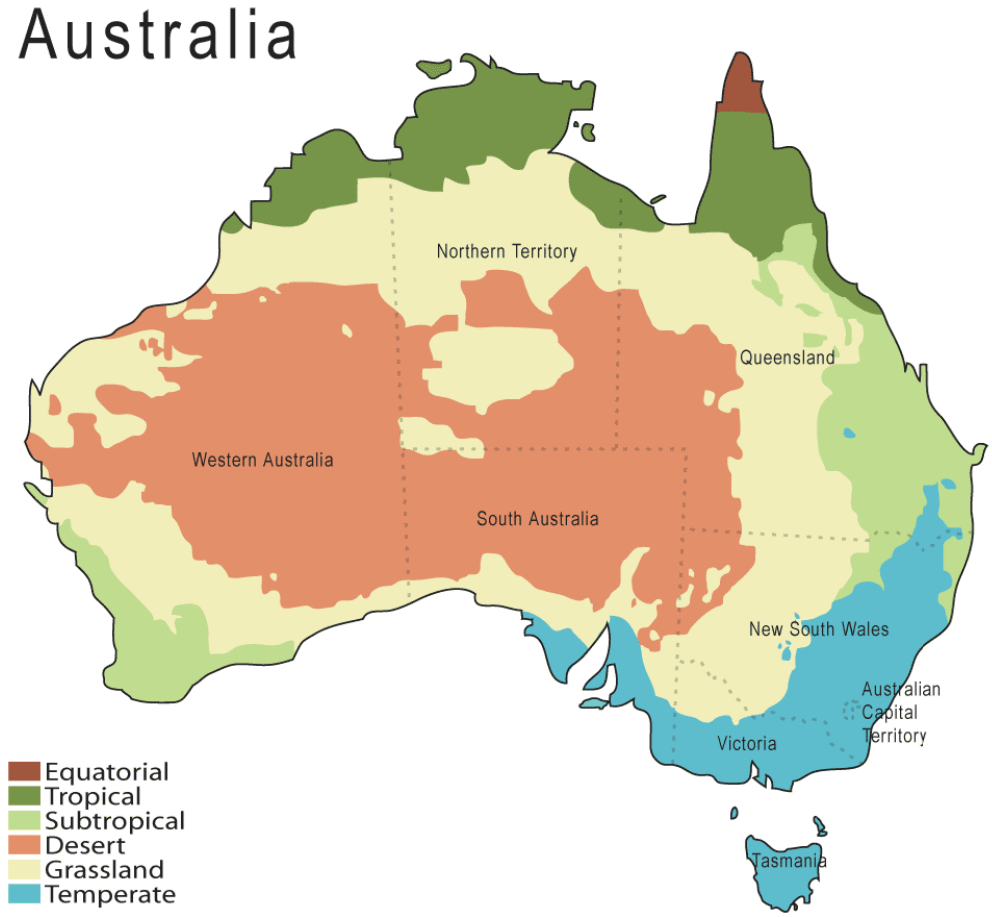
REGION BASED ON RELIGION

Regions can be created based on the popular religions of people in different areas.

This map of Indonesia shows the major religions of different areas. Notice that there are smaller regions within larger regions.



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REGION BASED ON CLIMATE

Regions can be created based on climate and weather patterns.

This map of Australia shows locations of various climates.

Defining climates by regions is very helpful. If you understand the temperate climate of southwestern Australia, you have a good idea of the temperate climate of Ireland.

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REGION BASED ON TRANSPORTATION

Regions can be created based on connections of transportation.

This map of the state of New Jersey shows the three different regions for the Department of Transportation.

Splitting areas into regions can be helpful for managing. The North region works with a lot of people who commute to nearby New York City. The South region has more commuters heading to Philadelphia.

REGION BASED ON PERCEPTIONS OR IDEAS

Regions can be created based on what people believe or think about a place.

This is a map of California. People often refer to Southern California, or Socal, but there is no border defining that, just an idea.

Many times, someone may create a region in their head based on stereotypes. They may often be incorrect. Some people might believe that most people in Southern California are laid back surfers with long hair or drive convertibles. This is creating a region based on an idea.

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WHY REGIONS:

WHY DO WE USE REGIONS?

BEFORE THE OUTBREAK: PROJECT 02

Now that we understand that regions are basically *geographic generalizations*, let's consider ***why we make regions***. Read on below to see the ***three main reasons*** we use regions.

3 MAIN REASONS FOR REGIONS
1. Simplify
2. Organize
3. Understand

REASONS FOR USING REGIONS

1) SIMPLIFY

The world is a complicated place.

By ***choosing just one characteristic***, we can focus our attention as we try to understand. Looking at a place to see if it either has or does not have a characteristic is much simpler than looking at all the details at once.

There may be a lot of information during the zombie outbreak. You would hear about number of attacks, who was attacked, what time they happened, etc.

Wouldn't it be simpler to create regions based on if there is or is not an attack?

2) ORGANIZE

Information about the world isn't neatly organized.

By creating regions, it can help to ***arrange*** the information in a way that is easier to look at, recognize patterns, and ask questions about.

Information may be scattered and all over the place when first looking at it. By creating regions, we aren't moving information, but we are organizing it to think about it.

Creating a region based on any zombie attacks, will help us ask questions about that information.

3) UNDERSTAND

When information is simplified and organized, we can ask the questions and look for the patterns that will help us understand the world.

Creating regions can help us better read information, make sense of it, recognize patterns, and ask important questions. All of this leads to a better understanding.

In a zombie outbreak, we need to understand what is happening. We need to figure out what is happening so we can make the right decisions. But we don't have a lot of time to figure out *all* of the data. Creating regions that focus on the characteristics we want to know about (e.g. attacks), can help us understand and react quicker and smarter.

REGIONS HELP US:

1) Simplify complicated things	2) Organize messy information	3) Understand what is going on

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DIFFERENT TYPES OF REGIONS:

WHAT ARE THE DIFFERENT TYPES OF REGIONS?

BEFORE THE OUTBREAK: PROJECT 02

Now that we understand what regions are and why we use them, let's understand the different types of regions. This understanding will really help us to see ***how regions are used*** and ***how they affect people's thinking***.

3 TYPES OF REGIONS
1. Formal
2. Functional
3. Perceptual

DIFFERENT TYPES OF REGIONS

1) FORMAL

Formal regions are based on a common characteristic about humans or the world.
Examples of ***regions based on human characteristics*** would be language, religion, nationality, political identity, or culture. Examples of ***regions based on physical characteristics*** would be climate, landform, or vegetation.

Formal means it is related to actual things. It is related to *people* or the *Earth* and how the Earth is.

This is probably the easiest type of region to understand and to work with.

2) FUNCTIONAL

Functional regions are based on the connections surrounding areas have with a central location.

Examples of ***regions based on connections*** would be large cities with transportation systems that branch out to other cities, communication systems, or other economic systems that include manufacturing and trading. It isn't based on people or physical characteristics, but is based on the connections between places.

Functional means it is related to how things work. It is based on the connections or network that makes a bigger system successful.

A functional region of New York City would reach out to include surrounding areas. These areas are connected by transportation such as trains and subways. These connections help people outside of New York commute to work.

3) PERCEPTUAL

Perceptual regions are based on feelings and attitudes people have about a place. These are often based on stereotypes that may be incorrect.

Examples of ***regions based on feelings and attitudes*** would be southern California, Dixie, and the upper Midwest. People sometimes picture a certain "type" of person who comes from this area.

Perceptual means it is based on how it is perceived or sensed. It is based on the sense someone gets of a place.

Perceptual regions may not be very helpful, and can often be wrong. However, they do play a large role in how people view the world around them.

DIFFERENT TYPES OF REGIONS:

1) Based on a human or physical characteristic	2) Based on a connection	3) Based on a belief

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CREATING REGIONS:

WHAT ARE THE STEPS TO CREATING REGIONS?

BEFORE THE OUTBREAK: PROJECT 02

Now that we understand what regions are, why we use them, and what the different types are, let's understand how to create regions. This is where we will be able to start working with information and getting a better understanding of our world.

3 STEPS TO CREATING REGIONS
1. Choose criteria
2. Identify borders
3. Display regions

STEPS TO CREATING REGIONS

1) CHOOSE CRITERIA

The first step to creating a region is to ***choose the criteria it will be based on***. What data or information do you want to simplify? Many times, you will have a reason you want to create a region, and that will tell you your criteria.

Criteria includes any identifiable piece of information about a place. It can be the *presence* or *absence* of something or a varying amount of something.

Criteria can be a *presence* or *absence* of something.
For example:
• Places which have 4G cellular coverage
• Places which have zombie attacks

Criteria can be a *varying amount* of something.
For example:
• Multiple regions based on amount of annual rainfall.
• Multiple regions based on number of zombie attacks per day

2) IDENTIFY BORDER

Once you have identified the criteria you plan to base your regions on, you need to ***identify the border*** of those regions.

This requires data or information from the locations, about your criteria. You then use that data to distinguish between places which meet the criteria you set in step 1.

If you are creating regions based on whether or not they have had a zombie attack, you can plot attack data on a map, and create two different regions: places with attacks, and places without attacks.

If you are creating regions based on the number of attacks, you decide how many attacks fall in each region.

3) DISPLAY REGIONS

After you have chosen criteria and used the data to identify the borders, you can place the regions on a map. Draw the borders (which show how the location meets the criteria) onto a map. Use shading, symbols, labels, or colors to distinguish different regions.

You may have multiple criteria that you want to use to create regions. That is okay, but focus on one set of criteria at a time.
Create a map to show each set of regions, and it will help you to recognize patterns or display information.

DIFFERENT TYPES OF REGIONS:

1) Based on a human or physical characteristic	2) Based on a connection	3) Based on a belief

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DISPLAYING REGIONS:

WHAT ARE THE DIFFERENT WAYS TO DISPLAY REGIONS ON MAPS?

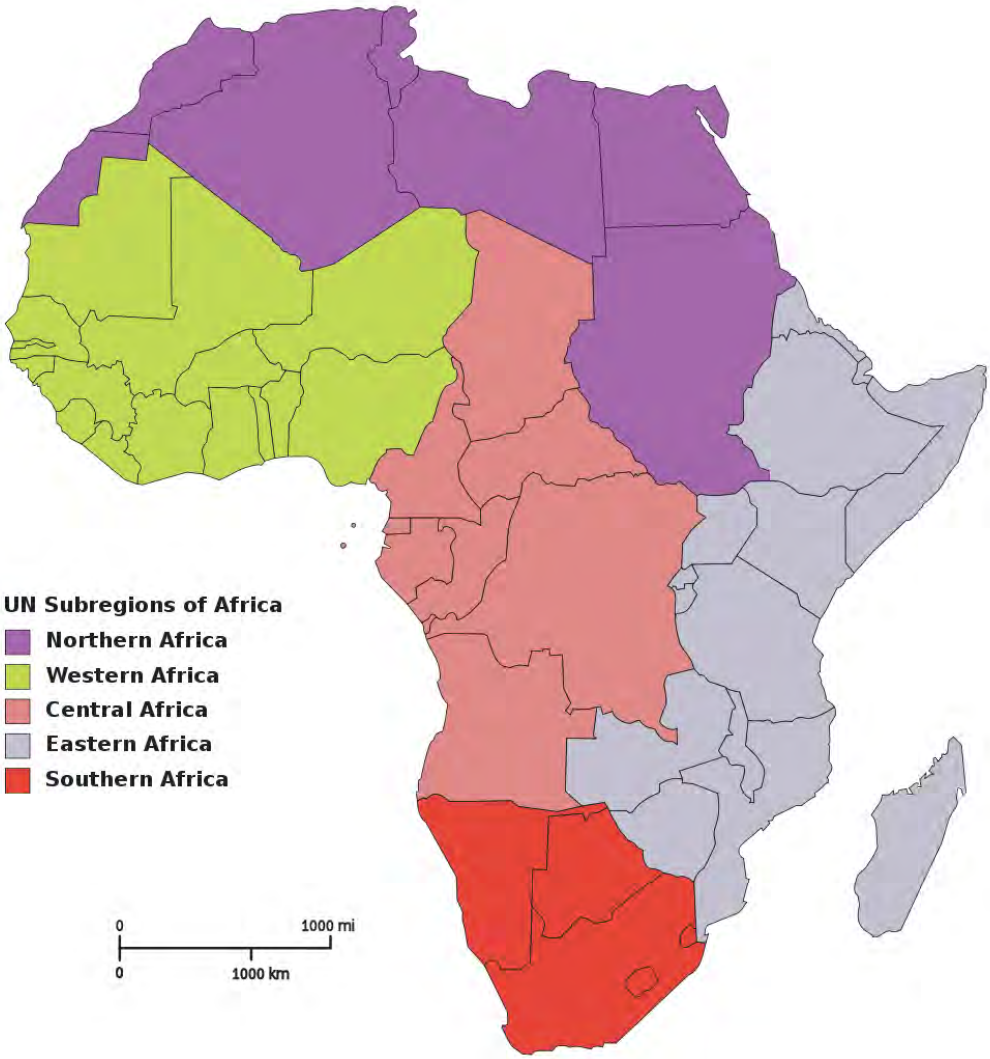
BEFORE THE OUTBREAK: PROJECT 02

Once you've defined your regions, you will most likely need to display the regions on a map. There a few different options for how to clearly show your regions.

The main ways to ***display regions*** are:

- Colors
- Labels
- and Shading

EXAMPLES



COLORS

Displaying regions with colors is probably the most popular option. It is easy to read visually.

Sometimes color is just used to show a certain area, as in the map to the left. The colors do not have any other meaning.

There are also maps that use color to show varying degrees of information. These are called *choropleths*.

How some maps can show data and regions:

Very Little Medium A Lot

There are also maps that use color to show varying degrees of information. These are called *choropleths*. The color gradient to the left shows how colors can show information.

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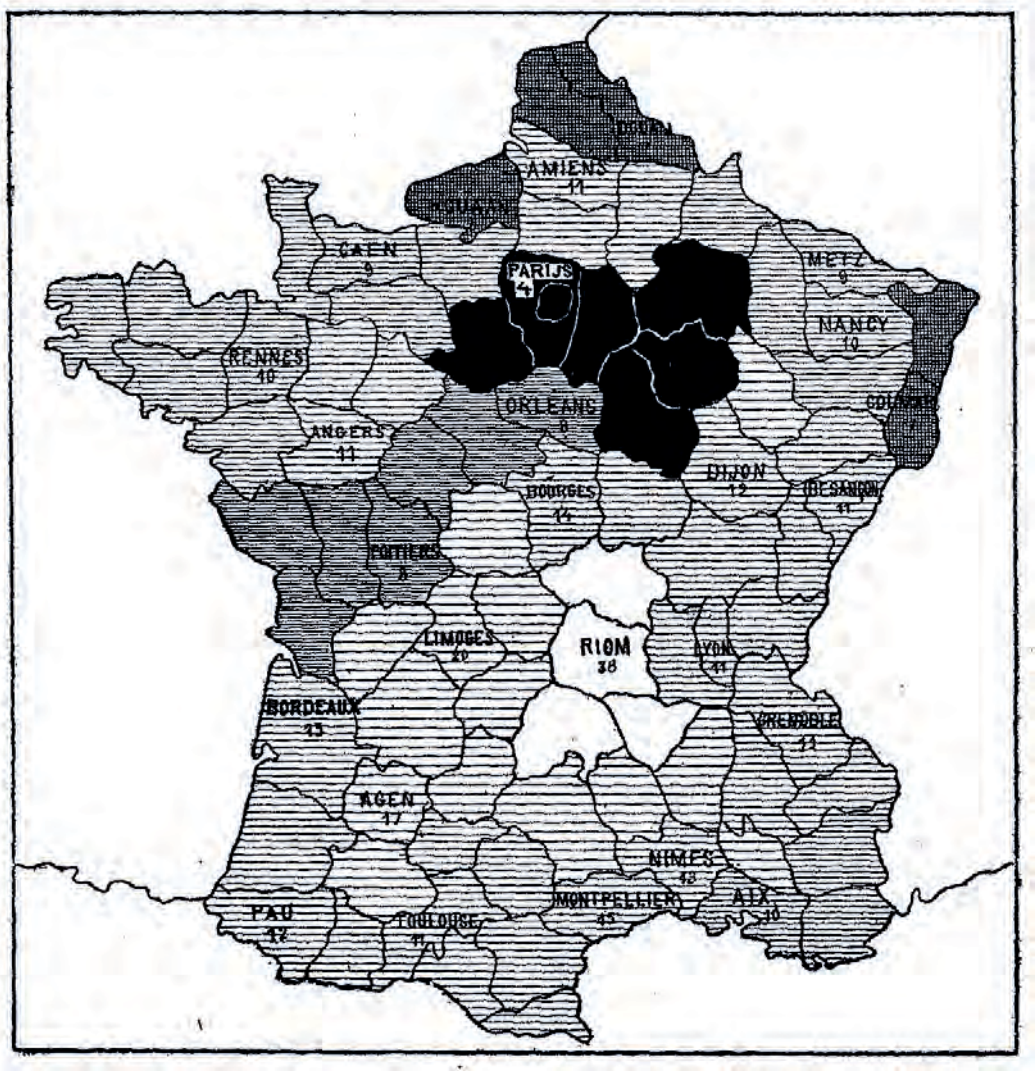
LABELS

Some maps simply label the regions. On the map of Somaliland to the left, the entire country is one color. Light gray borders show boundaries between regions. Light gray labels are placed within the borders of the regions they name.



Charles Dupin, 1826

SHADING

Different degrees of shading can be used to distinguish regions.

The map on the left shows different literacy levels in France during the 1800s. This map was created by Charles Dupin in 1826, and is the first known *choropleth*.

Shading can be valuable when you are not able to publish your map in color.

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Ready for the outbreak?

In the next issue of Dead Reckon you'll learn about how to survive in those early days of chaos. You'll learn how to move around your city, find supplies, and again, stay alive.

Show us how you survived

If you completed any projects to help you prepare for the zombie outbreak, give us an email at Survive@ZombieBased.com**.**
(Remember that thing about getting parent or guardian's permission before you email us).

You'll find all of the latest updates on Dead Reckon and Zombie-Based Learning at www.ZombieBased.com. You can also like us on Facebook at www.facebook.com/ZombieBasedLearning.

David Hunter - david@dthunter.com

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ZOMBIE GEOGRAPHY SOCIETY

#2

DEAD RECKON

Issue #2 coming soon

Keep an eye on www.ZombieBased.com
to find out about future releases.

Assignment:

Prepare for and survive the Zombie Apocalypse!

- Predict the spread of zombies
- Warn cities and communities
- DON'T get bitten!