ICMEE
cehs.unl.edu/icmee

7th – 8th grade • English Level 3

Learning PACKET #4

Theme: Disasters #4

University of Nebraska Lincoln

International Consortium for Multilingual Excellence in Education

August 15th, 2020

Dear District/School Personnel:

We are a consortium of researchers, teacher educators, and teachers who believe in and strive to foster multilingual excellence. Therefore, during this time of crisis and difficulty, we are eager to put our expertise and passions to use to try to be of assistance. We initially designed 21 immediate-response packets for K-5, as soon as the pandemic forced schools to shut down. We then applied for and received a grant that has allowed us to create more than 100 full activity packets, ranging from Levels 1-3 of English proficiency, and grades K-12.

The breakdown of packets is as follows:

Level 1 – Entry into English

Emphasis on developmentally appropriate interesting/challenging tasks

- K-2
- 3-5
- 6-8 with a literacy background
- 9-12 with a literacy background
- 6-8 without literacy background
- 9-12 without literacy background

Level 2 – Building Background

- K-1
- 2-3
- 4-5
- 6 -8
- 9-10
- 11-12

Level 3 – Interdisciplinary Inquiry

- K-1
- 2-3
- 4-5
- 6
- 7-8
- 9-10
- 11-12

With this letter, is an "Activity Packet" that can be used freely with any group of students or families as you see fit. Each packet includes interdisciplinary activities designed to be completed within a week. Teachers from around the country have designed, developed, and created these packets, each focusing on the topics of their choice. Because learning academic content can happen within any thematic context, these packets are designed to be diverse, dynamic, and engaging for students of all backgrounds. The topics covered in these units range from cultures, animals, natural disasters, inventions, and much more. You will see each teacher's personality reflected strongly in these packets, and our hope is that this will capture students in a way similar to that of a rich and immersive classroom environment.

International Consortium for Multilingual Excellence in Education

Our hope is that these materials can provide some meaningful learning supports to students and families who may not have access to online learning opportunities. However, we can also imagine a variety of ways that these packets can provide learning opportunities outside of our original intent and purpose. Please use these activity packets in any way you see fit for your students and families. We will be so pleased to learn of how they might be useful, particularly for your multilingual students and their families. We think it might be particularly helpful for you to print packets and mail them to families, but we also see opportunities to work with local agencies, leave printed-out packets for pick-ups at schools, etc.

We designed these activities based around several big ideas:

- Productive play and inquiry
- Grade level and English Language Development standards/curriculum
- Fostering multilingual language development
- Providing opportunity for all four language domains (reading, writing, speaking and listening)

These packets are self-contained. Everything a child will need to be successful with the activities is provided in the packet. Students will only need a writing utensil. Additional tools like crayons or scissors are optional.

We have also included a letter to parents. We hope this will help parents understand what students will be doing with the packet and that we encourage the use of all language resources available to the student. The packets are in English for the students, but the students can write, talk and engage with family members regarding the packet activities in any language they would like. We have translated the parent letter into Spanish, and we encourage districts to translate the letter into any other language that would be helpful for your local families.

Designing Activity Packets is a new initiative for us, though we have been designing professional learning opportunities (eWorkshops) for teachers of multilingual learners since 2011. Like our Activity Packets, those learning opportunities for teachers are free. To learn more about them and us, please visit our website at: https://cehs.unl.edu/icmee/

We are eager to be a helpful, collaborative partner in all learning needs related to multilingual students and their teachers, so please, do not hesitate to reach out to us with questions, ideas, concerns, feedback, etc. We are available at icmee@unl.edu.

Sincerely,

Kara Viesca

Kara Mitchell Viesca, PhD
Associate Professor of Language Education
University of Nebraska Lincoln
Teaching, Learning and Teacher Education
PI: International Consortium for Multilingual Excellence in Education

This packet was designed and created by **Caryn Jones**
in collaboration with Lauren Gatti and Alexa Yunes.

University of Nebraska Lincoln

College of Education and Human Sciences
Teaching, Learning and Teacher Education

The Standards that Informed the Development of this Packet are:

Standards:

- **ELA Literacy RH.6-8.7:** Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
- **ELA-Literacy WHST.6-8.2:** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
    - **Especially C**: Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
    - **Especially D:** Use precise language and domain-specific vocabulary to inform about or explain the topic.

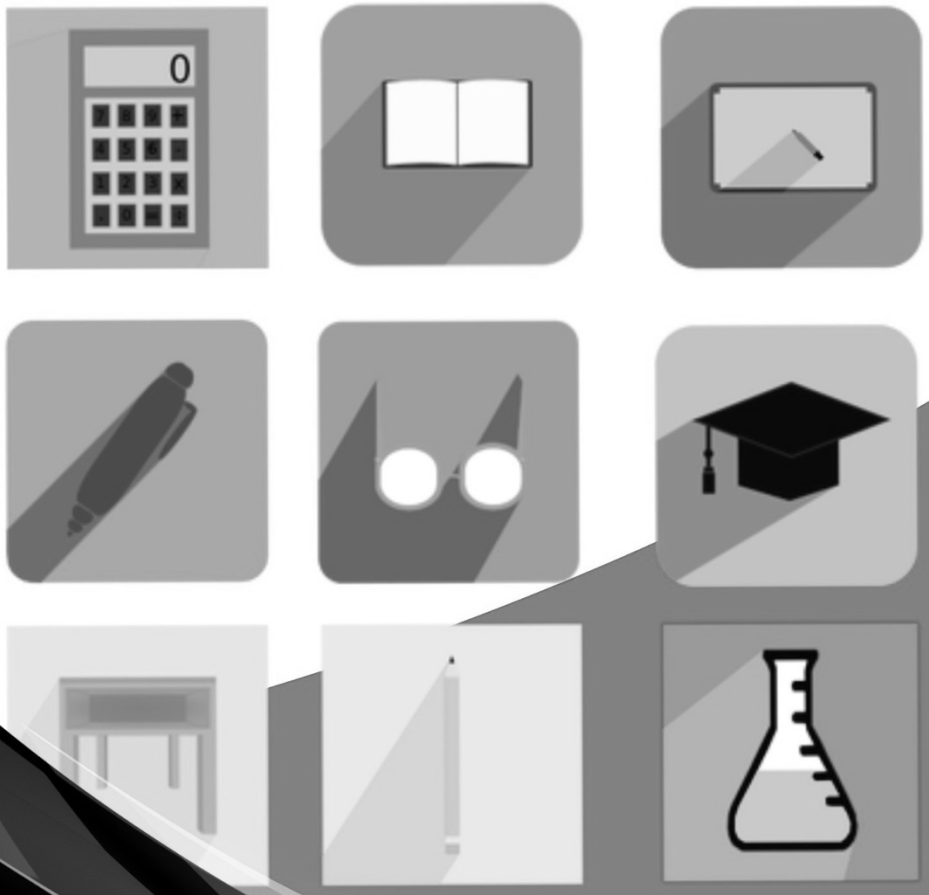
Language Functions:

- Explain a series of actions within an event; explain sequence and duration using adverbs of time and manner
- Explain cause and effect relationships for natural processes using auxiliary verbs with conjunctions
- Classification of objects or ideas using verbs and conjunctions
- Compare and contrast ideas using adverbs and conjunctions

ICMEE
cehs.unl.edu/icmee

7th – 8th grade • English Level 3

Learning PACKET #4



Theme: Disasters #4

University of Nebraska Lincoln

International Consortium for Multilingual Excellence in Education

August 15th, 2020

Dear Families:

During the COVID-19 pandemic, it became necessary for students to learn at home. Many students have limited access to technology, others struggle with online learning, and some simply want more to do while they are at home. With these things in mind, we have created an extensive resource of learning materials that we hope will be helpful for your children to engage with. These Activity Packets were designed with your students in mind and are aligned with each of their grade level content. Each activity in the packets will help students continue with their schooling as well as continue to grow their multilingualism. We encourage you to talk to your student about what they are doing and let your child ask you about the topics they are learning about. The packet is in English, but we encourage you and your children to speak and think together in any language you would like to. We strongly encourage you to use the language you feel most comfortable using with your student. Supporting their learning in all the languages they know is helpful—even for developing their English! So, please encourage your student to do the work in the packet in any language they would like.

We know that families are dealing with a lot of stress and uncertainty right now, so we encourage you to play the role you would like to play with your student and their Activity Packet based on what works best for you. We recommend reading the information about the packet and activities and then discussing with your student how the packet works and how they can work through it. We believe that with that introduction, your student can do a lot, if not all, of the work themselves. However, if you are available to work more closely with your student (or for a sibling or other family member to do so), we encourage that as well. Please know, this is not intended to be something that adds stress and work to your family during this demanding time. We hope that this is a helpful resource so your student can continue growing academically while in unusual situations.

We also hope you will find these packets interesting and fun. We have integrated activities from all of the grade level content standards: English Language Arts, Mathematics, Social Studies, Science, Physical Education and Art. We have also developed different packets for the different levels of English proficiency, so your child should feel challenged but also capable of largely understanding the content in front of them.

6th-12th grade students are encouraged to talk about their learning as much as possible, even if it is not to one person in particular. Some packets will include activities where students can "use a cell phone" to record voice messages and post on social media, which we hope might be ways in which they can be encouraged to speak in English or in any language they prefer.

In these packets, we have also included the following activities:

- Dictionary. Each day we hope that your student will engage with words they find interesting and want to keep track of. We encourage students to use the dictionary activities to keep track of words they learn and find interesting. We also encourage students to use any language they would like as well as pictures to help them remember what the words mean.

International Consortium for Multilingual Excellence in Education

- Journal. Students should be encouraged to write in any language (or combination of languages) that they feel most inclined to. They can also use pictures as appropriate. We hope these journal spaces will also be points of conversation for your child with someone in their home.

This packet is the fourth in a unit about Disasters. Your student will practice using high-level English language while learning about a high-interest topic. The lessons will include working with language used in science, math, and social studies, as well as reading and writing.

Day 1: Your student will choose someone to "communicate" with throughout this unit. It can be someone they know outside your household or someone that they imagine and create. They will also learn the basics of volcanoes and read the story about a family who survived the eruption of Mt. Saint Helens. There is an optional hands-on lab using crackers and Cool Whip, frosting, apple sauce, or peanut butter.

Day 2: Your student will understand the dangers of overheating the human body before reading about three women who survived getting lost in Death Valley. There is an optional hands-on lab using a zippered sandwich bag, water, and powered drink mix (Kool-Aid and lemonade) or sugar.

Day 3: Your student will study the effects of extreme cold on the human body and how altitude changes temperature and read about a young boy who got lost in a blizzard while skiing.

Day 4: Your student will understand the causes of sinkholes before reading an excerpt from the novel *Tangerine* by Paul Bloor.

Day 5: Your student will review all of the work they've done so far and use the information to use cause and effect language to write a story in which they get heat stroke and are then treated for it.

We have included answers for activities in the packet so your or your student can check their work, as well as some graphic organizers that can help students as they work through specific activities.

We hope that these activities will enhance your child's learning while we work through these very unusual circumstances. We also hope that they will give your child opportunities for productive play. If you have any questions or concerns about these packets, feel free to reach out to our project at icmee@unl.edu or by calling the Teaching, Learning and Teacher Education department at 402-472-2231.

Sincerely,

Kara Mitchell Viesca, PhD
Associate Professor of Language Education
University of Nebraska Lincoln
Teaching, Learning and Teacher Education
PI: International Consortium for Multilingual Excellence in Education

This packet was designed and created by **Caryn Jones**
in collaboration with Lauren Gatti and Alexa Yunes.

Answer Keys

International Consortium for Multilingual Excellence in Education

Donna, Gina, and Jenny survived being lost in the heat of Death Valley. What challenges did they face? What actions did they take?

Problem	Action	Result
They knew that Death Valley could be dangerous.	Donna packed food, water, maps, a roadside hazard kit, tools, blankets, phone chargers and a first-aid kit.	They had some supplies to begin with.
They took a wrong turn. They knew they shouldn't be going to higher elevation.	They turned around and started trying to use their GPS.	They got more and more lost
The car stopped running. They were almost out of water and food. The night was scary.	Gina begged her mother, Donna, to try starting the car again.	The car started and they were able to drive farther.
They saw some trees up ahead.	Donna tried to get as close as possible to the trees before they ran out of gas.	They were close enough to make it to the trailers.
The helicopter pilots are about to give up on finding the women.	They decided to fly over the area one more time.	They saw Donna's car and knew to look closer.
Explain whether their survival more luck, more skill, or a mix of both.	They survived more because of luck than because of their own actions. They packed some supplies, but not enough and didn't try to save some for later. They were lucky to find the trailers after driving around lost. But leaving their car near the trailers for the helicopter pilots to see finally saved them.	

What temperature would it be at 12,000 feet of elevation? (Show your work!)

12,000 feet divided by 1,000 feet = 12 3.3^{o} per 1,000 feet 3.3 x 12 = 39.6
60^{o} at sea level – 39.6 = 20.4^{o}
The temperature at 12,000 feet of elevation would be approximately 20.4 °.

International Consortium for Multilingual Excellence in Education

Meeting challenges

Nicholas was skiing by himself when he was caught in a blizzard. What challenges did he face? What actions did he take?

Problem	Action	Result
He took a wrong turn because he couldn't see where he was. He realized he was lost.	He remembered survival shows and stopped skiing.	He didn't get more lost so it would be easier to find him.
When he stopped skiing he was getting colder.	He used his skis to dig a snow cave and used branches like a blanket.	He stayed warm enough to survive the night.
He was hungry and thirsty.	He ate snow and drank water from a stream.	He was more comfortable than he would have been without food and water.
He hears snowmobiles the next afternoon.	He left his cave and went to try to find them.	He was afraid to go too far before dark.
He realizes that he's not going to find the snowmobiles before dark.	He returns to his cave.	He survives his second night on his own.
Explain whether their survival more luck, more skill, or a mix of both.	Nicholas survived mostly because he knew what to do. He knew to stop when he realized he was lost and how to dig a snow cave.	

International Consortium for Multilingual Excellence in Education

Meeting challenges

Now you are REALLY on your own. Identify the problems, the actions and the results. You've got this!

Paul and Joey witnessed a sinkhole opening and worked as part of a "kind of bucket brigade" helping rescue students from Paul's math class portable.

Problem	Action	Result
Paul and Joey and the teachers heard and saw something strange	They stopped and looked to try to figure out what was happening.	They recognized that something was wrong.
Something strange was happening	Ms. Alvarez takes her students out like it was a fire drill.	The other teachers started to take their students out of the portables.
The walkways started to break up	Students started panicking	Some jumped off the walkways into the mud; some knocking each other down
Some of the portables were being swallowed by the mud	Paul and Joey ran to help	They moved into danger instead of away from it
The roof of portable 19 (Paul's class) was where the door should be	Paul, Joey, some 8th graders, and Mr. Ward formed a "bucket brigade" to pull kids out of the classroom	All of the students in the portable were safe
Explain whether their survival more luck, more skill/actions, or a mix of them all.	Paul and Joey's actions successfully helped save Paul's classmates who were trapped in Portable 19 which was falling into the sinkhole.	

International Consortium for Multilingual Excellence in Education

15 de agosto del 2020

Estimadas familias:

Durante la pandemia del COVID-19, ha sido necesario que los estudiantes aprendan en casa. Muchos de los estudiantes tienen acceso limitado a la tecnología, otros tienen dificultad para aprender en línea y algunos simplemente quieren tener algo más qué hacer mientras están en casa. Pensando en estas razones, hemos creado un recurso con una gran extensión de materiales de aprendizaje que esperamos serán útiles para que sus hijos participen activamente. Estos paquetes de aprendizaje fueron diseñados teniendo en mente a sus niños y están alineados a los contenidos de cada nivel de grado. Cada actividad en estos paquetes los ayudará a continuar con su escolarización, así como a seguir aumentando su multilingüismo. Lo alentamos a que hable con su estudiante sobre lo que está haciendo y deje que le pregunte sobre los temas que le interesan. El paquete está en inglés, pero le recomendamos a usted y a su estudiante que hablen y piensen juntos en el idioma que deseen. Le recomendamos encarecidamente que use el idioma con el que se sienta más cómodo al comunicarse con su estudiante, ya que respaldar su aprendizaje en todos los idiomas que sabe es útil, ¡incluso para su inglés! Por lo tanto, anime a su estudiante a hacer el trabajo en el paquete en cualquier idioma que desee.

Sabemos que las familias están lidiando con mucho estrés e incertidumbre en este momento, por lo que lo alentamos a que desempeñe el papel que le gustaría desempeñar con su estudiante y su paquete de actividades según lo que funcione mejor para usted. Le recomendamos leer la información sobre el paquete y las actividades que contiene y luego discutir con su estudiante cómo funciona el paquete y cómo pueden trabajar en él. Creemos que, con esa introducción, su estudiante puede hacer mucho, si no todo, el trabajo por sí mismo. Sin embargo, si usted está disponible para trabajar más estrechamente con su estudiante (o un hermano u otro miembro de la familia), también lo recomendamos. Por favor, tenga en cuenta que esto no pretende ser algo que agregue estrés y trabajo a su familia durante este momento tan desgastante. Por el contrario, esperamos que este sea un recurso útil para que su estudiante pueda continuar desarrollándose académicamente durante esta situación tan inusual.

También esperamos que ustedes encontrarán estos paquetes interesantes y divertidos. Hemos integrado actividades de todos los estándares de contenido de nivel de grado: Artes del Lenguaje en inglés, Matemáticas, Estudios Sociales, Ciencias, Educación Física y Arte. También hemos desarrollado diferentes paquetes para los diferentes niveles de dominio del inglés, de esta manera su hijo podrá sentir el desafío y también será capaz de comprender en gran medida el contenido que se les presenta.

Los estudiantes de 6to a 12avo grado son motivados a hablar sobre su aprendizaje tanto como sea posible, aun cuando no sea a una persona en particular. Algunos paquetes incluirán actividades en donde los estudiantes pueden “usar un teléfono celular” para grabar mensajes de voz y subirlos a las redes sociales; esperamos que estas sean formas que los animarán a hablar en inglés o en el idioma de su preferencia.

En este paquete hemos incluido las siguientes actividades:

- Diccionario: Esperamos que cada día su estudiante aprenda palabras que encontrará interesantes y querrá tener un seguimiento y registro de estas. Al final de los paquetes encontrarán páginas en las que su estudiante podrá mantener su propio diccionario. Recomendamos ampliamente que los estudiantes usen estas páginas para registrar palabras que les gusten o les parezcan interesantes. También alentamos a los estudiantes a usar cualquier lenguaje que deseen, así como imágenes para recordar el significado.

- Diario: Cada día, los estudiantes tienen un tema corto de escritura al que pueden responder. Los estudiantes deben ser alentados a escribir en cualquier idioma (o combinación de idiomas) que les parezca más conveniente. También pueden utilizar imágenes si lo consideran necesario. Esperamos que estos temas de escritura puedan utilizarse de puntos de conversación entre su estudiante y su amigo.
- Este paquete es el cuarto de una unidad sobre Desastres. Su estudiante practicará el uso del idioma inglés de alto nivel mientras aprende sobre un tema de gran interés. Las lecciones incluirán actividades con el lenguaje usado en ciencias, matemáticas y estudios sociales, así como también lectura y escritura.
- Día 1: Su estudiante elegirá a alguien con quien "comunicarse" a lo largo de esta unidad. Puede ser alguien que conocen fuera de su hogar o alguien que imaginan y crean. También aprenderán los conceptos básicos de los volcanes y leerán la historia sobre una familia que sobrevivió a la erupción del monte Saint Helens (Santa Elena). Hay una actividad de práctica opcional que usa galletas y crema Cool Whip, glaseado, salsa de manzana o mantequilla de cacahuate.
- Día 2: Su estudiante comprenderá los peligros de sobrecalentar el cuerpo humano antes de leer sobre tres mujeres que sobrevivieron y se perdieron en el Valle de la Muerte. Hay una actividad práctica opcional que usa una bolsa de sándwich con cremallera, agua y una mezcla de bebidas energéticas (Kool-Aid y limonada) o azúcar.
- Día 3: Su estudiante estudiará los efectos del frío extremo en el cuerpo humano y cómo la altitud cambia la temperatura y leerá sobre un niño que se perdió en una tormenta de nieve mientras esquiaba.
- Día 4: Su estudiante comprenderá las causas de los sumideros antes de leer un extracto de la novela *Tangerine* de Paul Bloor.
- Día 5: Su estudiante revisará todo el trabajo que ha hecho hasta ahora y usará la información para aplicar el lenguaje de causa y efecto escribiendo una historia en la que sufra un golpe de calor y luego sea tratado por ello.

Hemos incluido respuestas para las actividades en el paquete para que usted o su estudiante puedan verificar su trabajo, así como algunos organizadores gráficos que pueden ayudar a los estudiantes mientras trabajan en actividades específicas.

Esperamos que estas actividades mejoren el aprendizaje de su hijo mientras trabajamos juntos para atravesar estas circunstancias tan inusuales. También esperamos que le darán a su hijo oportunidades de juego productivo. Si tiene alguna pregunta o inquietud acerca de estos paquetes, siéntase en libertad de comunicarse con nuestro proyecto a icmee@unl.edu o llamando al departamento de Enseñanza, Aprendizaje y Educación para maestras (Teaching, Learning, and Teacher Education) al 402-472-2231.

Sinceramente,

Kara Viesca

Kara Mitchell Viesca, PhD
Associate Professor of Language Education
University of Nebraska Lincoln
Teaching, Learning and Teacher Education
PI: International Consortium for Multilingual Excellence in Education

ICMEE is housed within:

University of Nebraska Lincoln

College of Education and Human Sciences
Teaching, Learning and Teacher Education

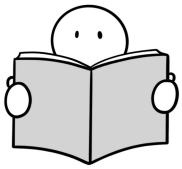
Share your learning!

Share a picture of any of your work by using **#MultilingualProud** on social media.

We'd love to see what you've done with this packet!

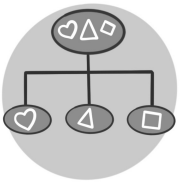
Instructions Key

- Share with someone else
- Comparte con alguien más
- مشاركتها مع شخص آخر
- La wadaag qof
- Chia sẻ với ai đó



- Read
- Lee
- اقرأ
- Akhriso
- Đọc

- Write
- Escribe
- اكتب
- Qor
- Viết

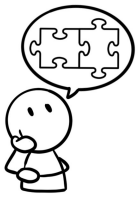


- Sort
- Ordena
- رتب
- Kala sooc
- lựa chọn

- Move your body
- Mueve tu cuerpo
- حرك جسمك
- Dhaqdhaqaaqa jirkaaga
- Di chuyển cơ thể của bạn

- Cut
- Corta
- قص الورقة
- Waraaqda jar
- Cắt giấy

- Read out loud
- Lee en voz alta
- قراءة بصوت عال
- Kor u aqri
- Đọc to



- Make a connection
- Hacer una conexión
- إجراء اتصال
- Xiriir samee
- Tạo kết nối

- Count
- Cuenta
- العد
- Tiri
- đếm

- Draw
- Dibuja
- رسم
- Sawir
- Vẽ tranh

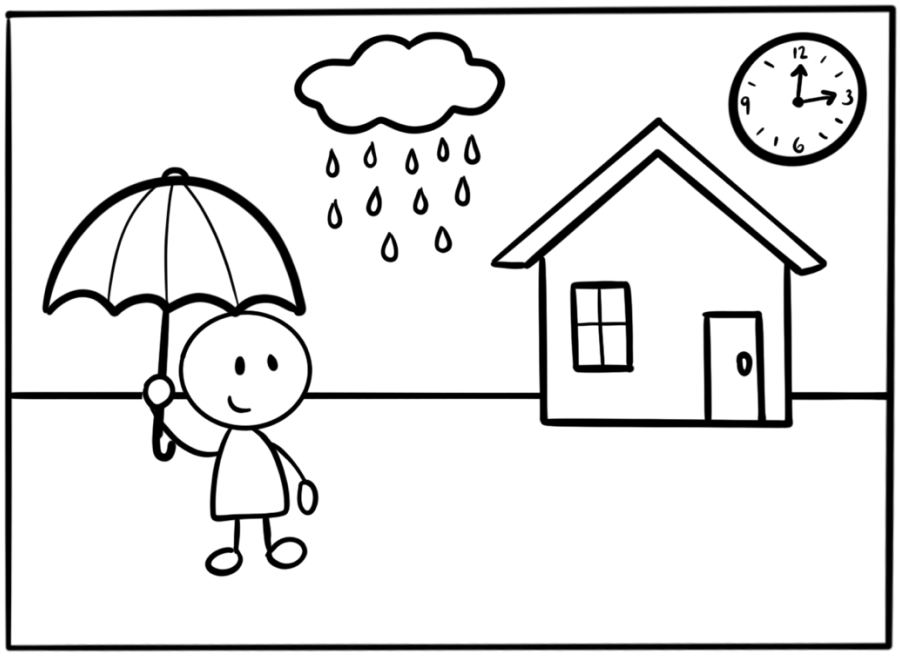
- Find
- Encuentra
- وجد
- Soo hel
- Tìm thấy

- Color
- Colorea
- لون
- Midab gudaha
- làm cho hoa mỹ

- Share with your Buddy
- Comparte con tu Buddy
- شارك مع صديقك
- La wadaag asxaabtaada
- Chia sẻ với bạn bè của bạn

ICMEE

Question Words



Who?

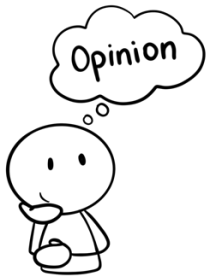
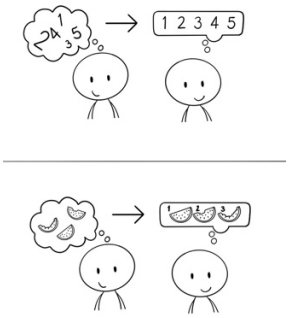
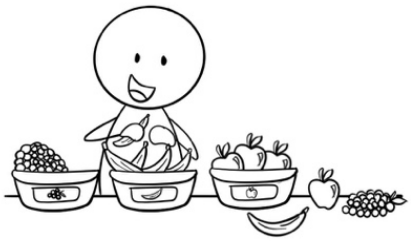
When?

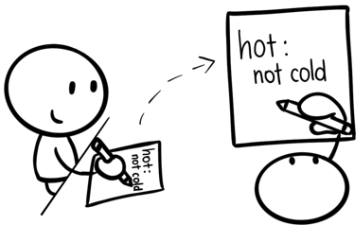
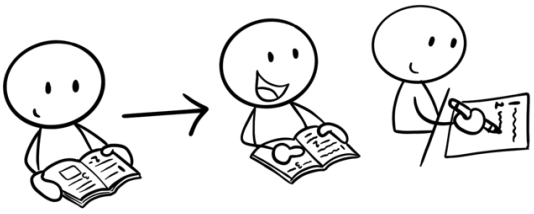
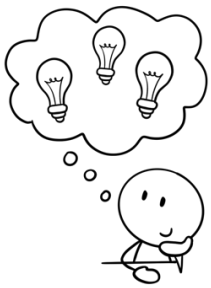
Where?

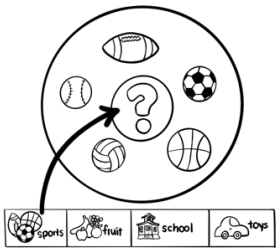
What?

Why?

Thinking Skills Glossary – Level 3 English

Word	Definition	Picture
Fact 事实 Hecho	something we know, without question 我们知道的毫无疑问 Algo que podemos comprobar	
Opinion 意见 Opinión	something we think or believe 我们认为或相信的事情 Algo que pensamos	
Compare 相比 Comparar	think about how two or more things are the same or different 考虑一下两个或多个事物是相同还是不同 Pensar en qué se parecen y en qué son diferentes dos o más cosas	
Sequence 序列 Secuencia	to put things in the right order from first to last 从头到尾正确地安排事情 Poner las cosas en orden , del primero al último	
Classify Sort Categorize 分类 Clasificar Organizar	to put things into groups by how they are the same 通过相同的方式将事物分组 Agrupar cosas por cómo se parecen	

Word	Definition	Picture
Define 限定 Definir	Write the meaning 写出意思 Escribir el significado	Define "hot" 
Retell 复述 Recontar	To tell again, in your own words 再说一遍，用你自己的话 Volver a contar en tus propias palabras	
Think Imagine Reflect 认为 想像 反映 Piensa Imagina reflexiona	Talk to yourself in your mind 畅所欲言 Hablar contigo mismo	
Brainstorm 头脑风暴 Lluvia de ideas	think of many ideas about one question 想出关于一个问题的许多想法 Pensar en varias ideas sobre la misma pregunta	

Word	Definition	Picture
Predict 预测 Predecir	Think about what will happen next 想想接下来会发生什么 Pensar y adivinar lo que va a pasar	
Main idea 大意 Idea principal	One big idea about the story 关于这个故事的一个大想法 Una idea mas importante de la historia	
Find Locate 找 Encontrar	Look for something 寻找东西 Buscar algo	

iPhone Instruction Icons

Write a text message
写短信
Escribe un mensaje

Tweet: write one sentence
推特：写一句话
Tweet: escribe una oración

Post on Facebook: write a few sentences
在Facebook上发布：写几句话
Publica en Facebook: escribe algunas oraciones

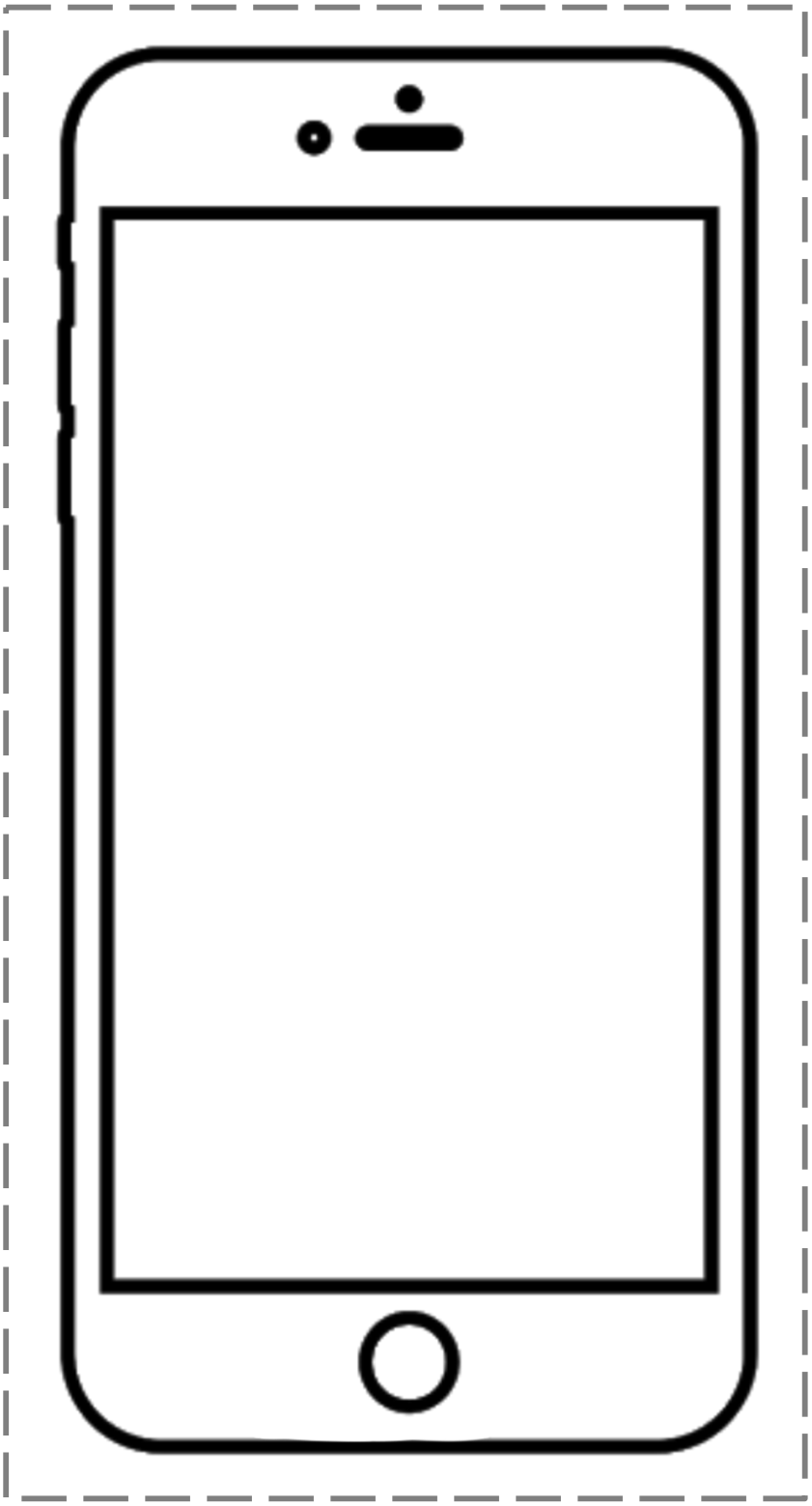
Post on Instagram: write a sentence and draw a picture
在Instagram上发布：写一个句子并画一幅画
Publica en Instagram: escribe una oración y dibuja

Write an email: write a paragraph
写一封电子邮件：写一个段落
Escribe un correo electrónico: escribe un párrafo

Record a voice message
录制语音留言
Graba un mensaje de voz

Make a phone call
打个电话
Haz una llamada

ICMEE



ICMEE

Survivor Stories

Grades 7-8

Who survives and how?

We've already explored a few survivor stories, but we're going to look at a few other experiences.

Language matters

In addition to learning about this topic, we are practicing how we work with language. We have many different ways to use the English language. This week we will use high-level academic language to:

- explain the sequence and duration of actions within an event
- explain cause and effect relationships for natural processes and for feelings, actions, and physical conditions
- clarify whether something has or hasn't happened.

Building academic language

Our goal, every day, in every lesson, is to use the English language to communicate in any situation, particularly in school or work. To do that, we are building:

Cohesion (adjective) *unified, well-structured*

- Does the way I organized my ideas help my readers understand?
- Have I used transitions to help my sentences fit together?
- Did I write enough to fully explain my thinking without repetition?

Flexibility (adjective) *able to be changed/adapted to make it better*

- How can I say or write this in a higher-level way?
- Have I used the right structures to help my readers understand?
- Did I use different types of sentences for different purposes?

Precision (adjective) *exact, exactly right*

- Did I use the right words/vocabulary to explain my thinking?
- How can I say this accurately or correctly?
- Has my language painted the picture I want readers to see?

Transfer (verb) *to move from one place to another*

- How can I use this language in my social studies/science class?
- Can I use this language in my math class?
- Is there a way to use this language outside school?

I already speak English

I know you do! You have so much experience with the English language, but we have to keep building. Even native English speakers need to work at it. The more proficient you are in using high-level academic language, the more opportunities you will have. We use language differently with our friends and families than we do to explain our thinking in school or at jobs.

Exploring survivor stories

This week we are going to take a look at the stories of people, kids in particular, who have experienced disasters and lived to tell about them. We're going to take a look at their encounters with natural disaster to understand how they withstood these dangers.

Week 4: Survivor Stories

Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
It's going to BLOW!	Too hot to handle	Cold enough for you?	Land falls away	Review the week's learning
Mountain of Fire	Lost in Death Valley	Lost in a Blizzard	Sinkhole excerpt from *Tangerine*	Write a first-person story of getting heat stroke
Meeting Challenges	Meeting Challenges	Meeting Challenges	Meeting Challenges	

What will you do in this packet?

- Learn/refine (make better) your understanding of vocabulary and sentence structure
- Explore cause and effect relationships of disasters, actions, and physical conditions
- Make and explain predictions and inferences about people, actions, or events
- Reflect on your learning and how you can use it in the real world

At the end of each lesson, you will enter the vocabulary you learned in your personal dictionary and write to tell your colleague what you've learned.

Focus on Reading with a Purpose

This week we're going to be doing a LOT of reading. There are four stories for you to read in order to understand how these people survived the disasters they experienced. We are looking for the problems (causes) they faced and the actions they took, as well as how those actions changed their situation (effects).

A few tips when you are reading with a purpose:

- Read the prompts first.
    - What information will you need? What will you be asked to write about?
- Annotate (mark) the text.
    - Where did you find the information you needed in the text?
- Move back and forth from the prompts to the text.
    - For each question, return to where you annotated the text.

The first article is a model. I have highlighted the prompt in the article and underlined the text I will need to answer. I have filled in the graphic organizer.

Check in with your colleague

You will continue to communicate with the colleague you've been "working" with.

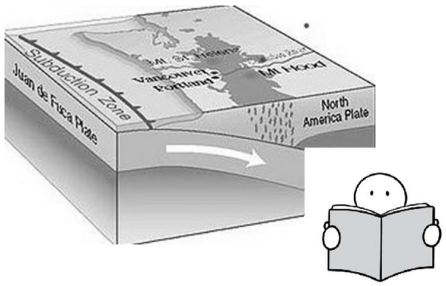
Name _____ **Where do they currently live?** _____

Review the language we practiced before

You can and should continue to use this language when it is useful, adding in the new language in this packet.

Word/Phrase	Emerging (Good)	Developing (Better)	Expanding (Best)
Ways to refer to disasters (Nouns)	Thing, stuff, problem One thing you should look for…	Threat, risk, challenge, trouble, emergency,	Danger, hazard, disaster, crisis, tragedy
Ways to say "look for" (verbs) Ways to say "stay away from"	Look for, see, watch for Stay away from	Consider, keep an eye out for, notice, pay attention to Escape	Observe, recognize, contemplate Avoid, avert, evade,
Ways to warn of danger (adjectives)	Bad, hard, unsafe	Dangerous, deadly, risky, serious,	Threatening, fatal, perilous
Ways to name a place (Nouns)	Place, house, area	Location, town, spot	Environment, locale*, region
Sentences	One thing you should look for is unsafe stuff in your new place.	Consider keeping an eye out for serious threats in your new town.	If you learn to recognize hazards in your new region, you could avoid a crisis.
Ways to compare/contrast	+____ and ___ are the same because ___. +___ and ____ are the different because ___.	+____ is _____ in the same way as _____. + _____ is _____, however, ____ is ____.	+ __ is __ similarly/likewise, ___ is ___. + ____ is ____ on the other hand/on the contrary _____ is ___.
Positive Superlatives to compare personal traits	good/better/best	strong/stronger/strongest experienced/more experienced/most experienced smart/smarter/smartest	capable/more capable/most capable accomplished/more accomplished/most accomplished qualified/more qualified/most qualified wise/wiser/wisest
Negative Superlatives *to compare personal traits*	bad/worse/worst	weak/weaker/weakest	incapable/less capable/least capable less accomplished/least accomplished less qualified/least qualified
Verb: find an item/place	Find, look for, spot	Determine, recognize,	Seek out, locate, identify
Verb: keep your position	Stay, wait	Hang on, sit tight, lie low	Remain, shelter, bide your time
Verb: stay away from	Stay away from	Avoid, protect…from	Stave off, ward off, prevent
Noun: broken objects	Junk, stuff, trash	Wreckage, ruins	Debris, rubble,
Adverbs we use to talk about time without being specific	Already Anymore Just Soon Still yet	In the past, earlier, Is done (v), is finished (v) Barely, hardly Shortly, before long, quickly Continues (v) Until now, up to now, so far	Previously, heretofore Was completed (v), is through (v) Just a while ago, recently In short order, expeditiously Proceeds (v), progresses (v) Thus far, hitherto, as yet
Ways to use verbs to show a completed action	Past participles are verbs, usually ending in –ed and used with have/has/had, this also works with irregular verbs We can also use have/has/had with the preposition "been"		

Lesson 1 – It's going to BLOW!



A meeting of plates

Volcanoes are created by the same forces that cause earthquakes. The crust of the earth is made up of plates that come together, sometimes violently, throughout the world.

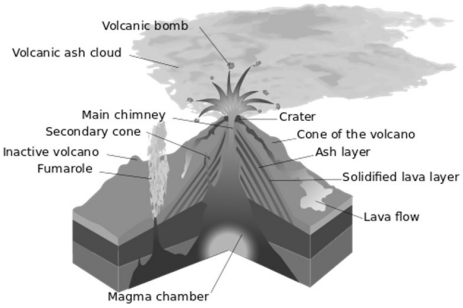
Remember when we were talking about the Ring of Fire, which includes the west coast of North and South America? That's where the Juan de Fuca Plate and the North America Plate meet.

The way they meet is called **subduction** because the Juan de Fuca Plate is sliding under the North America Plate. Volcanoes are often found parallel to subduction zones, inland from the ocean. That's exactly where we find Mt. Saint Helens, a volcano in Washington State. Other subduction zone volcanoes include Mt. Pinatubo in the Philippines, Mt. Fuji in Japan, and Krakatoa in Indonesia.

sub = under
duc = guide
tion = action
subduction zone = one plate being guided under another

When the oceanic plate (the one under the ocean) squeezes itself under the other plate, it helps squeeze the **magma** under the earth's crust toward the surface. Just like squeezing a tube of toothpaste, if the squeezing continues, it will force the magma out of the crust.

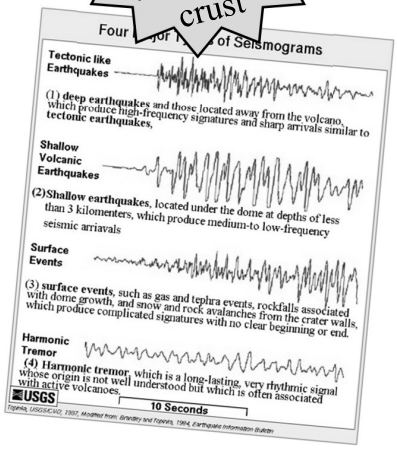
Building a volcano



When the subduction zone squeezes the **molten** (liquid) rock toward the surface of the earth, it creates a magma chamber, an underground pool. The subduction continues to press the magma tighter and tighter in the chamber and closer and closer to the crust. Some of the magma will get close enough to the surface to cool and form layers that eventually form into a mountain. Between these layers of **igneous** rock are layers of ash from past eruptions.

Shaking it

seismic = vibrations in the earth's crust



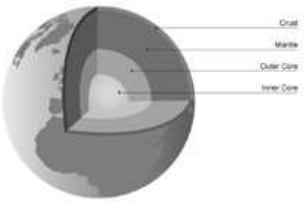
Interestingly, when a volcano is getting ready to erupt, there will be many small earthquakes in the area. Scientists measure the number of quakes and tremors as well as how big they are. They identify the causes of the quakes. Because the earthquakes aren't causing the volcano to erupt. On the contrary, the actions of the volcano are causing the earthquakes.

According to the United States Geological Service, there are four major types of **seismic** events associated with volcanoes. There are deep earthquakes similar to the ones that happen at the subduction zones. There are shallow earthquakes right underneath the dome of the volcano. Surface events like rock falls, avalanches, and small ejections of gasses or rock also show up. The events that usually precede eruptions, however, are harmonic tremors. They last longer than the other types and have a more predictable rhythm.

Plate tectonics on a plate – optional hands-on lab

For this activity, you need some kind of crackers and a soft food like Cool Whip, frosting, apple sauce, or peanut butter. The photos show graham crackers and Cool Whip. You will also need a plate to hold it all. Or you could use squares of cardboard and any type of liquid soap.

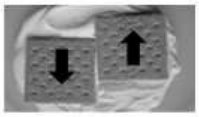
Remembering the structures of the earth
We live on the crust of the earth. The crust is broken up into about a dozen tectonic plates, including both heavy oceanic plates and lighter continental plates. The plates float around on the mantle just below.



Cool Whip = magma
Graham crackers = tectonic plates

Four types of boundaries:
Transform Boundary: Two plates grind past each other with their edges touching
Divergent Boundary: Two plates move away from each other
Convergent Boundary: Two plates move toward each other and crash together
Subduction Zone: A convergent boundary where one plate goes under the other

Make a Transform Boundary



- Put two pieces of graham cracker next to each other so they are touching
- Push one cracker toward the top of the plate and the other one toward the bottom

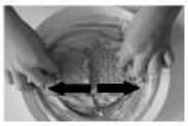
Use your senses:
What do you hear? _____

What do you see? _____

What do you feel? _____

At transform boundaries plates move in opposite directions slowly grinding past each other, sometimes getting snagged. When the plates finally slip it releases a jolt of energy (an earthquake). California's San Andreas fault is a prefect example of a transform boundary.

Make a Divergent Boundary



- Pick your crackers up and put them right next to each other again.
- Gently press down on each cracker as you pull them apart.

Use your senses:
What do you hear? _____

What do you see? _____

What do you feel? _____

Most active divergent boundaries occur where two oceanic plates move away from each other. Hot magma flows up where the plates separate, forming underwater lava flows and creating new seafloor and even islands.

Make a Subduction Zone

- Pick your crackers up and put them right next to each other again.
- Gently press down on the outer edge of one cracker (see the ★?) so it tilts up.
- Push the other cracker underneath.

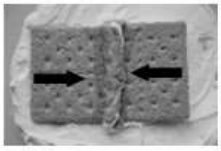
Use your senses:
What do you hear? _____

What do you see? _____

What do you feel? _____

A subduction zone occurs when a heavier oceanic plate is thrust under a lighter continental plate. This is the type of boundary that created the mountains that include Mount Saint Helens.

Make a Convergent Boundary



- Wet one edge of the crackers with a little water.
- Place the crackers next to each other again.
- Gently push the two crackers toward each other.

Use your senses:
What do you hear? _____

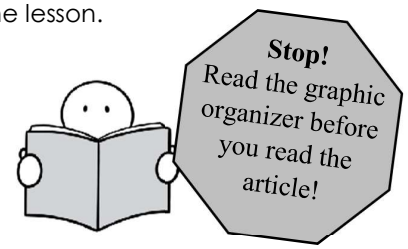
What do you see? _____

What do you feel? _____

Convergent boundaries (non-subduction zone ones) occur when two plates move toward each other and collide forming mountains where they crashed.

Work through this article the same way you would if you had to complete the lesson.

1. Read the prompts
2. Read the article and locate the annotations.
3. Read through the answers, moving back and forth to the text.
4. Read the reflection I wrote at the bottom.

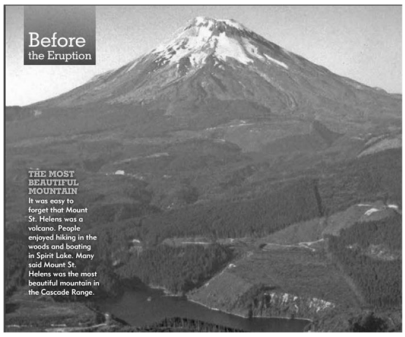


Mountain of Fire – A story of survival

How two boys and their dad survived the explosion of Mount St. Helens, the deadliest volcanic eruption in American history BY LAUREN TARSHIS

It was May 18, 1980. Eric Smith, 10, was camping with his father, Buzz, and his 7-year-old brother, Adam, in a forest near Mount St. Helens. The mountain—the fifth-tallest in Washington State— towered over them, its peak sparkling with snow.

The woods were whisper-quiet that morning. The only sound was the sizzle of bacon and eggs as Eric's dad cooked on the camp stove. However, all was not peaceful around Mount St. Helens. That's because this mountain was no ordinary mountain—it was a volcano, and it was about to erupt.



The Smiths had just finished breakfast when a noise broke the quiet. Crack! Crack! Crack! A thick gray cloud blocked out the sun. Strange rocks—hot and light—bounced off their heads. There was an earsplitting roar and a powerful blast of air. Eric stared in astonishment as 500-year-old trees fell around them. Hot ash poured from the sky.

Buzz grabbed the boys, and they took shelter under the trunk of a fallen tree. The ground shuddered, and the air became searing hot.

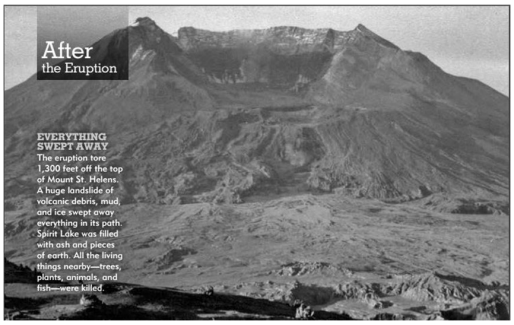
Mount St. Helens Wakes Up

For about two months before the Smiths' camping trip, earthquakes trembled beneath the volcano, and smoke rose from its peak. Mount St. Helens was waking up. Scientists studied the volcano, uncertain of whether it would erupt. Police encouraged people to evacuate, and many did. Logging companies kept workers away.

But soon the volcano quieted down. Many people believed that the worst was over and that scientists were exaggerating the danger. Loggers resumed their work, and hikers and campers returned to the nearby woods. Eric's father decided it was safe to take the boys camping. He was wrong.

Blizzard of Ash

The *crack, crack, crack* Eric heard that morning was the sound of the mountain splitting open. The roar that followed was the sound of ash and melting rock blasting into the sky. The strange rocks that fell on them were hardened lava. The blizzard of hot ash made it almost impossible to breathe. "We've got to get out of here!" Buzz cried, and they ran for their lives. Before they left the shelter of the fallen tree trunk, Buzz and the boys turned their hoodies around and tied the hoods over their noses and mouths to keep the ash out of their lungs.



Eric, Buzz, and Adam were covered in ash. They marched over fallen trees and debris, sometimes sinking up to their knees in ash and mud. Eric fought panic. Were his mother and sister OK? Would there be another eruption?

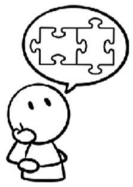
The hot ground burned their feet, forcing them to stand on logs for relief. Worst of all was the thirst: They had no water, and the area's sparkling streams were now filled with ash and mud. Eventually, they found some muddy water seeping from the ground. It tasted terrible, but they drank it.

Rescued!

They'd been hiking for almost 12 hours when they heard helicopters. Rescuers had been searching the area for survivors, and now they had found three—the exhausted and lucky Smiths. The helicopter carried them to

safety. Eric's mother and sister were safe too, but their house had been destroyed by a landslide of volcanic debris and mud. Fifty-seven people had died, and hundreds of square miles of beautiful wilderness had been reduced to a **smoldering** wasteland.

The Smiths built a new house. For months, the boys were afraid to play outside, but they had survived the worst volcanic eruption in U.S. history.



Meeting challenges

Eric, Buzz, and Adam Smith survived a volcanic eruption that killed 57 other people in the area that day. What challenges did they face? What actions did they take?

Problem	Action	Result
Ash and rock rained down	They hid under a fallen tree.	The fallen tree protected them from the falling rock and ash.
Ash filled the air	They turned their hoodies around and tied the hoods over their noses and mouths.	They were able to breathe without breathing in all the ash.
The hot ground burned their feet	They walked on the fallen trees and logs because they weren't as hot as the ground.	The logs kept their feet cooler than the ground had.
They were thirsty and had no water	They found muddy water coming from the ground (so it didn't have ash in it yet).	They had enough water to continue walking.
Their house was destroyed	They built a new house.	Life got back to normal.
Explain whether their survival was more luck, more skill, or a mix of both.	The Smiths survived in part because Buzz was able to solve some of their smaller problems like how to filter the air they breathed and keeping their feet cooler. In the end though, they were lucky that they were already awake when the volcano erupted and that the helicopter found them.	

Lesson 1 Reflections

Word-Wise

I told you there would be a lot of vocabulary this week!! Open your Personal Dictionary at the back of the packet. You should enter the words:

Subduction magma molten igneous seismic smoldering

We don't necessarily need to include noninfectious because we know that when we add **non-** to a word it means NOT. So noninfectious means not passed on. You may add it if you want to or just make a note of the meaning of the prefix **non-**. Add other words you want to remember, of course!

Talk it through

At the back of the packet* you will also find a place for your lesson reflections.

Reflect on what you learned and did today. What do you need to tell your colleague so that they can understand? This can be about volcanoes, or it could be about the skills and language you practiced. Here's a list of ideas of what you might talk about. You do NOT have to write about all of them or any of them if you have something else to say. You should write 3-5 sentences.

<u>USE PAST PARTICIPLES from the chart on page 4 to talk about what you "have been" learning.</u>

- Would you live near a volcano, even if it hasn't erupted in 100 years?
- Which type of seismic activity would tell you that you should evacuate?
- Which type of boundary is most destructive?
- Why did Buzz Smith think it was safe to take his sons camping?

You should start your writing off with a greeting or introduction to your colleague. Here are some ways you can do that:

- Dear _____
- _____, I have some important information for you.
- I worked on something challenging today. Let me tell you about it.
- You'll never guess what I learned today.

Looking Ahead

Considering what you learned today, make some notes on other ideas that you want/need to know about volcanoes or survival.

_____

_____

_____

_____

Lesson 2 – Too hot to handle

Cool enough for you?

Remember when we were learning about the Rule of Threes? If you are in a dangerous situation, you can live for three minutes without air, three hours without shelter, three days without water, and three weeks without food. The most important aspect of finding shelter was to keep your body near its **optimal** (best) body temperatures. Normal body temperatures range between 96 and 100.4 degrees. Colder than that and you will start to shiver. Hotter than that, you will start to sweat.

The human body does not run well if it gets too hot. In general, we need to start being cautious if the temperature is above 90 degrees F. Heat over 104◦ F are dangerous, even with precautions. There are three heat-related illnesses: heat cramps, heat exhaustion, and heatstroke. The two keys to heat-related illnesses are sunburn and dehydration.

The symptoms of heat-related illness start with:

- Heavy sweating
- Muscle cramps

At this point, you would have heat cramps but it would be easy to get better if you find somewhere cool to rest and drink plenty of water. The water should be drunk in small amounts, otherwise you could get **nauseous** (sick to your stomach).

If heat cramps aren't treated, then there will be additional symptoms:

- Dizziness
- Headache
- Weak, rapid (fast) pulse
- Rapid, shallow breathing

Heat exhaustion isn't always dangerous. You can still bounce back with rest in a cool place, and drinking water to replenish the fluids you've been sweating out. If someone overheated is vomiting or faints, however, it's important to get medical help as soon as possible.

If heat exhaustion isn't treated, things start to get really dangerous as heat stroke:

- Weaker pulse
- Noisy breathing
- **Fatigue**
- **Convulsions**
- Skin that is either hot and dry or hot and sweaty
- Unconsciousness

It's called Death Valley for a reason

Death Valley is the lowest, hottest, and driest place in North America. It is also a national park in southeastern California. The Valley is long and narrow, running about 140 miles long, but only 5 to 15 miles wide.

When you visit the website for Death Valley, the first thing you will see is a safety alert warning of the extreme heat. In the summer, the temperature can reach 135◦ F and **routinely** (often) gets to 115◦ in July and August. Generally, at least one person dies in the Valley each year.

Remember the steps we take to read nonfiction for a purpose:

1. Read the prompts
2. Read the article and annotate (highlight/underline)
3. Write your answers, moving back and forth to the text.
4. Write your reflection.

Stop! Read the chart before you read the article to know what to look for.

Lost in Death Valley

Two girls and a mom were stuck in one of the most dangerous places on Earth. How did they survive? By Kristin Lewis

Death Valley is the hottest place on Earth. The searing heat sucks the air out of your lungs and scorches the bottoms of your feet. Every year at least one person dies here.

It was in this desert inferno that on July 22, 2010, 17 year-old Gina Cooper, her mother, Donna, and their friend Jenny Leung, 19, became stranded. Lost, with no cell phone service and very little water, their chances of survival were slim…and getting slimmer by the moment.

Weird Things in Death Valley

Devil's Hole Pupfish are one of the rarest species in the world. They are able to live water up to 90° F.

Blazingly Hot

Like so many disaster stories, this one begins unremarkably: with a plan for a pleasant day trip.

Jenny, a student from Hong Kong, was spending the summer with Donna and Gina in Pahrump, Nevada. Donna was eager to show Jenny the spectacular sights of the West. They wanted to show her Death Valley so three set out for Scotty's Castle, a historical site and museum from the 1920s.

Death Valley National Park is a beautiful and dangerous place. Rocky snowcapped mountains jut thousands of feet into the sky, while vast salt flats and sand dunes sizzle in the sun on the valley floor below. Summer temperatures soar well about 120 degrees Fahrenheit. (The record is 134 degrees.)

Nearly 1 million people visit the park each year. Most come during the cool winter months. Donna, Gina, and Jenny knew that visiting in July meant extreme heat. But it would be a short trip, mostly in Donna's air-conditioned car. Still, Donna packed food and water for the day and stocked the car with maps, a roadside hazard kit, tools, blankets, phone chargers, and a first-aid kit. Little did she know they would soon be in a fight for their lives.

What Went Wrong?

As planned, the women spent a few hours at Scotty's Castle. They left for home around 3 p.m. On their way out, they passed a sign for Racetrack – one of Death Valley's star attractions. The women decided they shouldn't miss the chance to see it. They drove. And drove.

They came to an intersection of the dirt roads called Teakettle Junction. That must have been where they took a wrong turn, because they began gaining elevation, winding up into the mountains. They tried to head back the way they'd come, but with each passing mile became more lost. "Everything looked the same," Donna says. "It was awful."

Only the park's main roads were shown on their map so they turned on the car's GPS. With cool certainty, the GPS delivered directions: *Turn right in 500 yards. Continue straight ahead for 1 mile.*

To their dismay, it soon became clear that the GPS was useless. Such mapping systems are notorious for leading travelers astray in remote places like Death Valley. The year before, a woman had gotten lost there following her GPS. She survived, but tragically, her 6-year-old son did not.

Hours went by. The women had driven hundreds of miles. The fuel tank drifted toward empty, as did their supply of drinking water. Darkness fell, and a blaze of stars tore open the sky. Around 10 p.m., the car sputtered to a stop.

By now, their friends and families were worried. Donna's eldest daughter, Sky, 21, who lived in Florida had just had surgery, and when her mother failed to call and check-in, Sky knew something was terribly wrong.

Grim News

Around 6 a.m., Donna, Gina, and Jenny awoke from a long and frightening night in the car. Looking around they realized how truly desperate their situation was. Yet they remained clearheaded.

They decided that Gina would set out on foot to look for signs of life. While she was gone, Donna and Jenny foraged for food. They found some pine needles, which are nutrient-rich, and some cactus, though these proved too difficult to eat, even using Donna's knife.

From left: Tyler Johns, Gina, Donna, Jenny, Scott Steele.

Two hours later, Gina returned with grim news: She had seen car tracks but no people. By now, only a few sips of precious water remained and the heat was growing steadily more oppressive. Gina begged her mom to try starting the car again. It seemed pointless – the car was out of gas – but why not? Surprisingly, the car sprang to life.

Weird Things in Death Valley Pt. 2

This dry lakebed is home to hundreds of rocks (some weighing more than 500 pounds) that appear to have "raced" across the ground leaving tracks behind them.

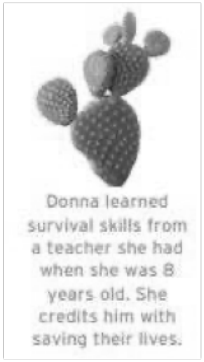
The Search Begins

Back in Florida, Sky, frantic with worry, found that her mom's credit card statement showed that she had purchased a T-shirt at Scotty's Castle the day before. Immediately, Sky contacted the California Highway Patrol (CHP) and a search was launched.

Scouring the 5,200 square of miles of Death Valley is a slow and painstaking process. Already the women had been missing for 24 hours. Finding them as soon as possible was critical.

Meanwhile, Donna, Gina, and Jenny found themselves on a crazy road. It was a series of steep hills that rose and fell sharply, one after the other. Donna gunned the car up each one and then let gravity take them down. If we got stuck between hills, I knew we were done for," she remembers. "We'd never be able to climb out."

Finally, off in the distance they saw a stand of trees – a splash of glorious green in a sea of desolate brown. They'd actually glimpsed the trees the day before, after they'd lost their way.



Donna learned survival skills from a teacher she had when she was 8 years old. She credits him with saving their lives.

Now, their lives depended on making it back to those trees. Because where there are trees, there is water.

They drove until they ran out of gas, this time for good. Thankfully, the trees were only a short hike from the car, but it was agony. It was at least 125 degrees. The superheated rocks on the ground burned their feet through their shoes.

The human body is not made for such high temperatures. Sweating, leads to dehydration. Heart rate speeds up. It becomes difficult to think at all, much less make lifesaving decisions. Heatstroke sets in and organs begin to shut down. Without treatment, death will follow.

But Donna, Gina, and Jenny were not about to give up. They arrived at the trees and discovered something incredible: three trailers and a small covered porch. "The chance of finding that in the middle of Death Valley was one in a million," Gina says.

The crude campsite would become their lifeline. Gina broke into one of the trailers. They found stale oatmeal, cans of beans, beer, and some jerky so old it had turned white. It was slim pickings, but Donna was over the moon. "I thought, OK, I can keep us alive for two weeks on this," she says.

In the morning they found the most important thing: On the back of one of the trailers was a hose. They turned it on, and to their utter joy, hot water gushed out. "It was the worst water I'd ever taste, but also the best," Gina says.

Later that day Gina, exhausted, was sick with dehydration and felt unable to eat. Donna coaxed her into swallowing a few bits of oatmeal. The day wore on, and the women prepared for another night in the wilderness.

Rescued!

On July 25, two CHP pilots, Tyler Johns and Scott Steele, were scouring the area from their helicopter. Their mission had been reclassified. It was no longer a rescue. It was a recovery – there was little hope of finding the women alive.

The pilots were about to give up when they decided to take a final pass over one of the most remote parts of the park. And that is when they saw it: Donna's car.

Down in the camp, Donna and Gina heard Jenny screaming. They ran outside to see Jenny wildly waving a yellow blanket for the helicopter that was flying straight toward them. They were saved.

When Johns and Steele landed, they were thrilled to find the women alive. The pilots arranged for a local man to bring gas and show them back to the main road.

The women were overjoyed as they raced out of the park. When they pulled into a gas station, it was as though they'd arrived at the finest restaurant in the world. Gina and Jenny tore through the aisles grabbing whatever they could shove in their mouths.

Meeting challenges

Donna, Gina, and Jenny survived being lost in the heat of Death Valley. What challenges did they face? What actions did they take?

Problem	Action	Result
They knew that Death Valley could be dangerous.		
They took a wrong turn. They knew they shouldn't be going to higher elevation.		
The car stopped running. They were almost out of water and food. The night was scary.	Gina begged her mother, Donna, to try starting the car again.	The car started and they were able to drive farther.
Their car ran out of gas, but they had seen some trees up ahead.		They were close enough to make it to the trailers.
The helicopter pilots are about to give up on finding the women.		
Explain whether their survival more luck, more skill, or a mix of both.		

Dehydration experiment – optional hands-on lab

Dehydration puts a lot of pressure on our heart as it tries to pump blood through the body. Let's do an experiment so you can see what that looks like. It is a lot harder to take liquid away in a **solution** so instead we're going to add solids to show how your blood would look as you got more dehydrated.

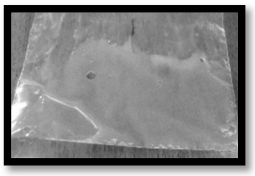
You will need:

- A zippered storage bag
- Drink mix (lemonade, Kool-Aid) or sugar
- Water

solution = a mixture of two or more ingredients

Procedure

Solution 1:



- First, put 1/8 cup of water in the bag.
- Add 1 tablespoon of drink mix or sugar
- Zip the bag carefully and shake it to dissolve the mix
- Close your fist over the bag like a heart beating; observe the liquid.

What do you see? _____

What do you feel? _____

Solution 2:

- Add 3 tablespoon of drink mix or sugar
- Zip the bag and shake it to dissolve the mix
- Close your fist over the bag like a heart beating; observe the liquid. What's different?

What do you see? _____

What do you feel? _____

Solution 3:

- Add another 3 tablespoons of drink mix or sugar
- Zip the bag and shake it to dissolve the mix
- Close your fist over the bag like a heart beating; observe the liquid. What's different?

What do you see? _____

What do you feel? _____

Reflect on how dehydration affects the blood and how Solution 3 would stress your heart:

_____

_____

_____

_____

_____

Lesson 2 Reflections

Word-Wise

Now you are going to turn to your Personal Dictionary at the back of the packet*. You should enter the word: **optimal** **nauseous** **fatigue** **convulsions** **routinely** **solution**

You may add other words you want to remember, of course! Look back at the sample for the word **disaster** if you need to remember how to complete the dictionary entry.

Talk it through

It's time to report to your colleague. What do you want to share about today's learning? You do NOT have to write about all of them or any of them if you have something else to say. You should write 3-5 sentences.

- Have you ever gotten heat cramps or been in danger of heat exhaustion or heat stroke? Describe that experience.
- Explain how to help someone who has gotten overheated.
- Would you want to visit Death Valley? How would you prepare?
- What is the hottest day you can remember? What did you do to stay cool?

USE PAST PARTICIPLES from the chart on page 5 to talk about what you "have been" learning.

You should start your writing off with a greeting or introduction to your colleague. Here are some ways you can do that:

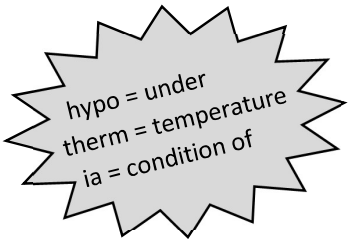
- Dear _____
- _____, I have some important information for you.
- I worked on something challenging today. Let me tell you about it.
- You'll never guess what I learned today.

Looking Ahead

Considering what you learned today, make some notes on other ideas that you want/need to know about traveling in dangerous places or surviving dangerous situations.

Lesson 3 - Cold enough for you?

From desert heat to blizzards



Being in Death Valley, the lowest, hottest, driest place in the United States is dangerous, but just as dangerous are the high mountains where temperatures drop and blizzards bring bucketsfull of snow. Usually, it is safe to be outside when temperatures are above 31◦ F. Between 13 and 31◦ F people should take breaks inside every half hour or so. Below 13◦ F outdoor activity should be limited and only attempted with special clothing and equipment when possible. The dangers of extreme cold include frostbite and **hypothermia**.

Any port of the body that is exposed to extreme cold is in danger of frostbite. Our **extremities** (fingers, toes, ears and nose), start to go numb as the tissue actually freezes. Frostbite can result in the **amputation** (loss) of the affected body parts.

Remember, normal body temperatures range between 96 and 100.4 degrees. When our body temperature falls below 95 degrees, we start to shiver.

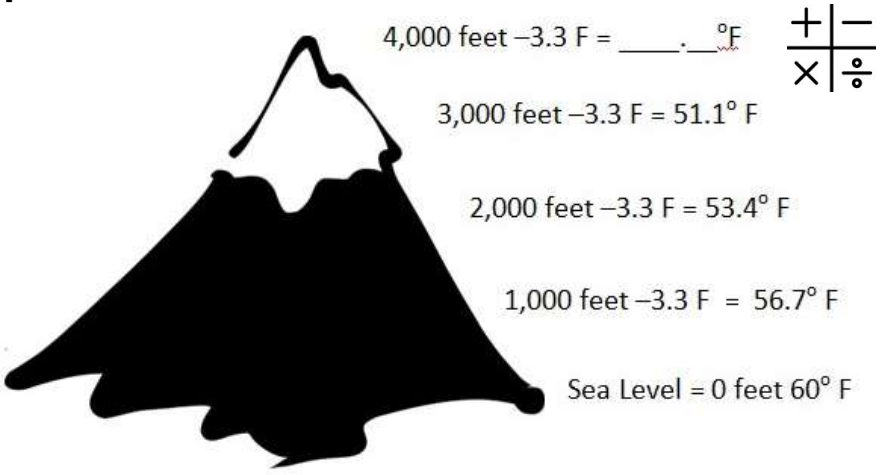
When we move our muscles, that uses energy and produces heat. That's why we sweat when we exercise. It's also why we say that we need to "warm up" before we exercise. As our body gets cold, we shiver. That's our body's way of making our muscles move to help warm us up.

If you do not (or cannot) come in out of the cold, you will stop shivering as your body tries to **conserve** energy. Unfortunately, that is when our body temperature will drop more rapidly (remember, rapid, means quick). Your heart rate slows, you lose consciousness (go into a coma).

Altitude changes temperature

In the mountains you have to consider the **altitude**, how high you are above sea level. That also impacts the temperature. For every 1,000 feet above sea level, the temperature tends to drop approximately 3.3 degrees Fahrenheit.

If you look at this diagram you can see that at 4,000 feet above sea level the temperature will have dropped about 13 degrees Fahrenheit. Go ahead and fill in the correct temperature in the diagram.



What temperature would it be at 12,000 feet of elevation? (Show your work!)

Okay, now you are on your own. Remember the steps:

5. Read the prompts
6. Read the article and annotate.
7. Read through the answers, moving back and forth to the text.
8. Write your reflection.

Lost in a Blizzard

Nicholas Joy swooshed down a ski slope at Sugarloaf Mountain in Maine. It was just past noon on Sunday, March 3, 2013. After that run, Nicholas, then 17, was planning to meet his father to go home.

He never made it to the meeting place.

A fierce blizzard had swept into the area. Icy winds whipped blinding snow across the mountain. Nicholas could barely see. As visibility on the mountain got worse, he accidentally turned off the trail.

Before he knew it, Nicholas was lost, and all alone. He didn't have food, water, a phone, or supplies. He was getting colder by the minute.

Stranded Skier

Nicholas had no idea where he was. He tried not to panic. He thought about all of the survival shows he had watched on TV. It was time to put the tips he had learned to use.

He decided to stop skiing. There was a better chance of someone finding him if he stayed put.

His first priority was to find shelter from the freezing wind and snow. If he didn't, hypothermia could quickly kill him.

Using his skis, Nicholas built a snow cave. He gathered a huge mound of snow and dug out a hole in the middle. Then he piled branches on top of himself, like a blanket, to stay as warm as he could.

By that evening, Nicholas was really hungry, but he had no food. He managed to stay hydrated by eating snow and drinking water from a nearby stream.

Not knowing how much longer he could last, Nicholas did the only thing he could – he huddled in his cave and slept.

Rescued!

The next afternoon, Nicholas heard snowmobiles. They belonged to rescue crews, who were searching for the missing teen.

Nicholas went out to look for them, but he couldn't find anyone. He knew that if he went too far, he might not be able to find his way back to the cave. Without shelter, he could die that night. So Nicholas turned back. He followed his tracks and returned to the snow cave.

On Tuesday, Nicholas went out again to find help. He had walked for about a mile with a volunteer searcher found him. After two days stranded in the snow, Nicholas had been saved.

"I'm glad to see somebody," Nicholas told his rescuer. "I'm OK. I'm just tired."

Meeting challenges

Nicholas was skiing by himself when he was caught in a blizzard. What challenges did he face? What actions did he take?

Problem	Action	Result
He took a wrong turn because he couldn't see where he was. He realized he was lost.		
When he stopped skiing he was getting colder.		
He was hungry and thirsty.		
He hears snowmobiles.		
He realizes that he's not going to find the snowmobiles.		
Explain whether their survival more luck, more skill, or a mix of both.		

Lesson 3 Reflections

Word-Wise

Now you are going to turn to your Personal Dictionary at the back of the packet*. You should enter the word: **hypothermia extremities amputation converse altitude**

You may add other words you want to remember, of course! Look back at the sample for the word **disaster** if you need to remember how to complete the dictionary entry.

Talk it through

It's time to report to your colleague. What do you want to share about today's learning? You do NOT have to write about all of them or any of them if you have something else to say. You should write 3-5 sentences.

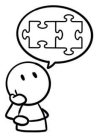
- What would you have done if you were Nicholas?
- Where did Nicholas learn his survival knowledge?
- Describe a time when you have been really, really cold. How did your body react? How did you warm back up again?

USE PAST PARTICIPLES from the chart on page 5 to talk about what you "have been" learning.

You should start your writing off with a greeting or introduction to your colleague. Here are some ways you can do that:

- Dear _____
- _____, I have some important information for you.
- I worked on something challenging today. Let me tell you about it.
- You'll never guess what I learned today.

Looking Ahead



Considering what you learned today, make some notes on other ideas that you want/need to know about surviving disasters.

_____

_____

_____

_____

_____

Lesson 4 – Land falls away

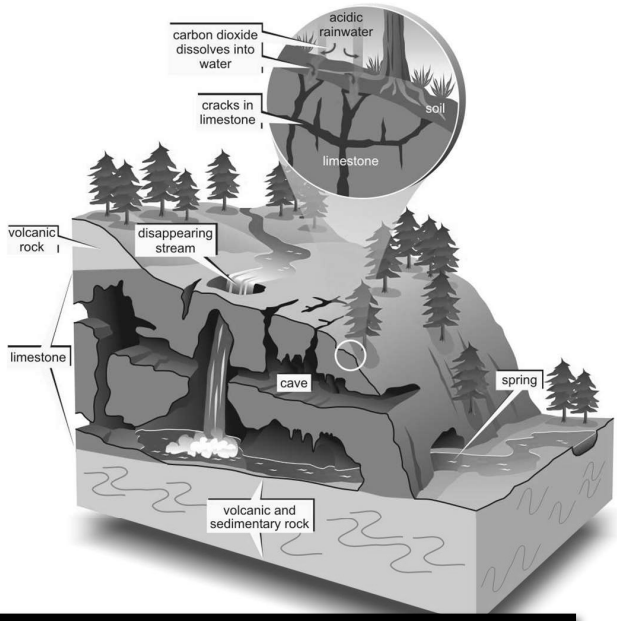
Building for safety

Geology, the study of rocks and soil, is a fascinating subject. Everywhere around us, the earth itself is being changed by natural forces. Sometimes those natural forces are helped along by human decisions and actions. We have to pay attention to how and where water moves from one place to another. If we build a dam or change the course of a river, how will that affect how the water behaves from there to the end of the river? With sea levels rising, how far back will be safe in the next 10 years, 20 years, 100 years?

Communities have rules that must be followed in order to be sure we are building in areas that are geologically safe. Inspectors are hired to look carefully at the land where building is planned. Does it often flood in that area? Will there be landslides or mudslides that would threaten the building? They're looking for any reason why that land might be a dangerous place to build.

Sinkholes happen

Limestone is a type of rock that is easily eroded (worn away) by water. In parts of the country where limestone makes up the bedrock, strange events can occur. Sometimes, a stream or creek will suddenly disappear in the middle of a forest. This happens when water drips through the limestone under the river and, over time, carves out a cave, turning that stream into an underground waterway.



Here's how it works:

- Rain falls and mixes with carbon dioxide becoming acidic
- Rain drips through cracks in the limestone
- Eventually, the acid and the movement of the water wear a hole rerouting the stream under ground

When a new building is being proposed on a site, civil engineers and geologists check to be sure that the area is not eroding in this way. They can check the soil down several yards to see what kinds of rock and soil are under the surface.In areas where people have built or changed the land in any way, the water may come from leaking pipes in addition to the usual rain and natural movement of water.

This sinkhole in Guatemala City in 2010 was caused by a mixture of rain from a tropical storm and years of leaking pipes and other human-caused messes. This sinkhole is HUGE. It takes up the entire intersection of two-lane streets, plus the build that was used to be where I put the star. Think about a big intersection (where two streets cross) near your house. Now think about a sinkhole opening up.

Sinkhole (excerpt from the novel *Tangerine* by Paul Bloor**)**

It was still pouring during third period when Paul and Joey came out of the building and looked out at the ocean of mud criss-crossed by wooden walkways.

Suddenly, I heard a *whooshing* sound, like the sound you get when you open a vacuum-sealed can of peanuts. Then the brown water that had puddled up all over the field began to move. It began to run toward the back **portables**, like someone had pulled the plug out of a giant bathtub. Next came a *crack-crack-cracking* sound. The boards began to come apart, and the loose mud under the walkways began to slide toward that giant bathtub drian.

One after another the doors of the portables opened and the teachers looked out, staring into the dense rain, trying to spot the cause of all this **commotion**. Mr. Ward opened the door of Portable 19. He stepped out onto the porch and looked around back. Across the field, the kids from Ms. Alvarez's portable came walking out with their belongings, in single file, like they were supposed to do in a fire drill. Other teachers saw that and started their kids out, too. But suddenly there was a larger sound. A louder *whoosh* turned every head and opened every eye in that rainy field. The the walkways started to heave up and down, making terrible splintering noises.

Immediately kids started screaming and vaulting over the handrails, landing in the ankle-deep mud. Another whoosh and more violent cracking sounds followed. Then every seventh and eighth grader started to pour out of those portables, some still calm, some panicking.

There was instant and total chaos in the back row, the one nearest to the football field, because the portables themselves were starting to break apart and move. The kids came diving out, jamming in the doorways, pushing into the backs of other kids, knocking each other flat on the disintegrating boardwalk. They knocked each other into the moving mudslide that was now swirling in a circle around them.

"What is it?" I yelled to Joey. "An earthquake?"

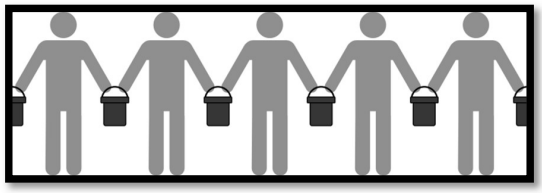
"No! Sinkhole, man! It's a sinkhole! It's opening up under the field. Look at 19!"

I looked and saw the entire portable being swallowed up by the mud, its roof now where the porch steps should be. I yelled, "That's my math class!"

Joey shouted back over the din, "They must all be trapped in there!"

I didn't even think about it. I yelled back, "Come on!"

We ditched my umbrella and jumped out of the way as the first panicked wave reached the building. We pushed around the bottleneck of screaming kids forming at the door. Stopping carefully, we sloshed and fought our way through the mud to Portable 19.



We joined some eighth graders in **a kind of bucket brigade** extending from the field down into the sinkhole. They were grabbing the hands of the kids who were trapped in the portable and pulling them up, step-by-step to the edge of the whole. Some of those guys must have

been ten feet below ground level at this point, and the sinkhole was still deepening and spreading. The mud continued to swirl around us in a rapid clockwise motion.

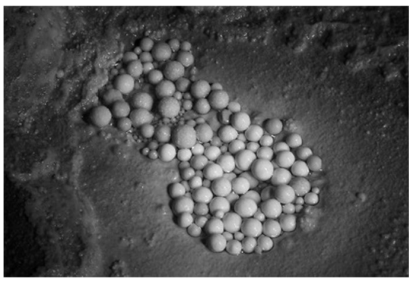
Empty of kids, Portable 16 fell right over, roof first, into the far end of the hole. Portables 20 and 21 were balanced on the rim of the crater, about to go.

Joey and I dug our heels into the mud about halfway down toward the bottom of the hole. We pulled and grabbed at kids as t hey made their way up the slippery include to the top. Some of them were so frightened that they didn't want to let go of us, but we pushed them along anyway, up to the next guys. I lost my balance twice and fell into the mud, but I managed to right myself quickly. My glasses were so caked with mud that I could no longer see anything clearly. I must have pulled twenty kids up before I heard Mr. Ward's voice yell, "That's it! That's everybody! Let's get out of here!"

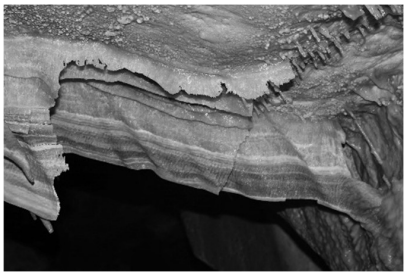
Those of us in the middle of the line helped the guys from the bottom to climb out. Then they pulled us up. I heard Mr. Ward yell again, "There go 17 and 18!" and I heard the sounds of Portables 17 and 18 splitting apart. The *whooshing* was getting louder and I felt afraid fro the first time, afraid that we might all get sucked down and drown in the mud. We moved out in a tight group, holding on to each other through the field of moving slop and splintered boards.

Draw out what has happens in this story			

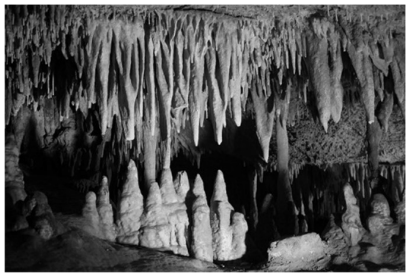
Other crazy limestone creations made by dripping water



Cave Pearls

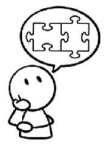


Flowstone aka Bacon formation



Stalactites and stalagmites

Meeting challenges



Now you are REALLY on your own. Identify the problems, the actions and the results. You've got this!

Paul and Joey witnessed a sinkhole opening and worked as part of a "kind of bucket brigade" helping rescue students from Paul's math class portable.

Problem	Action	Result
Explain whether their survival more luck, more skill, or a mix of both.		

Lesson 4 Reflections

Word-Wise

Now you are going to turn to your Personal Dictionary at the back of the packet*. You should enter the word: **geology** **portable** **commotion** **a kind of bucket brigade**

You may add other words you want to remember, of course! Look back at the sample for the word **disaster** if you need to remember how to complete the dictionary entry.

Talk it through

It's time to report to your colleague. What do you want to share about today's learning? You do NOT have to write about all of them or any of them if you have something else to say. You should write 3-5 sentences.

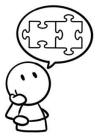
- What would you have done if you were Paul? Would you have gone to help?
- Are there any places in your community where you could see the potential for disaster? What are they like?
- What would you think was going on if you had heard the commotion from inside one of the mobiles?

USE PAST PARTICIPLES from the chart on page 5 to talk about what you "have been" learning.

You should start your writing off with a greeting or introduction to your colleague. Here are some ways you can do that:

- Dear _____
- _____, I have some important information for you.
- I worked on something challenging today. Let me tell you about it.
- You'll never guess what I learned today.

Looking Ahead



Considering what you learned today, make some notes on other ideas that you want/need to know about surviving disasters.

_____

_____

_____

_____

_____

Use your knowledge: *Heat it up*

Prompt

Write a story in which you experience heat stroke. Remember to show how you started with heat cramps, heat exhaustion, and heat stroke (refer back to the information from Lesson 2 and my example about someone who is getting hypothermic). Explain why you are in danger (make up a situation), how you get help, and how your heat stroke is treated medically.

You will use first-person perspective (I/me) for this piece of writing.

Language to explain cause and effect for actions and physical conditions

Word/Phrase	Emerging (Good)	Developing (Better)	Expanding (Best)
Ways to show understanding	Saw, got, knew	Thought, understood	Realized, recognized, grasped
Conjunctions to show cause	So, since	As, because	As a result, due to
Conjunctions to show effect	So	So that, as a result	Consequently, therefore, accordingly
Verbs that show cause/effect	Led, got	Drove, forced	Compelled, induced, persuaded,
Using a subordinate clause to provide cause/effect information	By describing a noun's physical condition we can show cause/effect relationships. For instance: *As I walked, my nose, the only part of my body not covered, began to sting from the cold.* See how the highlighted clause shows why her nose began to sting?		

My proficient fictional story of surviving hypothermia (I've never actually been that cold.)

I underlined the cause/effect language I used. Note that I use a mix of all three levels of language.

My car broke down near the top of the mountain. The car's thermometer showed that it was only 20° F outside and the falling temperature inside the car persuaded me to walk to a town just about 5 miles away, over the top of the mountain. I knew that walking would help me stay warmer as my muscles moved.

I got my heavy coat, boots, hat, and gloves from the back of the car so I started out warm. However, as I walked, my nose, the only part of my body not covered, began to sting from the cold. As I climbed up the road, I could feel the temperature drop; consequently I began to shiver. I had been walking for almost an hour when my nose became numb and I stopped shivering. I understood that these were dangerous signs, but I had to keep walking. Soon, I started to feel numb and tired.

About a mile from town, I was nearly unconscious when a car stopped and took me to the hospital. My body temperature of 80 ° F led doctors to diagnose hypothermia. In order to warm me up, the medical team wrapped me in warmed blankets and gave me an intravenous drip (IV) of warmed fluids. Because my nose was white with frostbite, they laid a warm compress over it to help warm it up slowly. As a result, my frostbitten nose healed.

A less proficient fictional story of surviving hypothermia

My car broke down and I had to walk even though it was really cold. As I walked, my nose got frostbite and I was shivering. I kept getting colder, but then a car picked me up and took me to the hospital. The doctors said I had hypothermia and they helped me get warm.

Plan your writing

Write a story in which you experience heat stroke. Remember to show how you started with heat cramps, heat exhaustion, and heat stroke (refer back to the information from Lesson 2 and my example about someone who is getting hypothermic). Explain why you are in danger (make up a situation), how you get help, and how your heat stroke is treated medically.

Topic	Draw it	Write it (with c/e language)
Where are you that you are getting overheated (remember, you can get heatstroke as easily in a park as in a desert):		
What symptoms of heat cramps do you have?		
What symptoms of heat exhaustion do you have?		
What symptoms of heat stroke do you have?		
How do you get help? What treatments do you receive?		

- Your first paragraph should tell where you're/what you're doing, and symptoms of heat cramps.
- Paragraph two should explain symptoms of heat exhaustion and heat stroke.
- Your final paragraph should explain how you get help and what medical treatments you receive.

Prompt:

Write a story in which you experience heat stroke. Remember to show how you started with heat cramps, heat exhaustion, and heat stroke (refer back to the information from Lesson 2 and my example about someone who is getting hypothermic). Explain why you are in danger (make up a situation), how you get help, and how your heat stroke is treated medically.

Looking Back

What information/skill/practice was most interesting to you?

Looking Ahead

Considering what you've learned about these survivors, what do you still want to learn? How could you learn more?

My Packet Journal

In this packet I learned _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Reference Sheet

LENGTH

Metric	Customary
1 kilometer = 1000 meters	1 mile = 1760 yards
1 meter = 100 centimeters	1 mile = 5280 feet
1 centimeter = 10 millimeters	1 yard = 3 feet
	1 foot = 12 inches

CAPACITY AND VOLUME

Metric	Customary
1 liter = 1000 milliliters	1 gallon = 4 quarts
	1 gallon = 128 ounces
	1 quart = 2 pints
	1 pint = 2 cups
	1 cup = 8 ounces

MASS AND WEIGHT

Metric	Customary
1 kilogram = 1000 grams	1 ton = 2000 pounds
1 gram = 1000 milligrams	1 pound = 16 ounces

TIME

1 year = 365 days
1 year = 12 months
1 year = 52 weeks
1 week = 7 days
1 day = 24 hours
1 hour = 60 minutes
1 minute = 60 seconds