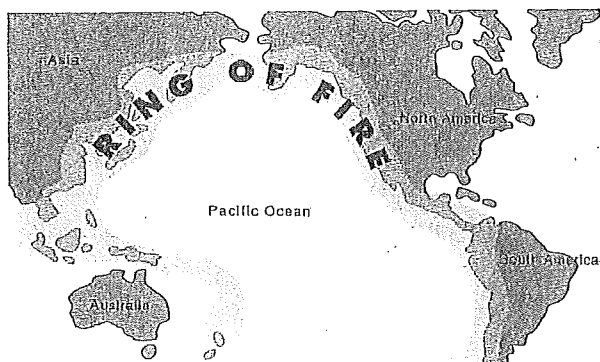


The Pacific Ring of Fire

Term 3

You are on a sailing trip. You sail from New Zealand to Indonesia to Japan. From Japan, you sail to Alaska. From Alaska, you sail down the west coasts of North and South America. You just sailed an area called the Ring of Fire.

The Ring of Fire is a long, horseshoe-shaped area along the rim of the Pacific Ocean. It is 40,000 kilometers long. The Ring of Fire is where most of the world's volcanoes and earthquakes are located.



Plates on the Earth

The Earth's surface is broken into huge slabs of rock called plates. Underneath the plates, the earth is very hot. It is so hot that rock melts into a liquid called magma. The plates are like giant rafts that float on top of this liquid magma. The magma is always moving, dragging the plates around with it.

These plates are in constant slow motion. Sometimes, the plates collide or push past each other. This causes movement. Movements of plates cause faults, or large breaks, in the Earth's crust. Earthquakes happen along those faults.

Volcanoes can also happen when magma breaks through cracks in the plates.

Figure 1:
One plate slides over or under the other plate.

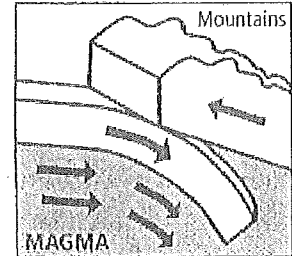


Figure 2:
Plates move past each other. The edges of the plates grind together.

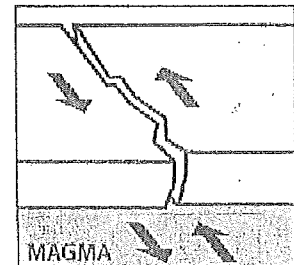
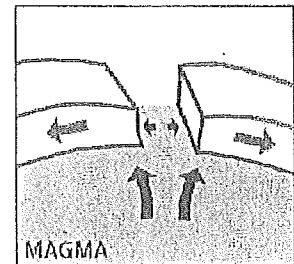


Figure 3:
The plates move apart, making a gap where the magma seeps out.



RING OF FIRE NATURAL DISASTERS

* Earthquakes: Terrific Trembling

Every year, more than a million earthquakes shake the Earth. Eighty percent of the earthquakes happen along the Ring of Fire belt.

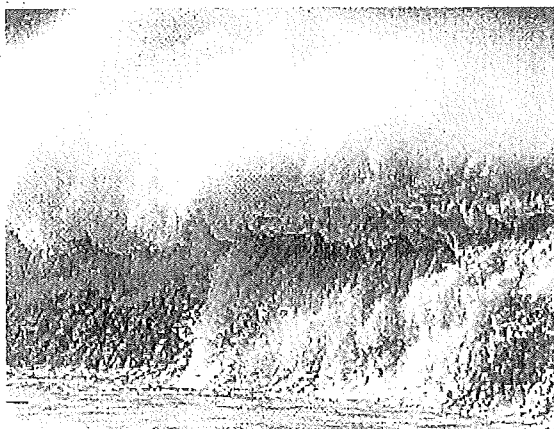
Some earthquakes are small and harmless. The ground shakes a little, causing some hanging objects to sway. But sometimes the shaking is so strong that buildings crumble, bridges collapse, and large cracks open in the ground. The Alaska earthquake of March 27, 1964, was felt over an area of almost 500,000 square miles. The ground motion near the epicenter was

so violent that the tops of some trees were snapped off. One hundred and fourteen people (some as far away as California) died as a result of this earthquake.

Experts expect a major earthquake to happen on the west coast of North America. New buildings are constructed to handle the movement of an earthquake, but many older buildings, including schools, will probably collapse unless they are rebuilt. *

Tsunamis: Walls of Water

Tsunamis occur when an earthquake causes the ocean floor to rise or sink, displacing water and creating a series of large waves.



Tsunamis are the largest waves in the world.

These giant waves can travel thousands of miles. They can travel up to 500 miles per hour! As they get closer to shore they slow down and get much taller. Tsunamis can be as high as a football field is long.

The tsunami of December 26, 2004 killed an estimated 221,100 people in

South Asia. Over 166,000 were killed or swept out to sea in Indonesia alone. An earthquake off the west coast of Canada could produce a similar tsunami.

Volcanoes: Enormous Explosions

There are about 1,500 active volcanoes on Earth. About half of those occur along the Ring of Fire. Volcanoes usually erupt along the edges of plates, where there are cracks and thin spots.

A volcano can cause an explosion of extremely hot, poisonous gasses. The explosion can be so powerful that it knocks over entire forests, and so hot that it starts destructive fires. Sometimes huge chunks of rock burst from the volcano. Mountainsides can be ripped away. Ash and melted rock shoot into the sky. The volcano erupts with unbelievable power!

Deaths	Volcano	When	Major Cause of Death
92,000	Tambora, Indonesia	1815	Starvation
36,417	Krakatau, Indonesia	1883	Tsunami
29,025	Mt. Pelee, Martinique	1902	Ash flows
25,000	Ruiz, Colombia	1985	Mudflows

Scientists are trying to learn as much as they can about these violent events along the Ring of Fire. If they can predict these natural disasters, thousands of lives could be saved.

The Pacific Ring of Fire: STUDENT RESPONSE SHEET

Name _____

Date _____

1. **BEFORE YOU READ.** Using the title, *The Pacific Ring of Fire*, and your background knowledge, write several interesting questions that might be answered in this text.

NOW READ THE STORY.

2. Reread the sections on *Natural Disasters*. In the following organizer, identify the main idea and three or more important supporting details for each section. Try to use your own words.

Main idea (sentence)	Important details (point form)
Main idea (sentence)	Important details (point form)
Main idea (sentence)	Important details (point form)

3. Explain the different ways that magma moves the plates around.

4. Which natural disaster (earthquake, volcano or tsunami) do you think would cause the most damage to an area along the Ring of Fire? Use evidence from the text and your own knowledge to support your choice.

5. What do the following words mean in this text? They are underlined for you.

collide _____

estimated _____

violent _____

6. What is one reading comprehension strategy you used today?

How did it help you understand this text? _____

Comprehension Strategies

visualized asked questions
used what I already knew

predicted made a connection
paused to put it in my own words

inferred reread
used text features

Earthquakes: Terrific Trembling

Every year, more than a million earthquakes shake the Earth. Eighty percent of the earthquakes happen along the Ring of Fire belt.

Some earthquakes are small and harmless. The ground shakes a little, causing some hanging objects to sway. But sometimes the shaking is so strong that buildings crumble, bridges collapse, and large cracks open in the ground. The Alaska earthquake of March 27, 1964, was felt over an area of almost 500,00 square miles. The ground motion near the epicenter was so violent that the tops of some trees were snapped off. One hundred and fourteen people (some as far away as California) died as a result of this earthquake.

Experts expect a major earthquake to happen on the west coast of North America. New buildings are constructed to handle the movement of an earthquake, but many older buildings, including schools, will probably collapse unless they are rebuilt. 152 words

Whole Class Reading Assessment – Reading for Information							Date: _____	Student Name: _____
READING LEVEL AND INSTRUCTIONAL DECISIONS about text levels								
# Miscues	0 - 2	3 - 4	5 - 6	7 - 8	9 - 10	11 or more		
	Independent Level	Instructional Level				Frustration Level		
Oral Reading Fluency								
	Not yet Within Expectations	Meets Expectations (minimal to moderate)	Fully Meets Expectations		Exceeds Expectations			
Pacing	<ul style="list-style-type: none"> slow & laborious struggles with words 	<ul style="list-style-type: none"> rate varies some hesitations 	<ul style="list-style-type: none"> generally conversational some smooth, some choppy 		<ul style="list-style-type: none"> conversational & consistent smooth & fluent throughout 			
Expression (prosody)	<ul style="list-style-type: none"> monotone 	<ul style="list-style-type: none"> monotone combined with some expression 	<ul style="list-style-type: none"> appropriate expression used of much of the time 		<ul style="list-style-type: none"> appropriate expression maintained throughout 			
Phrasing	<ul style="list-style-type: none"> word-by-word long pauses between words 	<ul style="list-style-type: none"> some word-by-word, some phrases 	<ul style="list-style-type: none"> mostly phrases, some smooth & some choppy 		<ul style="list-style-type: none"> phrases consistently throughout, generally smooth & fluent 			
Accuracy in reading	<ul style="list-style-type: none"> makes frequent errors 	<ul style="list-style-type: none"> makes occasional errors that affect meaning of text (e.g., reads "can" for "car"). 	<ul style="list-style-type: none"> makes occasional errors that do not affect meaning of text (e.g., mispronouncing names). 		<ul style="list-style-type: none"> self-corrects, or does not make errors with familiar text. 			

WCRA Assessment –Nonfiction Text - Term 1					Grade 5	Student Name: _____
Accuracy: Independent Instructional Frustration					Strategies Used to Decode	
Notes:					Sounds out letters	
					Uses word parts, groups or letters	
Fluency					Uses some visuals, then guesses	
					Reads to end of sentence & rereads	
					Skips and reads on	
					Partial attempt, then goes on	
Pacing					Errors are meaningful	
Expression					Errors are real words	
Phrasing					Stops or notices when meaning is lost	
Accuracy					Self corrects at appropriate rate 1:3	
					Appeals for help before attempting	

WCRA Assessment –Nonfiction Text - Term 2					Grade 5	Student Name: _____
Accuracy: Independent Instructional Frustration					Strategies Used to Decode	
Notes:					Sounds out letters	
					Uses word parts, groups or letters	
Fluency					Uses some visuals, then guesses	
					Reads to end of sentence & rereads	
					Skips and reads on	
					Partial attempt, then goes on	
Pacing					Errors are meaningful	
Expression					Errors are real words	
Phrasing					Stops or notices when meaning is lost	
Accuracy					Self corrects at appropriate rate 1:3	
					Appeals for help before attempting	

WCRA Assessment –Nonfiction Text - Term 3					Grade 5	Student Name: _____
Accuracy: Independent Instructional Frustration					Strategies Used to Decode	
Notes:					Sounds out letters	
					Uses word parts, groups or letters	
Fluency					Uses some visuals, then guesses	
					Reads to end of sentence & rereads	
					Skips and reads on	
					Partial attempt, then goes on	
Pacing					Errors are meaningful	
Expression					Errors are real words	
Phrasing					Stops or notices when meaning is lost	
Accuracy					Self corrects at appropriate rate 1:3	
					Appeals for help before attempting	

READING	QUEST. #	Category	Not Yet Meets Expectations	Meets Expectations Minimally - Moderately		Fully Meets Expectations	Exceeds Expectations
				-	+		
BEFORE	1	Predictions, questions, background knowledge [PLO B5] <input type="checkbox"/> No answer	<ul style="list-style-type: none"> Predictions or questions may be illogical or irrelevant No evidence of connections to prior knowledge 	<ul style="list-style-type: none"> Predictions or questions generally logical but simplistic Makes simple connections to prior knowledge 	<ul style="list-style-type: none"> Predictions or questions logical, thoughtful, relevant Makes specific, logical connections to prior knowledge 	<ul style="list-style-type: none"> Predictions or questions relevant; may be insightful or unique Makes many connections to prior knowledge; insightful 	
	2	Main Ideas & details; Note-taking [PLO B1 & B2] <input type="checkbox"/> No answer	<ul style="list-style-type: none"> Has difficulty identifying important idea(s) Details inaccurate or missing 	<ul style="list-style-type: none"> Identifies some important idea(s) Details vague or partially missing 	<ul style="list-style-type: none"> Accurately identifies important ideas(s) Details relevant, accurate 	<ul style="list-style-type: none"> Restates important idea(s) in own words; synthesizes Details specific, accurate, complete 	
	3	Accuracy & Use of Text Features (captions, graphics, bolded terms etc.) [PLO B7 & B11] <input type="checkbox"/> No answer	<ul style="list-style-type: none"> Incomplete, inaccurate or irrelevant information Little or no use of text features 	<ul style="list-style-type: none"> Partially accurate information; may be vague or incomplete Includes some information from key features 	<ul style="list-style-type: none"> Response clear, detailed, complete Includes accurate, relevant information from key features, graphics 	<ul style="list-style-type: none"> Response clear, accurate & thorough; parts precise Includes important, specific details from text features 	
	4	Inferences, conclusions, connections (match own ideas with info in text) [PLO B6 & B8] <input type="checkbox"/> No answer	<ul style="list-style-type: none"> Unable to make logical inferences, conclusions, or connections 	<ul style="list-style-type: none"> Makes obvious inferences, conclusions or connections Text support may be vague, missing or confusing 	<ul style="list-style-type: none"> Makes logical inferences, conclusions or connections Some specific text support evident 	<ul style="list-style-type: none"> Makes one or more logical inferences, conclusions or connections Clear specific or insightful support 	
	5	Word skills [PLO B6] <input type="checkbox"/> No answer	<ul style="list-style-type: none"> Unable to figure out new word(s) Relies on one strategy (e.g. sound out) 	<ul style="list-style-type: none"> Partially able to figure out words Strategies simple or repetitive 	<ul style="list-style-type: none"> Correct definition of word Several effective strategies 	<ul style="list-style-type: none"> Clear & correct definition Variety of strategies explained 	
AFTER	6	Metacognition – knowledge of strategies [PLO B6& B11] <input type="checkbox"/> No answer	<ul style="list-style-type: none"> Unable to state strategies used or describe application May use word level strategy instead 	<ul style="list-style-type: none"> Comprehension strategy from list application vague or repetitive 	<ul style="list-style-type: none"> Comprehension strategy effective; application may be vague in spots 	<ul style="list-style-type: none"> Comprehension strategy & application show knowledge & expertise 	

Earthquakes: Terrific Trembling

Every year, more than a million earthquakes shake the Earth. Eighty percent of the earthquakes happen along the Ring of Fire belt.

Some earthquakes are small and harmless. The ground shakes a little, causing some hanging objects to sway. But sometimes the shaking is so strong that buildings crumble, bridges collapse, and large cracks open in the ground. The Alaska earthquake of March 27, 1964, was felt over an area of almost 500,000 square miles. The ground motion near the epicenter was so violent that the tops of some trees were snapped off. One hundred and fourteen people (some as far away as California) died as a result of this earthquake.

Experts expect a major earthquake to happen on the west coast of North America. New buildings are constructed to handle the movement of an earthquake, but many older buildings, including schools, will probably collapse unless they are rebuilt.

The Pacific Ring of Fire: ANSWER KEY

GR. 5 TERM 3

1. BEFORE YOU READ. Using the title, *The Pacific Ring of Fire*, and your background knowledge, write several interesting questions that might be answered in this text. • answers will vary

Minimal: vague, no mention of title, repetitive	Fully: show thought, apply general knowledge, includes title
<ul style="list-style-type: none"> ◦ <i>Why do volcanoes occur?</i> ◦ <i>What causes tsunamis?</i> ◦ <i>Where do they occur?</i> ◦ <i>How many volcanoes are there?</i> 	<ul style="list-style-type: none"> ◦ <i>What does "Ring of Fire" mean?</i> ◦ <i>Is this about the Pacific Ocean?</i> ◦ <i>Where do most earthquakes happen?</i> ◦ <i>How many earthquakes happen in Canada each year?</i> ◦ <i>Can we predict tsunamis and volcanoes?</i>

NOW READ THE STORY.

2. Reread the sections on *Natural Disasters*. In the following organizer, identify the main idea and three or more important supporting details for each section. Try to use your own words. (Wording will vary. Teacher judgment is required.)

Main idea	Important details
Most of the million earthquakes that happen each year occur along the Ring of Fire.	<ul style="list-style-type: none"> - some quakes are small and only cause things to shake - strong quakes damage buildings, bridges and open cracks in ground - Alaska quake in 1964 killed 114 people - experts think a major earthquake will happen on west coast of North America
Tsunamis are caused by earthquakes in the ocean floor that cause huge waves.	<ul style="list-style-type: none"> - can travel thousands of miles - speeds of up to 500 mph - waves slow down and get higher as they near shore - can be as high as a football field - around 221,100 people died in the 2004 tsunami that hit South Asia.
Volcanoes erupt where cracks occur in the earth's plates, often along the Ring of Fire.	<ul style="list-style-type: none"> - 1500 active volcanoes - can cause a gas explosion, often poisonous - hot and powerful enough to destroy forests - can send huge rocks into the air - unbelievable power sends ash and melted rock into the air

3. Explain the different ways that magma moves the plates around.

Fully meeting has info from diagrams and text. In own words = exceeding.

- *they can slide over or under the other plate; colliding (diagram)*
- *the plates can move past each other; edges grind together*
- *the plates move apart, creating a gap where magma seeps out*
- *Plates float on liquid magma. Magma moves, pulling the plates with it. (text)*

4. Which natural disaster (earthquake, volcano or tsunami) do you think would cause the most damage to an area along the Ring of Fire? Use evidence from the text and your own knowledge to support your choice.

- **Minimal: logical, but lacks text support.** *I think it would be earthquakes because they knock buildings down. See marking guide.*

Fully: includes text and other support based on inference or connections.

- *I think tsunamis would cause the most damage. Over 220,000 people died in the tsunami in South Asia. That's a lot more than the 92,000 who died in 1815 in the volcano at Tambora, Indonesia. Scientists can't predict tsunamis like they can earthquakes and volcanoes, so there is more danger. (includes specific text support)*

5. What do you think the underlined words mean in this text?

Collide: *to strike or bump together with violent or intense force* (**Fully** needs force)

Estimated: based on a best guess, using information they have. Not an actual count.

Violent: extremely destructive, damaging, can kill people or destroy property

6. What is one reading comprehension strategy you used today? (see list below)

Look for any strategies that you have taught.

How did it help you understand this text? *I really used the diagrams for the first page. It was hard to understand and I looked at the map to help me. In the section on Plates, I had to go back and reread it. It still didn't make sense so I looked at the diagrams and that helped me understand what they had been talking about. I guess I need the help!*

Comprehension Strategies

visualized asked questions
used what I already knew

predicted made a connection
paused to put it in my own words

reread
used text features

CLASS AT A GLANCE 2012-13

WCRA Term: _____

Grade: _____

Teacher: _____

READING	Quest. #	TOPICS & alignment with PLOs <i>[reading nonfiction]</i>	Not Yet Within Expectations 1	Meets Expectations		Fully Meets Expectations 3	Exceeds Expectations 4
				2	Minimal - Moderate 2.5		
DURING	BEFORE 1	Predictions, Questions, Access Prior Knowledge [PLO B5]					
	2	Main/important Ideas & supporting details; note-taking [PLO B1 & B2]					
	3	Extracting information from text & text features [PLO B7 & B11]					
	4	Inferences, connections, conclusions, interpretations (matching own ideas to text) [PLO B6 & B8]					
	5	Word Skills [PLO B6]					
AFTER	6	Metacognition: knowledge of reading strategies [PLO B6 & B9]					