

## Home Learning Resources Grade 5 Chinese DLI



#### Home Learning Day with Digital Options Chinese DLI Grades 5

Listed below you will find a menu of academic and non-academic learning opportunities for students to review and practice previously learned content that will support their target language. While the students are not at school, they may access online resources and/or printed learning packets.

Younger students may need guidance and support in accessing online resources. All students will benefit from encouragement to pursue these learning opportunities outside of the classroom.

Subject	Menu of Learning Opportunities
Reading (Mandarin Matrix)	<ul> <li>Re-read a previously read story 10 - 15 minutes (stories can be accessed at the <u>Mandarin Matrix online classroom</u>. Login information available in Links and Login Guidelines below.</li> <li>Call a target language peer and retell the story to each other in target language.</li> <li>Do a compare and contrast activity; using a <u>Venn Diagram</u>, compare two characters in the story, call a friend and share how they are alike and different.</li> <li>Connect with a target language peer through Facetime to practice reading a paragraph with fluency using the <u>Reading Fluency Log</u>.</li> <li>Call a friend and, using the following sentence frames, share your favorite part of the story and why, your favorite character and why, and create a different ending for the story.</li> <li>Call a friend and use the focused words in the uint to create a new story.</li> </ul>
Writing	<ul> <li>Practice writing on MMX workbook for the unit the teacher assigned.</li> <li>Practice writing previous learned sentences including dates(yesterday/today/tomorrow), weather and them-based (sports/hobbies/ animals/ food etc.)</li> <li>Using uint focused words to write 5 sentences.</li> </ul>

	<ul> <li>Write your favorite part of the day in Chinese using this sentence frame: "今天我最喜欢的是,因为"</li> <li>Write in Chinese all the <u>Colors and shapes</u> / numbers(一二三 四五六七八九十) you can find in the room.</li> </ul>
Science	<ul> <li>Read a chapter from the <u>Open Educational Resource</u> textbook. Create a summary of what you have read.</li> <li><u>Digital Science Online</u> videos/activities (login: online password: school)</li> <li>Read science books available at: <ul> <li><u>4th Grade</u></li> <li><u>5th Grade</u></li> </ul> </li> <li>Create a summary, call a target language peer and explain what you have read.</li> <li>Talk, draw, write about natural things in our world.</li> <li>Make a video explaining something you learned in class and share it with a peer.</li> <li>Write a paragraph describing rocks, landforms, water cycle, electricity. Call a peer and read it aloud.</li> <li>Build a structure with items around you.</li> <li>Use <u>sentence frames</u> to support your writing.</li> </ul>

#### Links and Log In Guidelines

Mandarin Matrix online classroom: https://www.mandarinmatrix.com/

Digital link for Chinese

Interactive Notebook

https://sites.google.com/ccsdut.org/dliscienceresources/home

DLI Science Resources https://sites.google.com/ccsdut.org/dliscienceresources/home

Wellness Resources

Student Resources Home http://parentconnections.canyonsdistrict.org/home-learning.html

#### **Current Classroom Practices**

Your student can log into Clever to access most digital platforms that they regularly use. Current teacher communication practices will continue during the two week dismissal: (e.g. email, google classroom, Canvas, Remind, DoJo, etc. )

Logging into Clever at home Logging into Pearson at home

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## Home Learning Student Resources Grade 5 Chinese DLI

**Table of Content:** 

**1. Sentence Frames and Graphic Organizers** 

2. MMX: Text, worksheets and Activities

**3. Science: Text and Worksheets** 

# 1. Sentence Frames and Graphic Organizers

- 1. 在这个故事里有:什么人?他们在做什么?为什么他们做这个事情?然后呢?最后怎么了?
- 2. 首先。。。然后。。。还有。。。最后



U7-01

今天要做的事情有...比如说...

例子:今天要做的事情有很多,比如说:学习汉语,做数学,还有考科学。

这里一共有多少...

例子:这里一共有几个同学?这里一共有二十个同学。

有的...有的...还有的...

例子:这里有很多花,有的是红色的,有的是白色的,还有的是紫色的。

U7-02

当...就开始...

例子:当铃声响起的时候,我们就开始下课。

下一次...

例子:下一次去饭店的时候,我想吃面条,不想吃米饭了。

U7-03

如果...怎么办

例子:如果小宝宝哭了,我们要怎么办?

马上...

例子:听到爸爸回家的声音,小狗马上跑到门口。

U8-01

一边...一边... 例子:小猫一边叫,一边喝牛奶。

U8-02

只要...到时候...

例子:只要我认真练习汉语,到时候汉语小考我就可以拿到一百分。

### 2. MMX: Text, Worksheets and Activities

#### MMX Text Unit 7





## 消防演习





第一章 xiāo fáng yǎn 消防演习

第二章

新同学

第三章 yān 房子冒烟了!

3

25

第一章 fáng yǎn xiāo 消防演习

重点字词

#### 事情 shìqíng



#### 室 shì













瘦牛

胖牛





钟

重点字词







学习

#### 汉语 hànyǔ









一月共有三十一天

一共五个人





同学



同一样的



"午饭时间快到了,今天有小考',我们快 点开始吧!"教汉语的黄老师说。大家 急忙<sup>2</sup>回到自己的椅子坐下。

<sup>1</sup>考 (kǎo)

<sup>2</sup> 忙 (máng)

Contraction of the second seco



今天来了一个新同学,小班知道他是谁因为他住在小班家旁边。开始上汉语 课时,黄老师问:"谁记得上节课我们 学习了什么?"



小当说:"我记得,上节课我们学习了不同的动物!"可是那是上两节课学习的东西。"上节课我们学习了怎么描述'人和东西的样子。"小班答对了。







这节汉语课,同学们要说一说自己最喜 欢的明星。小班很喜欢踢足球,他描 述了一个足球明星。"他不胖不瘦,也 不是很高。他踢球踢得很好,可是去年 他的脚受伤了,所以他现在还在家里 休息。"

<sup>2</sup> 述 (shù)

<sup>1</sup> 描 (miáo) <sup>3</sup> 受 (shòu) <sup>4</sup> 伤 (shāng)



说完后,小班高兴地给大家看他的足球,上面有那个足球明星的名字。就在小班说话的时候,同学们听到消防"演" 习的铃声。

<sup>1</sup> 消 (xiāo) <sup>2</sup> 演 (yǎn)

<sup>2</sup>防 (fáng) <sup>3</sup>铃 (líng)





黄老师说要进行消防"演"习,他请同学 们马上放下手上的事情,一个跟着一个 站在门旁。今天来的那个新同学听到老 师的话后没有马上站起来。

- <sup>1</sup> 消 (xiāo) <sup>3</sup> 演 (yǎn)
- <sup>2</sup> 防 (fáng)





有的同学把手放到耳朵上,有的同学说他们的耳朵好疼因为铃声太大了。小花也不喜欢那铃声,可是她觉得很开心。因为她知道消防。演"习后,他们就没有时间做汉语小考了。大家都可以回家多学习一会儿,明天多拿点分数。

<sup>1</sup> 铃 (líng) <sup>2</sup> 消 (xiāo) <sup>3</sup>防 (fáng) <sup>4</sup>演 (yǎn) 5考 (kǎo)





同学们从教室里走出来的时候有点 急。小班不小心踢到了自己的足球,还 好新同学技了他一下,他才没有摔<sup>2</sup>倒。 有的同学撞<sup>3</sup>到了桌子。还有同学没有把 水瓶<sup>4</sup>关好。四分钟后所有同学都从教 室里出来了。黄老师正在点人数,"一、 二、三……一共二十四个。少了一个同 学!怎么回事了!"

<sup>1</sup>扶 (fú) <sup>3</sup>撞 (zhuàng) <sup>2</sup>摔 (shuāi) <sup>4</sup>瓶 (píng)



第二章 新同学



#### 铅笔 qiānbǐ






"那个新来的同学不见了!"大家看起来 很着急。黄老师说:"大家冷静,不要 着急!大家要好好想想新同学的样子, 还有他今天穿了什么。"







小班记得他高高瘦瘦的,穿了黄色的上 衣,衣服上有一只花猫。小当记得他穿 了绿色的裤子和黑色的鞋子。还有一个 同学说他看见新同学有一些很漂亮的铅 笔,是一些他自己都很想要的铅笔。同 学们和校长在外面等着,黄老师去找新 同学了。



老师在红路没有看到新同学,在绿路也没有看到他。小班想到新同学的衣服是黄色的,于是他跟黄老师说新同学可能在黄路。最后,黄老师真的在黄路的洗手间找到了新同学。新同学没有跟同学们在一起是因为他想上洗手间,所以 消"防"员"带了他去黄路。

<sup>1</sup>路 (lù) <sup>3</sup>防 (fáng) <sup>2</sup>消 (xiāo) <sup>4</sup>员 (yuán)





"同学们好!在今天的演习中,你们都做得很好!你们一共花了四分钟就从教室 里出来了!"校长说现在他们可以回到 他们的教室了。小花很开心,因为他们 真的没有时间考汉语了。他们可以回家 多学习一会儿,明天多拿点分数。

<sup>1</sup> 演 (yǎn) <sup>2</sup> 考 (kǎo)





小当想:"教室怎么变成这样了?我们 的汉语书和铅笔都在地上!"小当回 想:可能是刚才走得太急,同学们不小 心踢到了桌子和椅子。当所有人一回到 教室,小班就开始找他的足球。他发现 他的足球在小当的桌子下面。小当的汉 语书不见了,小班发现小当的汉语书在 自己的椅子下面。

<sup>1</sup>发 (fā)







黄老师请大家把地上的东西拿起来,然 后说:"今天大家都做得很好,可是怎 么样可以做得更好呢?"小班说:"下一 次我要冷静一点。如果这次我慢一点, 我就不会踢到足球了。"小花说:"下次 演习的时候我要把水瓶放好,那就不 会弄"得到处都是水了。"

<sup>1</sup>静 (jìng) <sup>2</sup>演 (yǎn) <sup>3</sup> 瓶 (píng) <sup>4</sup> 弄 (nòng) <sup>5</sup> 处 (chù)



第三章 yān 房子冒烟了!



放学后,小班请小当到家里和他的家人 吃饭。回家时,他们在说如果在学校以 外出现火灾的话怎么办<sup>2</sup>。就在这时, 小班大叫起来:"你看,那里有黑烟<sup>3</sup>! 是不是着火了?那不就是新同学的家 吗?他们家里有没有人?要是有人在里 面就不好了!快点,我们去看看!"

<sup>1</sup> 灾 (zāi) <sup>3</sup> 烟 (yān) <sup>2</sup> 办 (bàn)





小当叫小班停下来,说:"冷静'一点!先 别过去。我们应该找帮手。"同时,小当 拿出了手机打电话。"这里是九一一吗? 我们看到有个房子在冒烟'。他们家里有 一只小猫,可能还有人。请快来帮帮他 们!"电话那头的人说消'防'员'五分钟后 就会到。

<sup>1</sup>静 (jìng) <sup>3</sup>消 (xiāo) <sup>5</sup>员 (yuán)



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<sup>2</sup>烟 (yān) <sup>4</sup>防 (fáng)



看到消防员。出来,小班很着急地问: "有人在家里吗?小猫没事吧?我的同学 真的很爱他的小猫!"消防员说:"房子 里面没有人,只有一只小猫。因为你们 发现得早,小猫和房子什么事也没有! 你们放心吧!"小当和小班觉得很开心, 因为他们帮助了别人!

<sup>1</sup> 消 (xiāo) <sup>3</sup> 员 (yuán)

<sup>2</sup>防 (fáng) <sup>4</sup>发 (fā)





吃晚饭时,妈妈说:"你们今天是不是 做了一件很好的事?"小班说:"是!今 天学校进行了消防演习。新来瘦瘦的同 学不见了!我跟老师说他的衣服是黄色 的,他可能在黄路,最后真的在那儿找 到他了。"小当说:"还有!我们回来的 时候看见新同学的家着火了!你能相 信。吗!我们马上找消防罚把他们家的 小猫救出来!"

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āo) <sup>5</sup>相 (xiāng) 防 (fáng)

<sup>4</sup>路 (lù) <sup>7</sup>员 (yuán)

<sup>8</sup> 救 (jiù)



<sup>3</sup> 演 (yǎn)

6信 (xìn)



小班听到门铃声,就起来去开门。他看见新同学和他的爸爸妈妈。"谢谢你们!要不是你们,我们的房子和小猫还不知道会变成什么样!"新同学说:"谢谢你们。黄老师说你们很喜欢我的铅笔,这是送你们的!"

<sup>1</sup> 铃 (líng)





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## MMX Workbook Unit 7



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中级一等 第七单元, 练习二

	学习、教室、汉语 小当再黄老师的。。	学习、教室、汉语 小当最喜欢跟同学们一起在	
<ul> <li>填空</li> </ul>			着 图写句子

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中级一等 第七单元, 练习三

写一马
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并一来有二十四个人。	$\frac{1}{x}$	事情		<b>漫</b>	

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中级一等 第七单元, 练习四 有二十五个学生。 6 670 他每天吃的不多,他看起来很。 一头、事情 渡、 一头、 事情 我的姐姐不胖也不 你今天有很多 遁、 三 第一項 教室里 3 教室里的学生都很忙, 右边的同学在练习舞步, 左边的同学在唱歌。 「 读 ~ 读、 画 ~ 画 画一画、写一写 姓名: 1

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中级一等 第七单元, 练习五



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中级一等 第七单元, 练习八

风一风	
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2? 你可以用图里的字描述一个人吗?	寻子、眼睛、耳朵、头发、同学、高				
教汉语的黄老师要学生们做什么?你可以用图J用这些字写句子:	瘦、胖、	Value			

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中級一等 第七单元, 练习九

5 3一足

得新同学的样子吗? 他怎么描述新同学的 字写句子: 绿色、黄色、衣服、裤子、鞋 绿色、黄色、衣服、裤子、鞋
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中级一等 第七单元, 练习十

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中级一等 第七单元, 练习十一

- 看图写故事



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→ 读一读、画一画、写一写	
小班说:"下次我要冷静一点。如界	民这次我慢一点,我就不会踢到足球了。"
小花说:"下次演习的时候,我要把	2水瓶放好,那就不会弄的到处都是水了。
	为什么小班说他下次要冷静一点?
	为什么小花说她要把水瓶放好?
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中级一等 第七单元, 练习十三

- 看图写故事

谁的家着火了? 小班跟小当做了什么事情? 那时新同学的家里有人在吗? 你觉得他们为什么要帮 助这个新同学?



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日 马一兄

第七单元, 练习十四

中级一等 INTERMEDIATE 1

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为什么新同学跟他的家人来小班的家

1 读一读

"谢谢你们!要不是你们,我们的房子 小班听到门铃声,就起来去开门。他看 见新同学和他的爸爸妈妈。

欢我的铅笔,这是送你们的。



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中级一等 第七单元, 练习十五

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中级一等 第七单元, 练习十六

- 看图写故事



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中级一等 第七单元, 练习十七

- 看图写故事

你见过消防员吗?你在哪里见过他们?他们除了救火以外,还会做些什么事情?你想为什么我们 ς. 需要消防员



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第七单元, 练习十八 中级一等 INTERMEDIATE 1

臣一臣	

你从这个	故事里	学到了	了什么	6										
中国有句	话说:	(俯"	人为快	乐之	" *	就是该	羌, 帮	助別ノ	人会让	自己沙	快乐。	是这样	之后	
除了消防	员以外	, 你头	和道还	有那些	些人争	天都帮	帮助剂	六?						

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姓名:		中级——	等 第七单元, 练习十九
● 读 − 读、 画 − 画			
昨天小班的右脚受伤	57,他走得很慢。下课时,	小班慢慢地走出教室门口	,可是有个渡渡的同学走
得很快,不小心撞到了小.	班。摔倒在地上的小班很	<b>L</b> 想哭。	
这时, 走在后面的美美和	小当马上来帮小班,他们	跟他说:"没关系!别急	!我们来帮你站起来,再
一起出去玩。"			
下课的十五分钟,美	-美和小当都跟小班一起3	阮接球,他们让小班站在-	一个地方接球,不让他跑
来跑去。听到上课铃后, 伯	他们三人一起慢慢地走回	1教室。在教室里练习写汉	语时,小当还帮小班去拿
船笔。			
教汉语的黄老师看3	到美美和小当帮助小班的	事情、就问他们为什么喜;	欢帮助同学。两人笑着说:
"帮助别人让我们感觉很	艮快乐!"黄老师说:"我	们一共有二十五个同学,考	年个人每天都可以帮助别
人,让别人开心。"			
1.	2.	3.	4.
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中级一等 第七单元, 练习二十

			 什么?	
			 做?为	
			会怎么	
			 上, 你	
		· ·	 倒在地	
		 为什么	 别人撞	
		哭吗?	 , 你把	
问题	地上?	也会想	的同学	
再回答	摔倒在	班, 你	 个渡渡	
读故事,	为什么	你是小	 你是那	
● 先:	小班	市	市	

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## 3. Science: Text and Worksheets



## 互动笔记本

## 评分标准 和 分数表

	● 笔记本的内容填写完整					
3	● 完全了解课程内容概念					
	● 对于做完的课程有良好的反思					
	● 笔记本的内容几乎填写完整					
2	● 对于课程内容概念了解有限					
	● 对于做完的课程有些许的反思					
	● 笔记内容做得很差,组织也很差					
1	● 笔记本的内容没有填写完整					
	● 对于课程内容观念只有些微了解					

笔记本 页数	标题	分数	老师盖章 #	老师签名
4	现象:大峡谷			
5-8	风化:小组工作站			
9–10	不同种类的风化			
11-12	冰河的影响			
13-14	流水桌的侵蚀实验			
15-16	评估:大峡谷			
17-18	现象:地球板块活动			
19-20	地球板块			
21-22	地球表面的变化			
23-24	地表变化的过程			
25-26	预测火山爆发和地震			

27-28	现象的评估:地球板块活动		
29	自我检测		

互动笔记本重要生词

页数	字/词	定义/意思

#### xiànxiàng dà xiá gủ 现象:大峡谷

请你在看光嶼谷视频的时候 · 请完成下面的 T 影格。

写出你在视频中你注意到的事情	请写出你想要知道的事情
huðban yū oð nī zðishìpín zhay 请你和你的伙伴来预测你在视频中注意	shi fa shāng 意到的事情是怎么发生的?请你写下
来你的预测。	
yù cé xi égǔ xíngohéng bèi 我预测大峡谷的形成是被	

xíngchéng xiá gǔ xǔ yào \_\_\_\_\_。我觉得要形成大峡谷需要\_\_\_\_\_\_年。

yuán yín 我会这么想的原因是因为\_\_\_\_\_ fēnghuà de xiǎo zǔ gông zuò zhàn 风化的小组工作站

《入》活动:

dú wán guānfēnghuà wénzhāng 读完有关风化的文章,请你写下来什么是风化。

风化:

《出》活动:

shí yàn 在我们做的五种不同的风化实验中\_\_\_\_\_

chéng dù 风化的 程 度最大,因为

chéng dù 风化的程度最大,因为\_\_\_\_\_

## fēnghuàxiǎo zǔ gōngzuòzhàn 风化小组工作站

## 第一站:

qing di zhán zhí shì huô xiế guān chá ; 请看第一站的指示来做,然后画出或写出你的观察。

	在瓶里, 只有	yáo dòngfāngtáng 「摇动方糖	就入碎石和方	táng yáo dòng 糖一起摇动
<sup>făngtáng</sup> 方糖	yù cè 预测	shì shi 事实	yù cẻ 预测	shì shi 事实

## 第二站:

qing di zhàn zhǐ shì huó xié guān chá 请看第二站的指示来做,然后画出或写出你的观察。。

dǎo 在倒入水以前	<sup>dǎo</sup> 倒入水以后	有石头在上面的时候

## 第三站:

qing di zhàn zhǐ shì huô xiế guān chá 请看第三站的指示来做,然后画出或写出你的观察。。

làng 有海浪前	làng 有海浪后	加石头在海边

## 第四站:

qing di zhàn zhǐ shì huò xié guàn chá 请看第四站的指示来做,然后画出或写出你的观察。。

chuī 风吹以前	风吹了以后	加入石头之后

1		
I		
I		
I		
I		
I		
I		
I		
I		
I		
1		

## How Earth's Surface Changes

The surface of Earth is constantly being worn away by many forces. This can happen very slowly or over a long period of time,



glacier

# Earth's Crust

The part of Earth we see is actually a very thin layer of rock called the crust. You can't see Earth's crust in the ocean because it is deep below the surface.

Earth's natural features are called **landforms.** A canyon is one shape that Earth's crust can take. Other landforms include hills, islands, and peninsulas. Streams plateaus, and glaciers are also landforms. Can you think of more?

High areas, low areas, flat areas, rugged areas they all vary in size, shape, and age. How were they formed? How do these landforms change?



Landforms can develop quickly, or they can take millions of years to appear. A volcano can change the shape of land very quickly when it erupts. But it takes a long period of time for a hill to form. Have you ever seen the Grand Canyon? Think about how long it took for a landform of that size to form!



# Weathering

The surface of Earth is always changing. Weathering causes rocks to break down slowly into smaller pieces. There are many causes of weathering. Some causes are the movement of water, changes in temperature, and the actions of living things. Rocks may weather physically or chemically.



stream

## 不同种类的风化

《入》活动: 在犹他州的小妖精谷州立公园有很多像 xiáoyáojing 是小妖精的样子的石头,这个公园的名字就是由此而来。 请回想一下风化的小组工作站活动,然后请你预测一下 这些石头有可能是如何形成的。



《出》活动:请你选一种我们学到的风化。请你写出这种风化的发生的原因、觉耀 和结 第,然后请你把它画出来。 不同种类的风化

冰河

《入》活动:

在犹他州, 四轮摩托车的活动造成很大的侵蚀作用, 这些侵蚀作用改变了 犹他州的地貌。为了减少对地装的侵蚀, 你觉得我们应该要限制四轮摩托车 的使用吗?请你说出你的想法还有为什么。

《出》活动:

ye yáng xiá gủ xíngchéng wénzhāng shì pín 在读完和看完有关冰河是怎么让大小三叶杨峡谷形成的文章和视频以后, 请回答下面的问题:

yé yáng xiá gǔ xíngchéng shì bèi 大和小三叶杨峡谷的形成是被\_\_\_\_\_\_

yè yáng xiá gǔ yíng xiǎng ér xíngchéng yì xiě tè 我们可以看到在大和小三叶杨峡谷里面,因为冰河的影响而形成的一些特 zhěng 征有

造成这些特征形成的原因是

(把冰河的闽读贴在这)

## 冰河

- 在托盘里,用手按压冰块在粘土的表面,前前后后移动数次。粘 土的表面发生了什么事?请你把你的观察在下面写出或画出来。
- 把一小堆沙放在粘土上。先把冰块放在沙的上面等一分钟的,然后拿起冰块来观察。在把冰块放到沙子上以后,冰块发生了什么 变化?请你把你的观察在下面写出或画出来。

 请把冰块放回有沙的粘土上,用手按压冰块在粘土的表面,前前 后后移动数次。把冰块拿开然后轻轻的把沙子从粘土上弄掉。在 你第二次摩擦以后,粘土的表面看起 来是怎么样的?请你把你的观察在下 面写出或画出来。



#### (把阅读的文章黏在这里)

### liú shuizhuð qīn shí shí yàn 流水桌的侵蚀实验

yǒuguān qīn shí wénzhāng qīn shí kí wénzhāng qīn shí 《入》活动:读完有关侵蚀的文章,在下面请你写出你觉得什么是侵蚀。

《出》活动:

wishuizhuo shi yèn 在流水桌实验里,请你描述水是如何改变地貌的。

> liú shuizhuð qīn shí shí yàn 流水桌的侵蚀实验

dù 高度 yingcùn (英寸)	jiāo dù dù 角度(度)	qin shi de miáoshù 有关侵蚀的描述
1.5		
3.0		
4.5		
6.0		
7.5		

xiànxiàng dà xiá gǔ 现象:大峡谷

看视频: 大峡谷

讨论:

在我们做完风化和侵蚀的实验,看完大峡谷的视频和读完有关风化和侵蚀的文章,请你 提出证据来描述大峡谷是如何形成的?

qingmitesthi shin me yuán yin zào ching xià mianliang ge tù bianhuà 请描述可能是什么原因造成下面两个图的变化。



Possible Sentence Frames	Word Bank	
<ul> <li>The Grand Canyon is wide because</li> <li>Weathering is</li> <li>Scientists estimate the Grand Canyon took 4 million years to form through the actions of</li> <li>When we poured water on the sand in our experiments, we observe This is similar to the Grand Canyon because</li> </ul>	Erosion Time Water Glacier Valleys	Deposition Abrasion Weathering Ice Canyons Mountains

## Writing Rubric:

	On-Track/ Mastery	Progressing	Insufficient Progress	Self Grade	Teacher Grade
Citing Evidence	Appropriately cite evidence from learning experiences in the interactive notebook.	In sufficient evidence from learning experiences is cited.	Does not cite evidence from learning experiences in the interactive notebook.		
Correct Content	Information is accurate Vocabulary is used appropriately	Some information is accurate. Not all vocabulary is used appropriately	Information is inaccurate Vocabulary is used inappropriately		
Effective communication	Makes sense to the reader Grade level appropriate conventions	Mostly makes sense to the reader Lack of appropriate conventions	Does not make sense to the reader No appropriate conventions		

## xiànxiàng dì qiú bǎnkuài huó dòng 现象:地球板块活动

dǎo wǒmen kàndào zhè liǎng gè lùdi yǐ límǐ sùdù mànmàn de fenkā 在冰岛,在图 1我们看到的这两个陆地以每年几厘米的速度慢慢的分开。 qǐng nǐ yòng tú hé gẻi nǐ de xùnxī láishuò kuài lù di mànmàn fēn kāi de yuán 请你用图一和图二给你的讯息来说明这两块陆地慢慢分开的可能的原 yīn 因。

图1 在冰岛的山里有一个很大的裂缝。

#### d) qi di ði nikuði biðn jið 图 2 一个地球板块的边界





#### dì qiú bản kuải huó dòng 地球板块活动

《入》活动:

在看完火山、地震活动和极英的地图以后,你有发现什么规则吗?

《出》活动:

親搖你的阅读请你在每个图下面写出这是哪种被哭的边界(汇象极哭边界、离散极哭边界, 等管极哭边累)





最英的边界和火山和地震的活动有什么哭素?

#### (把阅读的文章黏在这里)

### dì qiú bǎn kuài huó dòng 地球板块活动

- 用粘土做成一个球,然后把它虚單成一个圆圈。把两个纸 被的边放在一起,然后把粘土粉茬;粥\*纸被的愛接处。把你 的手放在纸板上,然后请你小心慢慢地向外把粘土分开。请 你在下面说明当你把纸板分开的时候发生了什么?
- 2. 用粘土做成一个球,然后把它压平成一个圆圈。把两纸板平 放但是中间有一个空隙,然后把粘土放在两个纸板的交接处。 把你的手放在纸板上,然后请你小心慢慢地向内把纸板推近 在一起。请你在下面说明当你把纸板往内推近的时候发生了 什么?
- 3. 用粘土做成一个球,然后把它压平成一个圆圈。把三小条 nien v 粘土放在圆形粘土的上面。用手慢慢的站线板板在窗的箭 vu de fangxianghué dong 头的方向滑动。请你在下面说明当你滑动纸板的时候 粘土有什么变化?.



	shuōming 说明	图画
#1		
#2		
#3		

#### biǎomiàn 地球表面的变化

《入》活动:

请你复习一下在第19页的极瑛活动的图片。请你推想一下在极块边界的地表可能会有哪些变化?

《出》活动:

请你讨论然后给两例子来说明被块移动是如何造成地球地貌的改变的。

请你讨论然后给一个例子来说明在犹他州断层线是如何改变地球地貌的。
di qiú biǎomiàn de biànhuà 地球表面的变化

请你讨论和说出每种不同的被欺选罪和它们是如何改变地辩地貌的,然后在下面做出一个概念函

地球板块是如何改变地 球地貌的

di biǎobiànhuà de guòchéng 地表变化的过程

《入》活动:

除了地震和火山以外,还有哪些其他的逻辑 能改变地 我也貌?(请你先夐习笔记举的第 9 和第 13 页)

《出》活动:

在游戏的过程"中",地装的变化过程"是怎么样改变山的样子?

di biǎobiànhuà de guòchéng 地表变化的过程



### <sup>火)</sup> 预测火山爆发和地震

《入》<sup>huódòng</sup>:

aling ni he panghian de ren taolin , weishenme neng vuce dizhen he huöshan shenme shihou hui fäsheng dui wörne keneng fi for 和旁边的人讨论,为什么能预测地震和火山什么时候会发生对我们可能很有用?

《出》活动:

Predicting Volcanoes & Earthquakes Read both the Predicting Volcanoes and the Predicting Earthquakes articles. In the Venn Diagram below, write what is similar and different about how scientists predict volcanoes & earthquakes.



## xiànxiàngpíng gū di qiú bǎnkuài huó dòng 现象评估:地球板块活动

在淤岛,在图1我们看到的这两个陆地以每年几厘米的速度慢慢的分开。 请你用图一和图二给你的讯息,写出来说明这两块陆地慢慢分开的可能 的原因。



图1 在冰岛的山里有一个很大的裂缝。

图 2 一个地球板块的边界



Possible Sentence Frames	Word Bank
<ul> <li>Iceland is located along a</li></ul>	Tectonic Plates Tectonic Plate Boundary Transform Boundary Divergent Boundary Convergent Boundary Volcano Earthquake Hot Spots Faults Uplift

## Writing Rubric:

	On-Track/ Mastery	Progressing	Insufficient Progress	Self Grade	Teacher Grade
Citing Evidence	Appropriately cite evidence from learning experiences in the interactive notebook.	In sufficient evidence from learning experiences is cited.	Does not cite evidence from learning experiences in the interactive notebook.		
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Effective communication	Makes sense to the reader Grade level appropriate conventions	Mostly makes sense to the reader Lack of appropriate conventions	Does not make sense to the reader No appropriate conventions		

## Student Reflection Page

I consider my best work in my interactive notebook on page \_\_\_\_\_, titled

I consider this my best work because\_\_\_\_\_

The skills that helped me make this work successful were\_\_\_\_\_

(organization, note taking, summary writing, creativity, connecting new information, measuring, etc.)

This topic connects to me because\_\_\_\_\_

Parent Comment

Parent Signature

.

.

Date

## How do weathered materials move?

# Effects of Erosion

**Erosion** is the process of moving weathered rock. Water, ice, gravity, and wind can cause erosion.

Rain can wash away loose rock material into a stream. The stream may carry that material far away.

Over time, water running downhill carves grooves into the

land. These grooves become canyons or valleys. Waves pound against cracks in rocks that are at the shore. Pieces of rock break off and are carried away. As the shore erodes, new landforms, such as beaches, will appear. Millions of years ago, huge ice sheets, called glaciers, covered parts of Earth. A glacier slowly slides along a thin layer of water below it, wearing away rock. Even small glaciers can rip rocks apart and carry the pieces far away.



## Deposition

Wind and water carry bits of rock and soil from one place to another. **Deposition** is the laying down of pieces of Earth's surface. This may happen slowly or very quickly.

When water moves slowly, big pebbles in the water sink first. Then smaller bits, such as sand, sink. Finally the smallest pieces of soil, called sllt, fall to the bottom. Rivers deposit material where they meet the ocean. This deposit forms a fan-shaped landform called a delta.

Wind can carry only small bits of rock. In deserts, the wind deposits sand in mounds called sand dunes. Wind will keep shaping the dunes.



## How well can scientists forecast massive earthquakes?

By Christian Science Monitor, adapted by Newsela staff on 12.01.17



Earthquakes can happen very quickly. It is very hard to know when they will happen. Scientists are working to get better at this. But some have learned that earthquakes might get stronger in the next five years.

One of these scientists is Rebecca Bendick. She says that this news is not meant to scare anyone. She hopes it will make people more prepared.

## **Understanding The Big Picture**

The top layer of the Earth is called the crust. It is made up of large pieces called tectonic plates. These plates are always moving. They sit on top of hot melted rock, called the mantle. Sometimes the plates run into each other. Their edges stick together, like zippers. As stuck plates move, they start to bend the crust. Then, the plates break through and start to shake. That is when an earthquake happens.

Scientists cannot measure this stress. It is not like measuring the weather. These plate movements are happening deep inside the Earth. But machines in space, called satellites, can give us information about plate movements. They can see fault lines from high in space. These are large cracks where earthquakes often happen.

Scientists can measure how much pressure has built up since the last earthquake. This does not

give an exact day or time of an earthquake. It just tells us one might be coming. It could this year or many years from now.

## Like A Spinning Top

Bendick worked with scientist Roger Bilham. They studied the history of strong earthquakes over the past 100 years. They found an interesting pattern. Earth spins in place, like a spinning top. Over the years, the spinning speed changes. This change is tiny. We cannot tell when it is happening. But it does slightly change the shape of the Earth.

As Earth spins faster, its middle part grows a bit larger. As it spins slower, the middle shrinks. Scientists think these changes make tectonic plates move. In the past, when the Earth has spun slower, more earthquakes happened. Right now, Earth is spinning slower. So, Bendick and Bilham think there will be more earthquakes.

## Having Extra Time Is Important

Governments and labs are carefully preparing. They want to know if an earthquake is coming. They use a tool called seismometer, which can tell when the earth shakes. Systems that can tell when a natural disaster will happen are called early warning systems.

For example, an earthquake happened this year in Mexico City, Mexico. The country has had early warning systems for a long time. The system sensed that an earthquake was coming just before it hit. It sent out a warning. This gave people time to run to safety.

An earthquake does not hit everywhere right away. It has waves that move out from its center. It is a bit like dropping a stone in a lake.

## Early Warnings Are Helpful

The center of an earthquake is called the epicenter.

Many people are far enough from an epicenter. An early warning system can help people all over. After a warning, trains could also automatically slow to a stop. That way, they would not run on tracks that are broken by an earthquake.

Bob de Groot works for the U.S. Geological Survey. This is a U.S. government science lab. He said that early warning systems can save lives and stop too much damage from a strong earthquake.

## Each volcano has unique warning signs that eruption is imminent

By Tracy K.P. Gregg, The Conversation, adapted by Newsela staff on 12.12.17



Image 1. The Mount Agung volcano erupts in Karangasem, Bali, Indonesia, November 27, 2017. Authorities told tens of thousands of people to leave an area extending 10 kilometers (6 miles) from the volcano as it belched volcanic materials into the air. Agung was still spewing ash into the air weeks after this photo was taken. Mount Agung's last major eruption in 1963 killed about 1,100 people.

Mount Agung is a volcano in Bali, Indonesia. Volcanoes are mountains that can erupt with lava, which is melted rock. Lava is burbling at the

top of Mount Agung. People living near Agung were told to leave. Scientists think Mount Agung might erupt soon. How do they predict this?

Mount Agung's sides are bulging from all the magma inside it. The magma is trying to push its way out. Magma is melted rock from below the ground. If it is hard for the lava and magma to come out, the pressure builds up. Then Agung shoots out ash instead.

Every volcano is different. They each do different things before erupting. One might tell you it's going to erupt by causing more earthquakes. A different volcano might just get taller as melted rock swells under it.



## **Optional Science Reading**

## Volcano

A volcano is an opening in Earth's crust that allows molten rock from beneath the crust to reach the surface. This molten rock is called magma when it is beneath the surface and lava when it erupts or flows from a volcano. Along with lava, volcanoes also release gases, ash, and rock. It's a super hot mix that can be both incredibly destructive and creative.

Volcanoes form at the edges of Earth's tectonic plates. These huge slabs of Earth's crust travel atop the partly molten mantle, the layer beneath the crust. If you could see the plates, you might think they look like pieces of a puzzle because the edges fit together. But these puzzle pieces move, usually at the unnoticeable pace of only a few inches every year. Sometimes, though, plates collide with one another or pull apart, and it's at these active zones where volcanoes form. Volcanoes may also erupt in areas called hot spots where the crust is thin.

Volcanoes erupt in different ways, producing different landforms. Steep, cone-shaped volcanoes form when plates collide. All the pressure and heat of the collision make for a violent eruption. The cone forms when lava and other material eject and build up around the opening. This type of volcano is known as a stratovolcano, and Mt. Rainier is a good example. Sometimes an eruption is so violent that the top of the volcano collapses, leaving a huge pit or caldera. You can see calderas in Yellowstone National Park and Crater Lake. When plates pull apart, lava escapes through the rift. This more gentle flow creates new crust on the seafloor and wide, rounded volcanoes on the surface called shield volcanoes. Hawaii's Kilauea is a shield volcano. It is also an example of a volcano that formed over a hotspot.

Volcanic eruptions can be deadly. Eruptions of Krakatau and Tambora in Indonesia caused the deaths of more than 100,000 people. Dangerous as they are, volcanoes also build and shape the land, creating mountains and new seafloor and depositing minerals and nutrients that enrich soil.

## Fast facts:

- About 90% of the world's volcanoes can be found in the Ring of Fire, where tectonic plates meet around the rim of the Pacific Ocean.
- Worldwide there are 1,500 active volcanoes that could erupt at any time. Other volcanoes are dormant; they are quiet for now but could become active. There are even extinct volcanoes, which are never expected to erupt again.
- Volcanoes aren't unique to Earth. The largest volcano in our solar system is Olympus Mons on Mars. It is three times taller than Mt. Everest, Earth's highest elevation. Mercury, Venus, and Jupiter's moon lo also have or have had volcanic activity, with lo being the most active of all.
- The eruption of Mt. Vesuvius wiped out the Roman cities of Pompeii and Herculaneum in the year 79, killing thousands of people. Many victims were covered in ash, which hardened to solid rock over time. As the bodies decayed, hollow impressions remained in the rock. Archaeologists poured plaster into the hollows to form detailed casts of the victims, including animals.

	Part of		Encyclopedic
Term	Speech	Definition	Entry

active volcano	Noun	volcano that has had a recorded eruption since the last glacial period, about 10,000 years ago.	
archipelago	Noun	a group of closely scattered islands in a large body of water.	Encyclopedic Entry: archipelago
caldera	Noun	large depression resulting from the collapse of the center of a volcano.	Encyclopedic Entry: caldera
composite volcano	Noun	steep volcano made of hardened lava, rock, and ash. Also known as a stratovolcano.	
crust	Noun	rocky outermost layer of Earth or other planet.	Encyclopedic Entry: crust
extinct volcano	Noun	volcano that will no longer erupt.	
geyser	Noun	natural hot spring that sometimes erupts with water or steam.	Encyclopedic Entry: geyser
lagoon	Noun	shallow body of water that may have an opening to a larger body of water, but is also protected from it by a sandbar or coral reef.	Encyclopedic Entry: lagoon
lava	Noun	molten rock, or magma, that erupts from volcanoes or fissures in the Earth's surface.	
magma	Noun	molten, or partially melted, rock beneath the Earth's surface.	Encyclopedic Entry: magma
mantle	Noun	middle layer of the Earth, made of mostly solid rock.	Encyclopedic Entry: mantle
shield volcano	Noun	large, gently sloping volcano made from fluid lava.	
tectonic plate	Noun	massive slab of solid rock made up of Earth's lithosphere (crust and upper mantle). Also called lithospheric plate.	
volcano	Noun	an opening in the Earth's crust, through which lava, ash, and gases erupt, and also the cone built by eruptions.	Encyclopedic Entry: volcano

A volcano is a vent or chimney which transfers molten rock known as magma from depth to the Earth's surface. Magma erupting from a volcano is called lava and is the material which builds up the cone surrounding the vent.

A volcano is active if it is erupting lava, releasing gas or generates seismic activity. A volcano is dormant if it has not erupted for a long time but could erupt again in the future. Once a volcano has been dormant for more than 10 000 years, it is termed extinct.

The explosiveness of a volcanic eruption depends on how easily magma can flow and the amount of gas trapped within the magma. Large amounts of water and carbon dioxide are dissolved in magma causing it to behave in a similar way to gas expanding in fizzy drinks, which forms bubbles and escapes after opening.

As magma rises quickly through the Earth's crust, gas bubbles form and expand up to 1000 times their original size.

Volcanoes can be different in appearance with some featuring perfect cone shapes while others are deep depressions filled with water. The form of a volcano provides a clue to the type and size of its eruption which is controlled by the characteristics and composition of magma. The size, style and frequency of eruptions can differ greatly but all these elements correlated to the shape of a volcano. Three common volcanoes are:

## Shield volcano

When magma is very hot and runny, gases can escape and eruptions are gentle with considerable amounts of magma reaching the surface to form lava flows. Shield volcanoes have a broad, flattened dome-like shape created by layers of runny lava flowing over its surface and cooling. Because the lava flows easily, it can move down gradual slopes over great distances from the volcanic vents. The lava flows are sufficiently slow for humans to outrun or outwalk them. This type of magma has a temperature between 800°C and 1200°C and is called basaltic magma.



## **Composite volcano (Strato)**

Also known as strato-volcanoes, these volcanoes are characterized by an explosive eruption style. When magma is slightly cooler it is thick and sticky, or viscous, which makes it harder for gas bubbles to expand and escape. The resulting pressure causes the magma to foam and explode violently, blasting it into tiny pieces known as volcanic ash. These eruptions create steep sided cones. They can also create lava flows, hot ash clouds called pyroclastic flows and dangerous mudflows called lahars. This type of magma has a temperature between 800°C and 1000°C and is called andesitic magma.

## Caldera volcano

These erupt so explosively that little material builds Eruptions partly or entirely empty the underlying leaves the region around the vent unsupported, collapse under its own weight. The resulting basinroughly circular and is usually several kilometers or lava erupted from caldera volcanoes is very viscous with temperatures ranging from 650°C to 800°C and magma. Although caldera volcanoes are rare, they Volcanic hazards from this type of eruption include large pyroclastic surges and tsunami from caldera

## **Volcanic hazards**

Volcanic hazards include explosions, lava flows,



up near the vent. magma chamber which causing it to sink or shaped depression is more in diameter. The and generally the coolest is called rhyolitic are the most dangerous. widespread ash fall, collapse.

bombs or ballistics, ash

or tephra, pyroclastic flows, pyroclastic surges, mudflows or lahars, landslides, earthquakes, ground deformation, tsunami, air shocks, lightning, poisonous gas and glacial outburst flooding known as jökulhlaups. Each hazard has a different consequence, although not all occur in all eruptions or in association with all volcanoes.

Volcanic eruptions are measured using a simple descriptive index known as the Volcano Explosivity Index which ranges from zero to eight. The index combines the volume of material ejected with the height of an eruption column and the duration of the eruption.

Interesting fact: Volcanic ash clouds can damage aircraft engines but ash is not visible by radar, the main navigation aid for aircraft. There are nine Volcanic Ash Advisory Centers around the world which use satellites to help track volcanic ash clouds and provide warnings for aircraft.

## Science Benchmark: 05:02

The Earth's surface is constantly changing. Some changes happen very slowly over long periods of time, such as weathering, erosion, and uplift. Other changes happen abruptly, such as landslides, volcanic eruptions, and earthquakes. All around us, we see the visible effects of building up and breaking down of Earth's surface.

## Standard 02:

Students will understand that volcanoes, earthquakes, uplift, weathering, and erosion reshape Earth s surface.

## Shared Reading

## It's All About Change

Imagine you are on the moon. The footprints of the astronaut who walked on its surface are still there. Craters formed by meteors still remain. The surfaces of the moon do not change as the surfaces of Earth change. The moon does not have the same forces at work as Earth does.

Earth's surface is constantly changing. Some of these changes like earthquakes, landslides and volcanoes happen quickly. Other changes such as weathering, erosion, and uplift happen slowly over long periods of time.

Weathering happens all around us. Water seeps into small cracks in rock. When the

temperature falls below freezing, water expands as it becomes ice. Freezing and thawing make the cracks bigger until some of the rock break away. The roots of plants can grow in cracks. As the roots grow larger, they split the rocks. Water can break rock into very small pieces. Rocks carried down a swiftly moving river are weathered as they bump against each other. Particles carried by wind also smooth and polish the rock as they strike its surface. Small pieces of rock produced by weathering become soil or sand.



weathering - the physical breaking up of the rocks on Earth's surface into smaller pieces of rock or sand

Grade	Benchmark	Standard	Page
05	05:02	02	9.1.1

*Erosion* also contributes to our changing landscape. Glaciers, water, and wind with the force of gravity are some causes of erosion.

*Glaciers* form as a result of snow falling on the north side of mountains. The snow on the north side never completely melts each year because sunlight seldom shines on it. After thousands of years, the snow builds up and turns to ice. It becomes very heavy. Gravity pulls it slowly down the mountain. As it inches along, the glacier *erodes* the surface beneath it. Boulders and rocks, carried in the ice, scrape the rock beneath the glacier carving valleys into mountainsides.

Water erosion moves the most rock on Earth's surface by the force of gravity. Rain carries the soil away as it washes over the land, leaving gullies, valleys, and canyons. The paths of some rivers have changed over the years as water erodes the banks. Rivers and streams have formed many natural wonders including arches and buttes. *Arches* are formed by a combination of erosional forces. Ice, rain, and wind continue to weather the arches found in Utah's Arches National



Arch

Park. Running water can form a *butte*. Hard rock on the top of buttes protects the softer rock below from erosion.

Wind erosion moves soil in the air from place to place on Earth's surface. When there is soil in the air gravity pulls the soil out of the air and places it somewhere else. Many *geological* features, such as arches, valleys, canyons, and buttes, are continually changing due to the effects of weathering and erosion.



arches - curved rock formations, formed by a combination of erosional forces
butte - an isolated hill with steep, even sides, and a flat top
erode - to wear away by the action of water, wind, or glaciers
erosion - the process of moving weathered bits or rock from one place to another
geological - relating to the structure of Earth and the changes that have taken place over the years
glaciers - thick layers of ice

A volcano is an opening in Earth's crust. Hot rock deep in Earth expands and is forced out the opening. As the rock cools, it may form a mountain on Earth's surface, or it may flow and form a large flat layer of rock. Volcanoes are not all the same shape or size. Some volcanoes erupt often, some erupt rarely. Utah has had volcanoes erupt and flow in the past. Topaz Mountain is an extinct volcano. Volcanoes can erupt underwater, forming huge ranges of volcanic mountains on the ocean floor.

Volcanoes are useful because they can enrich soil. The ash from volcanoes is rich in minerals, especially nitrogen. However, volcanoes can injure people and damage property. Scientists who study volcanoes try to predict when they will erupt. They use gas detectors and devices that measure the movement of Earth. If unusual



Volcano

*Earthquakes* also change Earth's surface. You know you are in an earthquake if the ground starts to shake. Tremendous forces under Earth's surface build up pressure, which is released along a *fault*. Imagine you are bending a Popsicle stick. When the pressure is great enough, the stick snaps in two. The energy is released by the snap and waves travel through the stick to your hands. The fault, however, doesn't come apart like the stick. Portions of Earth's crust slide past each other, creating waves. Earthquakes can create landforms on the surface. Mountains, such as the Wasatch Mountains in northern Utah, form as the valley rocks slide down and the mountain rocks rise up during an earthquake. The picture below shows two directions a fault can slip.

gases are present and Earth is shaking, volcanic rock may be moving to Earth's surface.

Earthquake Faults



earthquake - energy waves passing through Earth caused by a sudden shift of Earth's crust along a fault

fault - a crack in Earth's crust that allows the crust to slip

volcano - an opening in Earth's crust that allows hot, melted rock, ash, and gases to erupt outward

Can you see why the path of the road changes in the horizontal fault? An earthquake fault may leave a cliff over the fault line. The fault may slip deep underground and leave no trace on Earth's surface that an earthquake has occurred. Earthquakes occurring in the ocean can cause a tsunami, a large ocean wave.

There are frequent earthquakes all over the world. Many of them are too small to be felt by people. Instruments measure earthquakes and record their strength and location. Earthquakes are measured on a scale from 1-10. Any earthquake measuring a 6 or above is considered a very large earthquake. Scientists try to predict when earthquakes will occur because earthquakes cause loss of life and property damage every year.

Uplift occurs when part of Earth's surface rises above the surrounding land by great forces of heat and pressure deep within Earth. Uplift formed the Colorado Plateau, creating nearly all the spectacular variety of Canyon Country in Southern Utah.

Imagine you are in a raft floating down the Colorado River through the Grand Canyon. One of the first things you would probably notice is the steep canyon walls on both sides of the river. You may ask, why are the walls so steep? Why do you see different layers of rock exposed?

Millions of years ago, much of the western United States was covered by a shallow sea. The area of the Grand Canyon was once flat, marshy land under the sea. Scientists have determined that many seas have come and gone, leaving different layers of rock during various time periods. Some of the layers contain fossils of sea creatures exposed in the walls of the canyon. The pictures on the next page show when some of the layers were formed and what geologic events were happening at that time.

Uplift took place causing a high, flat plateau. As the land rose, water cut a channel down through the plateau creating a deep canyon. The oldest rocks at the base of the Grand Canyon are about two thousand million (two billion) years old. Each layer above the base was formed under different conditions. It has taken thousands of years for erosion to uncover the rocks of Grand Canyon. In our lifetime we wouldn't notice many changes because our life span is too short. However, thousands of years from now, the Grand Canyon will look different.

Rivers like the Colorado River carry enormous loads of sand and soil they pick up from erosional processes. In the spring, the Colorado River looks like chocolate milk from all the bits of rock it carries. When the water slows down, as in a reservoir or when it reaches the ocean, *deposition* occurs. Wind, glaciers, and running water all deposit weathered materials. Beaches, sandbars, deltas and sand dunes form when deposition occurs. Weathering, erosion, uplift and deposition all work to change Earth's surface. How would Earth appear without them?

deposition - the dropping of sand and rock carried by wind or water as it slows down or from ice that melts

uplift - part of Earth's surface that rises above the surrounding land by great forces of heat and pressure deep within Earth.

Time (In Million Years Ago)	Geologic Events	
0 to 65 MYA	Thick glaciers in much of the world. Rocky Mountains, Alps, Andes, and Himalayas form. Glaciers cover North America.	
65 MYA to 248 MYA	Widespread volcanic activity Age of the dinosaurs American and Europe/African continents move apart.	
248 MYA to 544 MYA	Age of Ocean life Appalacchian Mountains begin to form. Warm, shallow seas cover much of North America. Two ancient continents are found near the equator.	A Mary
544 MYA to 4,600 MYA	Earth's first ice age occurs. First sedimentary rocks form. Oceans form. Earth forms.	The second secon
	Time (In Million Years Ago) 0 to 65 MYA 65 MYA to 248 MYA to 248 MYA to 544 MYA 544 MYA	Time (In Million Years Ago)Geologic Events0 to 65 MYAThick glaciers in much of the world. Rocky Mountains, Alps, Andes, and Himalayas form. Glaciers cover North America.65 MYA to 248 MYAWidespread volcanic activity Age of the dinosaurs248 MYAAge of Ccean life Appalacchian Mountains begin to form.248 MYAAge of Ocean life Appalacchian Mountains begin to form.544 MYAEarth's first ice age occurs. First sedimentary rocks form. Oceans form.

Remember the footprints and craters on the moon? They remain unchanged. Without the forces of weathering, erosion, and uplift, the moon's surface is quiet and still. It would be similar on Earth. These forces make our planet an interesting place full of different landforms constantly transforming. Geological change makes Earth an exciting place to live!

## Science Language Students Need to Understand and Use

- 1. arches: curved rock formations, formed by a combination of erosional forces
- 2. butte: an isolated hill with steep, even sides, and a flat top
- deposition: the dropping of sand and rock carried by wind or water as it slows down or from ice that melts
- earthquake: energy waves passing through Earth caused by a sudden shift of Earth's crust along a fault
- 5. erode: to wear away by the action of water, wind, or glaciers
- 6. erosion: the process of moving weathered bits of rock from one place to another
- 7. fault: a crack in Earth's crust that allows the crust to slip
- geological: relating to the structure of Earth and the changes that have taken place over the years
- 9. glaciers: thick layers of ice
- 10. uplift: part of Earth's surface that rises above the surrounding land by great forces of heat and pressure deep within Earth
- 11. volcano: an opening in Earth's crust that allows hot, melted rock, ash, and gases to erupt outward
- weathering: the physical breaking up of the rocks on Earth's surface into smaller pieces of rock or sand