

# Constructive & Destructive Forces Unit Study Guide

Name \_\_\_\_\_

SC-06-2.3.3 Students will compare constructive and destructive forces on Earth in order to make predictions about the nature of landforms.

Landforms are a result of a combination of constructive and destructive forces. Collection and analysis of data indicates that constructive forces include crustal deformation, faulting, volcanic eruption and deposition of sediment, while destructive forces include weathering and erosion.

I Can Statements	Meaning	Examples/Diagrams
<p><b>I can explain how constructive and destructive forces affect the nature of landforms on Earth.</b></p>	<p>-Breaks rocks in smaller pieces without changing them <b>chemically</b></p> <p>-Identical to <b>composition</b> of original rock.</p> <p>-Causes: <b>ice wedging</b> <b>plant roots growing</b> <b>animals burrowing</b></p>	<p>Show a rock being mechanically weathered</p>
	<p>-Breaks rocks into smaller pieces by changing the <b>chemical composition</b> of the rock</p> <p>-It is rapid in <b>tropical</b> regions where it is warm and moist</p> <p>Causes: <b>natural acids (carbonic acid)</b> <b>plant acids (tannic acid)</b> <b>oxygen (oxidation)</b></p>	<p>Show a rock being chemically weathered</p>
	<p>Compare &amp; Contrast Mechanical and Chemical Weathering</p> <p><b>Comparison</b>- Both break apart rock – can be caused by water/ice &amp; plants</p> <p><b>Contrasts</b> – Mech./Phy. Rocks <b>not</b> changed chemically – Chem. Chemical composition of rock <b>is</b> changed</p>	<p>Show one example of physical and one of chemical weathering.</p>
	<p>- Wearing away and <b>removal</b> of rock or sediments</p> <p>Agents: <b>gravity</b> <b>ice</b> <b>wind</b> <b>water</b></p>	<p>Give one example for each</p>
<p><b>I can explain how constructive and destructive forces affect the nature of landforms on Earth.</b></p>	<p>-A force or process that <b>builds</b> landforms</p> <p>-Processes: <b>deposition-dropping of sediments</b> <b>mountain building-tectonic plate movement</b> <b>volcanic activity- layering of lava</b></p>	<p>Description of each process</p>
<p><b>I can compare examples of constructive and destructive forces on Earth.</b></p>	<p>-Give one example of each of the above constructive processes</p> <p>deposition - <b>deltas, glaciers-outwash and till – moraines &amp; drumlins</b></p> <p>mountain building - <b>fault-block, folded, upwarped</b></p> <p>volcanic activity -<b>volcanic mountains (subduction-steep, cone shaped, 1 central eruption zone Mt St Helen's</b> <b>underwater eruptions/hotspots(growing underwater, more gently sloping sides</b> <b>multiple vents, Hawaiian Islands</b></p>	

<p><b>I can explain how constructive and destructive forces affect the nature of landforms on Earth.</b></p>	<p>-A force or process that <b>breaks things down</b></p> <p>Processes: Chemical &amp; Mechanical Weathering Erosion Explosive Volcanic Eruptions</p>	<p>Description of each process</p>	
<p><b>I can compare examples of constructive and destructive forces on Earth.</b></p>	<p>-Give one example of each of the above destructive processes</p> <p>Chemical &amp; Mechanical weathering- <b>oxidation/rust formation(Chem.)- ice wedging(Mech/Phy.)</b> Erosion -<b>gravity, ice, wind, water</b> Explosive volcanic eruptions -<b>Mt St Helens</b></p>		
<p><b>I can compare examples of constructive and destructive forces on Earth.</b></p>	<p><b>CONSTRUCTIVE</b> <b>Building of landforms</b></p> <p>List 2 examples: <b>deposition due to river flowing(delta)</b> <b>Plate tectonics - Mountain Building</b></p>	<p><b>BOTH</b> <b>Create and change landforms</b></p>	<p><b>DESTRUCTIVE</b> <b>Breaking down of landforms</b></p> <p>List 2 examples: <b>V-shaped valley carved by river</b> <b>U-shaped valley carved by glacier</b></p>
<p><b>I can predict types of landforms that result from both constructive and destructive forces.</b></p>	<p><b>Constructive</b></p> <ul style="list-style-type: none"> <li>*Rivers carrying sediments toward the ocean; slowing &amp; dropping sediment can form a <b>delta</b>.</li> <li>*A volcano slowly erupting lava over time can form a <b>volcanic</b> mountain.</li> <li>*Plates colliding, compressing and folding rock layers can form a <b>folded</b> mountain.</li> </ul> <p><b>Destructive</b></p> <ul style="list-style-type: none"> <li>*Glaciers carving out bowl-shaped depressions called <b>cirques</b>.</li> <li>*Wind carrying small particles in the desert leaving behind larger sediments creates <b>desert pavement</b>.</li> <li>*Water carves out river valleys that are v- shaped, leading to forming <b>canyons/gorges</b>.</li> </ul>		