Geological Activity from Plate Tectonics Processes

Earthquake Safe Structures

Earth Science Study Guide

New Construction

- Building foundations are built into bedrock, which makes the buildings stable since the bedrock extends deep into the Earth.
- Building materials like wood are used more often, due to their flexibility and durability.
- Buildings are supported by steel beams and balanced by counterweights.
- Buildings use steel and rubber foundation to absorb shock. Some buildings are put on rollers so they can move with the ground.
- The first floor is better supported, and the connections between walls and foundations are built stronger.

Study Tip

Earthquakes can cause damage in multiple ways, so it is important to prepare accordingly.

Retrofitting and stabilizing buildings can lessen the damage from earthquakes.

Retrofitting

- **Retrofitting** is when old buildings and structures are supported with steel and wood to reinforce their strength.

Preventing Fire Damage

- Fire damage is a main cause of damage from earthquakes.
    - Earthquakes often break gas and electric lines, causing fires.
    - Earthquakes can break water pipes that could extinguish fires.
- Zigzag pipes can be built so they bend when the ground shakes.
- Pipes can be separated with valves, so one can be isolated if another breaks.

Cost Considerations

- Earthquake safety structures are often more expensive to build, so people need to decide how dangerous their areas are before spending the extra money.

Concept Check

- Name some methods that new buildings use to keep themselves safe from earthquakes.
- What is retrofitting?
- Why can't all buildings have maximum safety structures?