

## 1 Forces in Earth's Crust

### Key Concepts

- Tension, compression, and shearing work over millions of years to change the shape and volume of rock.
- Faults usually occur along plate boundaries, where the forces of plate motion push or pull the crust so much that the crust breaks. There are three main types of faults: normal faults, reverse faults, and strike-slip faults.
- Over millions of years, the forces of plate movement can change a flat plain into landforms such as anticlines and synclines, folded mountains, fault-block mountains, and plateaus.

### Key Terms

stress	footwall
tension	reverse fault
compression	strike-slip fault
shearing	anticline
normal fault	syncline
hanging wall	plateau

## 2 Earthquakes and Seismic Waves

### Key Concepts

- Seismic waves carry energy from an earthquake away from the focus, through Earth's interior, and across the surface.
- Three commonly used ways of measuring earthquakes are the Mercalli scale, the Richter scale, and the moment magnitude scale.
- Geologists use seismic waves to locate an earthquake's epicenter.

### Key Terms

earthquake	Mercalli scale
focus	magnitude
epicenter	Richter scale
P wave	seismograph
S wave	moment magnitude scale
surface wave	

## 3 Monitoring Earthquakes

### Key Concepts

- During an earthquake, seismic waves cause the seismograph's drum to vibrate. But the suspended weight with the pen attached moves very little. Therefore, the pen stays in place and records the drum's vibrations.
- To monitor faults, geologists have developed instruments to measure changes in elevation, tilting of the land surface, and ground movements along faults.
- Seismographs and fault-monitoring devices provide data used to map faults and detect changes along faults. Geologists are also trying to use these data to develop a method of predicting earthquakes.

### Key Terms

seismogram	friction
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## 4 Earthquake Safety

### Key Concepts

- Geologists can determine earthquake risk by locating where faults are active and where past earthquakes have occurred.
- Causes of earthquake damage include shaking, liquefaction, aftershocks, and tsunamis.
- The best way to protect yourself is to drop, cover, and hold.
- To reduce earthquake damage, new buildings must be made stronger and more flexible. Older buildings may be modified to withstand stronger quakes.

### Key Terms

liquefaction	tsunami
aftershock	base-isolated building

