

**Reading Guide for Chapter 14:  
Mass Movement (p.436)**

**What Causes Mass Movement?** (p. 438)

*Gravity, Friction and Slope* (p. 438)

\_\_\_\_\_ promotes down slope movement; \_\_\_\_\_ resists it.

What are some ways that the friction between a rock (or mass) and a hill can be reduced?

What are some natural and human reasons that slopes are increased in angle?

*Slope Composition* (p. 438)

Solid Bedrock—the six characteristics/conditions help us explain why solid rock sometimes fails. I will not ask you to list these six items, but you may need to be able to apply them to situations. I recommend reading them carefully, but you do not need to memorize them.

► One of the important ideas in this section is that layered rocks (such as layers of sedimentary or metamorphic rocks) may become folded (tilted) and the bedding planes between these layers are weak and frequently are the source of instability in a hillslope.

The angle of repose concept only applies to \_\_\_\_\_ materials. The angle of these materials depends primarily on their \_\_\_\_\_ and their \_\_\_\_\_.

Other than reducing the frictional forces in materials, what role does water play in the stability of a hillslope?

*Setting Off a Mass-Movement Event* (p. 441)

The text divides the “triggers” of landslides into natural and human-induced triggers. What are some common characteristics of both natural and human-induced triggers?

**Types of Mass Movement** (p. 444)

*Slow Mass Movement* (p. 444) and *Rapid Mass Movement* (p. 444)

Matching: Answers may be used more than once.

- |  |                 |
|--|-----------------|
| _____ 1. A mass movement that rotates as a block along a concave slip plane. Usually occurs in cohesive materials.                     | A. creep        |
| _____ 2. Relatively dry mass movements. They ooze downslope with a relatively high viscosity   | B. solifluction |
| _____ 3. The Gros Ventre mass movement is an example.  | C. rock slide   |
| _____ 4. When news announcers say a “mudslide” has occurred, it is most likely this type.  | D. slump        |
| _____ 5. A very slow type of mass movement that affects slopes at most latitudes. Freezing and thawing is one way this process occurs. | E. debris flow  |
| _____ 6. The fastest type of mass movement occurs when loose sediment or rocks breaks free   | F. earthflow    |
| _____ 7. This type of mss movement moves along a defined slip plane. Normally parts of the mass hold together.                         | G. fall         |
| _____ 8. Common in semi-arid regions. Similar to “mudflows” but particles are larger.  | H. slide        |

What are some characteristics of slumps?

What is the difference between an earth flow and a debris flow?

**Avoiding and Preventing Mass-Movement Disasters** (p. 454)

List four specific characteristics that we could use to determine a slope is unstable? (use the diagram on page 460)

List three ways in which humans can reduce the risk associated with mass movements?

**Extraterrestrial Mass Movements** (p. 459)

You may read this section if you are interested, but you will not be tested over this material.