ESS Unit 10 Mass Movement Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per. \_\_\_\_\_

Navigate to the website: <https://ees.as.uky.edu/sites/default/files/elearning/module11swf.swf>

or Google: **ees uk mass movement**

HOME

Read and scroll the text to **define mass movement:**

**3 Examples:**

OVERVIEW

**FORCES:** driving force for mass movement is….

**FACTORS** include: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1

**DRIVING AND REISITING FORCES**: check each circle and place it in the correct side

|  |  |
| --- | --- |
| Increases driving force or decreases (lowers) resistance force  **Causes** mass movement | Decreases driving force or increases resistance force:  **Prevents** mass movements |
|  |  |

2

CONTROLS- **SLOPE**

G**p** represents: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

G**d** represents: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The boulder will roll downhill when the G**p** has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and theG**d** has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3

**CONTROLS**- SLOPE **MATERIALS**

1. Unconsolidated materials such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are particularly prone to mass movement because they……

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Strong crystalline rocks such as granite, gneiss and limestone are very strong and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to mass movement
2. Sketch a diagram of a **tilted ‘dip slope’**
3. **Fractures** due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ create zones of weakness.
4. What is the benefit of **plant roots** and **vegetation** to mass movement?

CONTROLS **– WATER**

4

|  |  |
| --- | --- |
| Water amount | Results |
| Dry Sand |  |
| Damp Sand |  |
| Saturated Sand |  |
| Rainstorm |  |

5

CONTROLS – **VEGATATION**

Vegetation and roots do 2 things: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are 3 ways that vegetation is removed that causes slope stability problems:

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6

CONTROLS- TRIGGERS such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7

**FALLS:**

What are **talus** slopes?

How do they form?

How steep are they?

8

**SLIDES**

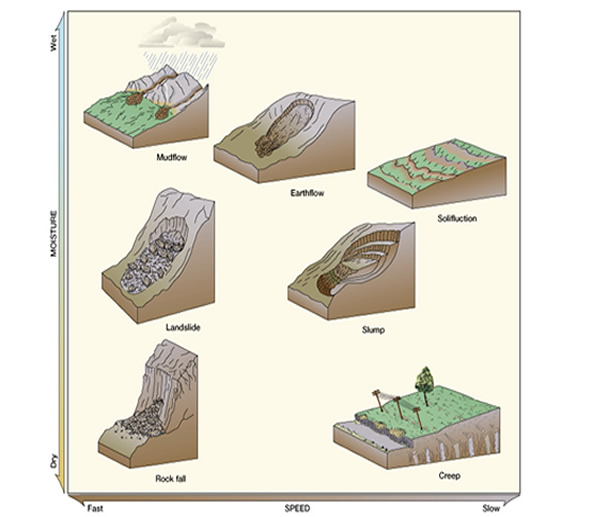
“S” Slides occur in **s**\_\_\_\_\_\_\_. A **s**\_\_\_\_\_\_\_\_\_ is type of slide commonly found in roadside s\_\_\_\_\_\_\_\_\_\_\_ at a site of s\_\_\_\_\_\_\_\_\_\_\_\_\_, poorly vegetated **s**oil **s**lopes.

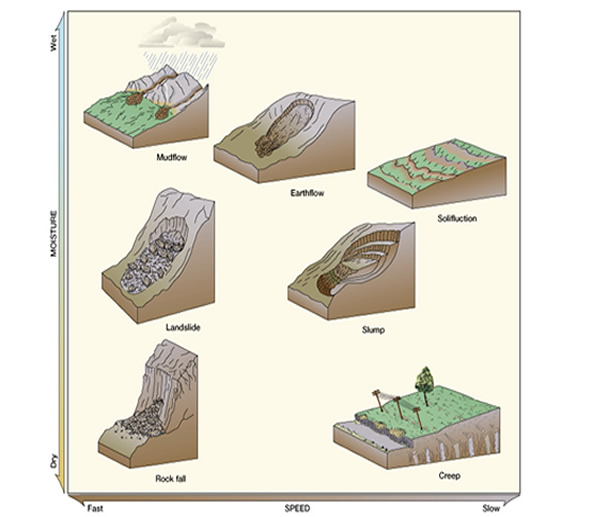
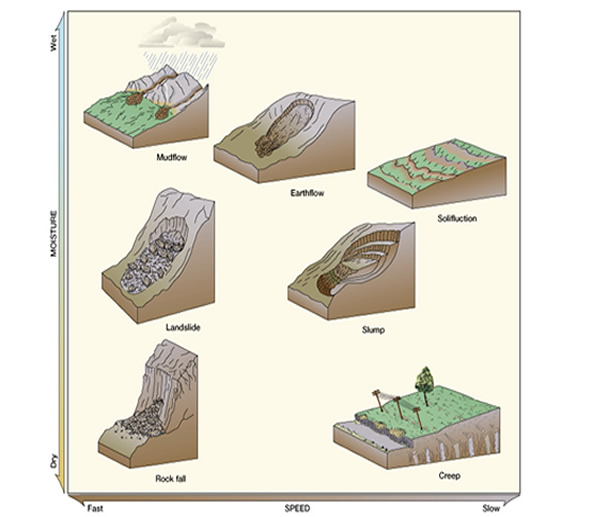
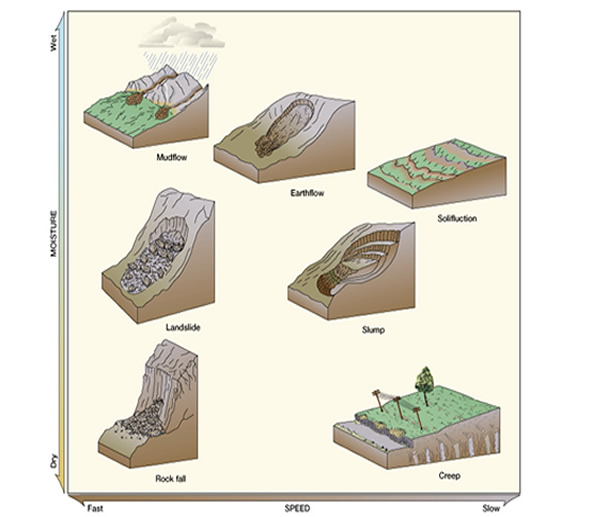
**FLOWS** behave as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

9

Examples are:

CREEP: moves at (fastest or slowest) speeds

Label each type of mass movement below as either **FALL, SLIDE, CREEP or FLOW**



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

MODEL

Select one factor from each location to model best and worst situation

|  |  |  |
| --- | --- | --- |
| BEST / WORST SCENARIO | 3 IMPROVEMENTS | RESULTS |
| BEST combination of factors | -  -  - | Mass movement  Stable |
|  | -  -  - | Mass movement  stable |
| WORST combination of factors | -  -  - | Mass movement  stable |