

# measuring earthquakes

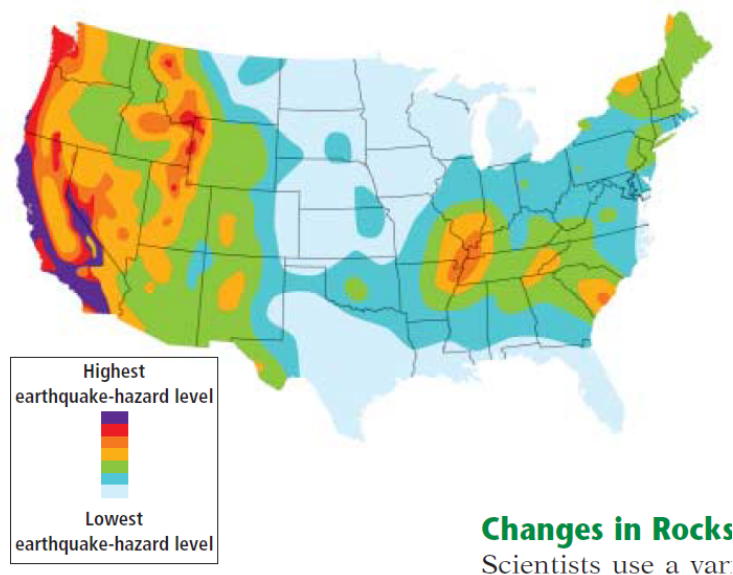
name \_\_\_\_\_

Modified Mercalli Intensity Scale	
Intensity	Description
I	is not felt except by very few under especially favorable conditions
II	is felt by only few people at rest; delicately suspended items may swing
III	is felt by most people indoors; vibration is similar to the passing of a large truck
IV	is felt by many people; dishes and windows rattle; sensation is similar to a building being struck
V	is felt by nearly everyone; some objects are broken; and unstable objects are overturned
VI	is felt by all people; some heavy objects are moved; causes very slight damage to structures
VII	causes slight to moderate damage to ordinary buildings; some chimneys are broken
VIII	causes considerable damage (including partial collapse) to ordinary buildings
IX	causes considerable damage (including partial collapse) to earthquake-resistant buildings
X	destroys some to most structures, including foundations; rails are bent
XI	causes few structures, if any, to remain standing; bridges are destroyed and rails are bent
XII	causes total destruction; distorts lines of sight; objects are thrown into the air

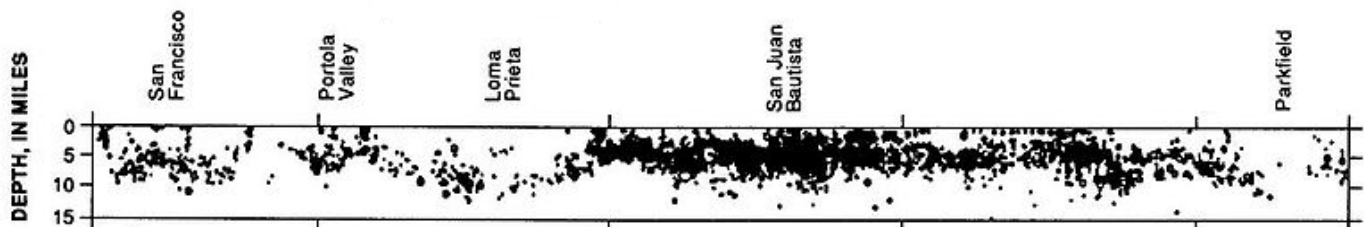
RICHTER SCALE – EACH LEVEL IS 10 TIMES STRONGER THAN THE PREVIOUS			
Level	Description	Occurance	damage
1.0-1.9	micro	Millions per year	We cannot feel these
2.0-2.9	Minor	One million per year	Can barely feel it
3.0-3.9	Minor	100,000 per year	Can feel it, but only people at epicenter
4.0-4.9	Light	10,000 per year	Causes damage at epicenter
5.0-5.9	Moderate	1,000 per year	Damage to weak buildings at epicenter
6.0-6.9	Strong	100 per year	Great damage around epicenter
7.0-7.9	Major	10 per year	Serious damage; can be detected all around world
8.0-8.9	Great	1 per year	Causes death and major destruction
>9	Great	1 per 10 years	Rare, but would cause unbelievable damage and death

1. How is the Modified Mercalli Intensity Scale different from the Richter Scale?  
\_\_\_\_\_
2. An earthquake in Washington registers as 3.1 on the Richter Scale. An earthquake in California registers as a 5.1. How many times more powerful was the California quake? \_\_\_\_\_
3. Can people 10 miles away from the Washington quake feel it? \_\_\_\_\_
4. Everyone in the city of San Jose felt the earthquake. Refrigerators and stoves move out of place, and buildings have slight damage. Where does this quake rank on the Modified Mercalli Intensity Scale?  
\_\_\_\_\_

5. People typing at their desks felt it, but no one else did. Hanging lights swung a little. Where does this quake rank on the Modified Mercalli Intensity Scale? \_\_\_\_\_
6. Even earthquake resistant buildings suffer damage. Some buildings partially collapse. There's no doubt everyone felt it. Where does this quake rank on the Modified Mercalli Intensity Scale? \_\_\_\_\_
7. How many micro earthquakes do we get in a year? \_\_\_\_\_
8. How many earthquakes with a magnitude of 5 to 5.9? \_\_\_\_\_
9. We only average 1 per year of what type of earthquake? \_\_\_\_\_
10. Fill in the phrase. Earthquakes with lower magnitudes happen \_\_\_\_\_ often, and earthquakes with higher magnitudes happen \_\_\_\_\_ often.



11. What is the earthquake hazard level for Michigan? \_\_\_\_\_
12. Florida? \_\_\_\_\_
13. California? \_\_\_\_\_
14. Maine? (top right corner of country) \_\_\_\_\_



15. According to the gap hypothesis, which cities above are more likely to have an earthquake in the near future? \_\_\_\_\_
16. Which cities are less likely to have a major earthquake in the near future?  
\_\_\_\_\_