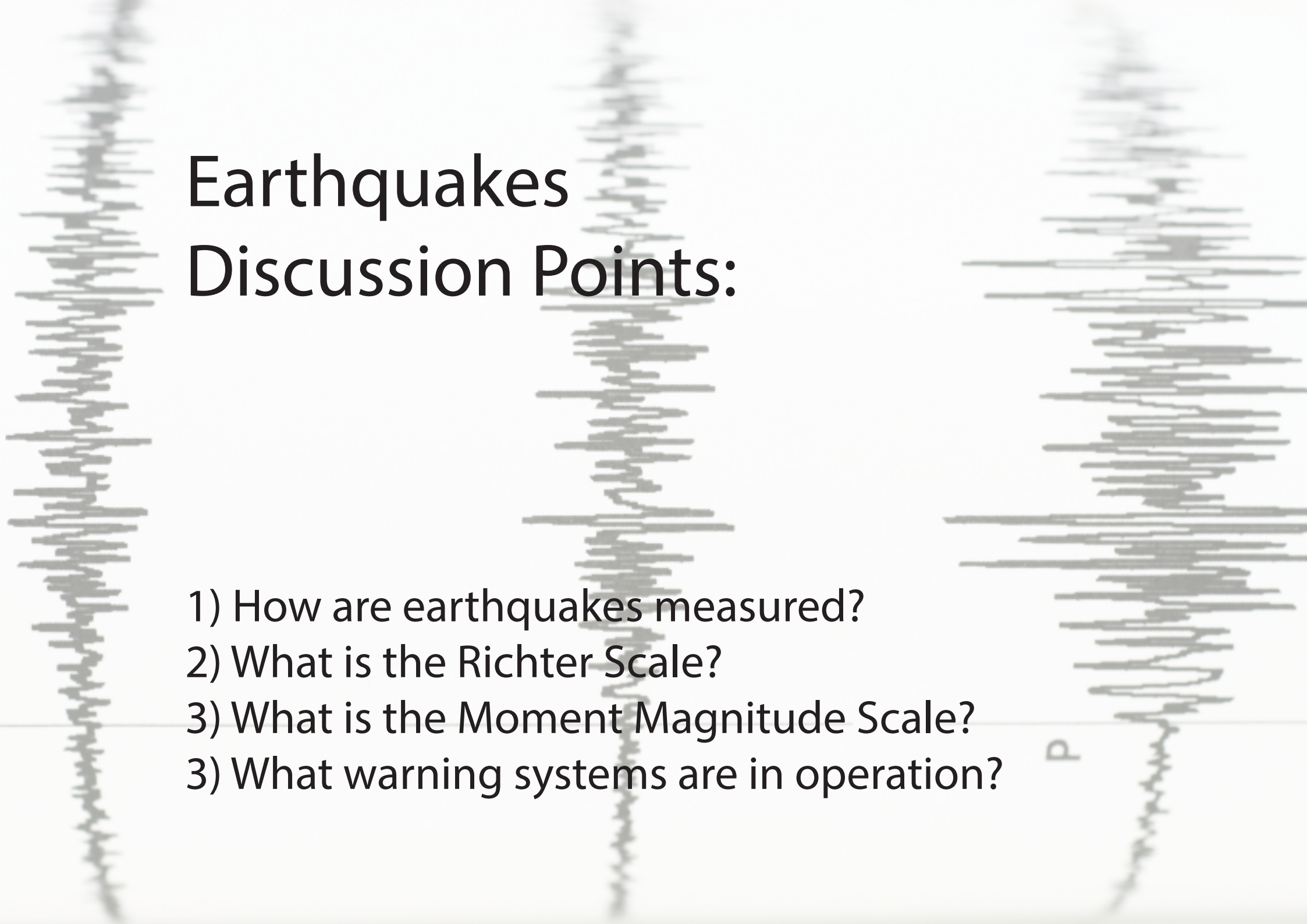
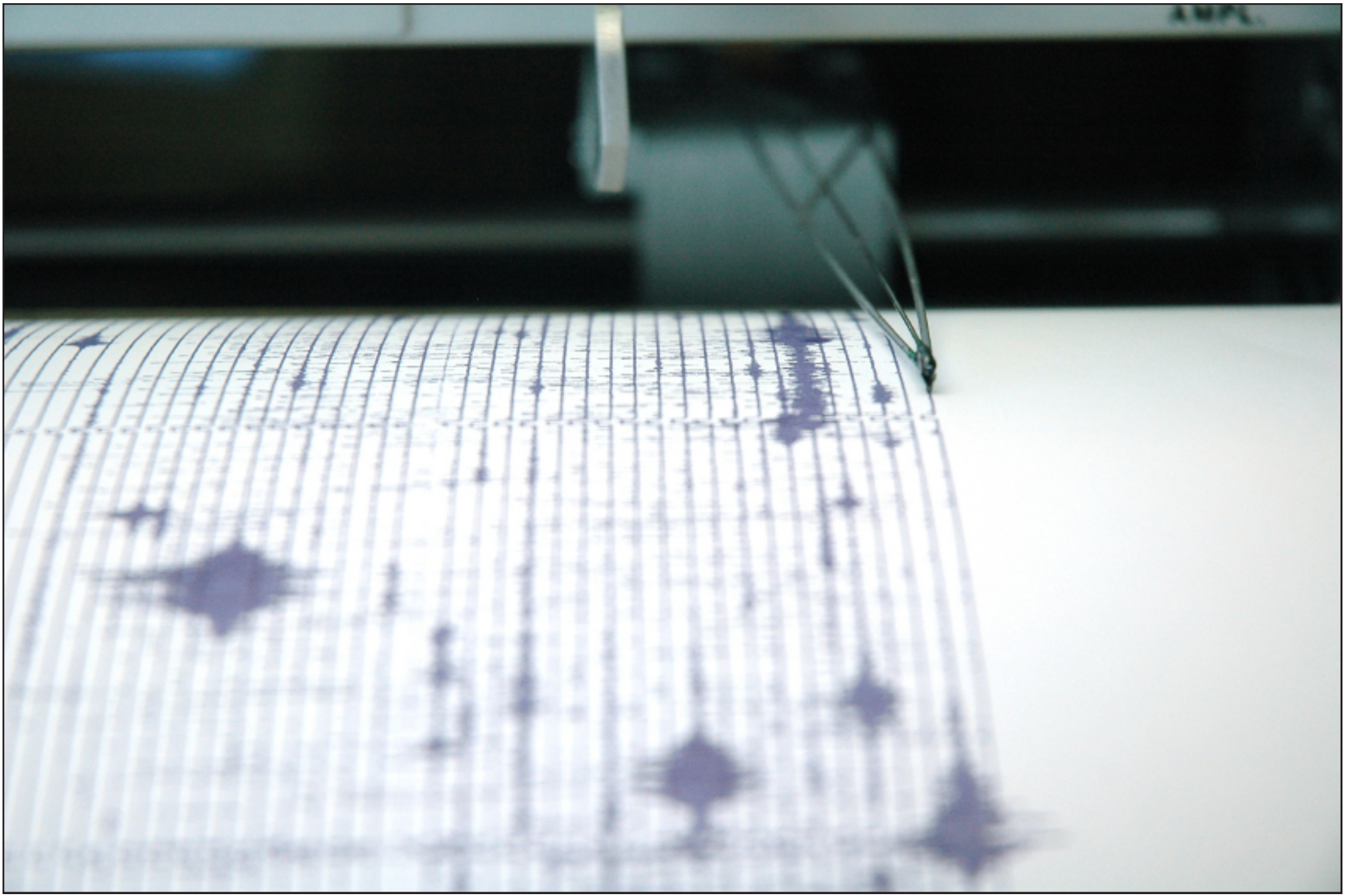


Earthquakes
Discussion Points:

1) How are earthquakes measured?
2) What is the Richter Scale?
3) What is the Moment Magnitude Scale?
3) What warning systems are in operation?

Vibrations in the earth's surface are detected by seismographs. The earthquake's strength is measured using the Moment Magnitude Scale.



Richter Scale of Earthquake Magnitude

8.0 to 9
Great earthquake that can totally destroy communities near its epicentre

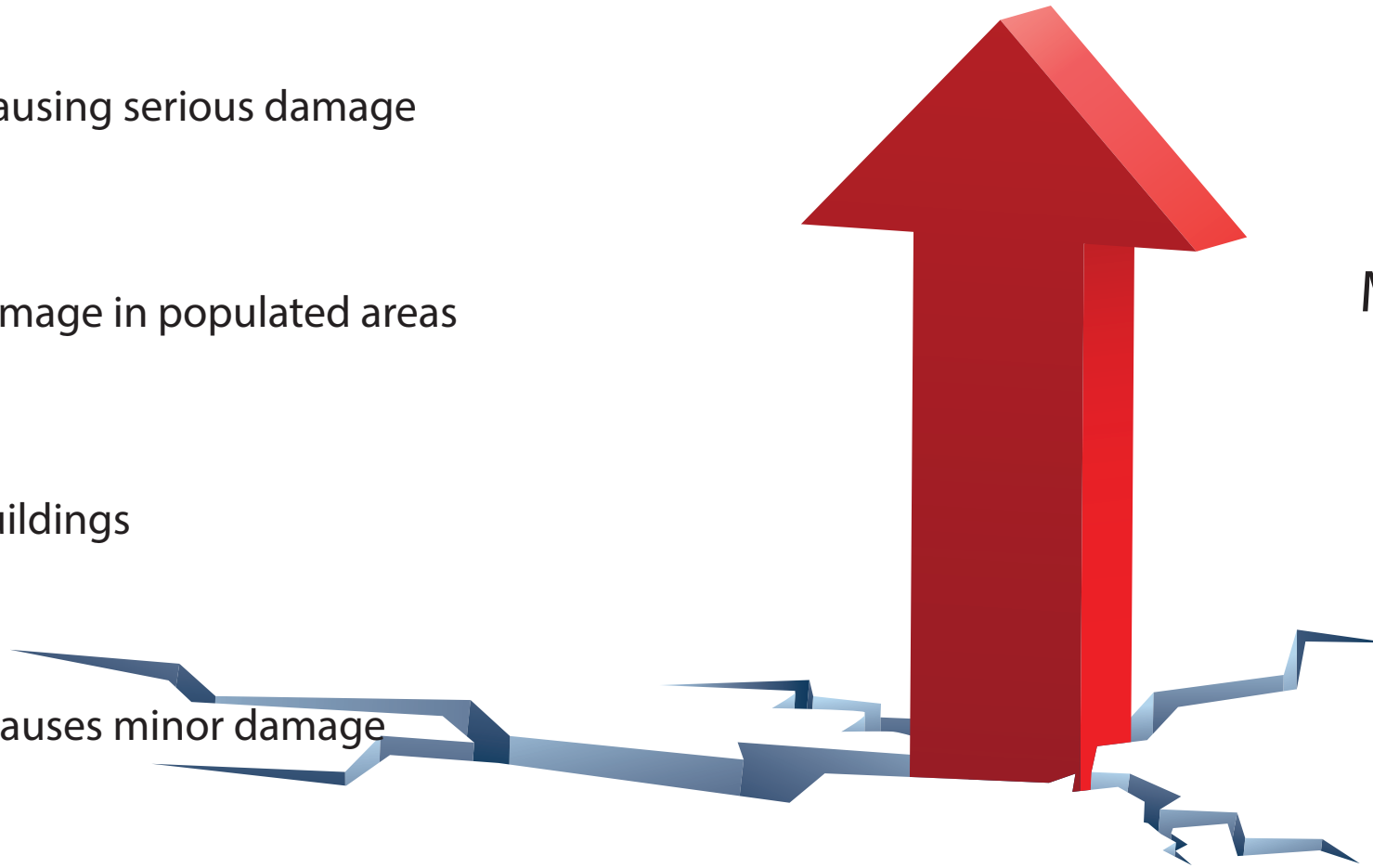
7.0 to 7.9
Major earthquake causing serious damage

6.1 to 6.9
May cause major damage in populated areas

5.5 to 6.0
Slight damage to buildings

2.5 to 5.4
Often felt but only causes minor damage

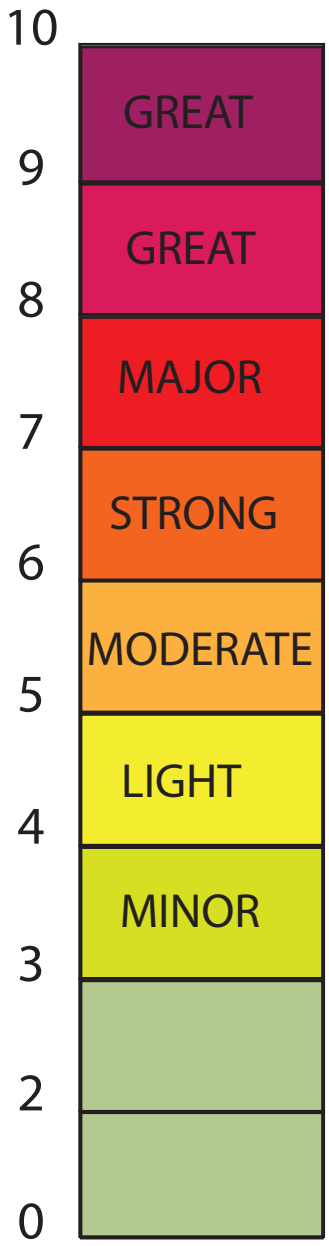
2.5 or less
Usually not felt but can be recorded by a seismograph



Great
8
Major
7
Strong
6
Moderate
5
Light
4
Minor
3

Moment Magnitude Scale

The Moment Magnitude Scale was introduced in 1979 to more accurately describe earthquakes at the upper end of the scale.



Near total destruction, massive loss of life

Near total destruction, massive loss of life

Severe economic impact, large loss of life

Damage in $billions, loss of life

Property damage

Some property damage

Felt by humans

Not felt by humans, detected only by seismograph

Not felt by humans, detected only by seismograph

Frequency:

Mag 9 (< 1 per year worldwide)

Mag 8 (3 per year worldwide)

Mag 7 (20 per year worldwide)

Mag 6 (200 per year worldwide)

Mag 5 (2000 per year worldwide)

Mag 4 (12 000 per year worldwide)

Mag 3 (100 000 per year worldwide)

Mag 2 (1 000 000 per year worldwide)

Seismic activity can be monitored but there is no accurate way to predict when an earthquake will occur or what magnitude it will be. Underwater detectors pick up vibrations when an earthquake occurs and this information is sent to communication centres who issue tsunami warnings to the public.