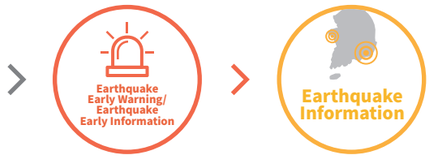
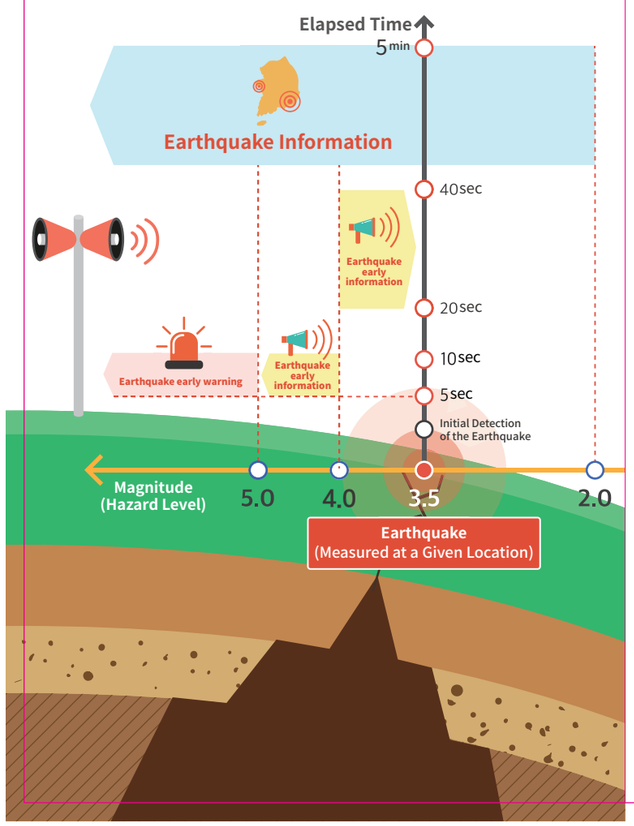
STANDARDS FOR EARTHQUAKE NOTIFICATIONS





IMPROVED EARTHQUAKE INFORMATION SERVICE

Earthquake Notification Messages with Expanded Coverage

Korea Meteorological Administration sends Earthquake Notification Messages for earthquakes of magnitude 3.0 or greater under the set standards.

Earthquakes in the Republic of Korea		Areas Where Messages Are Sent	
Land	Ocean		
Magnitude of 4.0 or greater	Magnitude of 4.5 or greater	The whole country	
Magnitude of 3.5 or greater, but less than 4.0	Magnitude of 4.0 or greater, but less than 4.5	Based on the distance from the epicenter	Metropolitan cities and provinces within the 80-km radius
Magnitude of 3.0 or greater, but less than 3.5	Magnitude of 3.5 or greater, but less than 4.0		Metropolitan cities and provinces within the 50-km radius

Provision of Information on Microearthquake

By visiting the website of Korea Meteorological Administration(KMA), everyone can learn about earthquakes of magnitudes less than 2.0.

No.	Origin Time	M	Depth (km)	Largest Intensity	Lat	Long	Location	View Maps	View Details (E.g.Intensity)
49	28 Jun 2019 09:18:10	1.9	8	I	35.46 N	125.30 E	Ocean, 51 km N of Heuksan Island of Sinan-gun, Jeollanam-do	Map	-
48	28 Jun 2019 02:33:18	0.9	6	I	35.76 N	127.09 E	Land, 6 km SSW of Wansan-gu, Jeonju-si, Jeollabuk-do	Map	-

Reporting Uncertainty of the Results of Earthquake Analysis

The uncertainty (margin of error) about the analysis results of magnitude and the epicenter of an earthquake are expressed in information provide by KMA

Earthquake information			
Origin Time	2019-08-11 18:19:50		
Location(MOE)	5km WNW of Baengnyeong Island of Ongjin-gun, Incheon 37.97°N, 124.63°E(±6.2km)		
Magnitude(MOE)	2.1ML(±0.1)	Depth	10km

Provision of Information of Estimated Arrival Time of Ground Motion

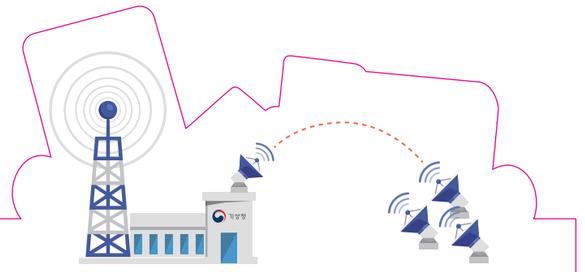
The weather app run by KMA provides personalized information about estimated arrival time of earthquakes and perceived shaking intensity depending upon the user's location.

Korea Meteorological Administration

Korea Meteorological Administration

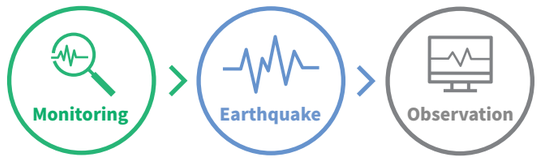
Service Providing Useful **Earthquake Information**

Earthquakes? You can be more prepared
by identifying potential hazards ahead of time.

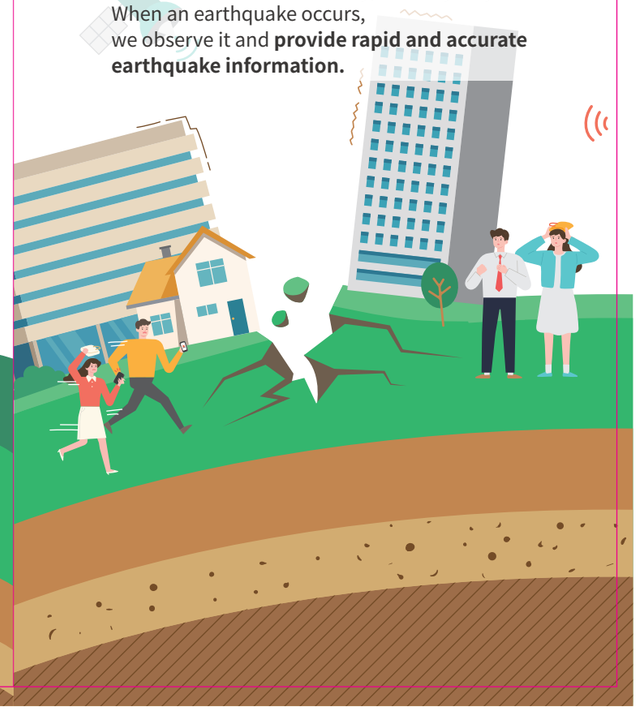


WHAT IS AN EARTHQUAKE?

An earthquake is a shaking of Earth's surface and it leads to cracks. There is energy stored up in rocks of Earth. At some point, you have to release it. Earthquakes occur when all that stored up energy is released.



Korea Meteorological Administration **monitors earthquakes 24 hours a day, 365 days a year.** When an earthquake occurs, we observe it and **provide rapid and accurate earthquake information.**



EARTHQUAKE NOTIFICATION SYSTEM

Prompt Information

Information disseminated focusing on the speed rather than the accuracy of information dissemination in order to reduce the people's anxiety and minimize damages

- An estimate made automatically by using only the specific type of seismic wave(P-waves) that travels at the great velocity

Detailed Information

Information analyzed (comprehensively and) manually by seismic analysts in order to complement instantaneous information

Earthquake Notification System

Categories	Prompt Information			Detailed Information			
	Earthquake Early Warning	Earthquake Early Information		Earthquake Information		Abroad Earthquake Information	
Announcement Standard	Magnitudes of 5.0 or greater	Magnitudes of 4.0-4.9	Magnitudes of 3.5-3.9 (In land)	Domestic Earthquakes	Magnitudes of 2.0 or greater	Within area	Magnitudes of 5.0 or greater or intensity of II or higher in Korea
						Outside area	Magnitudes of 6.0 or greater
Contents	Origin time, Estimated epicenter Estimated magnitude, Estimated intensity			Origin time, Epicenter, Magnitude, Instrumental Intensity, Focal depth, etc		Origin time, Epicenter, Magnitude, Focal depth, etc	
Time it takes for the system to disseminate information (since the detection of an earthquake	5-10 seconds	5-10 seconds	20-40 seconds	Less than 5 minutes as regards the first information dissemination and any time after the first information dissemination as regards another necessary information dissemination			

* The data automatically analyzed by the earthquake early warning system are included in instantaneous information (earthquake early warning and Earthquake Early Information) and disseminated. In addition, detailed information (information about earthquakes in Korea and other countries) is disseminated.

Ways of searching for earthquake information

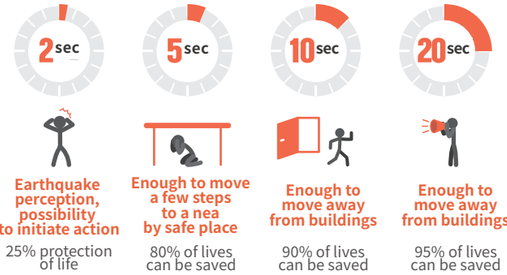
Earthquake notification message, TV programs with subtitles, KMA website, 131 Weather Call Center, weather app run by KMA, KMA Earthquakes and Volcanoes YouTube channel, mobile messenger(LINE), portal, Emergency Ready App, etc.

EARTHQUAKE EARLY WARNING

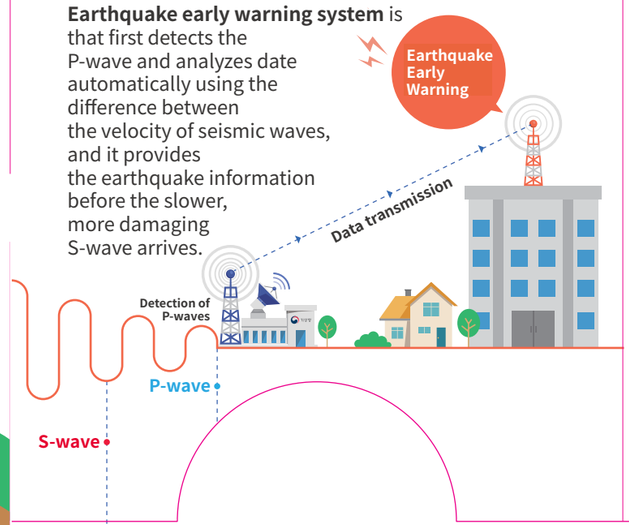
The Importance of Earthquake Early Warning

It is important to give people as much time as possible to move away from hazardous areas, given that earthquakes are unpredictable.
To transmit information more quickly, Korea Meteorological Administration is implementing an Earthquake Early Warning(EEW) system.

• **Time available for evacuation**

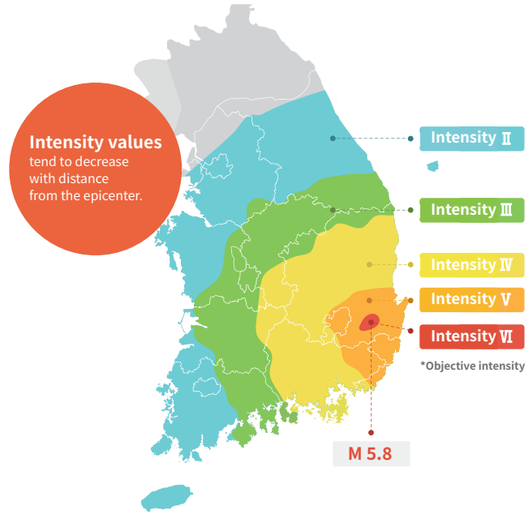


Earthquake early warning system is that first detects the P-wave and analyzes date automatically using the difference between the velocity of seismic waves, and it provides the earthquake information before the slower, more damaging S-wave arrives.



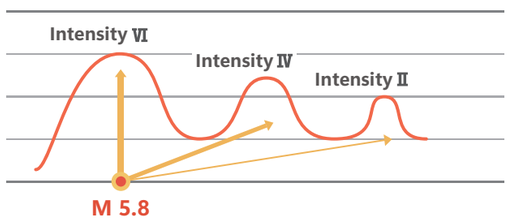
EARTHQUAKE INTENSITY NOTIFICATION SERVICE

To help our people **react effectively** when an earthquake occurs, Korea Meteorological Administration has been **providing information about earthquake intensity,** which, unlike earthquake magnitude, depending on the region.



The Size of the Earthquake

Magnitude(expressed in Arabic numerals) is a measure of the amount of energy released at the epicenter.
Intensity(expressed in Roman numerals) is a measure of the amount of shaking at a given location to which the seismic waves travelled.

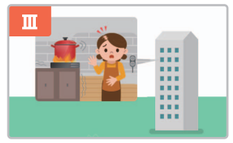


The Effects of the intensity

Intensity Ⅰ~Ⅻ (assigned by the Modified Mercalli Intensity Scale)

Not felt except by a very few. Recorded on seismographs.

Felt by a few persons in quiet situations or on upper floors.



Felt by people indoors, particularly the ones on upper floors. standing cars are slightly shaken

Felt indoors by many. At night, some awakened. Dishes, windows, and other objects shake.

Felt by nearly everyone. Objects including dishes and windows may be broken. Unstable objects overturned.

Felt by all. Some heavy furniture moved. Some plaster falls.

Damage slight in well-built ordinary buildings. Damage considerable in poorly constructed buildings.

Damage considerable in ordinary buildings with partial collapse. Damage serious in poorly constructed buildings.

Damage considerable in substantial buildings. Damage great in ordinary buildings; some collapse.

Most structures destroyed. Bridges destroyed. Rails bent greatly.