

DID YOU KNOW

Earthquake Preparedness by Schools

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'Earthquake' is the sudden shaking of the Earth's surface for a short span of time. Quakes are unpredictable in nature and cannot be prevented. Some are weak in frequency, and usually, go unnoticed, while few are higher on the Richter Scale and can cause severe damage to life and property.

However, it must be noted that most of the damage incurred in the event of a quake is caused due to the poor quality of building material used and violation of construction norms.

Many children may be aware of earthquakes. Some may even have experienced one. So, it is important to educate students at the elementary stage about disaster management, including quakes. A teacher may ask the students to perform an activity while introducing the concept of quakes. They may be asked to hold a pencil horizontally with both their hands. They can now be asked to imagine a situation of someone applying force to both the ends of the pencil. They would see the pencil bend. After enough force

is applied, the pencil would eventually break from the middle, releasing the stress put on it.

Hence, it may be explained that the Earth's surface is not one smooth plane but a crust made of plates, overlapping and binding each other. As the plates move, they exert force on each other. When the force is strong, the Earth's crust is forced to get disrupted. As a result, the stress is released in the form of energy that moves through the Earth's surface like waves. This is an 'earthquake'.

COMMON TERMINOLOGY

Epicenter

It is the point on the Earth's surface where a quake occurs. Most damage is caused at the epicenter. While explaining the concept of epicenter, the teacher may ask the students to imagine throwing a stone in a pond, causing ripples or concentric circles. The epicenter is the spot, where the

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stone drops and the waves indicate the force of the earthquake becoming lesser as they move away from the centre.

Seismic waves

The energy created by the quake travels in the form of waves from the epicenter. These are 'seismic waves'. Depending on the frequency of the quake, the waves may cause severe damages to life and property.

Richter Scale

It is an instrument used to measure the intensity or magnitude of a quake.

Tsunami

It is a series of oceanic waves caused by an underwater quake or volcanic explosion. Tsunamis are different from tidal waves.

Tectonic plate

Also called 'lithospheric plate' of the Earth's crust, it is a massive irregular shaped slab of solid rock composed of continental and oceanic lithosphere.

SCHOOL PREPAREDNESS

As quakes are sudden in nature, school authorities need to take appropriate measures in order to prevent the loss of lives and property. This is all the more important for schools located in quake-prone regions. Earthquake preparedness requires proactive participation by all stakeholders, including administrators, school authorities, teachers, students, parents, as well as, those who design,

build, regulate and maintain school buildings. The school authorities must conduct mock drills from time-to-time, and encourage students and staff to participate in these activities. Besides, safety audit of school buildings must be carried out on a regular basis. Depending on when and how the buildings were designed, built and furnished, existing school buildings may have structural vulnerabilities.

Safety first

- Safety training workshops and mock drills must be conducted for staff members and students, with emphasis on 'drop, cover and hold' during earthquakes.
- The curriculum must include a chapter on disaster management, including earthquakes.
- Identification of locations, where people can take shelter in the event of a quake be made. These may be outdoors away from buildings, trees and power cables.
- Earthquake preparedness must be integrated into the schools' emergency preparedness, response and recovery planning.

Community awareness

- As part of earthquake preparedness, secondary students can be trained to reassure primary students when shifted to a safe open area.
- Teachers must try using age-appropriate vocabulary and

examples to teach students about earthquakes.

- All this will help transform young students into responsible adults, who will ensure construction of quake-resistant buildings and contribute towards reducing risks and hazards that can cause damage to life and property.

POTENTIALLY DANGEROUS ITEMS — NON-STRUCTURAL COMPONENTS

In addition to frequent safety drills, school authorities must secure non-structural components that may cause casualties and destruction in the event of an earthquake. Common non-structural components include ceilings, windows, computers, things kept on shelves, almirahs, AC units, electrical appliances, furniture, etc.

It is important to understand why non-structural components in a building are of concern in case of an earthquake. These items shake when an earthquake occurs and may slide, swing, strike with other objects or overturn. They may slide off the shelves and fall on the floor or over people. Such items include broken glass pieces, overturned tall and heavy cabinets or shelves, collapsed false ceilings or overhead light fixtures, ruptured gas lines, damaged asbestos material, broken pieces of decorative brickwork, etc. There is a possibility of some casualty due to these falling non-structural components. So, even though they may seem harmless, these items may become hazardous.

MAKING SCHOOLS SAFE

School authorities need to take appropriate steps in order to reduce risks associated with earthquakes. First of all, they must identify areas in a building that may have higher occupant load. It must be ensured that all non-structural items are securely anchored as they may cause loss of life and property in case of an earthquake. When a quake strikes, students and staff members may take shelter under desks and tables in order to protect themselves from falling objects like light fixtures and ceiling tiles. However, the authorities must note that debris falling in hallways and stairs can obstruct people's movements as they try to escape the site. Wall-mounted cameras and televisions sets are common in schools and may cause falling hazards. They may add to the panic, especially, when quake is accompanied by a power snag.

Hence, design and construction professionals may be consulted to secure non-structural components. Besides, the school authorities must ensure regular maintenance of all electrical appliances installed in their respective campuses. Students may also be encouraged to help mitigate non-structural hazards. Moreover, preparing students on how to behave and the measures that need to be taken in case of a natural disaster like an earthquake is one of the best ways to reduce trauma and maintain their mental and emotional well-being.