



Spark!Lab's Dr. InBae Yoon

# Invent It Challenge

Think about a new and innovative way to provide natural disaster preparation or relief.

## NATURAL DISASTER TOPICS & RELATED RESOURCES

Use these ideas and resources to spark your inventions!

### Prepare

**Warning! Natural Disaster!** Natural disasters cannot be prevented, but they often can be predicted. The better the ability to predict when and where they will happen the better people can prepare for the event. In areas where certain disasters such as flooding, earthquakes, or volcanoes occur, engineers can design structures to better withstand destructive forces. Inventions in this area include methods for prediction, warning systems, systems to provide supplies and care before a disaster strikes, and improved structural designs to better withstand natural disaster destruction. Methods to evacuate people before the natural disaster strikes is important for saving lives and decreasing the need for difficult and dangerous rescues. What can you invent to help people prepare for natural disasters?

#### Resources:

- [Ready!](#)
- [FEMA](#)
- [Relief Web](#)
- [NOAA](#)
- [Engineering Bridges for Natural Disasters](#)
- [Simulations Training Systems](#)
- [National Geographic: Natural Disasters](#)
- [Emergency Management](#)
- [Ready! Evacuation](#)

### Respond and Rescue

During and after a natural disaster, it is critical to begin saving lives by rescuing those who are hurt or stranded. Rescue is often risky and difficult because of dangerous conditions, power outages, broken communication systems, and unstable structures. What can you invent to help save people and animals in difficult and dangerous situations?

#### Resources:

- [Red Cross](#)
- [National Organization for Search and Rescue](#)
- [Search and Rescue Dogs](#)
- [Search and Rescue Robots](#)
- [Animal Rescue](#)
- [Emergency Management: Communication](#)
- [National Geographic: How to Survive a Natural Disaster](#)

## Immediate Relief

When a natural disaster occurs there is a need for immediate relief. Many times people have lost their homes or have been displaced. They need food, water and shelter. Water is often contaminated during a natural disaster, which requires a way to bring clean drinking water to large numbers of people. Shelters need to be quickly setup to protect families from the weather and keep them safe. Medical care and supplies are necessary for those who are injured or have special health needs. In addition, methods are needed to reunite family members who may have been separated during the disaster event. What can you invent that helps with one or more of these important natural disaster relief needs?

### Resources:

- [Red Cross](#)
- [Disaster News Network](#)
- [EPA: Clean Water](#)
- [Inhabit: Emergency Shelters](#)
- [Urbanist: Emergency Shelters](#)
- [Disaster Assistance-Immediate Needs](#)
- [Ready! Food](#)
- [CDC: Natural Disaster Relief](#)
- [CDC: Safe Food and Water](#)
- [USDA Food Assistance in Disaster Situations](#)
- [Reconnecting Families](#)
- [FEMA: How Do I Find My Family?](#)

## Recovery

After the immediate dangers have passed the work of recovery begins. Natural disasters destroy structures needed for living, working, and transportation. Damaged factories and sanitation systems cause widespread pollution as water and air are contaminated with bacteria and toxic chemicals. Destruction of roads, railways, bridges, and ports make transportation challenging. Power and fuel are often not available or in shortage. Crops are also destroyed and farms need support to get up and running again. These are some of the many problems people need to tackle after a natural disaster. What can you invent to help solve one of these problems?

### Resources:

- [Reconstructing Haiti's Transportation](#)
- [National Transportation Recovery](#)
- [EPA Natural Events and Disasters](#)
- [WSDA: Agriculture and Natural Disasters](#)
- [Energy: Alternative Fuels During Natural Disasters](#)
- [Best Climate Practices](#)
- [Clean Water Education Partnership](#)
- [Ready! Recovering from Disaster](#)
- [OSHA Fact Sheet on Natural Disaster Recovery](#)