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

Spark!Lab's Dr. InBae Yoon

Invent It Challenge

TIPS!

THINK IT

Invention is all about solving problems, so the first step is to identify a problem related to natural disaster preparation and relief you want to work on. (This is sometimes the hardest step in the invention process!) Look around you – what natural disaster challenges do you see in your community, region, nation, or across the globe? Ask friends, teachers, and family members about natural disaster issues that are important to them. Look at your local newspaper to learn about related issues that people in your community are talking about. Observe the world around you and write down any problems you see presented by natural disasters. You can also use the Internet to research natural disaster issues in other places. Talk to people working in the emergency preparedness and response field, like a first responder, recovery specialist, or emergency medical technician, or FEMA expert. If possible, talk through what you've discovered in partners and groups with other students to spark more ideas. The best invention ideas often address problems that affect lots of people.

EXPLORE IT

If you've identified a natural disaster preparation and relif problem that affects many people around you (or even around the world), you're probably not the first inventor to try to solve it! Don't let this discourage you. Instead, do some research to learn how others have addressed the problem. What do you like about their solutions? What do you think you can improve? How can your invention be different? Many inventions build and improve on ones that have come before. Think carefully about who your invention helps and make sure your idea clearly solves the identified problem. Identify specific features and benefits of your invention that builds on inventions of the past.

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Once you have a basic concept of what your invention will be, make some simple sketches of your idea. These do not have to be perfect or artistic. Sketches simply help you take the idea in your head and put it on paper. Sketches can help you think through not only what your invention will look like, but how it will work. You may want to make several sketches of your invention – from the front, side, looking down from above, or from the inside to show how it works. Be sure to label your sketches to explain how the various parts and pieces function.

For many inventors, this is the most fun part of the invention process! This is where you create a prototype, or model, of your invention. Using your sketches as a guide, you'll build your first prototype. Remember, this doesn't have to be perfect or even work! It's just the next step in the process and allows you to take your concept and put it into three-dimensional form. When you are building your model, make your invention as eco-friendly or sustainable as possible by using materials that you already have. Remember the model does not need to actually work, but it should show others what the pieces and parts look like. Capture video or photos of the steps you take building your prototype or model.

Once your prototype is finished, ask friends, teachers, parents, and neighbors to try it. It's even better if you ask people you interviewed in the Think it step or someone who is affected by the natural disaster preparation and relif challenge you're trying to solve. What do they like? What suggestions do they have for making your invention better? Be sure to write down what they say about your invention so you have good notes for the next step of the process. If possible, perform some experiments to find out how well you prototype works. Write down the results of each test.

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Using the feedback you got in the Try it step, identify ways you can improve your invention. Do you want to modify the design or change the materials it's made from? Do you want to add a new part to your invention, or take something away to make it simpler? How could you make your invention more environmentally friendly? Many inventors try and tweak and then try again to keep improving their idea until they get it just the way the want it!

Once you have your final invention idea, you want to convince other people to start using it! Create a "fact sheet" or a video or written pitch about your invention. What natural disaster preparation and relief problem does it solve? How is it different from other inventions? Who is your "target audience"? Who should use your invention? How does it work? Answer these questions to explain how your invention will help people affected by natural disasters!

GOOD LUCK!