Global Problem Solvers: The Series
Season 2: Storm Force

Teacher’s Guide
gpstheseries.com
Objectives

Season 1 of *Global Problem Solvers: The Series* introduced students to the team and the concept of social entrepreneurship: creating innovative business strategies to solve social problems around the world. Season 1 involved improving access to water in an impoverished region of the world. Season 2 shows how social innovation can benefit even the most developed areas—in this case, a city in Florida, USA, where a hurricane has caused serious damage to schools.

Season 2 shares the same fundamental objectives of Season 1:

- Foster an entrepreneurial approach to problem solving;
- Encourage the future development of innovative technological solutions and sustainable social ventures;
- Inspire students to be social change agents; and
- Facilitate the achievement of these objectives by presenting six attributes of Global Problem Solvers and nine steps of social entrepreneurship in an engaging and entertaining way.

In addition, the following objectives are specific to Season 2:

- Encourage students to see the importance of global problem solving everywhere, including in their own communities and schools;
- Highlight the value of foresight;
- Enable students to see how familiar technology can be used for social innovation;
- Develop students’ ability to gain support for their ideas;
- Cultivate a sense of the interconnectedness of people, society, and the environment; and
- Equip students with helpful problem-solving tools, such as design thinking, reasoning from analogy, leveraging social networks, and finding inspiration from past experiences and by taking breaks.

Core Concepts Review

Both Seasons 1 and 2 use the team’s adventures to teach the six attributes of Global Problem Solvers and the nine steps of social entrepreneurship. Season 2 also provides opportunities to develop students’ facility at proposing or pitching their ideas with an entrepreneurial business plan. What follows is a brief review of these core subjects as well as the series’ lead characters.

The members of the Global Problem Solvers super-team, their home countries, and the attributes they exemplify include:

1. Beela, Jordan, Digital skills
2. Adrien, France, Creativity
3. Satoshi, Japan, Critical thinking
4. Kelile, Malawi, Social consciousness
5. Cristina, Brazil, Entrepreneurial spirit
6. Putri, India, Teamwork skills
The nine steps of social entrepreneurship include:

1. Articulate the problem
2. Surround yourself with experts
3. Formulate a solution
4. Incorporate technology to connect people, processes, data, and things
5. Develop a business plan
6. Raise funding and spend it wisely
7. Test and refine solution
8. Use data to measure impact
9. Spread the word

**Episodes**

This Global Problem Solvers season once again consists of seven units, each of which contains a three-to-four-minute video, prompts for class discussion, part of an optional season-long project, and a worksheet. The discussion prompts are designed to accommodate a twenty-to-forty-minute class and can be supplemented by each episode's script and storyboards.

The episodes illustrate attributes of Global Problem Solvers and the steps of social entrepreneurship as follows:

- **Episode 2.1: The Storm**—establish the cause of the problem to be solved.
- **Episode 2.2: The Problem**—identify the problem and consult with experts.
- **Episode 2.3: The Solution**—formulate a technological solution.
- **Episode 2.4: The Technology**—prototype the technology.
- **Episode 2.5: The Business Plan**—pitch the project to potential funders.
- **Episode 2.6: Test and Retest**—test the solution.
- **Episode 2.7: Birth of a Social Enterprise**—measure effectiveness, market the product, and continue to grow.

**Pedagogy**

The Global Problem Solvers series uses the adventures of a teenage super-team to show students how they can make a difference in the world. This season's curriculum has three main sections for each class:

- **Discussion** prompts cover each episode's theme and help students see how they too can be Global Problem Solvers wherever they may be.
- **Long-term Project** has students apply design thinking to develop their own ideas to improve education.
- **Worksheets** give students an opportunity to explore the themes of each episode further.

**Materials**
In addition to the videos, classroom activities for this curriculum make use of the following materials:

- Storyboards
- Scripts
- Worksheets

Additional Resources

In addition to Season 1's introductory references on social innovation and entrepreneurship, the following are some useful links for keeping up-to-date on global problem solving:

- Ashoka - https://www.ashoka.org
- Ashoka Changemakers - https://www.changemakers.com/
- Cisco CSR - csr.cisco.com
- DoSomething.org - https://www.dosomething.org
- Echoing Green - https://www.echoinggreen.org/
- Grameen Foundation - https://grameenfoundation.org/
- Kiva - https://www.kiva.org/
- Muhammad Yunus - http://www.muhammadyunus.org/
- Rise Networks - https://risenetworks.org/
- School for Social Enterprise - https://www.the-sse.org/
- School for Social Entrepreneurs India - http://www.the-sseindia.org/
- Techfugees - https://techfugees.com/
GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.1: THE STORM

This episode sets out the inciting incident for the series—a hurricane in Tampa, Florida, USA—and introduces a tech-savvy teen who over the course of the season will prove to be a valuable new member of the Global Problem Solvers: Ivy Stormcatcher. Ivy has an internet channel on which she talks about the weather and calls the team for help after the Tampa hurricane. However, her phone loses power before she can describe the specific problem that led to her call. The Global Problem Solvers plot a course for Tampa.

Objectives

In addition to setting up the problem to be solved, Episode 2.1 provides a way to reintroduce students to the main characters and to the six attributes of Global Problem Solvers. This episode also:

- Highlights the role of technology in effective social entrepreneurship;
- Illustrates the power of interconnectedness;
- Demonstrates how small changes can have big effects; and
- Shows how young people can play a significant role in identifying potential problems.

Class Discussion: Introduction

One of the recurring themes of the Global Problem Solvers series is that your students have the power to make a difference. This season’s adventures start with the team detecting signs of an imminent natural disaster. It might be instructive to tell the class the real-world story of how an eleven-year-old girl saved dozens of lives from one of the worst natural disasters this century: the tsunami that hit Southeast Asia the day after Christmas 2004.

The story could be told like this:

“Back in 2004, eleven-year-old Tilly Smith and her family were enjoying a beach vacation in Thailand when Tilly noticed that a log in the water started spinning wildly and the waves began to act in a strange way. The waves were pulling farther away from the beach and frothing at the top. She remembered that in geography class just two weeks earlier, her teacher described this as a sign of a coming tsunami: a giant, extremely dangerous wave often caused by a faraway earthquake. Not only did Tilly persuade her family to run to a high floor in their hotel, but her warning also spurred the lifeguard to clear everyone from the beach.

“The monstrous wave rose up and hit land just a few minutes later. On that hotel beach, thanks to that one girl in middle school, no lives were lost.
“You might never be on a beach when a deadly tsunami is about to hit, but there are plenty of other ways in which you can use what you know to help others. Today we begin another adventure of the Global Problem Solvers. They are once again going to show how you can use what you learn to change the world, whether you are on the other side of the globe or right here at home.”

Alternatively, if you would like to begin with a conversation, you could begin by asking the students how they have been putting their global problem-solving powers into action since watching the first season.

“It’s time for another adventure of the Global Problem Solvers. This time they are going to a new location to use their powers and technology to change the world. Before we watch the first episode, however, I’d like to hear how you have been using your own superpowers for good.”

One useful thing to note: If the class needs encouragement to speak up, let them know that no action is too small to be important. Just as your students will see in the video, small actions can have big effects.

**Class Discussion: Video**

This episode provides a springboard for the class to re-familiarize themselves with the characters and the concepts at the heart of the Global Problem series.

One way to make this engaging is to list the six attributes of Global Problem Solvers on the board. Discuss each character one at a time, asking the class which trait each character exhibits in this episode. For reference, below is the more extensive description of each character’s powers from the Season 1 Teacher’s Guide:

- **Beela, Digital Skills**—Not just using technology, but embracing it. People who can analyze data, build networks, develop apps, or secure devices can bring ideas to life.
- **Satoshi, Critical Thinking**—Analyzing one’s way around every obstacle. People who are curious, ask questions, and evaluate options are essential to solving problems.
- **Kelile, Social Consciousness**—Awareness that “changing the world” is a must and that everyone can make a difference. People with a sense of service inspire others and spark transformation.
- **Cristina, Entrepreneurial Spirit**—Seeing a challenge as an opportunity waiting to happen. People who are comfortable taking risks and leading others can turn ideas into action.
- **Putri, Teamwork Skills**—Communicating well and respecting others. The best problem solvers realize they are stronger working together than powering through alone.
- **Adrien, Creativity**—Dreaming up new ways to solve problems and make things better for others. Innovative ideas are the foundation for addressing the challenges we face.

You might want to save Adrien for last. In this episode, he serves primarily as comic relief. However, it would not be inappropriate for students to characterize his leaning into the wind as a creative and rather daring way of trying to figure out what is happening.
Moreover, Adrien’s actions in this episode could provide a springboard for questions foreshadowing themes in the rest of this season. Could Adrien’s windsurfing accident have taught him anything that could be useful in helping deal with the hurricane in Tampa? Have your students ever learned something useful from playing? Having an accident? Making mistakes? What can be learned about emergency preparedness from Kelile giving Adrien first aid?

As a follow-up to the questions about the team, ask the students about the new character, Ivy Stormcatcher. Does she seem to have any special abilities? How does she use the internet to help others?

By the end of the episode, the Global Problem Solvers have learned that Tampa needs help after the hurricane. Try asking your students a thought-provoking question like, “Why doesn’t the team simply sell their airship and give Tampa the money?” It could elicit a discussion of the importance of making an impact over the long term. Money might not make much of a difference if it does not go toward creating new solutions to old problems, which is exactly what social entrepreneurship seeks to do.

**Long-term Project: Design Thinking**

Another potential discussion prompt could serve as a transition to the long-term project. In this episode, Ivy Stormcatcher is able to call the Global Problem Solvers to help with a problem at local schools. What if your students could call the team to help solve a problem at their school?

At first glance a school problem might not seem like a global problem, but just as a whirlwind off the coast of Africa can cause a hurricane in Florida, problems at schools can have ripple effects throughout the rest of society. From the content of textbooks to bullying to school shootings, circumstances inside a school can have a global impact.

This season’s optional long-term project gives students an opportunity to apply the problem-solving methodology to the educational community in which they spend a substantial part of their lives. The core approach to problem solving in this series is often referred to as “design thinking.” This does not mean that students need to be fashion designers or artists. Rather, it refers to applying the perspective of a designer to solve any kind of problem.

We can distill this approach into three basic actions:

- Discover
- Define
- Explore

Discovering is what the Global Problem Solvers are doing in this episode. Rather than just jumping into problem solving based on abstract theories, they are trying to understand the world around them, from the interconnectedness of the environment in Africa to the needs of individuals and communities in the United States. As we will see in the next episode, their drive to understand extends to technology too. By understanding how various technologies work, Global Problem Solvers can use devices more effectively as problem-solving tools.
For the first part of the long-term project, have your students start discussing what problems they can discover in the educational system, ideally at their (and your) school. Nothing should be off limits. The process of discovery could end up focusing on the classroom experience, but it could also extend to such things as sports, buildings, equipment, standardized tests, meals, or safety. Any part of their educational experience is open for understanding and innovation.

**Additional Resources**

- United Nations Office for Disaster Risk Reduction. “Lessons Save Lives: The Story of Tilly Smith.” [https://www.youtube.com/watch?v=V0s2i7Cc7wA](https://www.youtube.com/watch?v=V0s2i7Cc7wA)
The Global Problem Solvers are back for another adventure. Can you find all the heroes and their powers in this word find? To help, there’s a list of everyone in the team and their powers on the next page. Their friend Ivy is in the word find too!

E I V Y S T O R M C A T C H E R M L O Q
N N P G Q Y C T F K I K T D B S M B S U
T I H S O T A S A N I R L A L G T O F C
R A J J B E I A N H V M D L L N C I R
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P F O R E S I G H T E K C T A K O D E S
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I M O Y I C C I E A W W V D T C S R M P
A B G D Z B O Q X D D I C R V I D A W S
L M C N Z U Q Y F M M R H B Z T V Z Z H
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<td>Beela</td>
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GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.2: THE PROBLEM

Episode 2.2 takes the Global Problem Solvers to Tampa, where they get a direct look at the conditions that led Ivy to call for help. The team sees the role of infrastructure—roads, buildings, the electrical grid—in enabling a community to function at its normal level. With trees and floodwaters blocking the roads, schools damaged, power lines not fully restored, and disaster aid dedicated to higher priorities, Tampa’s schools could benefit from an innovative approach to getting students back to class.

This episode also underscores the importance of learning from people who have experience in dealing with a social problem even if they have not been able to fix this one themselves: Ivy and Principal Diaz help the Global Problem Solvers focus their attention on the real problem instead of the alligator; Principal Diaz explains why students cannot return to school; The city engineers say that the fallen trees are keeping power company trucks from accessing power lines; The power company explains why the limited electricity available has to go elsewhere and how long it may take for power to be restored; and Ms. Kivel provides specific details as to what is needed to get students back to class.

This is enough to start the Global Problem Solvers working on a solution, but first they must help Ivy find her grandmother’s missing cat. This would seem to be a distraction from their real work, but as we shall see in the next episode, that may not in fact be the case. Sometimes what appears to be a distraction can turn out to provide more useful information.

Objectives

Episode 2.2’s goals are as follows:

- Show students how to identify a social problem and factors that could aid in devising a solution;
- Highlight the importance of determining which problems should receive the most attention;
- Illustrate how managing resources can lead to difficult decisions, which in turn can lead to new ways to deal with a problem; and
- Encourage an approach to information gathering that includes a range of perspectives and backgrounds.

Class Discussion: Introduction

Episode 2.1 ended with a cliffhanger: Ivy was about to tell the Global Problem Solvers why Tampa’s schools needed help, but her phone died before she could finish. What kinds of problems could the hurricane have caused at the city’s schools? What clues might the next episode provide that clarify the problem the Global Problem Solvers need to solve? Hints: Ivy’s phone runs out of power; the community is rebuilding; and teachers are somehow unable to meet students’ needs.
You might also ask your students what they think the Global Problem Solvers’ first steps will be when they arrive in Tampa. See if they remember the first two steps of social entrepreneurship: articulate the problem and surround yourself with experts.

Class Discussion: Video

The following questions are designed to help reinforce the main points of this episode, which focus on articulating the problem and surrounding yourself with experts.

- Why are students not able to return to school?
- What is keeping teachers from teaching class in the shelters where families are staying?
- What would help teachers resume teaching classes?
- Why doesn’t Principal Diaz just tell families to send their kids to a different school until their local school is repaired? (He notes that when students go to a new school, it can be hard for them to adjust.]
- Is this problem likely to be limited to just one school? How might that matter to the Global Problem Solvers in coming up with a solution?

In addition to developing the main points, this episode continues to build on the theme of interconnectedness introduced in Episode 2.1. There the focus was the interconnectedness of nature, with ocean activity in Africa causing weather problems in the United States. Episode 2.2 calls attention to the interconnectedness of the environment with individuals and the community as a whole. The analogy between hurricane winds and a truck engine also highlights the interconnectedness of technology and nature: each can help us understand the other.

- At one point Ivy says, “If kids can’t return to school, the community can’t return to normal.” Why not? What are the various roles that schools play in a community? What would happen to your community if your school had to be closed for several months?
- If your students have been introduced to analogies in their language studies, you might want to use this opportunity to show how analogies are not just found in standardized tests. They are a vital tool in problem solving. Using something that is familiar to help understand the unfamiliar can make the difference in finding a solution and persuading people to use it. Ask your students to watch for analogies made by the Global Problem Solvers as they attempt to formulate a solution.

Long-term Project: From Discovering to Defining

In Episode 2.2, the Global Problem Solvers use the process of discovery to define the specific problem they are going to solve. Understanding is essential to effective design thinking, and so the
team tries to understand what people are experiencing, how the community as a whole functions, and the state of the natural environment and how it has interacted with various forms of technology: electronic devices, buildings, roads, power plants.

For this part of the long-term project, students should break into groups. Each group should identify the problem with schools that it would like to improve. Each group should then come up with a list of the experts with whom it would consult to learn more about the problem.

It is important for students to recognize that “expert” does not refer only to school teachers or administrators. It extends to anyone who has experience with a particular problem, which can include community leaders, alumni, parents, and other students. What kinds of questions would the students ask the experts they've identified?

### Additional Resources

GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.2: THE PROBLEM

WORKSHEET

1. Ivy Stormcatcher created her own online show to talk about her favorite subject: the weather. If you were to create your own online show, what would you discuss? What kind of information would you provide that might be helpful to other problem solvers?

2. Not every problem is a major disaster like a hurricane. Social problems are all around us. One of the essential skills in being a Global Problem Solver is seeing the problems that remain to be solved. What social problems do you think need to be solved in the following areas?

   Schools:
   
   Roads:
   
   Stores:
   
   Housing:
   
   Internet:
THE GLOBAL PROBLEM SOLVERS
EPISODE 2.3: THE SOLUTION

Ivy's grandmother provides the theme for this episode, which has direct application to the process of creative social innovation: “I know we'll find Bucky. I just love to see how you get us there.”

Ivy's solution of putting a tracking device on the cat's collar does not work in a community without internet. In using Beela's goggles to find the cat, the team not only locates Bucky, but also finds a house with an electricity generator, which in the next episode will become part of the solution. At the same time, Adrien's twisted ankle from Episode 2.1, coupled with a sunbeam shining through the airship window, inspires the idea for an emergency classroom kit and the use of solar energy. Sometimes the best ideas come from a combination of strategy and serendipity.

Objectives

Episode 2.3 has the following objectives:

- Encourage students to be open to inspiration from unexpected sources;
- Illustrate the value of making connections among things that might otherwise seem to be unrelated;
- Foster teamwork; and
- Show how creativity, critical thinking, and technology can help solve social problems.

Class Discussion: Introduction

The Global Problem Solvers have identified the problem: the hurricane has halted class. How will the team solve it? One way to introduce this episode is to ask students what they think the solution should be and why. Ask your class if their community ever experiences any weather emergencies or natural disasters. How does the community recover? How could that recovery have been improved? What might the Global Problem Solvers learn from your community's successes and struggles?

Class Discussion: Video

This episode provides another opportunity to ask your students how the Global Problem Solvers use their powers to find a solution.

- **Adrien, Creativity**—Adrien comes up with the idea for a first-aid kit for classrooms by making a creative connection between his windsurfing accident and the community’s problems after the hurricane.
- **Kelile, Social Consciousness**—Kelile’s instinct to come prepared with supplies that heal inspires those who benefitted—in this case, Adrien—to pay forward the benefit to others.
• **Cristina, Entrepreneurial Spirit**—Cristina recognizes that Adrien’s story about his windsurfing accident contains the seeds of an idea. She also notes that the classroom kit would generate its own power and not depend on the community’s power supply.

• **Beela, Digital Skills**—Beela suggests that the emergency classroom kit contain internet hardware.

• **Putri, Teamwork Skills**—Putri synthesizes the ideas (“pop-up classrooms”) and gets the team to brainstorm about the source of power. She also divides the team up so each can handle a discrete aspect of assembling the emergency classroom kit.

• **Satoshi, Critical Thinking**—Satoshi recognizes that the emergency classroom kit needs to be rugged and waterproof to withstand disasters. He also makes the connection between the sunbeam and solar energy.

A predictor of storms, Ivy’s special power is foresight. She recognizes that the hurricane’s disabling of roads would make the retrieval of the items proposed for the kit very difficult.

Ask your students where they have found inspiration for a creative approach to solve a problem. Did they learn from nature? Earlier experiences? Did an idea come to them in their sleep or while they were playing? A video game, TV show, movie? This is a good time to get students thinking about an approach to problem solving that combines deep understanding with creativity and inspiration.

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**Long-term Project: Process Mapping**

Episode 2.3 shows the power of exploration in finding innovative solutions to social problems. The team and Ivy explore possibilities, play with ideas, and imagine what might happen when they put a proposed solution to use. For this section of the long-term project—applying problem-solving techniques to education—the members of each group should start discussing how they might solve their problem of choice. Challenge them to only incorporate technology into their solution to which they have access and know how to use.

Some students might feel they do not have enough viable technology at their disposal. Help them realize that what they do have is more powerful than they might think. So far this season the Global Problem Solvers have used smartphones, pet tracking devices, GPS, GoPro cameras, and digital video to formulate a new approach for making class possible in an emergency zone. Have your students think about how they can use familiar technology in new ways.

This episode is also a reminder that thinking about potential obstacles—lack of power and access to supplies—is vital for making the solution a success. What could prevent the group’s idea from becoming a reality? What could keep it from working as well as they had originally imagined?

One method many businesses use to explore solutions to problems is called “process mapping.” A process map is a flowchart that breaks down a business process into smaller steps. The business can then examine the steps more closely to reveal areas of operating inefficiency and opportunity for improvement.

You can have your students do very basic process mapping. Start with their proposed solution, then draw lines to potential problems. Students should brainstorm whether technology can solve those
problems, and then see what other problems develop from there. Their finished process maps may resemble very deep and intricate root systems. What problems and solutions have they discovered through process mapping that they hadn't thought about when they started?

**Additional Resources**

GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.3: THE SOLUTION

WORKSHEET

We can become so used to everyday technology that we forget the problems it was designed to solve. For example, consider this ad from back when zippers were new:

Goodrich Zippers
with the Original Hookless Fastener

What was so special about a zipper being “the Original Hookless Fastener”? Before zippers, clothing was held together with so many buttons that people closed them with a special tool, called a button hook, to save time and their fingers. The zipper especially made pants, skirts, and dresses much easier to wear.

The following are a few more examples of everyday objects that were invented to solve one or more problems. What problems do you think they solved?

Lightbulb:

Flush toilet:

Beverage cans and bottles:

Car:

Smartphone:
GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.4: THE TECHNOLOGY

The Global Problem Solvers have developed a possible solution and considered some potential challenges. In this episode, they build a prototype, or first model, of their emergency classroom kit. Along the way, they encounter more obstacles that could limit the kit’s usefulness. They succeed in overcoming a couple of these obstacles by reaching out to a family contact and adapting the solar technology to cloud cover in Tampa. But these experiences show the Global Problem Solvers that there is another problem they need to solve: how to turn this one-of-a-kind prototype into a product they can scale.

Objectives

Episode 2.4 exemplifies the following aspects of implementing a technological solution:

- Making a prototype;
- Identifying potential obstacles and risks; and
- Leveraging personal networks.

Class Discussion: Introduction

When a young film student asked successful writer and director Kevin Smith if he had any advice for an aspiring filmmaker, Smith’s response was simple: stop aspiring and start doing. The same advice applies to global problem solving. The best way to solve a problem is to put the solution into action.

This provides a launching point for the introductory discussion. Which approach to problem solving do your students think works better: waiting until you have designed a perfect plan for your solution; or creating a prototype, even if it proves not quite ready for people to use?

Class Discussion: Video

This episode demonstrates how the understanding of available resources is essential to making a proposed solution a success. What circumstances allow the team to create the first working model of its emergency classroom kit?

- The team borrows the generator from the home where Ivy found her grandmother’s cat.
- Ms. Kivel drives the team partway to East Tampa for solar panels.
- Satoshi observes that a military vehicle could help the team drive through the flooded road.
- Ivy recalls that she has an aunt who works at a nearby Air Force base.
- Ivy and Adrien realize that a solar-plus-storage battery could give the kit power even when a cloudy sky reduces the effectiveness of the solar panels.
The technology in this kit is not science fiction. The Cisco Rapid Response Kit was created by real-life social entrepreneurs on the Cisco Tactical Response Team to help deal with a widespread forest fire in the United States. The Cisco Rapid Response Kit uses solar or wind power and a satellite uplink to provide internet support. It has been used to coordinate the response to crises like the Ebola plague in Africa. A more detailed description and photo of the Cisco Rapid Response Kit can be found in the “Cisco Tactical Operations” article in Additional Resources below.

A couple more questions for class discussion follow:

- Have you ever called on friends or family to help you with a problem? How did they help? Has any friend or family member ever asked you for help? Describe how having a “network” of friends and family is so important, particularly when starting a business.

- Choose a familiar example of technology, such as a smartphone, computer, or lightbulb. What kind of obstacles and risks might the inventors have had to anticipate when making their first model for testing? How was the technology then improved? For a few classic examples, check out Additional Resources for details on the following:
  - Thomas Edison’s lightbulb tests;
  - How a blizzard led New York City to bury its power lines; and
  - The behind-the-scenes story of the first public iPhone test.

**Long-term Project: Prototype**

When professional problem solvers talk about exploring creative solutions, they often describe it in terms of a repeated cycle:

- Ideate
- Prototype
- Test
- Improve, by repeating the steps again

This is a somewhat more jargon-y way of talking about the steps of social entrepreneurship after identifying a problem and consulting with experts. These four steps include exploring ideas, choosing one to produce, creating a working model, and testing and retesting to make the product better.

At this stage, the groups have considered problems in schools, the type of experts they would consult, and potential solutions and associated problems. Now it’s time to build a prototype. There are a few ways to do this:

- Have students take a sheet of butcher paper or poster board and draw out how their solution would work. Their drawings should be creative and colorful, but also well-labeled and very neat so that the solution is easy for others to understand, let alone members of the group.
• Have students create a short skit that recreates the problem and how their solution would solve it.

• You have indicated that students should craft a solution that only uses technology to which they have access. If you think it makes sense, have your students create a very basic prototype of the solution.

**Additional Resources**


• “Edison’s Lightbulb.” *The Franklin Institute*. [https://www.fi.edu/history-resources/edisons-lightbulb](https://www.fi.edu/history-resources/edisons-lightbulb)


GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.4: THE TECHNOLOGY

WORKSHEET

1. The most effective Global Problem Solvers realize that even though technology may solve an important social problem, technology can also create new problems or need to be improved.

   Let’s take another look at the inventions from the previous worksheet. Can you think of any new problems they have created and how these inventions could be made better?

   Lightbulb:

   Flush toilet:

   Beverage cans and bottles:

   Car:

   Smartphone:

2. What technology do you wish existed that has not been invented yet? What new problems might this new technology create? How might putting this new technology into practice show how it might be improved?
GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.5: THE BUSINESS PLAN

The Global Problem Solvers have a working model of an emergency classroom kit. Now they must get the product in the hands of their target market: teachers and administrators at Tampa’s schools. One problem is that the roads are difficult to travel and the Air Force can no longer spare high-water vehicles. Another is that these kits cost money, so someone is going to have to pay for them. Once again, understanding the community the Global Problem Solvers hope to serve helps them figure out successful strategies to overcome these problems.

Objectives

The objectives of Episode 2.5 are as follows:

- Show students the connection between meeting people's needs and building a successful social business;
- Illustrate different ways of finding support for a business; and
- Encourage creative entrepreneurial thinking.

Class Discussion: Introduction

Kids are natural-born sellers. From the time they come into this world as crying infants through the days they spend in your classroom, they are constantly trying to figure out how to get other people to bend to their will. While social entrepreneurship is a way your students can use their talents to help the world around them, the basic strategy remains the same: find ways to get their target audience to find value in the solutions they propose.

Most likely your class is not going to guess that monster trucks will be an important part of the Global Problem Solvers' business plan. They will grasp the principle that being useful to other people is an effective way to get their support, not to mention their business. This episode uses a common word among entrepreneurs, “pitch,” to describe the team’s efforts to get other people to buy or support their emergency classroom kits.

How would your students have pitched the technology that appears in the classroom, like smartboards, computers, or tablets? Understanding how companies make customers feel that they benefit from these products will help your students understand the team's business model for its social venture.

Class Discussion: Video

To start the discussion, ask questions that review the basic elements of the episode. The team needed money to build the kits as well as trucks and drivers to deliver them.
• Did the team merely ask for help, or did they do something more? If so, what?

• Why did the promoter of the Monster Truck Showdown decide to deliver the emergency classroom kits without charging the Global Problem Solvers?

• What made Florida’s education commissioner decide to buy the kits?

In addition to making a pitch, this episode shows that the team used a business plan to persuade others to provide money and logistical support, like trucks and drivers. Entrepreneurs often turn their business plan into a pitch to potential investors, and one way they do this is by using a set of slides known as a “pitch deck.” A pitch deck typically includes one or two slides for each part of the plan.

Ask your students what they think should be part of a persuasive pitch and business plan. They already covered this in Season 1, but the review will help reinforce it. Usually a pitch deck contains the following:

• An “elevator pitch” or summary
• The problem that needs to be solved
• How the idea solves the problem
• Target market, or for whom the solution is meant
• Marketing strategy, or how you will sell the solution to customers
• Risks, or how the solution might not work or sell
• Team behind the solution
• Business model, or how the venture will grow
• For social enterprises, social and/or environmental impact

One thing that can make this more real for students is to see how well-known companies used a business plan/pitch deck to get support when starting up. In Additional Resources, students can read about the early pitch decks of companies like Airbnb, Buzzfeed, YouTube, and Uber. Those pitch decks reflect what your students have learned in discussions of the Global Problem Solvers.

**Long-term Project: Designing the Pitch**

The long-term project thus far has consisted of students defining the problem they want to solve and exploring creative solutions. At this point each group should have identified and tried to design a workable solution. Now the time has come for the groups to think about how they will persuade others to support and use their idea.

One way to get students to work harder to design an effective pitch is to tell them that there will be a class pitch contest. For the contest, which will take place in the next session, each group will present its solution to improve some aspect of school life to the rest of the class. The class will then vote on the best pitch. In this session, students will just be developing the pitch.
What makes a pitch effective is a skill developed in the first season’s optional long-term project: storytelling. As in design thinking and effecting problem solving, good storytelling involves understanding one’s audience. Using a pitch to tell a persuasive story about an idea helps spark an audience’s interest and strengthens its personal connection to what an entrepreneur is trying to sell.

How students create their pitch decks is up to them. The prototype from the previous exercise will be incorporated into their pitch deck, so perhaps it would make most sense to match its format. If the group’s prototype consisted of a design on paper, have them create slides on paper; if they rehearsed a skit, have them integrate the skit into a pitch-deck infomercial; and if they designed technology, have them prepare an extended walk-through for potential investors.

Except for starting with the title of the venture and brief (thirty-second or so) summary, there is not an absolute rule for the order of a pitch presentation. Again, remind students to pitch as if they’re telling a good story. One typically starts a story with the lead characters (in this case, the community being helped), followed by the inciting incident (in a pitch, the problem), then introduces a “hero,” which is the solution. What follows is a series of interactions (target market and marketing strategy), complications (risks), a climactic triumph over the potential obstacles (business model), and positive resolution (social or environmental impact). Of course, there are other ways to tell the story of a particular enterprise, so your students should feel free to go with whatever seems most persuasive for their particular project for helping schools.

**Additional Resources**

GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.5: THE BUSINESS PLAN

WORKSHEET

The Global Problem Solvers have asked you for help in preparing their latest business plan for their Tampa schools social enterprise. The following are typical sections in an effective business plan. How would you persuade people to support the emergency classroom kit?

Title: What would you call this social enterprise?

Problem: What is the social problem that needs to be solved?

Solution: How will the emergency classroom kits solve the problem?

Target market: Who will use the kits? Who is likely to buy the kits?

Business model: How will the emergency classroom kit business make money?
GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.6: TEST AND RETEST

The Global Problem Solvers now must test their emergency classroom kit with a class. They set up the kit outside for a group of students. For a short time, the portable classroom appears to be a success, but the team has overlooked two critical pieces of information. First, Tampa is rebuilding after the hurricane, so there’s a lot of noise in the streets. Second, a city with rainy weather is not an ideal place to hold class outdoors. Fortunately, the team is able to find a solution to these problems by once again paying attention to the community they are trying to help. Empty shipping containers outside shelters provide protection from the weather, block outside noise, and have enough space for a class to meet. Testing and retesting has made a good solution even better.

Objectives

The objectives of Episode 2.6 are as follows:

- Illustrate the importance of testing solutions in real-world conditions;
- Show how to learn from mistakes; and
- Underscore the need to understand as much as possible about the community one is trying to help.

Class Discussion: Introduction

Many students in school are nervous about making mistakes on a test. The smartest social entrepreneurs, however, do not see mistakes when testing as a sign of failure. Mistakes provide useful information. They show what entrepreneurs do not yet understand about the interplay of people, community, environment, and technology. With that information, entrepreneurs can make their attempts to solve social problems more effective.

For this class, the place to start is fairly simple. Ask students how they have learned from mistakes.

Class Discussion: Video

In Season 1, the Global Problem Solvers tested and retested technology that stopped working under certain weather conditions. Episode 2.6 shows how entrepreneurs’ lack of foresight can itself create problems. The technology worked, but with the rain and loud noise that the Global Problem Solvers hadn’t considered, no one wanted to stick around to use it. Questions about the episode follow:

- What did the first test in this episode teach the Global Problem Solvers?
- How did the team try to solve the problems that arose?
In the process of testing and retesting, the Global Problem Solvers continued to ask questions. They spoke with an aid worker about the use of a large shipping container. When should social entrepreneurs stop trying to learn from the community and their customers? (Answer: Never. Always keep learning.)

Every day that we use technology is a day we test it. Can your students think of ways they might improve technology that is a regular part of their lives?

**Long-term Project: The Pitch Test**

In this session, groups will present their pitches to the class. Before the groups start, instruct the rest of the class that they will act as “alpha testers.” During an alpha test, a group of customers are invited inside a business to test a product, so the business may privately observe if the product has problems. Following the alpha test, the beta test, with which your class may be more familiar, involves sending versions of the product to customers outside the business for testing. The pitch’s beta test will come too, but in the next and final session.

After each group pitches its solution, the alpha testers—the rest of the class—should ask pointed questions about problems the solution may face. The questions will provide the group and the rest of the class insight on issues the group may have already considered or perhaps never addressed. The group answering the questions should be instructed not to be defensive of their solution—this rarely helps during a pitch—but as accepting and willing to consider feedback as possible. By responding to feedback positively, the group does not expose deficiencies in the solution, but ideally makes future possibilities for the solution stronger.

After all the presentations, each student should vote on a solution that is not his or her group’s. Inform the students that the winning solution will be revised by its group based on feedback. In the next and final session, that group will pitch its revised solution to the principal, superintendent, school board member, or other available administrator—perhaps, as a real solution for the school.

**Additional Resources**

Another important way to perfect your business plan is to integrate honest feedback on what could go wrong with your solution and how you would overcome those problems. A popular way of doing this is through what is called a SWOT assessment:

- S is for Strengths of the solution.
- W is for Weaknesses of the solution.
- O is for Opportunities. What circumstances in the outside world will help sales of the solution?
- T is for Threats. What circumstances in the outside world will hurt sales of the solution?

It's never too late to make a SWOT assessment. It's a good way to make sure that people will continue to buy whatever you're selling.

1. What would you say are the strengths, weaknesses, opportunities, and threats for the Global Problem Solvers' emergency classroom kit?

   Strengths:
   
   Weaknesses:
   
   Opportunities:
   
   Threats:

2. Choose an item of technology that you use every day, such as a smartphone, a favorite app, a car or television set, and make a SWOT analysis. Are there ways it could be improved to be more useful?

   Technology:
   
   Strengths:
   
   Weaknesses:
   
   Opportunities:
   
   Threats:
GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.7: BIRTH OF A SOCIAL ENTERPRISE

Once again, the Global Problem Solvers have helped a suffering community by creating a social enterprise: a business that attempts to solve a social problem. Even though this episode takes place sometime after their first test, the Global Problem Solvers continue to gather data to measure the effectiveness of their emergency classroom kits. Ivy helps spread the word through her internet reporting and the team receives another major marketing push from the promoter of the Monster Truck Showdown. As the team sets off for its next adventure, Ivy joins the Global Problem Solvers. Her ability to foresee problems will provide another valuable superpower sure to help other people in need.

Objectives

The objectives of Episode 2.7 are as follows:

- Review the concept of social enterprise;
- Show how a solution can benefit different people in different ways;
- Demonstrate how social entrepreneurs use ongoing data collection to measure impact;
- Provide examples of spreading the word; and
- Illustrate how social entrepreneurs remain open to new ideas and people.

Class Discussion: Introduction

Your students are about to complete another Global Problem Solvers adventure, which puts them on the way toward making their own contributions toward positive social change. The final episode of Season 2 is a good time to review how the team has been following the nine steps of social entrepreneurship. They include:

1. Articulate the problem
2. Surround yourself with experts
3. Formulate a solution
4. Incorporate technology to connect people, processes, data, and things
5. Develop a business plan
6. Raise funding and spend it wisely
7. Test and refine solution
8. Use data to measure impact
9. Spread the word

How have the Global Problem Solvers and Ivy executed the first seven steps?
Class Discussion: Video

A Global Problem Solver’s work is never done. Social entrepreneurs are continually learning about people and the planet, improving their ideas, and finding new ways to help others. What follows are several questions you might ask your students:

- By gathering data, the team learns how well the emergency classroom kit is working. What are the social benefits that the kit provides the community? Is everyone benefiting the same way?
- Members of the team are playing video games while waiting for new information. Can playing games and taking breaks help you be a better problem solver? If so, how?
  - Sometimes the most effective way of solving a problem is to do something else. It gives the mind time to process what it has learned and also provides an opening for other sources of inspiration. Game-playing also hones skills of strategy, working with others, and navigating competition—essential tools for social entrepreneurship.
- How might promoting the emergency classroom kits help the Monster Truck Showdown? How might doing something with social impact help a company that’s not a social enterprise?
- What are other ways to spread the word about a social enterprise?
- What qualities do you possess that would make you a worthy member of the Global Problem Solvers?

Long-term Project: Solution

All your students deserve kudos for getting this far. They have identified a problem, considered experts to consult, crafted a solution that incorporates technology, developed a business plan, pitched it, tested and refined it, and now, will attempt to launch their solution. This will include pitching the winning solution to the principal, superintendent, school board member, or other available administrator—perhaps, as a real solution for the school. At this point, hopefully knowingly, your students have undergone most steps of starting a social enterprise.

Either in the presence of the class or in a separate meeting, the winning group from the last session should revise their solution based on feedback to their pitch. For the rest of the class that did not win, it will be useful to see their suggestions implemented in the winning idea. Any social enterprise must integrate input from the community in order to gain its support.

Before the administrator comes in to hear the revised pitch, instruct him or her in a similar vein to how you instructed the class in the last session. If after hearing the pitch the administrator thinks the solution is untenable, ask him or her to provide constructive feedback to the group to make the
solution more tenable. Your students at this point should know that feedback will only make their solution stronger.

Once your students finish their presentation to the administrator, they will be affirmed of their solution’s possibilities. You can then ask: How would the class plan to tell other students or teachers about the solution to get them to use it? Flyers, announcements, social media, presentations to other classes or the school? Have the class brainstorm the most effective ways to spread the word.

Additional Resources

GLOBAL PROBLEM SOLVERS: THE SERIES
EPISODE 2.7: BIRTH OF A SOCIAL ENTERPRISE

WORKSHEET

1. By blending a project that benefits the community with a profit-making business strategy, the Global Problem Solvers have successfully launched another social enterprise. When and how would the emergency classroom kit be useful for your school?

2. Imagine that your school uses the emergency classroom kit. What kind of data would need to be gathered to determine whether it was effective for your school?

3. Marketing strategy is another key part of a good social enterprise business plan. Are there other ways besides a big event that the Global Problem Solvers could use to promote their emergency classroom kits?

4. How would you promote a social enterprise on social media? If you were to create a clever meme to market a social enterprise, what would it be?