Student Book Audio Script

TR: 83 1 **Listen and read.** See Student Book pp. 112–113.

TR: 84 2 **Learn new words.** **3D printer** / 3D printers can create real objects using digital images. **application** / A single tool can have many different applications. **concept** / Makers work to turn their concepts into reality. **device** / Many people use devices such as smartphones. **do-it-yourself** / You can learn about do-it-yourself projects online. **experiment** / Makers have fun experimenting with new tools and materials. **failure** / Sometimes we learn more from failure than success. **hands-on** / A hands-on person enjoys being involved in different projects. **hardware** / Computer hardware continues to get lighter and faster. **inspire** / If you are inspired to create something, then go out and do it. **open-source** / Anyone can access open-source software. **play around with** / Do you like to play around with gadgets to get them to work? **resourceful** / A resourceful person will try to fix a broken object before replacing it. **solve** / Many people create their own gadgets to solve problems. **software** / You use different types of software each time you work on your computer.

TR: 85 5 Do you have a great idea for an invention? Would you like to be a maker? Well, what are you waiting for? You don't need to be an adult—teens all over the world are becoming innovators. You also don't need to have a lot of money. It's possible to create with affordable devices, such as Raspberry Pi® . You can even find donated or recycled items to work with. Whatever you decide to do, make sure you're flexible in your plans. You'll probably experience failure at least once during your experiment. But, if you're willing to try several different approaches, you'll eventually get the result you want.

TR: 86 5 **Learn new words.** **affordable** / It's often more affordable to fix an item than it is to replace it. **approach** / Many makers take a hands-on approach to problem solving. **flexible** / Makers must be flexible and willing to try different ways of doing things. **innovator** / An innovator creates something totally unique.

TR: 87 **Speaking Strategy** See Student Book p. 115.

TR: 88 7 **S1**: Some animal was in the vegetable garden again. **S2**: What makes you think that? **S1**: It ate the vegetables I was growing for my science project. **S2**: Are you sure they were eaten? I just think you haven't been giving them enough water. **S1**: Yes I'm sure. And I'm going to prove it! I'm making a camera trap. All I need is a cheap motion sensor, my old camera, and an Arduino®. **S2**: So you think that this camera trap can photograph some animal eating your vegetables? **S1**: It should work. The instructions are online and don't look too complicated. **S2**: OK, but can you explain why all the other plants look so dry? Can that camera show how often you water the vegetables in your garden? **S1**: Maybe I should instead use the Arduino® to automatically water the vegetables each day!

TR: 89 **Grammar** See Student Book p. 116.

TR: 90 and 91 11 12 Ladies and gentlemen, today we will be hearing from innovator Tan Le. When they first began designing their Emotiv Insight headset, Tan and her team wanted to learn more about a healthy brain. They also thought the headset would help improve human/machine interaction. Once the headset was successfully developed, the team decided to make the technology open-source. Researchers and developers can now access and adapt the technology for their own goals. As a result, the headset is being used for a wide variety of applications. It's especially useful for helping disabled people. People who have limited movement can control things with their mind. People who lack the ability to speak can use the headset for communication. A disabled musician can even create songs without ever picking up an instrument. The headset is used for safety, as well. A car is being developed to sense if the driver is paying attention. The driver, wearing a headset, can control the car if he's focused. But as soon as he's distracted, the car knows to slow down. Even children can benefit from the Emotiv Insight headset. One company experimented by asking children to wear the device and then used 3D printing to create real objects, just from their thoughts! As you can see, the technology is extremely exciting. This afternoon, Tan will tell more about these developments. Ladies and gentlemen, here she is, Tan Le.

TR: 92 14 Can you create a song without singing or playing an instrument? A project in the United Kingdom, called Mindtunes® , made it possible to do just that. During this project, DJ Fresh, a popular dance DJ, worked with three disabled musicians who couldn't move independently. The musicians wore EEG headsets that tracked their brainwaves. One of the participants describes the process as being a matter of feeling: "You don't have to be able to read music," he said. "It's all about how you feel!" The three musicians' thoughts were recorded and interpreted. The headset then sent wireless signals to a computer, where DJ Fresh put the tune together. At the end of the experiment, their thoughts were transformed into some great dance music. Better yet, the song became a hit, and all of the money it made is being donated to help the disabled in other ways. Now, that's music to everyone's ears!

TR: 93 14 **Learn new words.** **disabled** / EEG headsets can help disabled people do things they couldn't do otherwise. **interpret** / Technology makes it possible for headsets to interpret our thoughts. **transform** / In the future, EEG headsets may transform our lives. **wireless** / Most electronic communication devices are wireless.

TR: 94 18 **Learn new words.** **amount to** / Einstein's teachers said that he wouldn't amount to much. **discourage** / Failure discourages some people to keep following their dreams. **persistent** / It's important for innovators to be persistent and keep trying until they get it right. **success** / Many people experience failure before they find success. **turn away** / Twelve publishers turned J.K. Rowling away.

TR: 95 19 **While you read.** See Student Book pp. 118–119.

TR: 96 **Grammar** See Student Book p. 122.

TR: 97 and 98 30 31 You've learned about inventor Kelvin Doe, who made his own radio transmitter at fourteen. He was later invited to study at the Massachusetts Institute of Technology in Cambridge, Massachusetts. He learned a lot during his visit to the United States, but Kelvin missed his community and his family in Sierra Leone.

Deepika Kurup visited India and became concerned about the supply of clean water available there. So, at the age of fourteen, she set out to work on a way to create clean water. She invented a device that can be placed into a bottle of water to purify it. The bottle is left in the sun with Deepika's invention, and the sun's energy works with certain chemicals to kill the bacteria and other pollutants in the water.

At the age of fifteen, Kenneth Shinozuka saw the dangers that Alzheimer's patients face because they tended to wander off. Kenneth saw this happening with his grandfather, who suffered from the disease. To help people who care for Alzheimer's patients, Kenneth invented a sensor to be worn in socks that will help track location. An alert is sent to the caregiver's cell phone when the patient begins to walk.

Thirteen-year-old Richard Turere was in charge of caring for his family's cattle. However, at night, lions would come to attack them. Richard soon realized that lions hate moving lights. So he invented simple, solar-powered lights and put them up to protect his cows from nighttime lion attacks. Since he installed his "lion lights," none of his family's cows has been killed.