Intermediate STEMSEL Projects

Project 1: Trapped Miners
When miners are trapped underground and you have just minutes to save their lives! In this project students will learn a way to communicate using a microchip while refreshing or learning programming skills.

Project 2: Olympic Torch Relay
The Olympics offer athletes around the world a chance to show their best to win fame and medals. They also bring people together through friendly competition which is embodied in the torch relay that visits cities all over the world in the lead-up to the Games. Students will make torches that light up because of one another. This allows the students to have their own relay using their torches.

Project 3: Human Conductor Project
Give your microchip a helping hand as students will learn about voltage and electricity while building a human conductor that makes them part of the circuit.
Note: will require two short lengths of wire per student in addition to the STEMSEL kit.

Project 4: Eyes for Blind – Find the Light
Most of us take our sight for granted, but imagine how hard it would be to move around if you were blind. Students will use their programming skills to make a device to help blind people find a light source, and even try to see if they can use it themselves to find their way across a room.

Project 5: Global Warming Temperature Sniffer
As climate change affects our planet, it is important to know exactly how the temperatures are changing. Students will learn about global warming and then use their temperature sniffer to find the minimum and maximum temperatures in the room.

Project 6: Blackout Light Sensor Alarm
Even in a disaster situation we want to protect precious items, although such items may be food and clean water rather than just money. Students will learn about survival and the importance of helping others while building this alarm that can work in any situation.

Project 7: Combination Lock
Although we still use traditional keys and locks, electronic security is becoming more prevalent in our daily lives. Microchips are used not just to lock doors but to safely pay bus fares and stop shoplifters. Students will learn more about electronic security while making a combination lock as protection.

Project 8: Generating Power – Wind Farm indicator
Even though we all use it every day, many people would be hard pressed to say exactly what electricity is. In this project students will not only learn what electricity is and why some materials conduct electricity, but also make electricity using nothing more than the fan in their kits.

Project 9: GPS - Crickets
Both people and animals have developed various ways of finding ways to find food, shelter and mates. Students will learn more about navigation and GPS in this project while they make their own electronic cricket that hides from predators.

Project 10: Sensor Tap
Hygiene is very important since it helps stop germs making us sick. Some places like restaurant kitchens and hospitals require no germs at all. Students will learn about hygiene and saving water as they make their own hands-free sensor tap.