

External partners and organisations have submitted the articles that follow. These are not SSERC-devised activities; however, they offer examples of practical STEM-based activities that could be delivered in the classroom.

# Mission H<sub>2</sub>O

We're excited to announce the launch of Scottish Water Generation H<sub>2</sub>O - a new nationwide campaign empowering every young person in Scotland to take positive action to protect Scotland's water.

Mission H<sub>2</sub>O is the primary resource bringing the Scottish Curriculum for Excellence to life for learners aged 5-11 through hands-on activities, a whole-school assembly, prizes and more!



Scottish  
Water

GENERATION H<sub>2</sub>O



Register now  
and download  
the free resources  
here!



NATIONAL  
SCHOOLS  
PARTNERSHIP

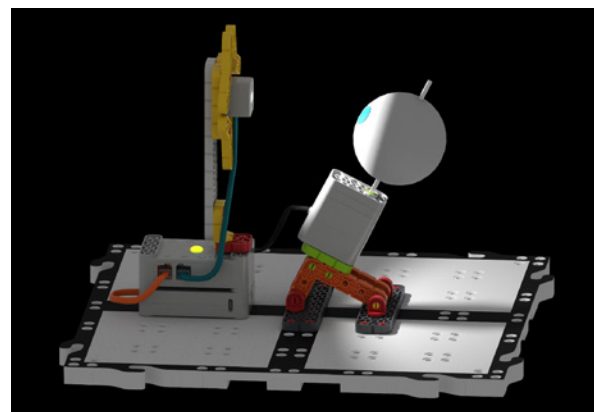
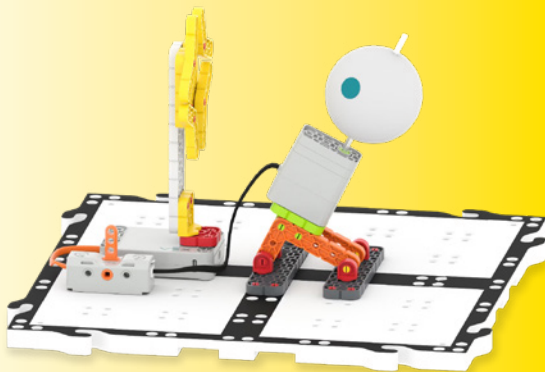
# VEX GO is day and night for teaching STEM!

The new VEX GO Day and Night STEM Labs lesson plans are perfect for First Level science to show how the Earth spins on its axis resulting in day and night.

Build a model of the Sun and Earth, complete with tilted axis and explore how the Earth rotates to cause the day and night cycles, and why it appears that the Sun moves across the sky during the day.

This is one of 32 VEX GO STEM Labs containing over 100 lessons covering all areas of STEM.

See them  
all here!



# Introducing Sphero Blueprint Build Kit

Designed for Secondary school classrooms, the Blueprint Build Kit enables students to learn foundational engineering concepts as they design and build working prototypes. With its approachable design, easy-to-handle parts, and supporting content, Blueprint Build makes engaging with mechanical and structural engineering hands-on, fun, and accessible to aspiring engineers of all abilities.

## Key features and benefits

### Easy prototyping

Blueprint Build's modular parts are easy to assemble for rapid prototyping due to their practical size and visual and technical simplicity.

### Hands-on problem solving

Solving problems is the foundation of engineering. Blueprint Build allows students to quickly design, build, and test mechanical and structural engineering concepts in the classroom.

### Lessons & unit plans included

The Blueprint Build Class Pack comes with 50+ hours of in-depth, standards-aligned lessons and unit plans and an in-depth Educator Guide.

### Relevant learning

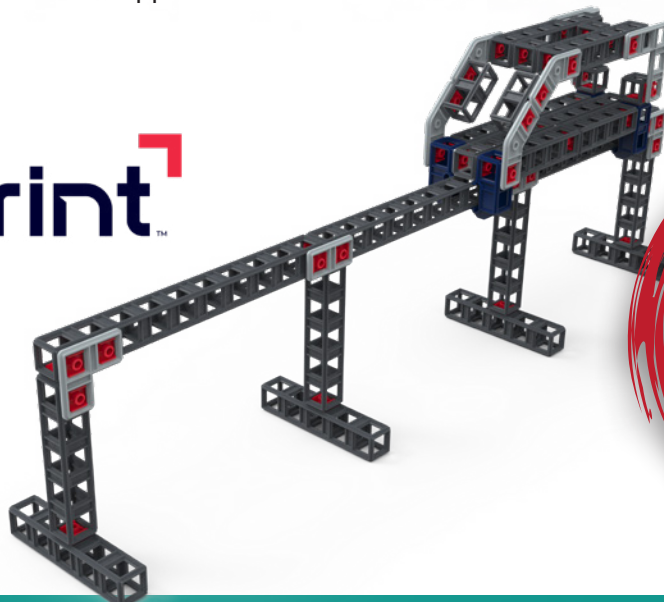
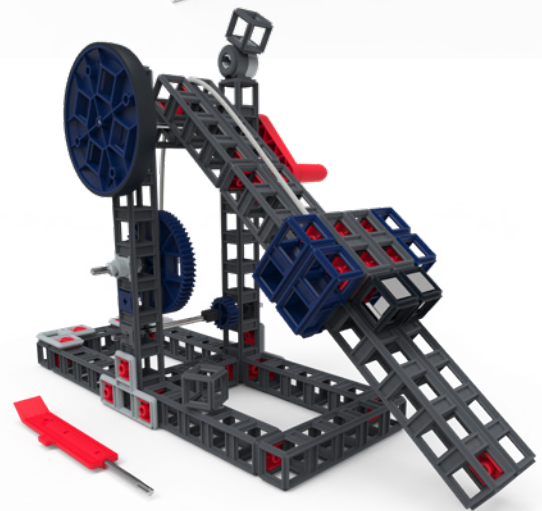
Flexible and standards-aligned unit plans to help teach students about simple and compound machines and calculating mechanical advantage.

### Engineering & beyond

Students explore cross-curricular concepts in engineering and design, while learning critical thinking, problem solving, and collaboration skills.

### Build in CAD

The Blueprint Build Kit supports various CAD certification curricula with free Blueprint Onshape documents, as well as Solidworks and STEP files for CAD software support.



Sphero Blueprint  
build kits will be  
available January  
2024

# Learning for sustainability with Marty the Robot

At Robotical, we're eager that Marty can be used to teach sustainable development education, global citizenship and social welfare. That's why our education team has worked hard to produce some fantastic **lessons and activities** that introduce children to the ways we can help people and the planet (Figure 1).

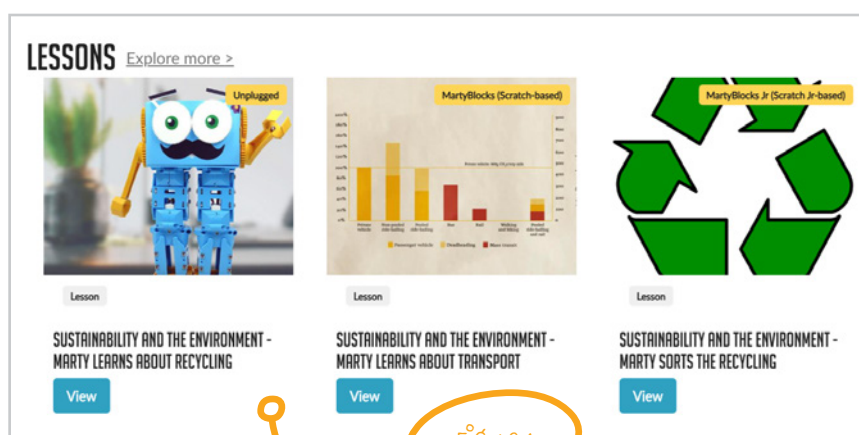
Marty is easy to integrate into the broader sustainability-themed curriculum. Robots can be used to teach children about ecosystems, climate change, and conservation while incorporating robotics as a practical application of these concepts.

For example, we have created lessons to teach children about the importance of recycling like [Marty Learns About Recycling](#) and [Marty Sorts the Recycling](#).

## Cross curricular learning with Marty

With a multitude of [cross curricular lessons](#) on our [Learning Portal](#), it's easy to find a lesson or activity that promote a well-rounded and adaptable education that prepares students for the complexities of the real world.

For example, our 'Cross-Curricular Learning Lesson Pack' contains five lessons that focus on literacy,



numeracy, and social and emotional learning to encourage connecting and combining concepts, skills, and knowledge from multiple subject areas.

## Using Marty to teach AI and machine learning!

In an increasingly technology-driven world, teaching children about machine learning and AI is essential to equip them with the skills and knowledge needed to thrive.

Technology literacy is vital, but it can be hard to find cost-effective solutions that encourage engagement with STEM learning. Marty the Robot makes STEM learning exciting for all students and, coupled with 4 coding environments, can be used across a range of subjects and skill levels. Our numerous extensions to our [MartyBlocks](#) coding environment offer further opportunities for creativity and learning. Our newest extension introduces [AI and Machine Learning](#), encouraging students to connect and interact with Marty by training their own image or sound models.

We recently introduced the 'Teachable Machine' extension to our [MartyBlocks](#) coding environment. This extension uses [Teachable Machine](#), a web tool created by Google that enables the user to easily create machine learning models. >>

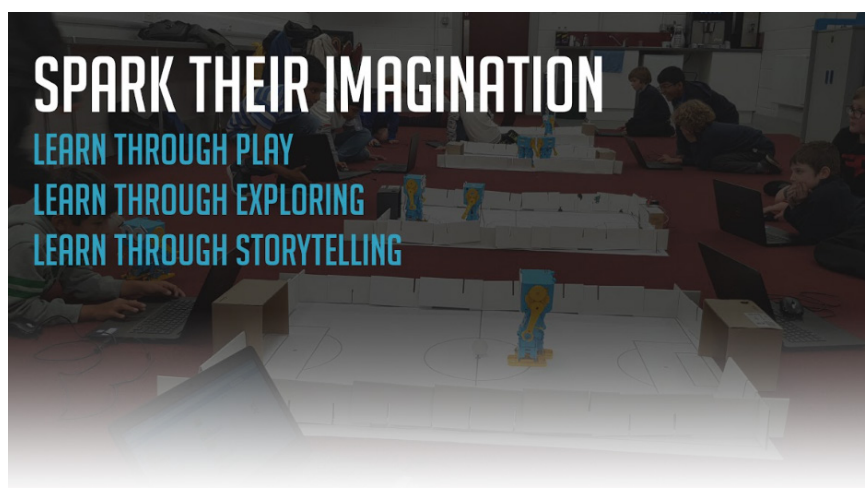




Figure 2

Using the step-by-step instructions provided in our [User Guides](#), it's a breeze to teach Marty to “hear” and “see”, bringing learning to life and allowing children to interact with Marty the Robot like never before (Figure 2).

### You can now teach data with Marty!

The recently launched [sensor dashboard](#) is a graphical tool designed to enable users to visualize and interact with data collected from sensors. It provides a user-friendly way for students to monitor and analyze sensor readings in real-time, enabling them to make data-driven decisions and gain insights from the collected data (Figure 3).

It offers a [multitude of benefits](#), from problem-solving and troubleshooting to collaboration and optimization, and empowers aspiring coders to develop a deeper understanding of coding principles and apply them effectively.

### Marty's sound functionality is even better!

Our new firmware update makes Marty's accents, languages and sounds clearer in the classroom.

Marty's sound functionality encourages creativity, allowing students to edit the pitch and volume of a vast library of sounds, record their own sounds, set Marty's voice and accent, and play notes and music.

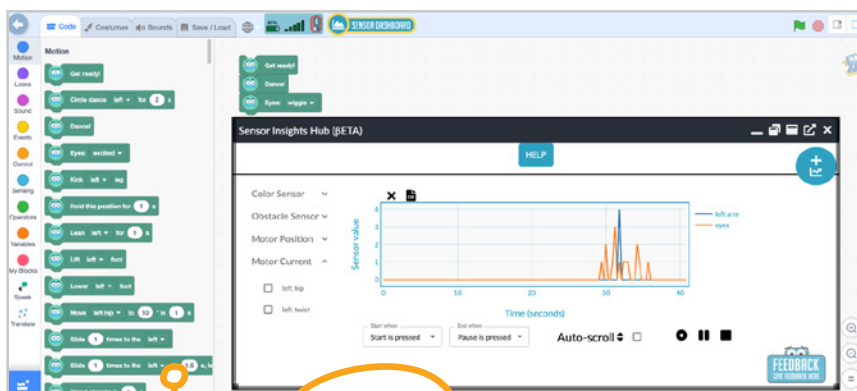
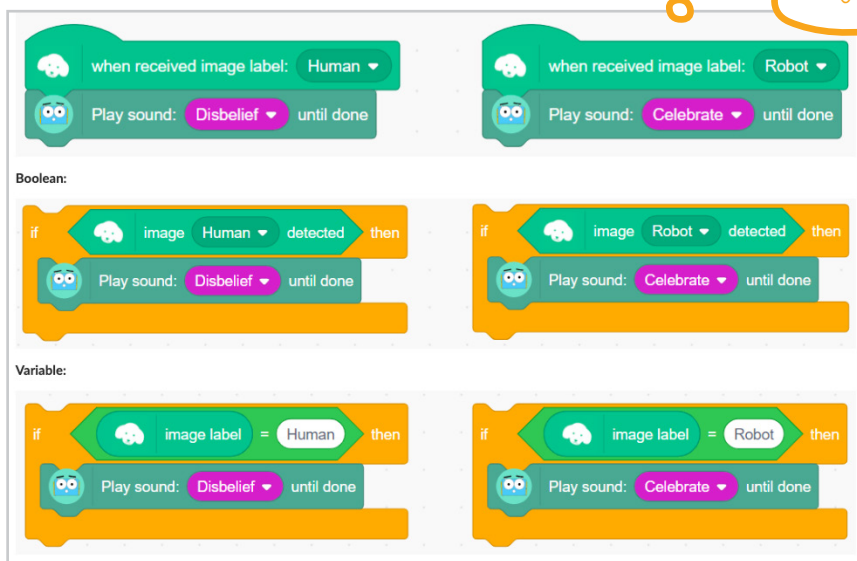


Figure 3

Marty also has a translation feature, with over 40 languages and accents to encourage cross curricular learning. If you already have a Marty, you can update your robot here to experience the updated sound quality.

### Want to try Marty with your Class?

Robotical is offering **FREE** two-week trials. They'll even cover shipping and collection costs and provide virtual training for teachers. <<



# Become a member of the ASE

September 2023



## Reasons to join the ASE

- ✓ Termly Fortnightly e-update on news, research and events
- ✓ Member's magazine with insights and features
- ✓ Regional e-updates on local news and events
- ✓ Access to free or discounted professional learning seminars
- ✓ Free access to resources and guidance
- ✓ Exclusive content in podcasts and webinars
- ✓ Pathway to chartered status: RSciTech and CSciTech
- ✓ Member discounts to ASE events – including our annual conference and partner organisations
- ✓ Opportunities to have your say on national consultations and surveys
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- ✓ Option to add on an ASE Journal or Hub of your choice for an additional fee

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**Continuous learning and professional development:** enhance your science teaching skills and knowledge

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