

Discover the fun of STEAM and coding in your classroom!

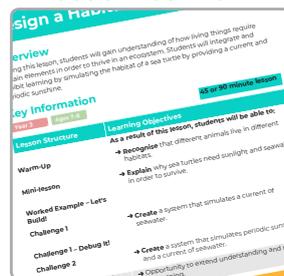


What is SAM Labs?

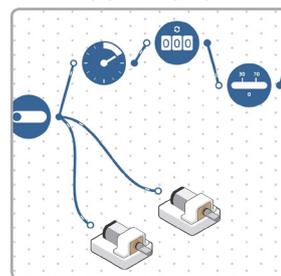
Curriculum-aligned courses in STEAM and coding, empowering teachers to prepare a generation of computational thinkers. Our courses provide a comprehensive teaching and learning suite, utilising a combination of lesson content, software and hardware to give students a hands-on, minds-on experience.



Standards-aligned lesson content



Easy-to-use software



Wireless hardware



Our solution is different

Our wireless hardware blocks are intuitive, easy-to-use and app-united, making learning visible. Students can code the behaviors of blocks in any way they can imagine, making complex creations in minutes.

Why use SAM Labs?



- Increases teacher confidence
- Eases teacher workload
- Covers curriculum objectives
- Enables real-world application



- Fosters student confidence, encouraging collaboration
- Increases student engagement and interest
- Enables stronger cross-curricular connections
- Enables creativity and critical thinking

STEAM Course

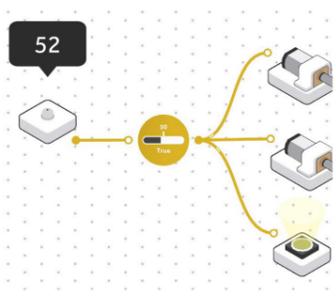


KS1-2/ K-5 Lesson Content



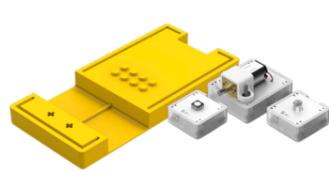
Lesson Plans, Teacher Slides,
Student Handout & Step-by-Step
[Download your sample Lesson](#)
from [samllabs.com](#) now!

SAM Space App



Intuitive, visual,
flow-based coding app
Compatible with iPad, Windows 10,
Android & Chromebook

SAM Hardware



Completed Prototype

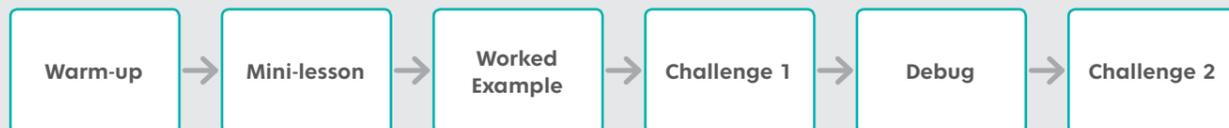


The STEAM course offers...

Comprehensive teacher and student resources, scaffolded and differentiated with opportunities for formative assessment. The SAM Space app enables students to programme Bluetooth blocks, conduct experiments, build prototypes and test their designs in order to cement subject knowledge in STEAM and computational thinking.

Features and benefits of the STEAM Course:

- Aligned to **UK Curriculum objectives/US standards in STEAM** subjects, emphasising a **cross-curricular** approach.
- Built-in opportunities for students to evidence and reflect on learning.
- Visual, interactive and guided lesson content, providing a clear structure for every lesson:



The STEAM course makes the experience of STEAM learning...

Creative:
encouraging
innovation



Collaborative:
promoting problem
seeking and solving

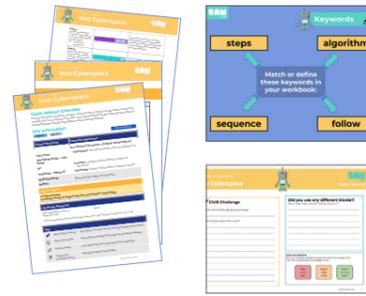
Cross-curricular:
engaging critical
thinking across
the disciplines

Future focused:
linked to
real-world
applications

Learn to Code Course

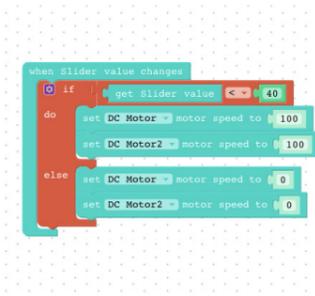


KS2-3/4-8 Lesson Content



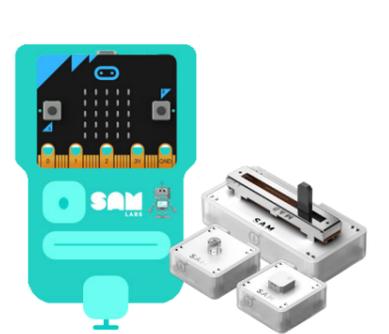
Lesson Plans, Teacher Slides,
Step-by-Step & Cyber Journal
[Download your sample Lesson](#)
from [samllabs.com](#) now!

SAM Blockly App



Block-based coding app
Compatible Chrome browsers
on any operating system

SAM Hardware



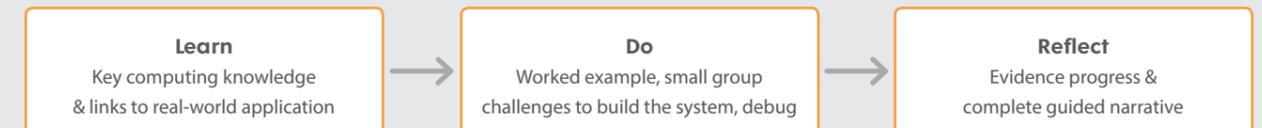
Featuring micro:bit

In the Learn to Code course...

Students across primary and secondary join our explorer on their journey through Cyberspace. Using the SAM Blockly app, students programme systems, utilising their **computational thinking skills** to help overcome obstacles and solve problems.

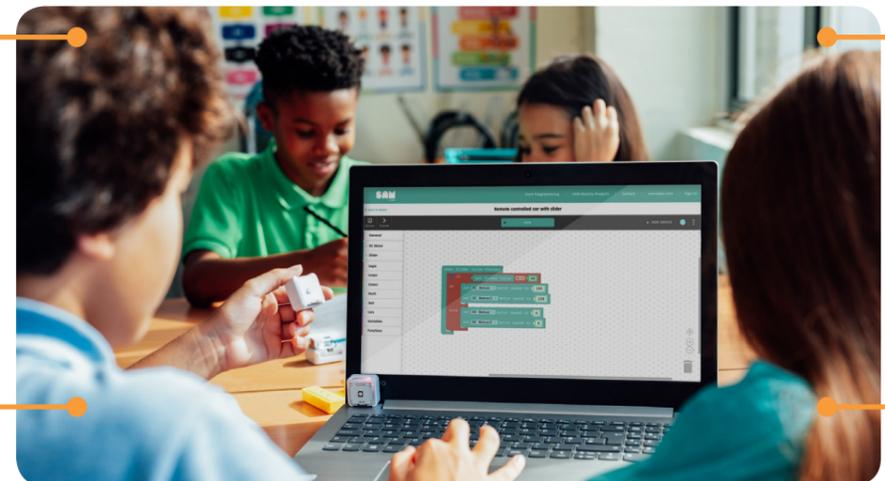
Features and benefits of the Learn to Code Course:

- Aligned to **UK Curriculum computing objectives/ US CSTA Computer Science standards**.
- **Demystifies coding**, providing teachers with everything they need for each lesson.
- Each lesson progresses from theory, to practical application, to reflection, with a clear three-part structure:



The Learn to Code course makes the fundamentals of computing...

Engaging and
context-based



Accessible and
empowering

Easy to
understand

Linked to
future careers

		STEAM	MAKER KIT	STEAM & MAKER KIT	Learn to Code	STEAM	
		Classroom kit	Makerspaces	Classroom Bundle	Classroom kit	Team kit	Alpha kit
Content	Age (KS / Grade)	5–11 UK: KS1-KS2 US: K-5	5–14 UK: KS1-KS3 US: K-8	5–14 UK: KS1-KS3* US: K–8*	9–14 UK: KS2-KS3 US: 4–8	5–11 UK: KS1-KS2 US: K-5*	
	Lessons	50+*	20+ challenges**	50+ & 20 challenges**	50+***	5 lessons, 1/yr grp	
Hardware	SAM Blocks	40	17	57	30	12	4
	Accessories	110	28	138	30 + 10 micro:bit	33	11
Software	App	SAM Space	SAM Space	SAM Space	SAM Blockly	SAM Space	
	Virtual blocks	35+	35+	35+	35+	35+	
Charging	Multi USB Cable	Included	Included	Included	Included	Included	
	Station (40 blocks)	Add on	Add on	Add on	Add on	Add on	
Students Groups		30 10	6 2	36 12	30 10	9 3	3 1

*: KS2 / K-5 course available now. KS1 / K-1 released September 2019 **: Maker challenges available autumn 2019: Key stages and Grades TBC ***: Content available June 2019

100s of ready-made teacher and student resources:

Time's Up!

Overview
During this lesson, students will gain understanding of the relevance and importance of timing events. Students will integrate and exhibit learning by creating an effective timer with an audio and visual alert.

Key Information
45 or 90 minute lesson

Lesson Structure
Learning Objectives: As a result of this lesson, students will be able to:

- Warm-Up → Recognize the importance of setting an alert when creating an effective timer.
- Mini-lesson → Explain appropriate timings for a variety of activities.
- Worked Example - Let's Build!
- Challenge 1 → Create a system with a timed light alert.
- Challenge 2 → Create a system with two outputs ready for timing group challenges.
- Chill Challenges & Exit Ticket → Opportunity to extend understanding and reflect on learning.

Lesson Topics (refer to the SAM Space program flow for 1-10)

Materials Required
SAM Labs Alpha, Team or Classroom Kit

*Other SAM Labs kits for whole class instruction. See Teacher's Guide for more info.

The Student Handouts can be used alongside each lesson.

TEACHER LESSON PLAN

Keywords

steps, algorithm, sequence, follow

Match or define these keywords in your workbook:

Challenge 1
Create a system that simulates a current of seawater

DC Motors

TEACHER SLIDES

Time's Up! Step by Step

Let's Build!
Create a simple timer.

Instructions
1. Turn on the power.
2. Light sensor block.
3. Logic block.
4. Drop internal block onto the workspace and connect as shown.

Workspace

Challenge 1
Create a system with a timed light alert.

Instructions
1. Drag into the workspace:
• Toggle block
• Compare block
2. Connect the blocks as shown.

Workspace

3. In the settings of the Compare, set to '1:00'. Test your system.

STUDENT STEP BY STEP

Time's Up! Handout

Mini-lesson
Draw lines to match the activities to the approximate length of time they would take to complete. Then add text of your own and match them.

1 minute
1 hour
10 minutes

Keyword Review
Write the definition for each keyword.

Keyword
Second
Minute
Time
Alert
Approximate

Challenge 2 - Record your results
Record the settings of the following blocks:

- Internal
- Compare

Describe the physical challenges your group decided on:

Annotation: Name the blocks, Compare when their function is.

STUDENT HANDOUT