



## SPHERO FROM 1<sup>ST</sup> USE (SESSION 1 OF 4)

### CURRICULUM MILESTONES

*I can control or simulate programmable hardware (e.g. a Sphero robot)*

*I can decompose (break into smaller chunks) a programming problem*

*I can debug errors across a sequence of code*

### EQUIPMENT YOU WILL NEED

Sphero mini (or other variant) programmable hardware. Best choice is to use iPads with the [Sphero Edu app](#). Chromebooks or laptops can work though this is often more fiddly and less reliable.

You will need 1 iPad (or alternative) to control each Sphero.

### ESSENTIAL PREPARATION

Make sure to plug the Spheros into mains power in plenty of time so they are fully charged. Children enjoy helping with such processes.

## HOW WILL THIS LESSON PROGRESS?

**Draw 1: Shapes.** You can access this lesson sequence using the link: <https://edu.sphero.com/cwists/preview/6872x>

You might want to assign the lesson to children if you have set up your education account. You can just send children the lesson link through a learning platform or, in some ways even simpler, just display the steps of the lesson through your classroom board or screen.

It is best to talk through individual steps with children and structure your lesson around these steps. Stopping children to focus back on you / the classroom screen is a good way to keep the tasks on-track and elicit learning through further discussion and questioning. Consider your groupings of children carefully and utilise as much space as you can. Using a full classroom is often fine, and desks together can often be used as an alternative to having all children using floor space. Halls and outdoor areas can be worthwhile spaces to use if they allow for more space.

You might want to extend this activity over more than one session – the challenge (step 4) could be a lengthy task if you feel children would benefit from such an approach.

## SETTING UP & USING A SPHERO EDU ACCOUNT

	<p>Sphero contains a well-considered teacher / student system through the Sphero Edu website so that teachers can assign tasks to children safely and securely. Teachers might typically access this through their laptop. Teachers need to register first so that they can create and manage classes. Choose the educator option here and sign up: <a href="https://edu.sphero.com/vpc/educator/signup">https://edu.sphero.com/vpc/educator/signup</a></p>
	<p>Once setup with Sphero Edu, classes can be created and synced with Google Classroom or standard pupil accounts. However, the 'class code' option is probably the best way to work with young learners in year 3 or 4 – no child logins required.</p>
	<p>Children can enter the class code into the iPad app to follow along and complete each step of the task.</p>



## SPHERO FROM 1<sup>ST</sup> USE (SESSION 2 OF 4)

### CURRICULUM MILESTONES

*I can control or simulate programmable hardware (e.g. a Sphero robot)*

*I can decompose (break into smaller chunks) a programming problem*

*I can debug errors across a sequence of code*

### EQUIPMENT YOU WILL NEED

Sphero mini (or other variant) programmable hardware. Best choice is to use iPads with the [Sphero Edu app](#). Chromebooks or laptops can work though this is often more fiddly and less reliable.

You will need 1 iPad (or alternative) to control each Sphero.

### ESSENTIAL PREPARATION

Make sure to plug the Spheros into mains power in plenty of time so they are fully charged. Children enjoy helping with such processes.

### HOW WILL THIS LESSON PROGRESS?

**Draw 2: Spelling.** You can access this lesson sequence using the link: <https://edu.sphero.com/cwists/preview/6875x>

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### TIPS FOR TEACHING DELIVERY

No devices needed for step 1 and you do not need to issue the Sphero robots to the children until they reach step 4. Use this to your advantage to keep children engaged in the activity and wanting to progress.

Good objects to use with the challenge activities in steps 4 and 5: pencil pots; glue sticks; pencil cases etc.

Children may need to use further space when attempting these challenge activities.



## SPHERO FROM 1<sup>ST</sup> USE (SESSION 3 OF 4)

### CURRICULUM MILESTONES

*I can control or simulate programmable hardware (e.g. a Sphero robot)*

*I can decompose (break into smaller chunks) a programming problem*

*I can debug errors across a sequence of code*

### EQUIPMENT YOU WILL NEED

Sphero mini (or other variant) programmable hardware. Best choice is to use iPads with the [Sphero Edu app](#). Chromebooks or laptops can work though this is often more fiddly and less reliable.

You will need 1 iPad (or alternative) to control each Sphero.

### ESSENTIAL PREPARATION

Make sure to plug the Spheros into mains power in plenty of time so they are fully charged. Children enjoy helping with such processes.

### HOW WILL THIS LESSON PROGRESS?

**Space: Rocket Launch.** You can access this lesson sequence using the link: <https://edu.sphero.com/cwists/preview/13578x>

You might want to assign the lesson to children if you have set up your education account. You can just send children the lesson link through a learning platform or, in some ways even simpler, just display the steps of the lesson through your classroom screen.

It is best to talk through individual steps with children and structure your lesson around these steps. Stopping children to focus back on you / the classroom screen is a good way to keep the tasks on-track and elicit learning through further discussion and questioning. Consider your groupings of children carefully and utilise as much space as you can. Using a full classroom is often fine, and desks together can often be used as an alternative to having all children using floor space. Halls and outdoor areas can be worthwhile spaces to use if they allow for more space.

### TIPS FOR TEACHING DELIVERY

Step 1 allows for exploration of the blocks in the Sphero Edu app and there could be considerable amounts of fun (and chaos!) made while exploring the many different options. Allow children to experiment but bring them back to the core questions mentioned in step 1 – and any other functions that you think will be worth exploring.

Step 2 should be worked through together as a class, highlighting the terms **decomposition** and **to decompose** – these are fundamental to programming, breaking down problems into smaller parts.

It may be good to get children to feed back to explain the different ways in which they have solved each part of the programming problem. It can be good to talk about the fact that there may be different commands that will make the same thing happen.

Step 3: allow children a little creative licence over their rocket launch procedures. Bring the conversation back to talking about the different stages of the process that has been coded.



## SPHERO FROM 1<sup>ST</sup> USE (SESSION 4 OF 4)

**\*THIS TASK WILL  
NORMALLY EXTEND TO  
FURTHER SESSIONS\***

### CURRICULUM MILESTONES

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### EQUIPMENT YOU WILL NEED

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### ESSENTIAL PREPARATION

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### HOW WILL THIS LESSON PROGRESS?

**Bridge Challenge.** You can access this lesson sequence using the link: <https://edu.sphero.com/cwists/preview/15602x>

You might want to assign the lesson to children if you have set up your education account. You can just send children the lesson link through a learning platform or, in some ways even simpler, just display the steps of the lesson through your classroom screen.

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### TIPS FOR TEACHING DELIVERY

You will need to source materials for the bridge construction – with enough materials for all groups. Sellotape, sturdy card and/or cardboard boxes may be your most available resource for making this work.

Remember that the initial steps involve design ideas and thought before children get their hands back on the Spheros and iPads. Use this to your advantage to focus them on the design process.

Step 2: you might find that exploring these ideas together as a class is a better use of time and will allow you to introduce your material choices.

Step 4: As well as children finding the code that will make the Sphero move in the right way, it's important that children understand whether the Sphero is physically able to move over a bridge structure. Typically, they will overestimate the angle of the ramp that the Sphero is able to climb. It is important that they understand a shallower ramp is the only way to get the Sphero to move upwards onto a bridge. They will need to keep this in mind as they build the bridge later – otherwise they are likely to be disappointed when the Sphero can't use their bridge!

If moving up a ramp proves to be too tricky, the activity can be adjusted to bridging between tables (see the video in Step 6 for an example).