



# robotics

School Competition 2020



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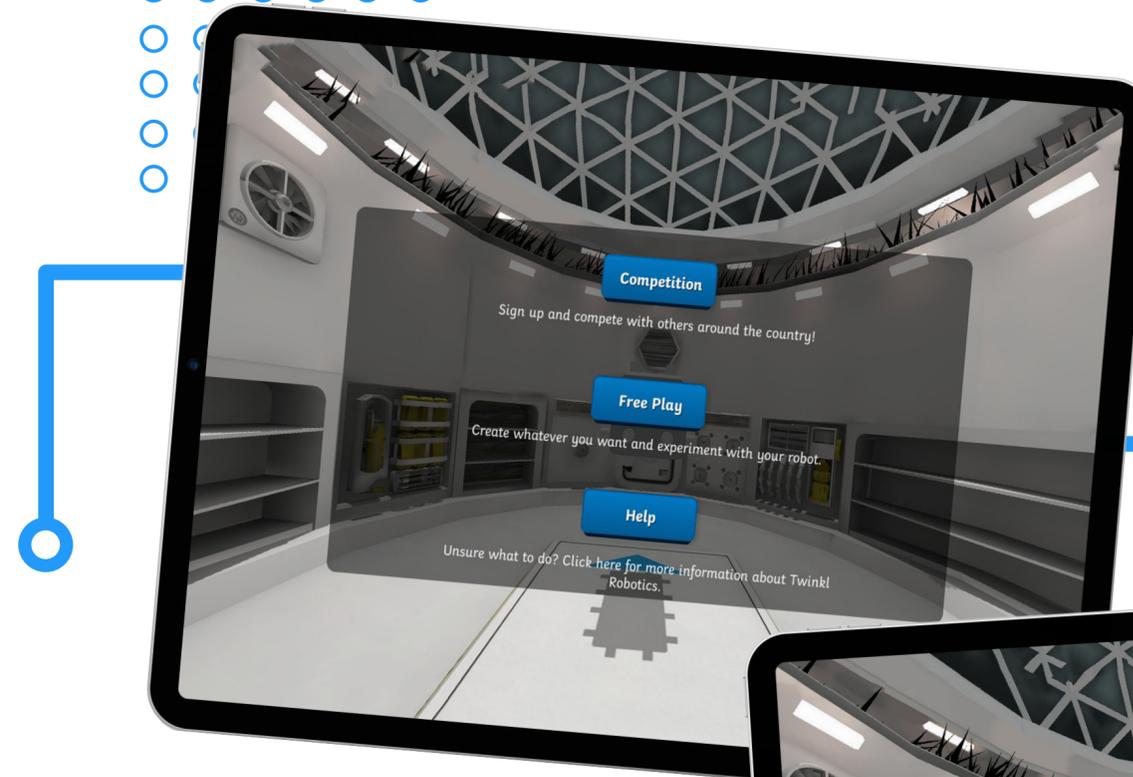
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# How to sign up your school

Signing up to the school's Robotics competition couldn't be easier – simply follow these steps to get started.

Plus, if you don't want to compete and just want to have fun, that's okay too – simply sign up and use our 'free play' mode.

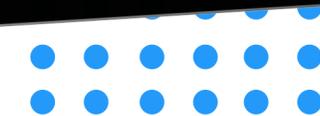
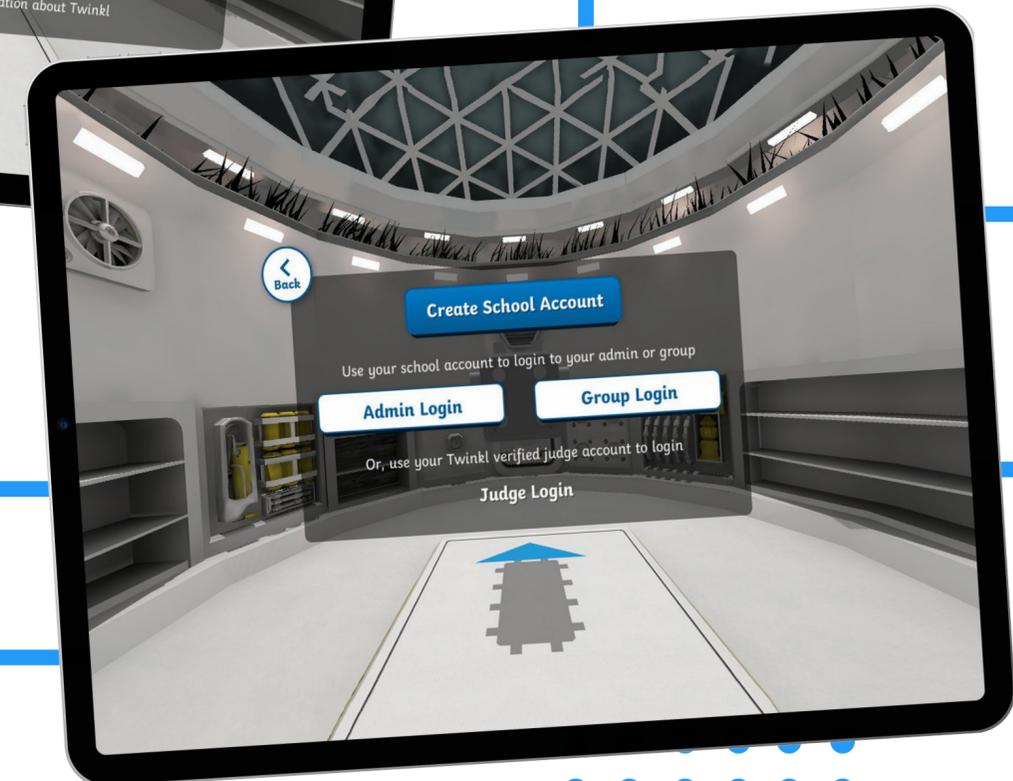


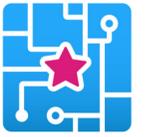
## Step 1

First, select Competition mode.

## Step 2

Then Create School Account.





**School Sign Up**

Please enter the email and password which will be used by all your students to access the application.

School Name

Login Email

Password

Contact Email\*

School Postcode

By clicking 'Sign-up', I confirm that I have read the privacy policy and agree to be bound by the terms and conditions of the competition and am happy to receive email updates for the competition.

I understand that I can unsubscribe from emails at any time by contacting schools@twinkl.co.uk or DPO@twinkl.co.uk

[Click here to view privacy policy.](#) [Click here to view competition rules in full.](#)

**Sign Up**

**Back**

### Step 3

Enter your School Details and click Sign Up. Remember to include a valid email address so we let you know all about the competition.

### Step 4

Once the form is completed, you will be presented with your administrator details. Use these to login as an admin and manage the creation and deletion of groups.

**Congratulations!**

You are now signed up!

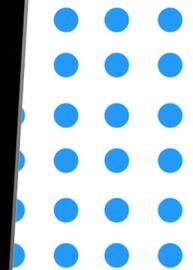
Here is your admin PIN:

**1404**

Please keep these details safe as you'll need them to create groups and track progress.

If you need any help, please find our user guide and more information [here](#).

**Enter**

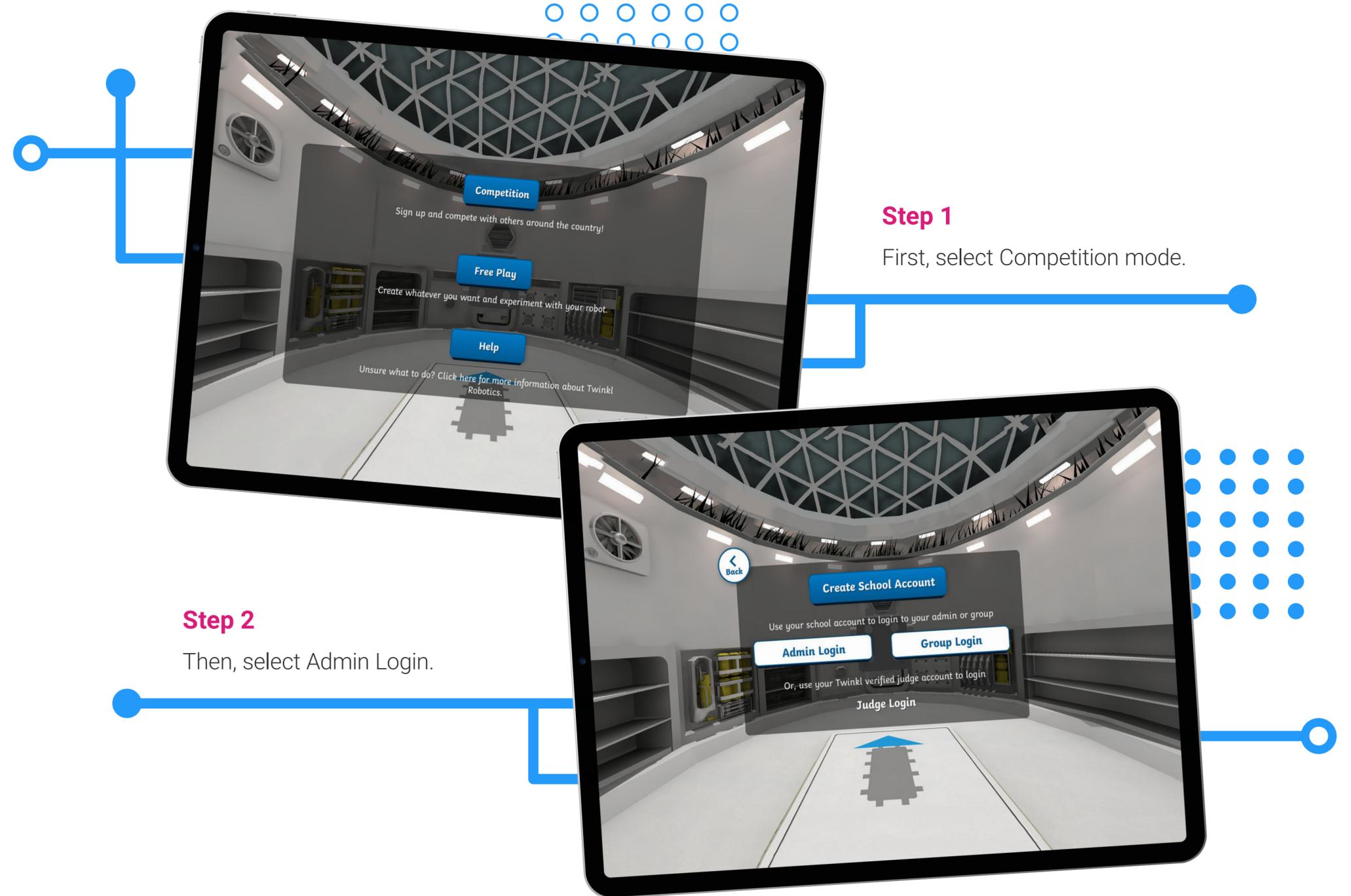


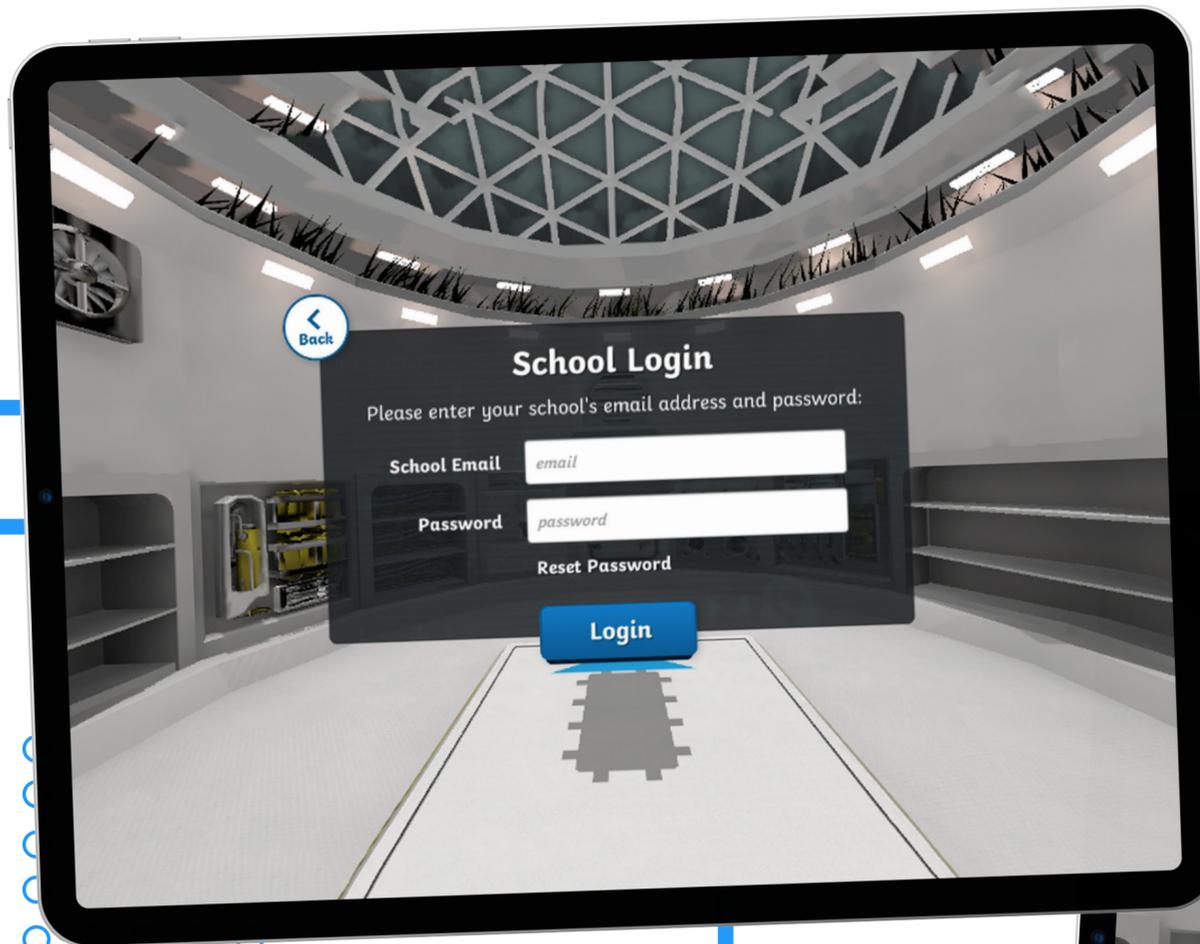


# How to sign up your groups

For the best results, collaboration is key and we've made it easy for you to create groups in the game. This way, your children can work together as a team and create amazing robots.

Creating a group is easy – just follow these simple steps.

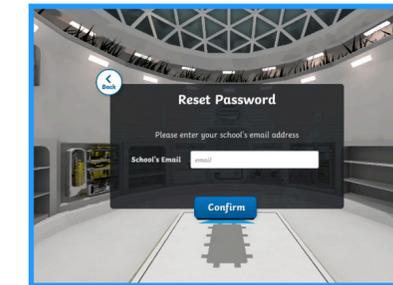




### Step 3

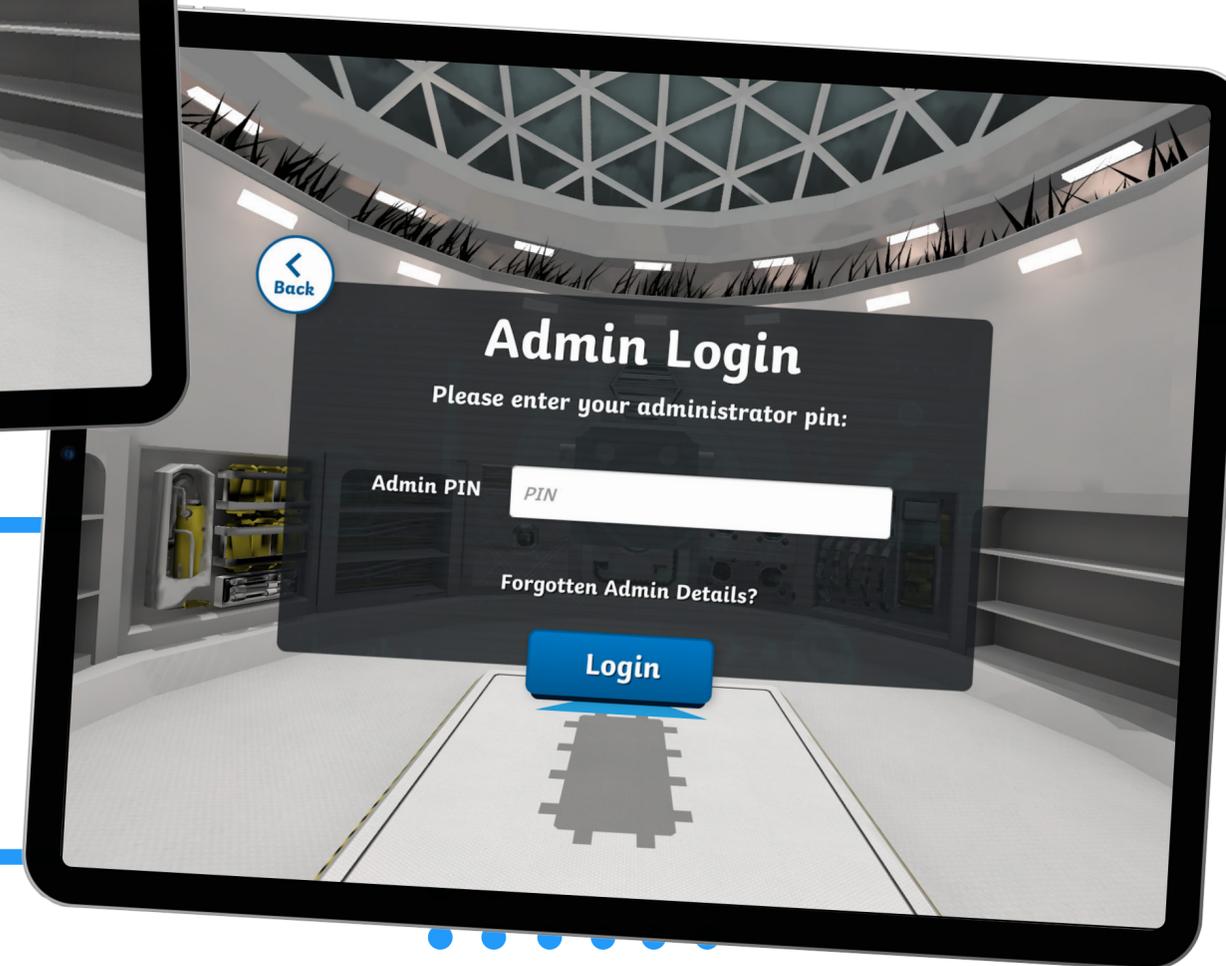
Sign into your school account

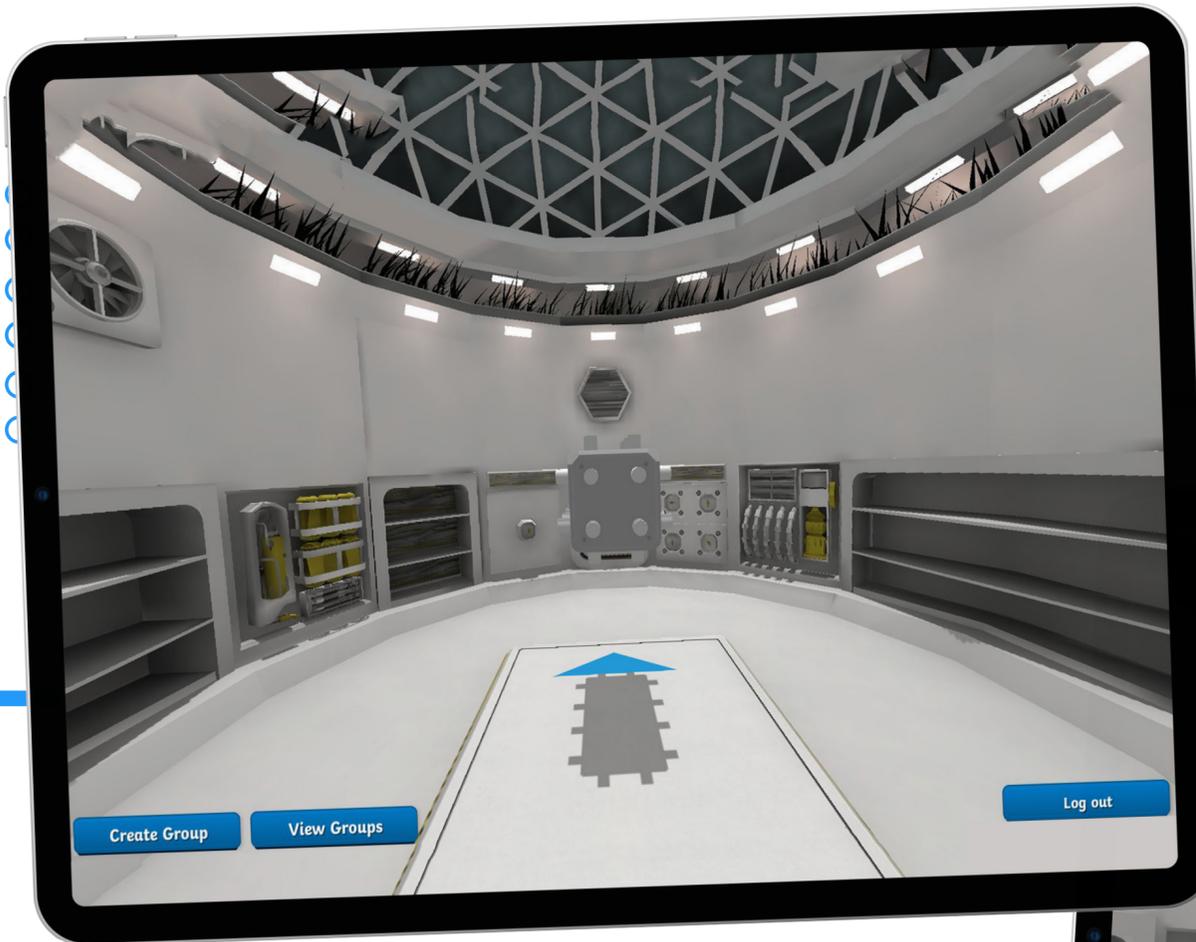
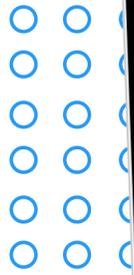
**Note:** If you forget your details you can always reset your password.



### Step 4

Use your details to sign into your school's admin account.





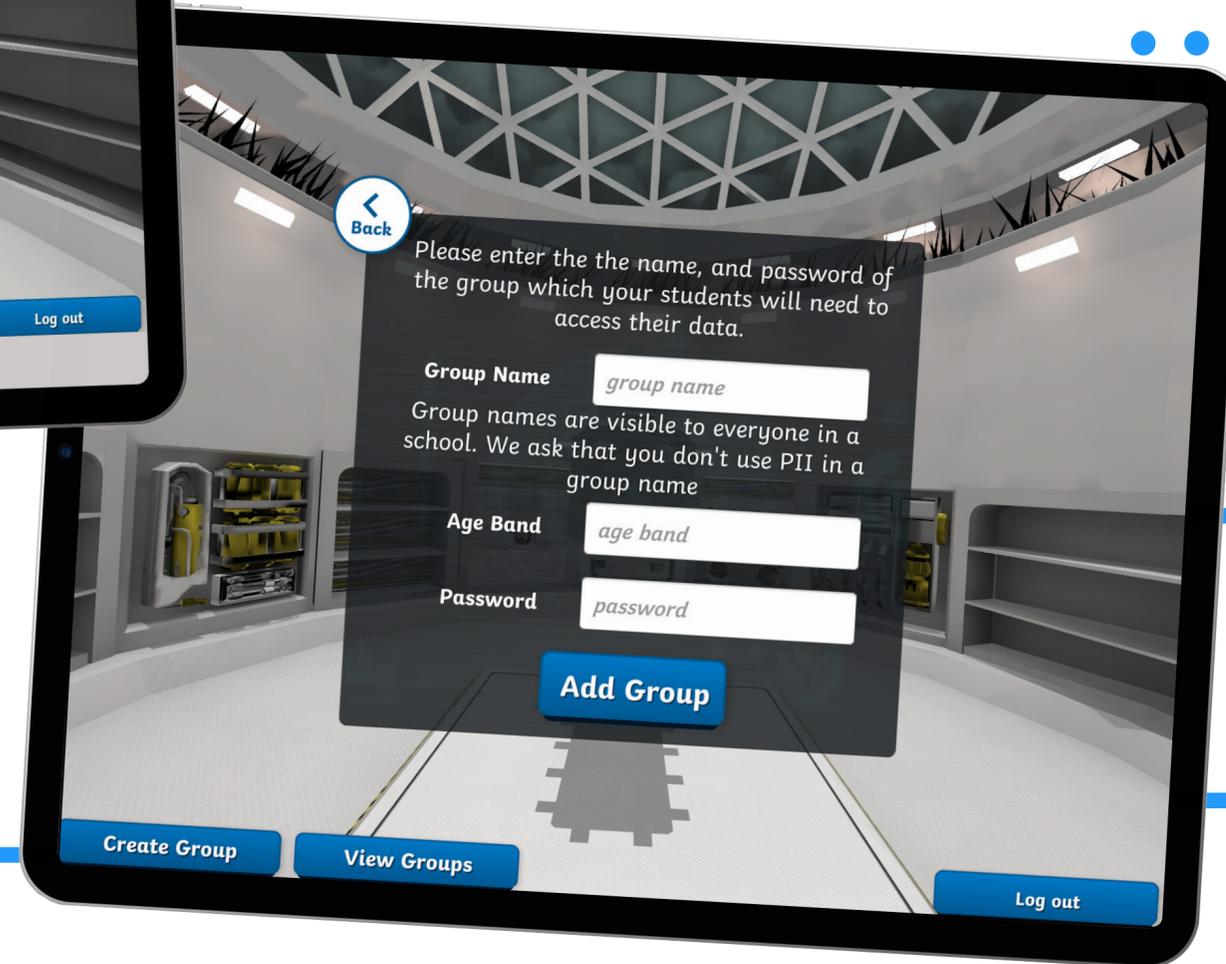
### Step 5

You will then be presented with the admin screen. To view a group select "View Groups".



### Step 6

Next, enter your group's details and when you've finished, click Add Group. (Remember, make sure your school Admin and the children in each group keep this information private. Plus, it's a good idea to keep a note of which group each child belongs to.)

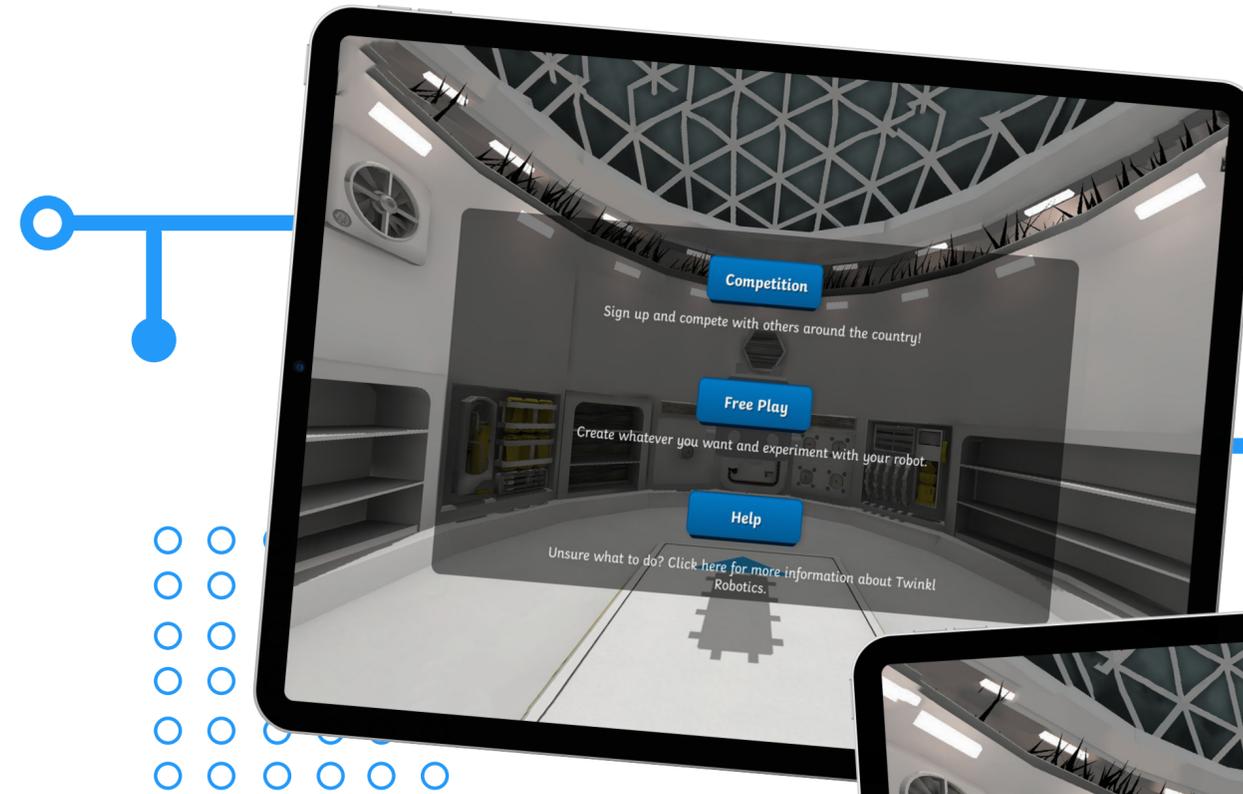




# How to sign in as administrator

To help make it easy for you to monitor the great work each group is doing, you'll find a handy Admin Account. Use this to create the groups and also view the contestant data.

Signing up is simple – just follow these simple steps...

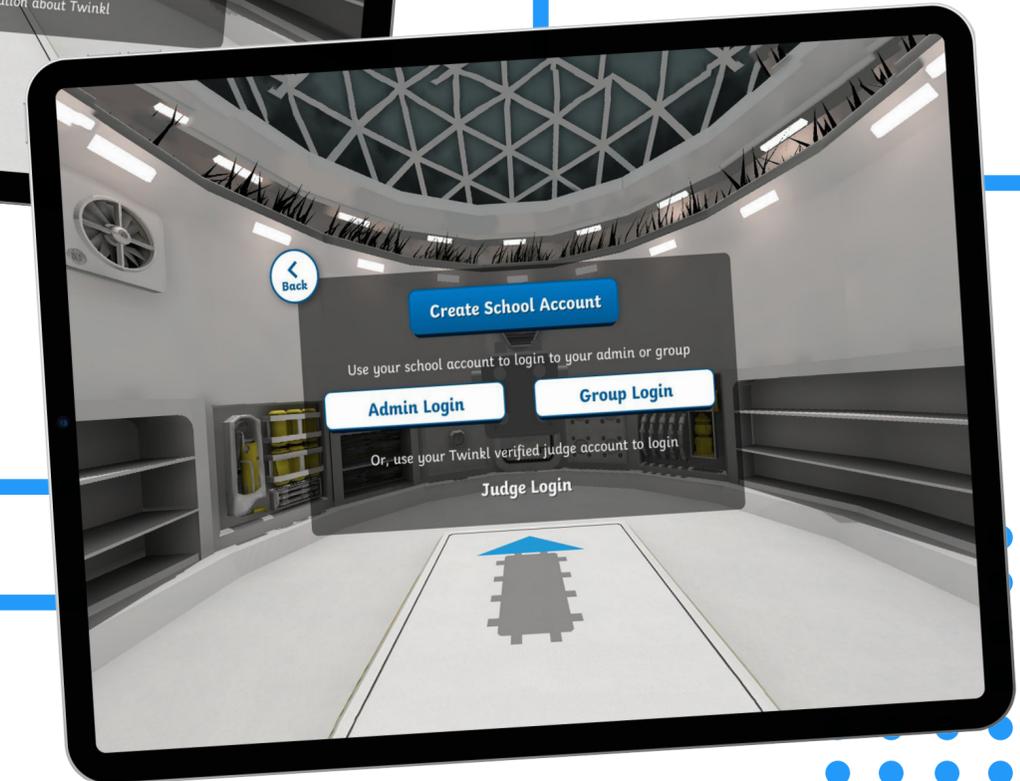


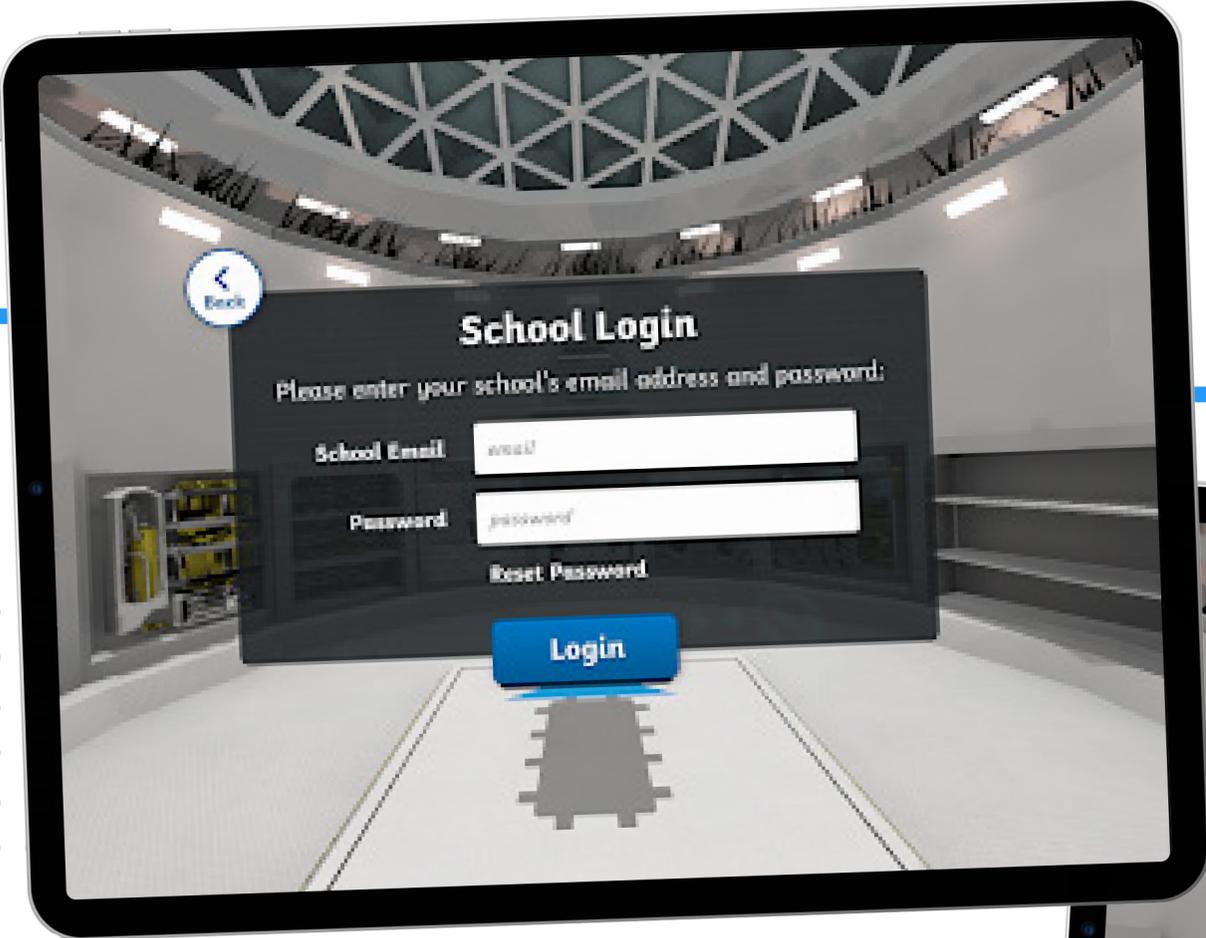
## Step 1

First, select Competition mode.

## Step 2

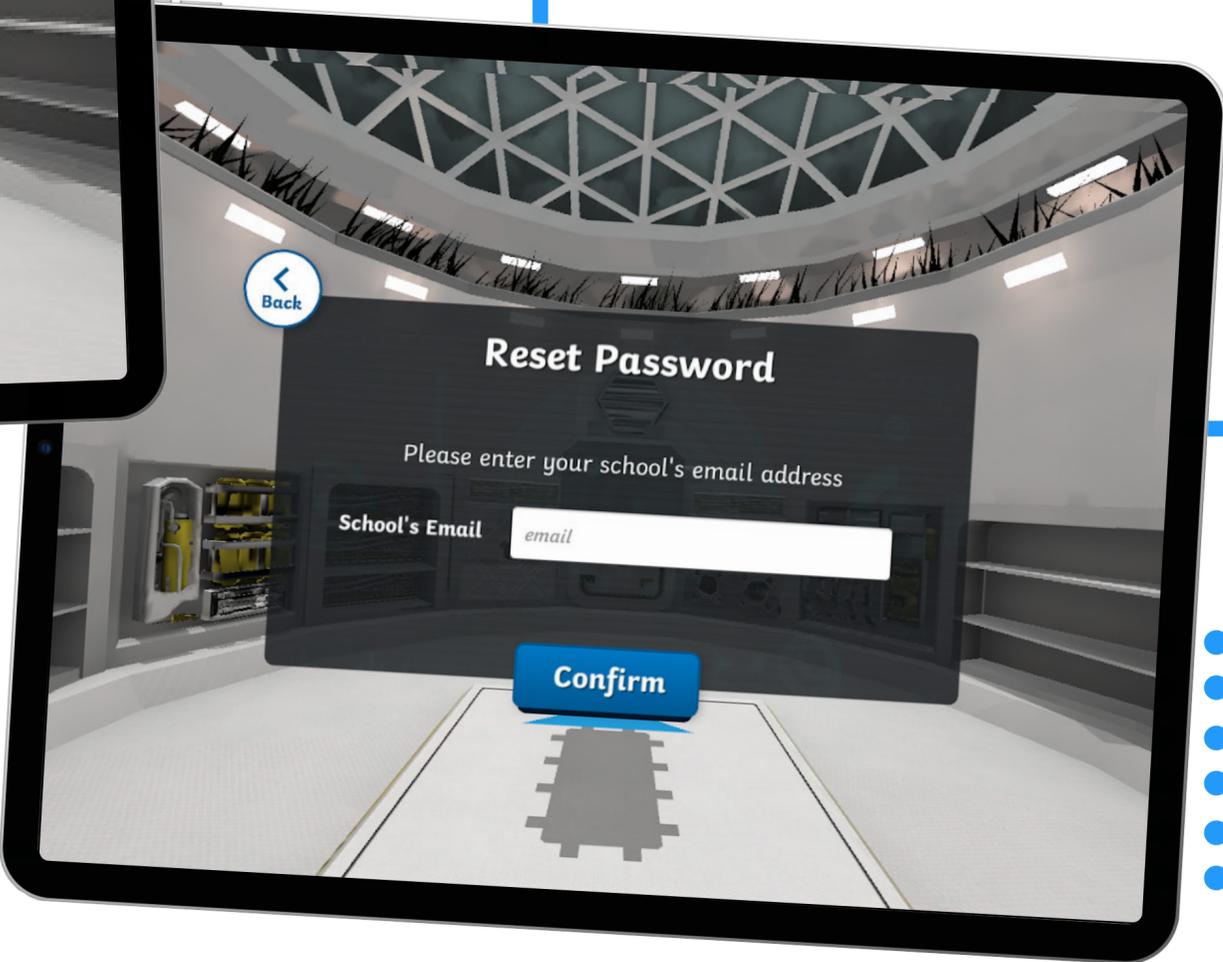
Then, select Admin Login.



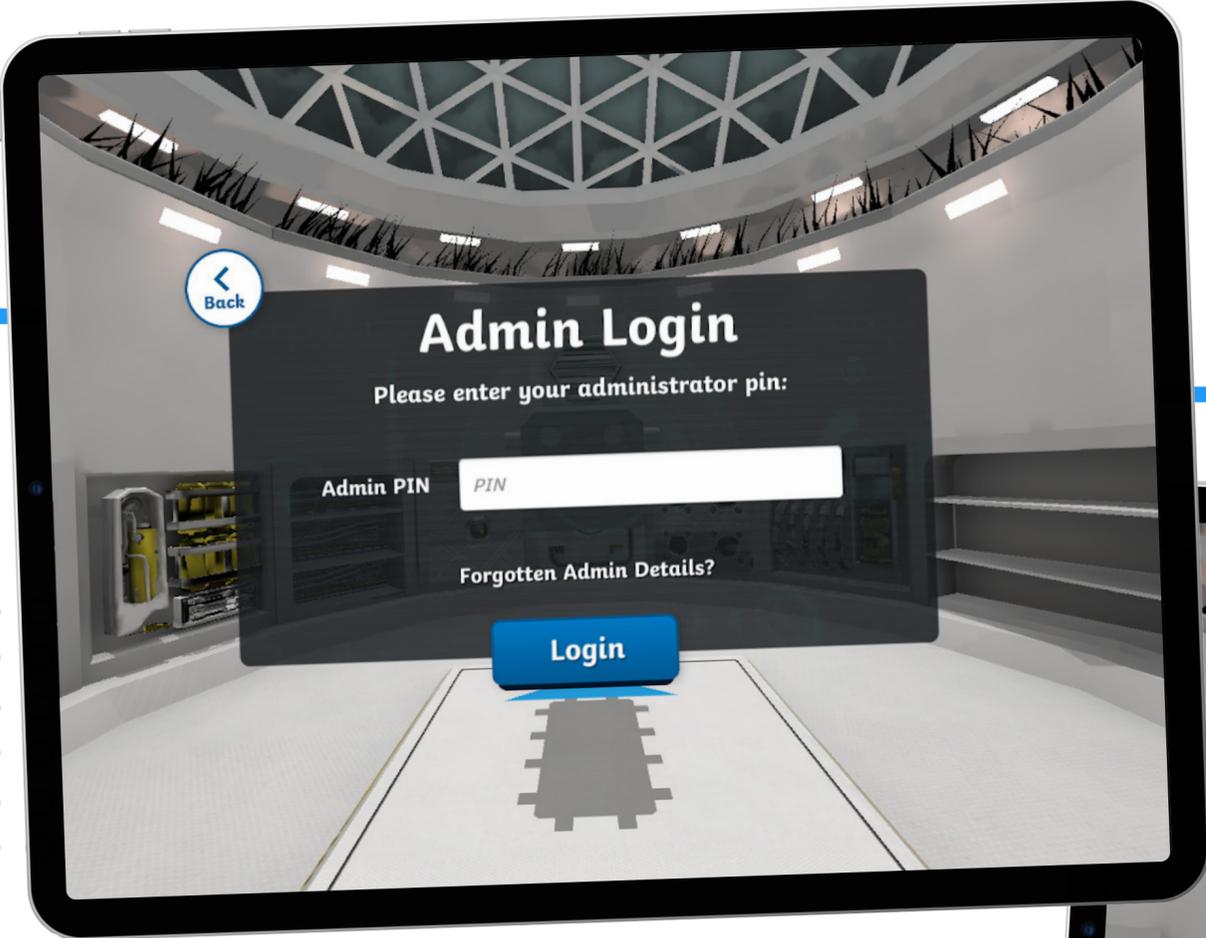


**Step 3**

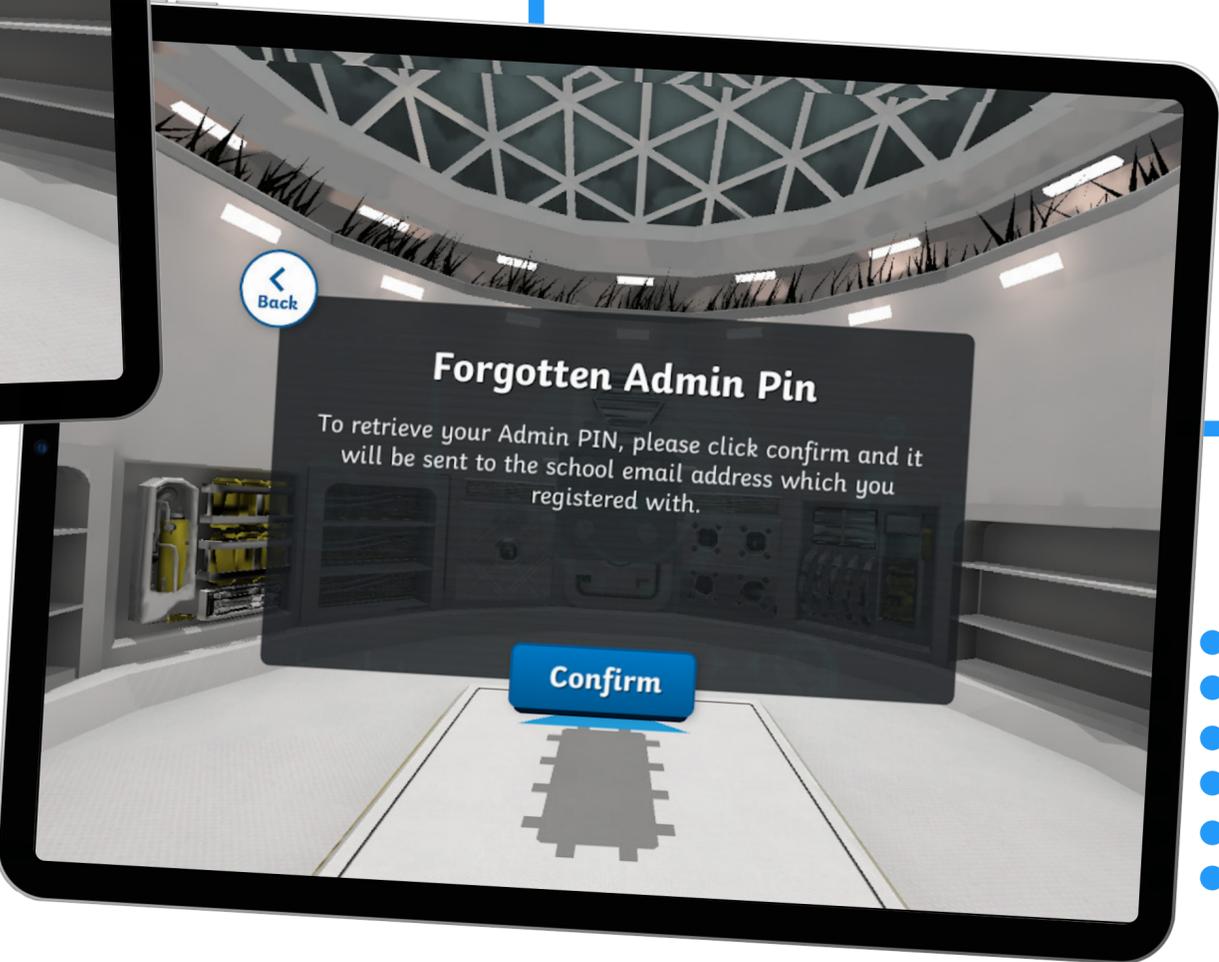
Sign into your school account.



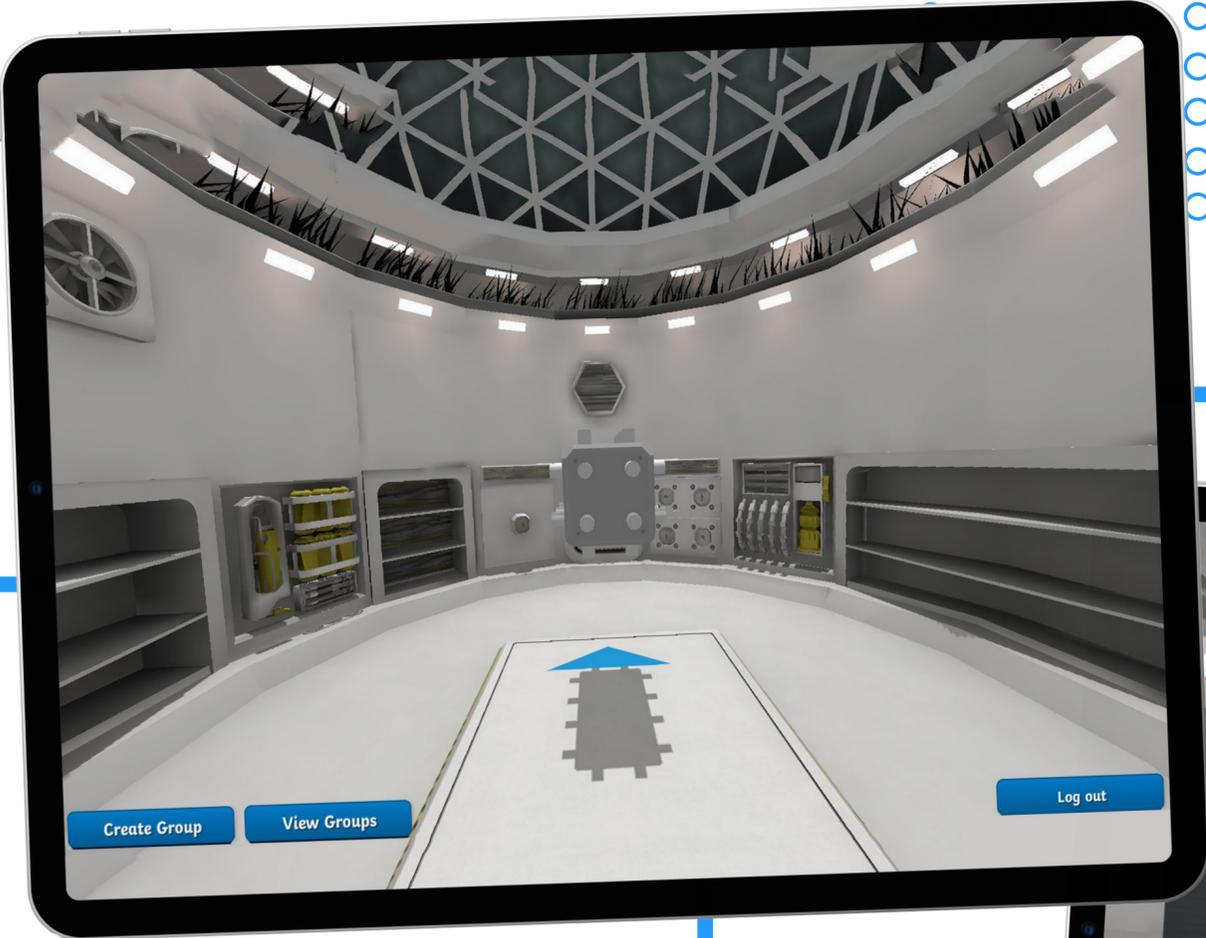
**Note:** If you forget your school account password, you can always reset your password. Remember to let your groups know, as they need this to sign into this school account before signing into their group.



**Step 4**  
Sign into your admin account.

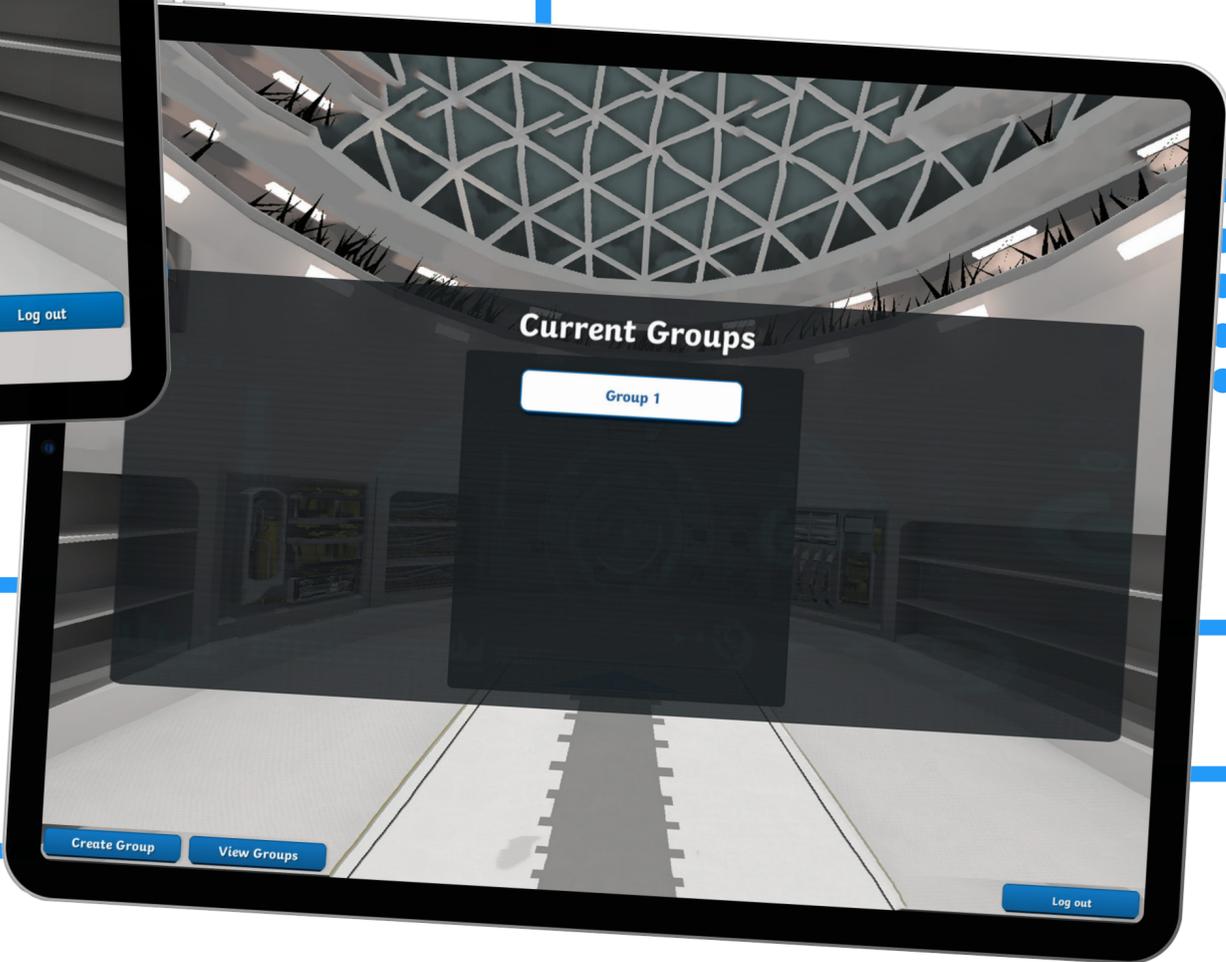


**Note:** If you forget your administrator PIN, you can always request for it to be sent via email to your school email address. This PIN is to be given to admins only as this is where admins can add and delete groups as well as viewing groups progress.



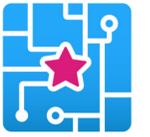
**Step 5**

You will then be presented with the admin screen. To view a group select "View Groups".



**Step 6**

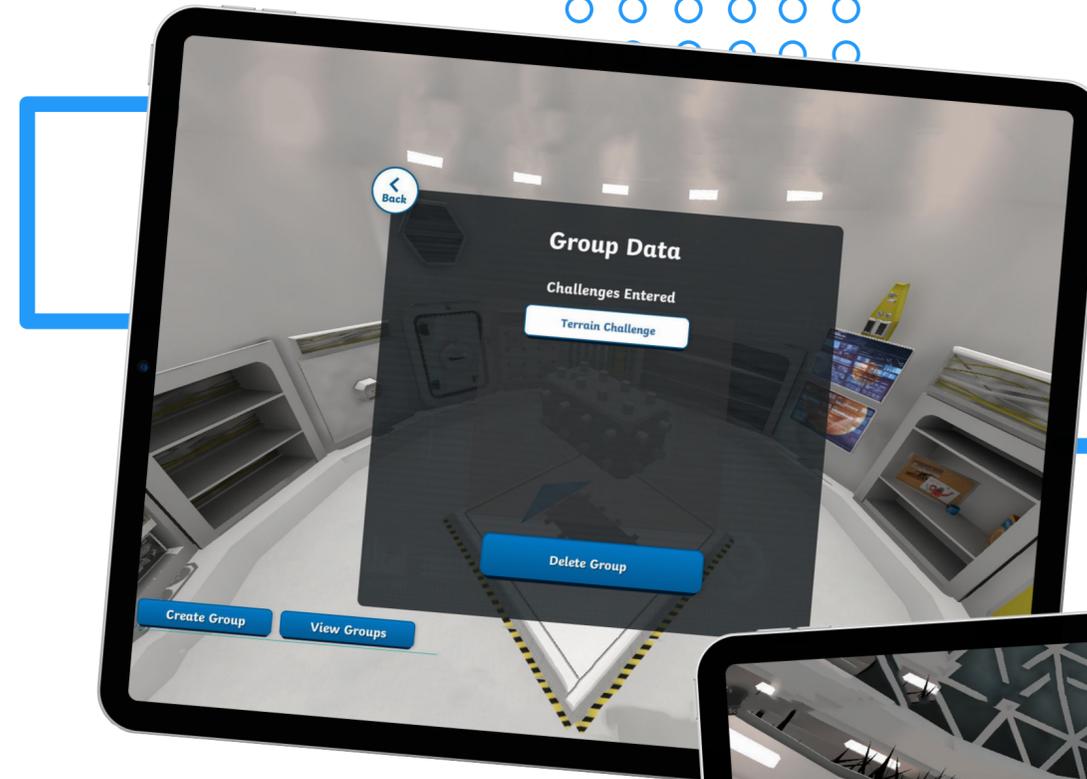
Select a group from Current Groups.



# Admin Management

As an Administrator, you'll find a set of handy tools that help you manage your groups.

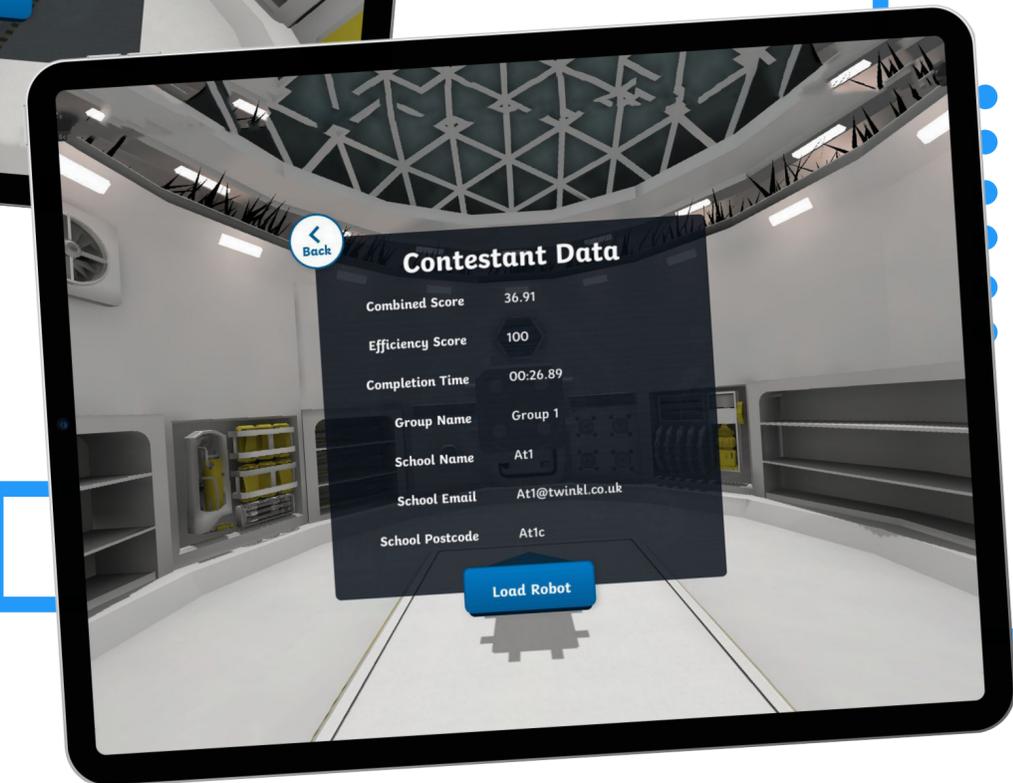
The following steps show how easy it is to see the data for each individual contestant – including completion times and efficiency scores.



## Viewing contestant data

Follow the steps for Administrator Sign In. Choose a group from your current groups list. Select a challenge from the Challenge Entered List.

Here you will see the Contestant Data window and be able to load and view the robot submitted for that challenge.

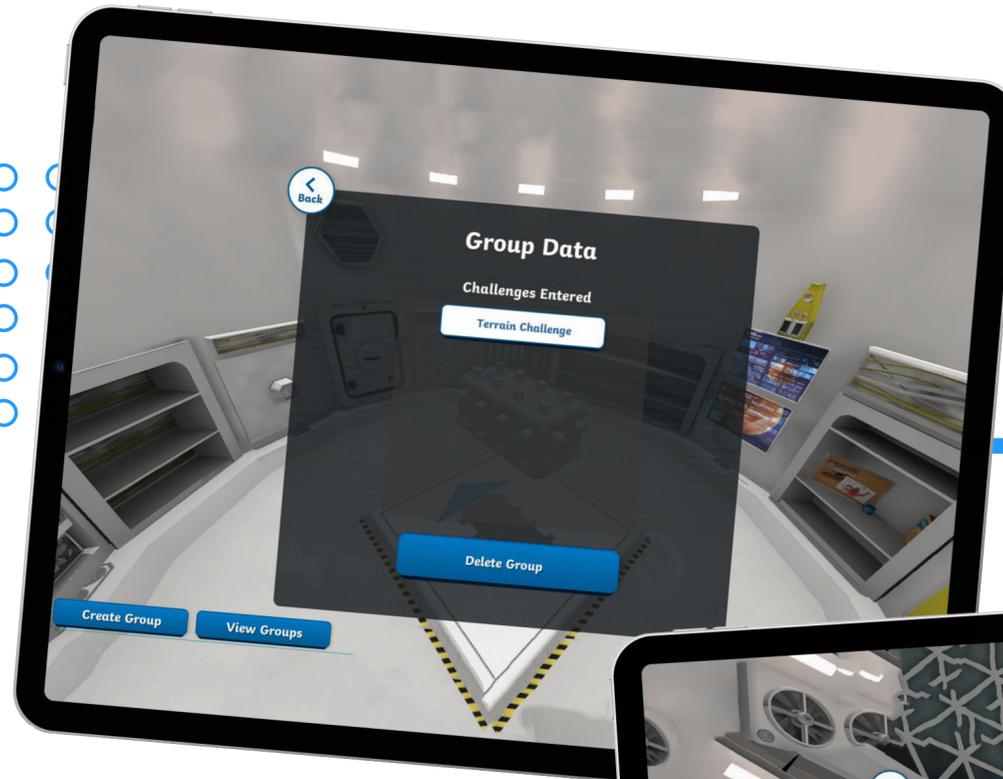




# Admin Management

Administrators also have access to a set of handy tools that help them manage all their groups.

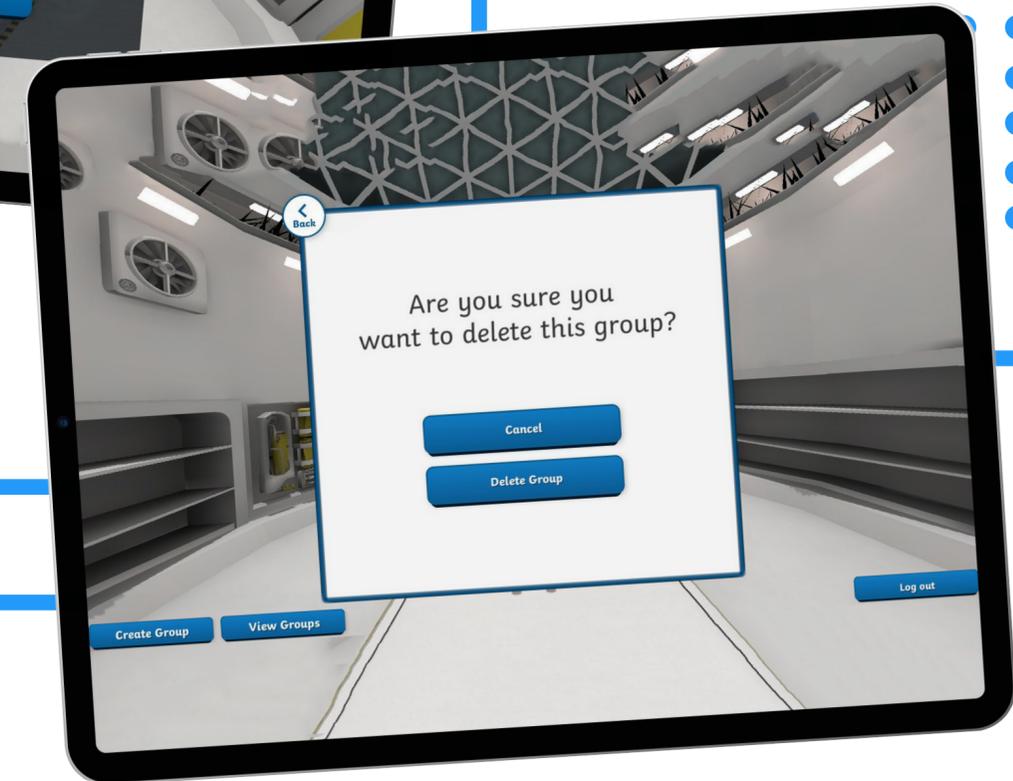
The following steps show how you can stay organised by deleting any groups you no longer need.



## Deleting a group

Follow the steps for Administrator Sign In. You will see your group list. Select your group and click "Delete Group".

You will be met with a confirmation pop up and will need to click "Delete Group" to successfully delete your group.





# Building your robot

Welcome to the lab. Here's where you can start to create your own robot. With so many features and components available, the possibilities are endless!

To get started and learn more, just follow these simple steps...



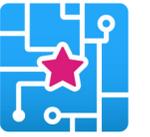
## Step 1

You'll find a block already waiting for you in the centre of the room - this is the base for your robot. You can add to this by clicking on an icon in the 'Build' toolbar (at the foot of the screen) and then selecting that component.

## Step 2

Attaching this component to your robots is easy - simply decide which joint you'd like to place it on and then click to add. You can program, copy or even delete a component at any time by simply clicking and holding on the item. This instantly opens the component menu, where you can make your choice.





# Programming your robot

When it comes to creating a robot that can venture across the treacherous surface of Mars, customisation is key.

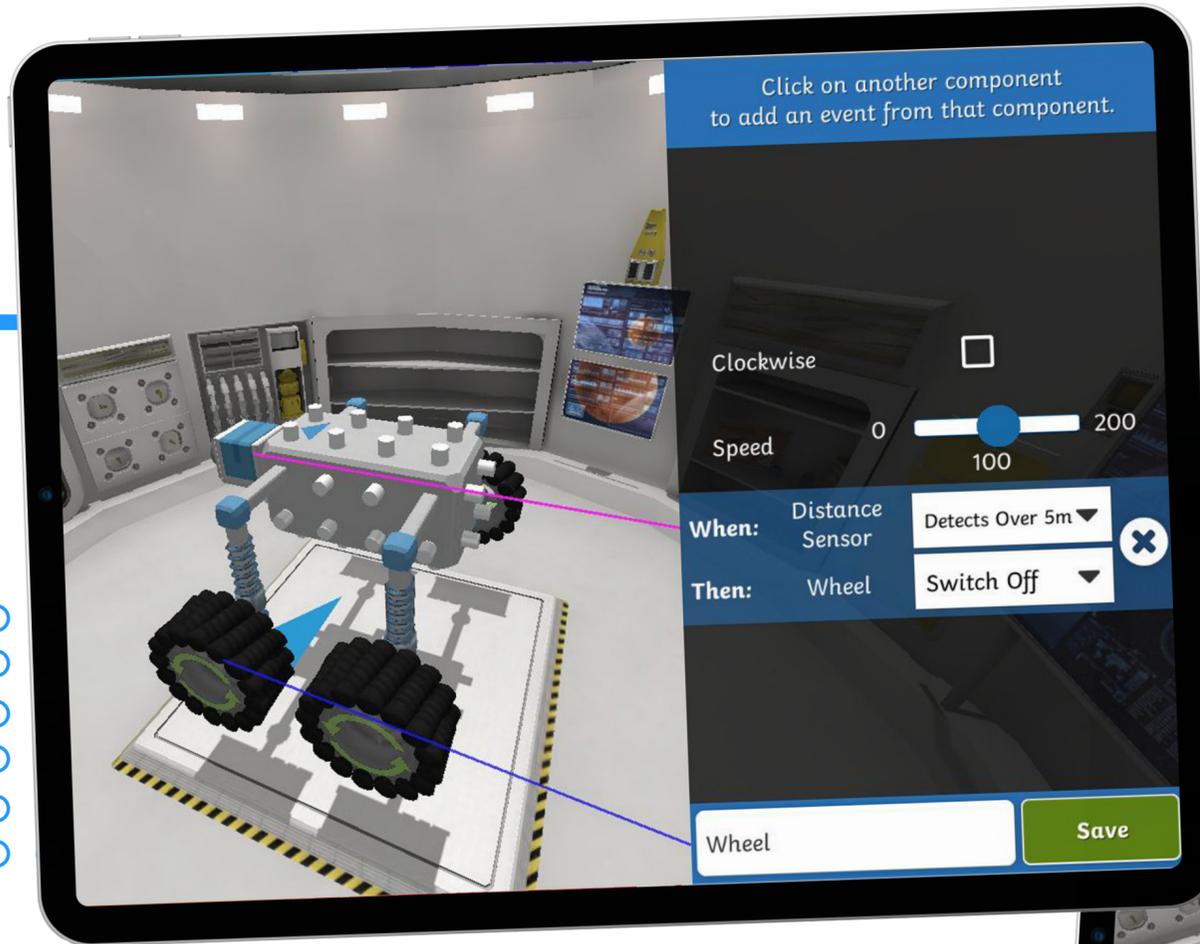
That's why you'll find a programming feature within the game – empowering your groups to create truly unique robots by programming every single component in a variety of different ways.



## Step 1

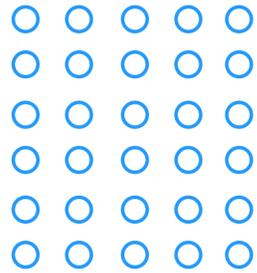
Start by choosing a component – click and hold on this component to open the 'Component Menu'.

You can now select the 'Programming' icon to open the programming window. Here, you'll find a list of all the various parameters that can be edited – this is how and where each group can decide on their robot's capabilities.



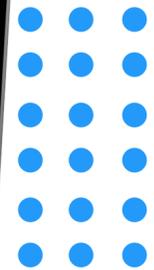
### Step 2

The really clever stuff happens when you begin to make relationships between the different components. To do this, simply click another component. This will instantly create a relationship between this and the component you're programming. Once you've created a relationship, you'll see a 'When' drop-down menu. This is where you'll find all the events your component can trigger while it's running - such as colour sensor that can detect the colour black. Select the ones you want to use.



### Step 3

Next, choose the 'Then' drop-down menu to see all the actions the component you're programming can perform - such as setting the direction of the wheel. Once you've created these relationships between components - setting the events and actions - you can apply these to your robot by pressing 'Save'.

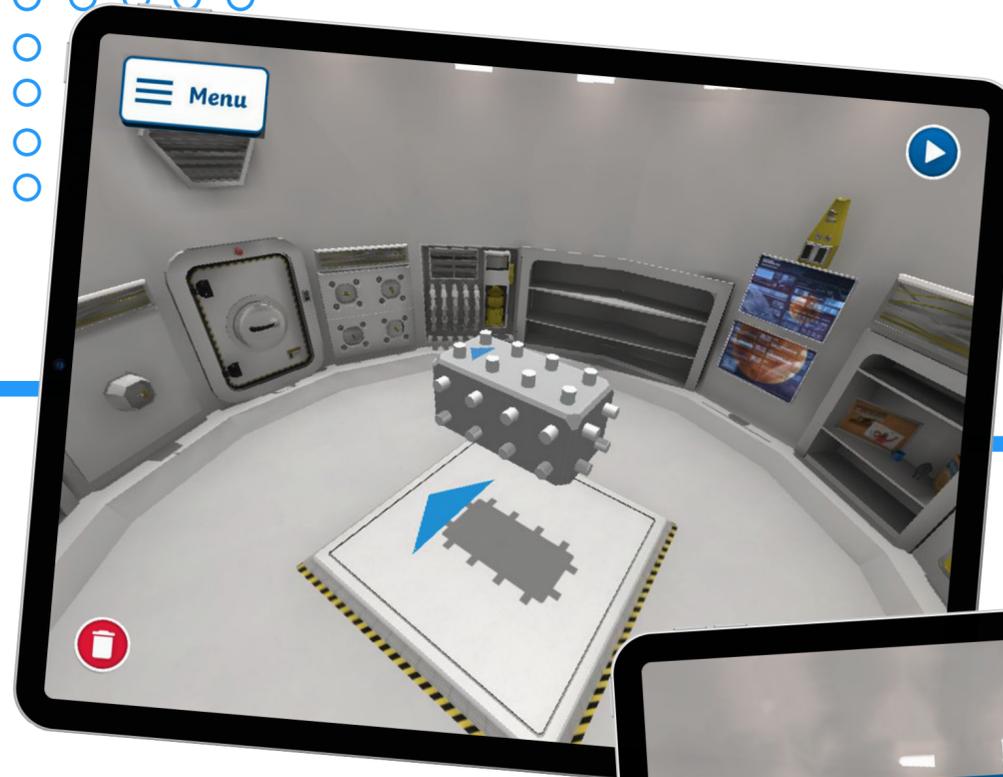




# Testing your robot

Now the fun really begins! You've spent oodles of time masterminding your genius creations and now it's time to put them to the test on the treacherous surface of Mars – here's where you find out if your robot can take on the challenges the app provides.

Follow these steps to access the challenge menu and dive straight into whichever challenge takes your fancy...



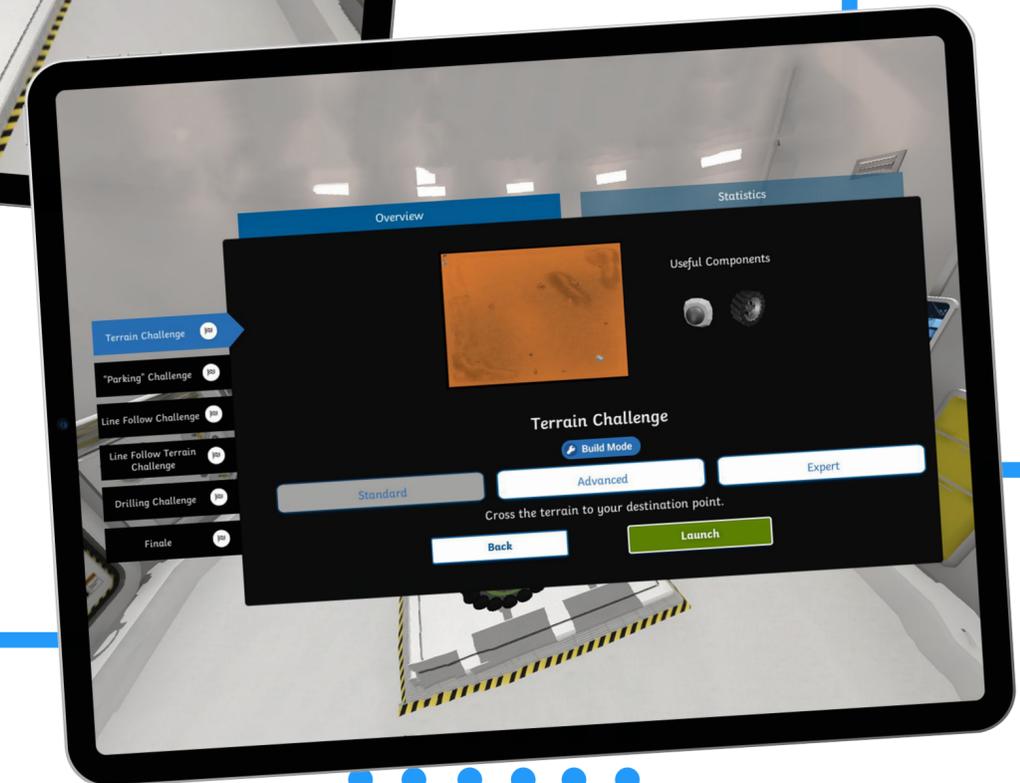
## Step 1

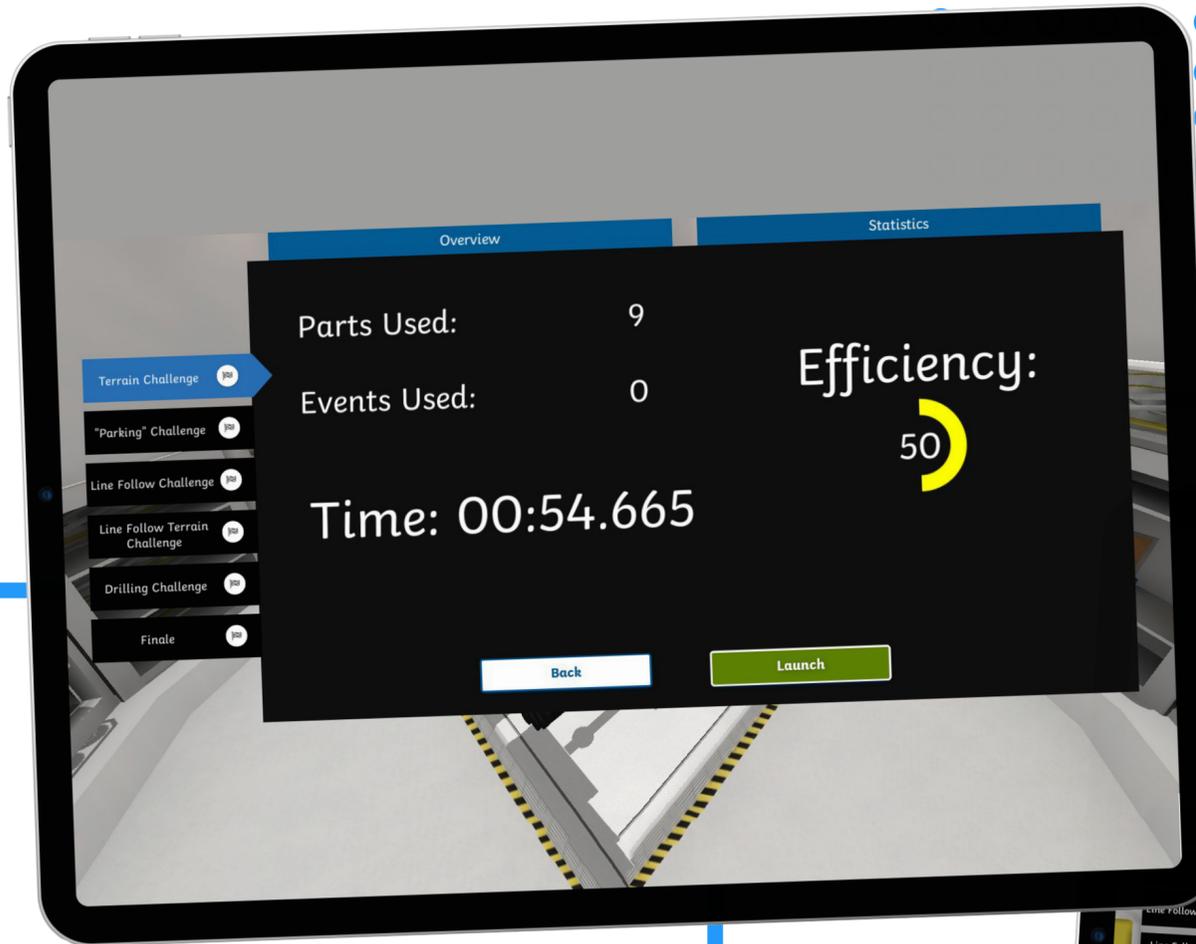
Click on the 'Start' button in the top right corner of the lab/build window – you'll see this when you're in the lab and have opened the 'Challenge' menu.

## Step 2

Once this menu is opened, you can take your pick from the various challenges available – you'll find these displayed on the left.

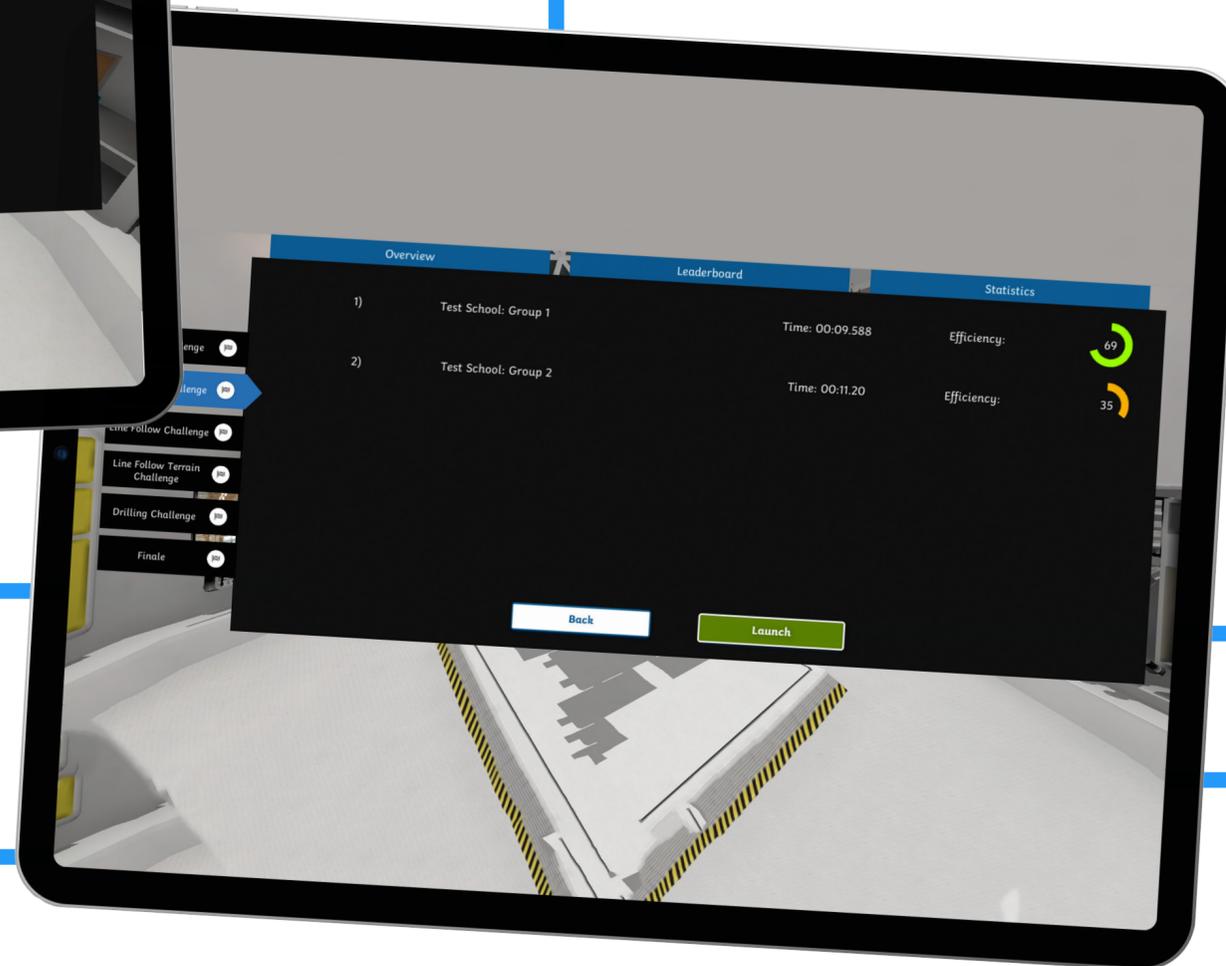
**Note:** To give you and your robot a helping hand, we always suggest a selection of 'Useful Components' for each challenge.





### Step 3

To view your stats select the Stats Tab.



### Step 4

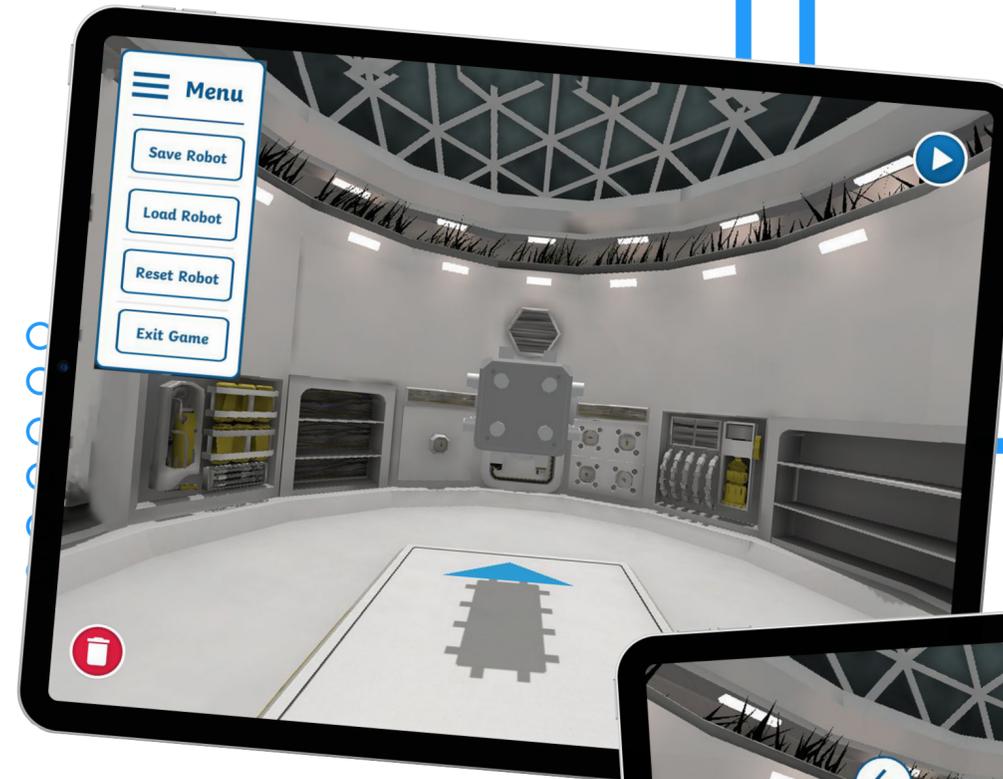
Select the Leaderboard Tab to view the leaderboard.



# Saving your robot

It takes time to create a masterpiece, right? After all, Rome (and your robots) wasn't built in a day. We get this, which is why you can Save everything you've built, take a break to recharge your genius, then return another day to pick up where you left off. You'll even find multiple 'Save' slots to keep all your incredible robots for future missions.

Follow these simple steps to see how easy it is to 'Save' your creations...



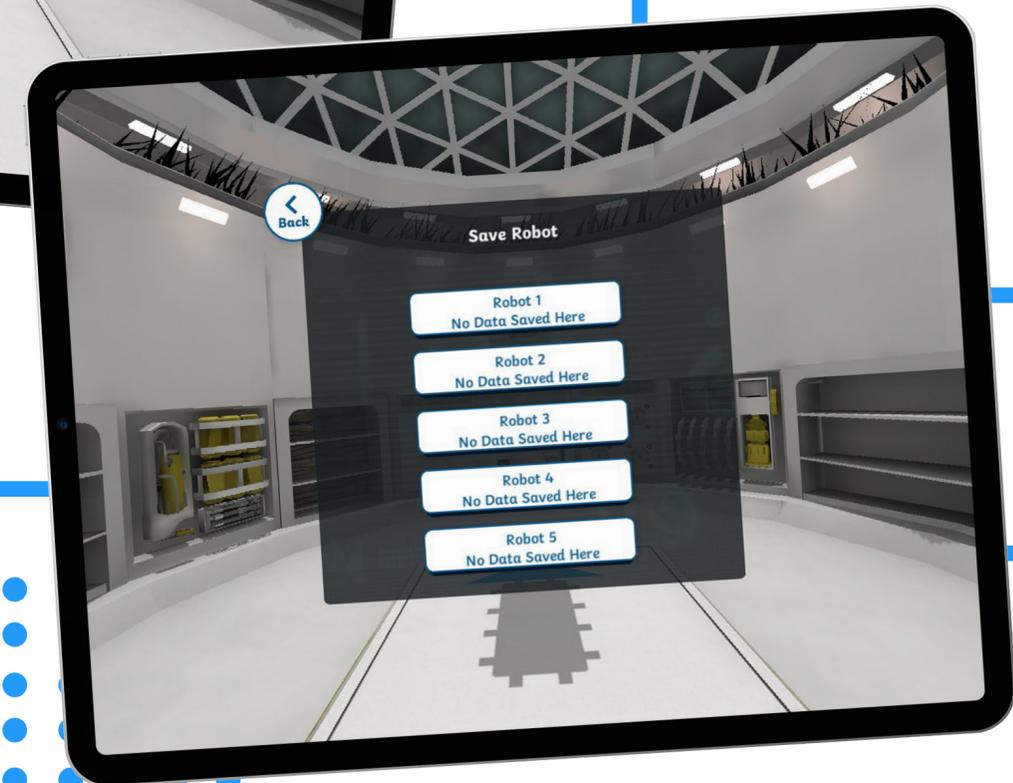
## Step 1

Follow the steps for Group Sign in. Click 'Save Robot'.

## Step 2

Select one of the five save slots, its as easy as that!

**Note:** If a robot already exists in this save slot it will be overwritten with your current robot.

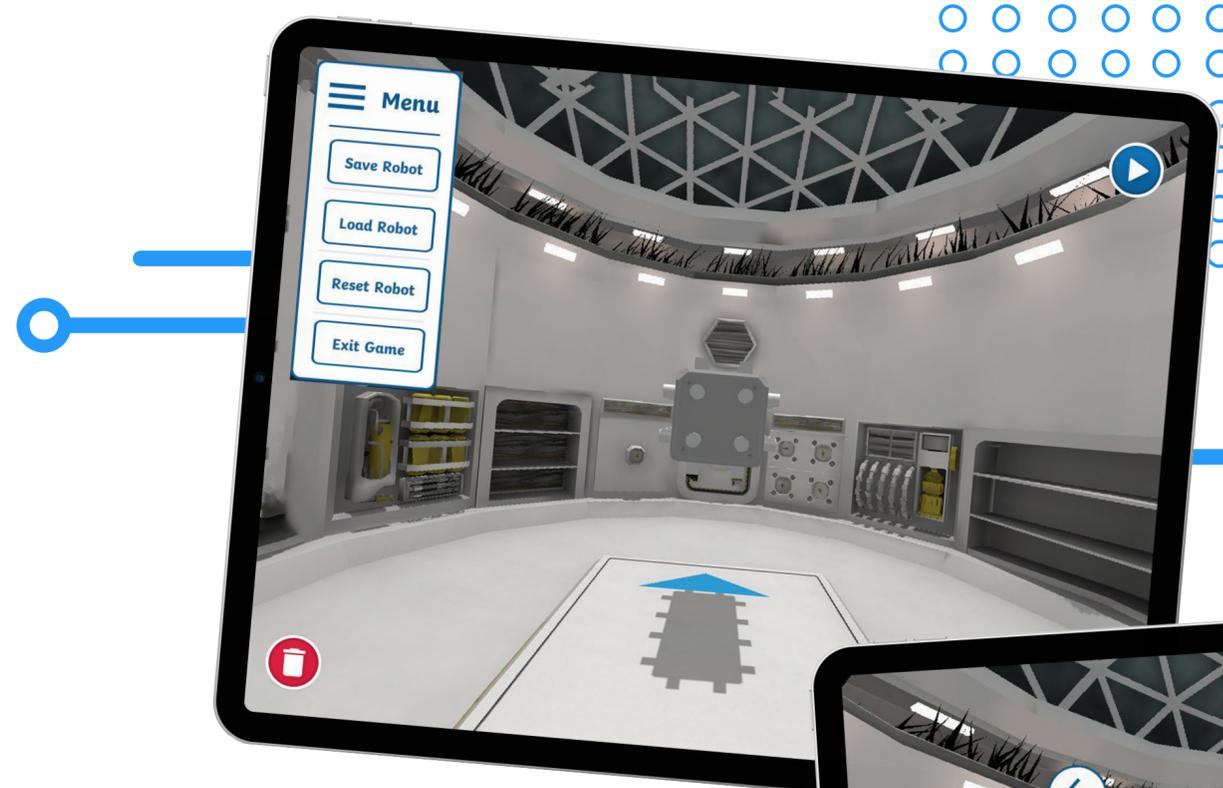




# Loading your robot

Okay, you've taken a break from robotics but now you're recharged and ready to return to Mars. No problem – simply go to your 'Saved' session and load your robot straight back into the garage.

It's as easy as it sounds – just follow these simple steps...



**Step 1**  
Follow the steps for Group Sign in. Click 'My Robots'.

**Step 2**  
Select one of your robot slots.  
**Note:** If you don't have a previously saved robot, no robot slots will be available to load from.

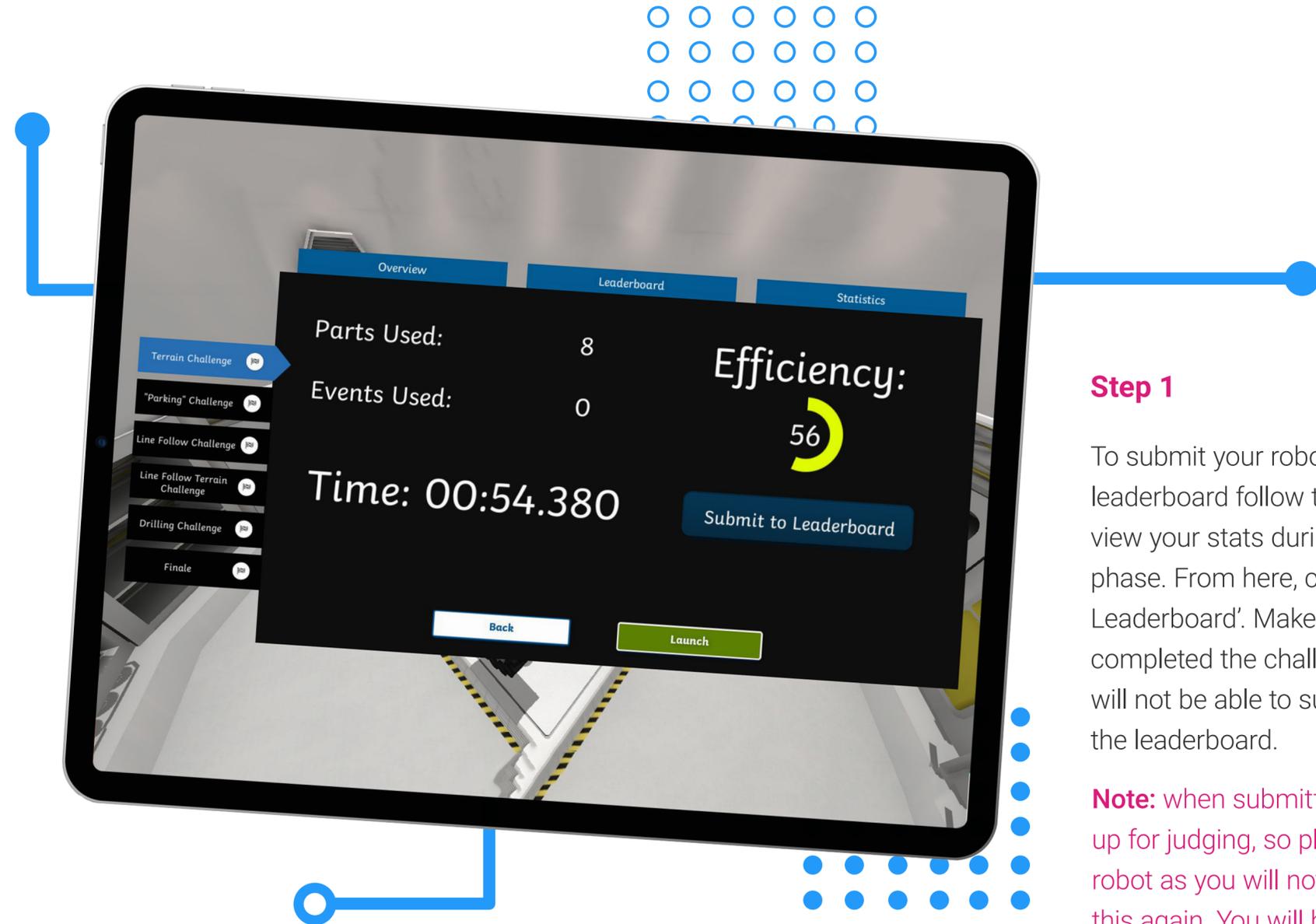




# Submitting your robot

We have a section of the app that allows you to see all of the statistics from each and every one of your amazing missions. From the amount of parts used to an efficiency score, you can get all the details you need.

If you're proud of the stats that you've achieved, why not submit it to the leaderboard for everyone to see. Follow the next steps to see how you can do this.



## Step 1

To submit your robot to the leaderboard follow the steps to view your stats during your testing phase. From here, click 'Submit to Leaderboard'. Make sure you have completed the challenge first or you will not be able to submit your robot to the leaderboard.

**Note:** when submitting a robot, it goes up for judging, so please save this robot as you will not be able to access this again. You will however be able to overwrite your competition entry



# Parking Programming

Once you've followed steps 1 and 2 on the right, you can duplicate the wheel where needed, make sure to correct the direction; e.g Wheels on the right side turn Clockwise.

Additionally, you may want to program the robot's wheel to switch on if the sensor does not detect a surface 5 metres away from the robot. This prevents the robot from halting each time it traverses over a bump. simple steps...

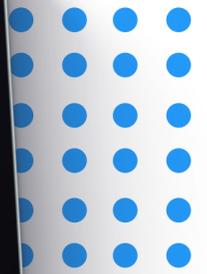


## Step 1

Select the **wheel** which will be used to move the robot across the surface. choose the 'i' icon.

## Step 2

Program the wheel to **switch off** once the **distance sensor** detects a surface **under 5 metres** from the robot. component to make building robots easier.





# Line Follow Programming

Once you've followed steps 1 and 2 on the right, you can duplicate the wheel where needed, make sure to correct the direction; e.g Wheels on the right side turn Clockwise.

Additionally, you may need to mirror this setup on the opposite side in order to make the robot follow the black line with more precision.



## Step 1

Select a wheel which will be used to steer the robot along the black line. Program the wheel to turn clockwise once the colour sensor has detected a colour which is not black.

## Step 2

Program the wheel, to turn anticlockwise once the colour sensor detects a black line on the surface.





# Drill Programming

The drill is an essential part of your robot as it allows you to gather precious minerals from Mars.

Make sure you follow the steps on the right in order to program your drill correctly.



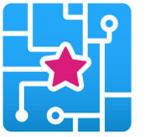
## Step 1

Select the drill you want to use for mining minerals. Program the drill to begin drilling once a mineral has been detected (automatically detected once in range). Program the drill to stop drilling once a the mineral has been mined.

## Step 2

Select the desired wheel which will stop once the drill has finished mining. Program the wheel to switch off once the drill has detected a mineral. Then, program the wheel to switch on once the drill has completed mining the minerals in range.





# Robotics Manual

Robots are complex creations and building them takes real time and effort. To make it as easy as possible, you'll have access to all the details and information that you need – including descriptions, useful relationships for each component, etc.

To access this, just follow these simple steps...

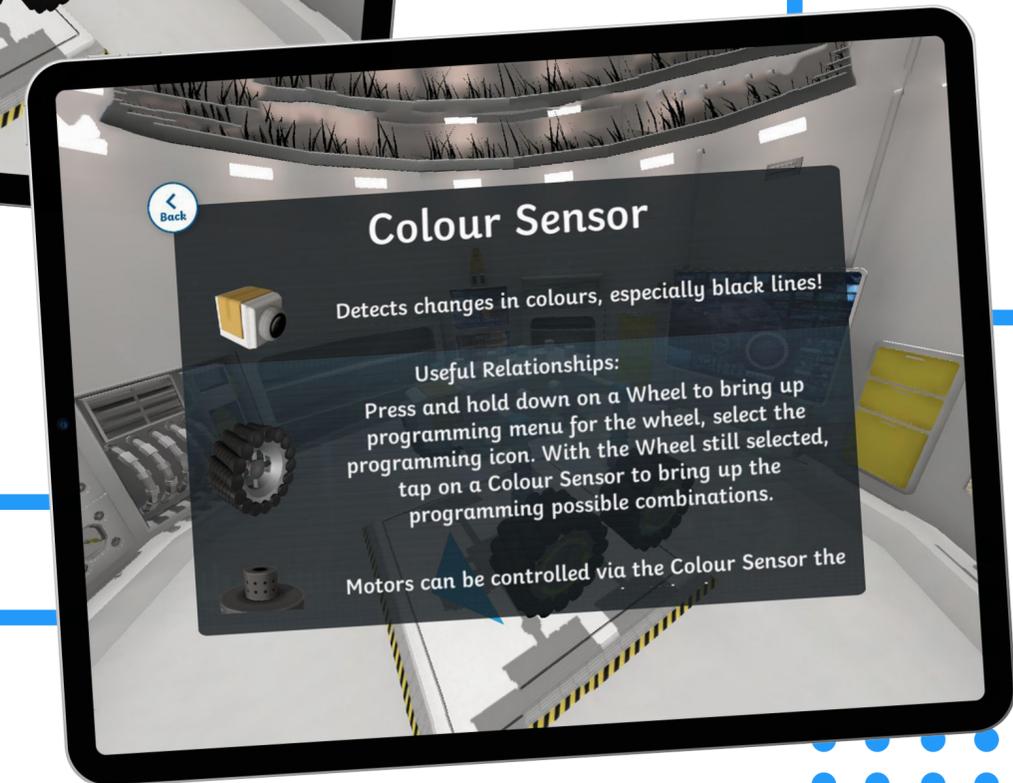


## Step 1

You can access the information at any time by simply clicking and holding on the component. This instantly opens the component menu, where you then choose the 'i' icon.

## Step 2

Here you are presented with information about the component. 'Useful Relationships' show which other parts can be used with this component to make building robots easier.



# robotics

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