



RM[®] MechRC[™] dance activity overview

Introduction

Main

Extension

Plenary

Activity 1

Introducing ED-E and the remote controller

Show the demonstration dance. Explain the features of ED-E and how it can be run live or using the controller.

Ask pupils to evaluate ED-E and describe what sort of moves it can do.

Get the pupils to explore the controller and list the key button combinations.

Discuss how the servo motors work.

Discuss what the next six activities will bring... use of the controller and the software with the ultimate aim of producing a robot dance.

Activity 2

Introducing the RM MechRC Animator software

Show the standing wave using the controller. Show this live on ED-E and then on the Animator software

Now demonstrate the creation tools on the software by creating a wave.

Explain that the program will only complete the wave once. Show the pupils how to loop the action. Download and test a sample of the programs written.

Obtain feedback on the software. How easy was it to use? What tools did the pupils find effective in programming? Point out that using the number box to enter figures is the most effective but less visual way of programming. Look at general controls.

Show camera views... this will give action to the dance. Also change the home frame transition from 2.5 seconds to 0.1 second. This will remove an unnecessary pause.

Activity 3

Linking up live to ED-E

Show the pupils how to connect ED-E to the computer and then link up to the Animator software.

Get pupils to explain that moving too fast from the home or 'standing' position into the new position could cause ED-E to topple.

Pupils link up live to ED-E and get it to balance on one leg at about 20° angle.

Discuss: momentum, centre of gravity.

Show the pupil how to save motion files.

Point out the dangers of programming and testing live. Robots can fall over!



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Activity 4

Editing existing moves

Load the walk forward loop file. Observe the action; run live on ED-E.

Discuss how we can add a wave action to the walk. Edit the walk move to include a wave. Play and look.

Use the walk forward loop.

Look at the delay; reduce the wait.

Show how to save edited moves and demonstrate how to assign these moves to buttons.

Note: Set arm to 90°, edit arm on every frame.

Activity 5

Assigning dance moves to buttons

In the 'Controller' tab, open the ED-E demo. Look at how buttons are assigned to moves.

Create two simple dance routines using more than two actions. Assign these routines to buttons on the controller. Use multi button presses.

Create a simple dance using the ready made actions.

Start to plan own dance routine.

Activity 6

Dance competition

Show the demonstration dance to remind pupils of the task.

Pupils spend time creating their own dance. Existing moves can be used where appropriate.

Pupils to choose their own music and convert if necessary (as detailed below).

Perform the robot dances and create a judging panel to mark the performances.

Converting sound files: Sound / music can only be a maximum of 90 seconds. Files may need to be converted to 8bit, 8mhz, mono