# Full Instructions Ballyland Code 2: Give Rotor

## Gestures used in the app

* Finger drag
* Flick left and right with one finger
* Flick down and up with one finger
* Double tap
* Three finger flick left\*

\* Please make sure you turn Zoom off in your device settings. If you have Zoom enabled, the three finger flick will not work.

**Tip:** It is recommended, and good programming practice, to code one line of code at a time, then run your code and check (finger drag). This makes correction easier.

## Self-voicing menu mode for VoiceOver users

The landing page of the app is VoiceOver accessible, but the app uses built-in speech. The landing page provides instructions on when to turn VoiceOver off in order to avoid mingling with the app's built-in speech. You can turn on VoiceOver again before you quit the app. Once you turn VoiceOver off, you need to turn on the Self-voicing menu mode. The menus will now be spoken aloud. Please note that regardless of whether this is on or off, the games are supported with audio throughout. The self-voicing menu navigation requires the use of finger gestures as used in VoiceOver, so you need to flick right/left through the menu items, and double tap to open.

To go to a page where you can turn the Self-voicing menu mode on and off, go to the Main Menu and double tap in the top left corner of the active screen.
Note: The app plays with the screen in "Landscape Mode".

Tip: On each page of the app there is a button ‘Go to Main Menu’ in the bottom right corner of the active screen. Double tap this button to go to the Main Menu.

## Use with 3D Learning tools

A tactile representation of the digital grid is essential for young learners who re blind or visually impaired to be able to develop a ‘mental map’ of the position of Wheelie, Ballicopter, the rock and the bushes. Mental mapping is required to analyse and understand the steps/commands that make Wheelie move to Ballicopter. You can create such a tactile representation yourself, but if you have access to 3D printing, we recommend the use of the Ballyland tactile grid and miniature Ballyland characters and objects that have been specifically designed to support learning with the coding apps. Print in 3D yourself, or ask your school or organisation. You can purchase the files from the Sonokids website.

## Coding – how to use the coding panel of the Challenge

Audio Based Coding provides user friendly navigation and an accessible coding panel. There is no need to type any code.

The code can be put together step-by-step, then you can run the code and explore the grid again to see how best to continue. Corrections are also very easily made to the code, if you find you have made a mistake. It is recommended, and good programming practice, to code one line of code at a time, then run your code and check (finger drag). This enables easy correction in case Wheelie turns out to be in the wrong position, and it avoids having to go back through a long sequence of code and find where the error is.

**Flick right with one finger to start the game and stop the speech. Use finger drag to explore the screen and find where Wheelie is, and where Ballicopter, the rock, and the clump of bushes are. Double tap to (re)open the coding panel.**

You code by way of the Coding Panel:

* Flick right with one finger to move to next line of code or Flick left with one finger to move to the previous line of code
* For each line, flick down or up to select a piece of code.
* Edit/de-bug by turning a wrong line of code into a correct one, or set it to an empty line. It will then be ignored. Having blank lines is acceptable in coding.
* Use a three finger flick left to clear all code from the panel (reset)
* Double tap anywhere on the screen to run your code
* Before coding, or after finding that your code is not complete or correct yet, you can use finger drag to explore the screen. Then double tap to (re)open the coding panel.

The coding options are:

* MoveForward
* TurnRight
* GiveRotor
* Empty line

## Coding – how to use the code

### MoveForward

Wheelie is a (ball-shaped) car and a car can only move in the direction in which it is facing. So it is important to remember that if you use the command ‘MoveForward’, Wheelie will move one step forward in the direction in which he is facing. Spoken feedback about which way Wheelie is facing (left, right, up, down) and his position in the grid is provided throughout the game. Wheelie always starts in row 1, column 1, facing right.

### TurnRight

Makes Wheelie turn right one time. Note that in level 3, to make Wheelie turn left, you need to code three lines of TurnRight. Loops and TurnLeft will be introduced in a later Ballyland Coding app.

### GiveRotor

The command ‘GiveRotor’ needs to be used when Wheelie is in the same cell as the target, Ballicopter.

### ‘Empty line’

An empty line will be ignored.

## Completing the challenge

* Any code that fulfills the requirements of the Challenge is correct, but the shortest is best and gets a special bonus. The shortest code in the highest level will even be rewarded with a musical serenade.
* If your code is correct, but not the shortest, you will be encouraged to go back and improve your code.
* The Challenge is coding movement in a digital grid. The grid represents a Ballyland landscape, as seen from the top. You need to use lines of code to give Wheelie the correct commands, in the correct order, to move through the grid and complete three levels of this challenge. Wheelie needs to move to Ballicopter, avoid the obstacles (the rock and bushes) and then give Ballicopter his new rotor one time. Ballicopter changes position in each of the 3 levels, and so do the obstacles, so you need to carefully explore the screen.
* The size of the grid is three rows by three columns. Around the landscape is a hedge which can’t be crossed by Wheelie. If Wheelie bumps into the hedge or into another obstacle in the grid, he will stay in the same cell.
* (optional) Create or 3D Print a tactile representation of the app game grid, target and obstacles, to support the coding process.
* Wheelie always starts in row 1, column 1, facing right. Remember that if you use the command ‘MoveForward’, Wheelie will move one step forward in the direction in which he is facing.
* Note that in level 3, to make Wheelie turn left, you need to code three lines of TurnRight.
* If you code more lines of code after Wheelie correctly reaches his target and gives the rotor, this extra code will be completely ignored.
* If your code proves to be too long to fit into the coding panel (you run out of lines), then you have chosen a wrong route. Improve the code and clean it up.

## Correcting the code

Edit/de-bug your code by turning a wrong line of code into a correct one, or set it to an empty line so that it is ignored.

Or use a three finger flick left to clear all code from the panel and start again.

**Tip:** It is recommended, and **good programming practice**, to code one line of code at a time, then run your code and check (finger drag). That enables easy correction in case Wheelie turns out to be in the wrong position, and it avoids having to go back through a long sequence of code and find where the error is.

## Menu navigation

* Each submenu offers a menu option to go back to the Main Menu.
* On every page of the game, there is a button in the bottom right corner of the active screen which you can double tap to go back to the Main Menu.
* To go to a page where you can turn the Self-voicing menu mode on and off, go to the Main Menu and double tap in the top left corner of the active screen.
Note that once the Self-voicing menu mode is turned on, you need to flick right/left through the menu items, and double tap to open.

## "Black Curtain"

In Settings you can turn "Black Curtain" on/off. Black Curtain mode creates a level playing field for all. With no visual feedback at all, sighted players need to completely rely on the same skills as children who are blind use to navigate the game, which makes for an exciting challenge for all. If you turn it on, double tap the button in the bottom right corner to return to the Main Menu from the game.