Preparing for Turtle Logo: From Here to There

Aim:	**Success Criteria:**	**Resources:**
Understand what algorithms are how they are implemented as programs on digital devices; and that programs execute by following precise and ambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. This unit prepares children for using Turtle Logo on screen, but links well to shape and direction in Maths. In this lesson, children will use small figures to follow routes on paper. This is an important transition from the real to the screen. I can create, test and debug an algorithm.	I can give clear accurate instructions. I can give instructions in order. I can write an algorithm. I can check an algorithm. I can move forward and turn right 90 and left 90. I can use the command abbreviations fd, rt, lt from Turtle Logo.	**Lesson Pack.** Routes that the children can use to walk along. Small whiteboards and pens. Small figures or counters.
	Key/New Words: Forward, Backward, Left, Right, Move, Turn, Right 90, Left 90, Debug.	**Preparation:** Edit the first two teaching slides in the **Lesson Presentation** to add a destination suitable for your school. School plans showing routes. Chosen route activity sheets.

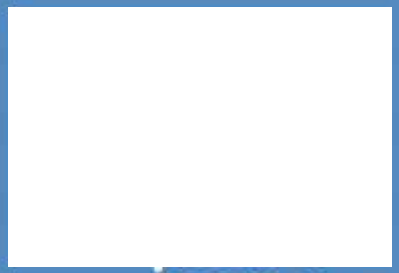
Prior Learning: Children will have been introduced to the shortcuts fd, lt and rt and have used these commands to walk squares, rectangles and rectilinear letters in lessons 4 and 5.

Learning Sequence

Whole Class	**Our Route to the...** Children walk a well known route in school, counting and recording their steps and turns. *(Some children may need the route drawn on paper which they can then record their steps on to.)*	
	Creating Our Algorithm: Demonstrate how to turn a route into an algorithm.	
	Create Your Algorithm: Children write their own algorithm for this route, and then write algorithms for other routes in school using the **School Route**. *(Decide as a class how stairs are indicated if relevant for your building. This could simply be included in the steps or as a specific command, remember that this command wouldn't be used in Turtle Logo.)* Pairs share their algorithms with other children to check, and then debug any errors.	
	In a Small World: Demonstrate how to move a small figure on a route on a map using the Turtle Logo language.	
	My Small World: Children create algorithms for routes on paper, using small figures or counters. ★ The **Farm Route** has fewer places to travel from and to. Use the large grid option and a small figure or counter to support each movement. ★★ Choose either **Farm Route** (small grid option), or **School Route** (large grid option) as appropriate and use a counter to support movement. ★★★ The **School Route** has more places to travel from and to. Use the small grid option and children should use their finger to trace movement.	
Whole Class	**Share Your Algorithms:** Share any algorithms as a class, looking at how the algorithms are written. Why might some algorithms for the same route be different? *(Different size steps or different route).*	

Task*it*

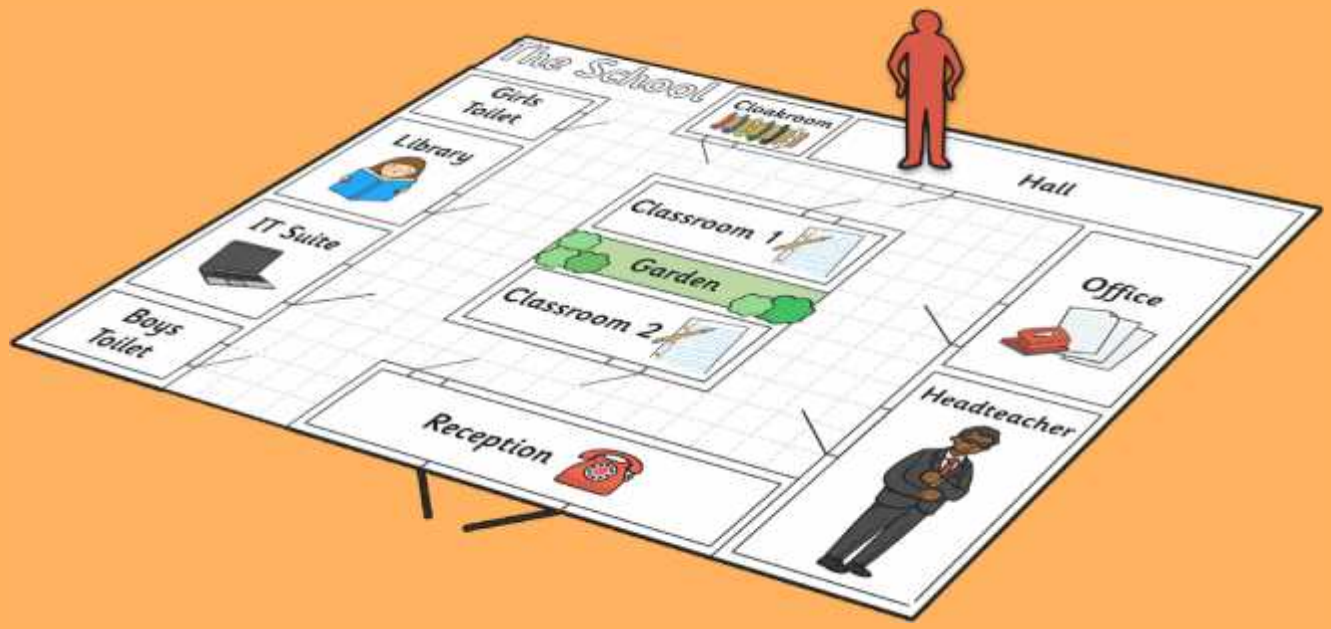
***Route*it:** Children create algorithms for other routes in school. Give to children to test and debug any errors.



Computing

Preparing for Turtle Logo

From Here to There



Aim

- I can create, test and debug an algorithm.

Success Criteria

- I can give clear accurate instructions.
- I can give instructions in order.
- I can write an algorithm.
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- I can move forward and turn right 90 and left 90.
- I can use the command abbreviations fd, rt, lt from Turtle Logo.

Our Route to the…

How do we get to the…

We will create an algorithm for the route from our classroom to the…

Creating Our Algorithm

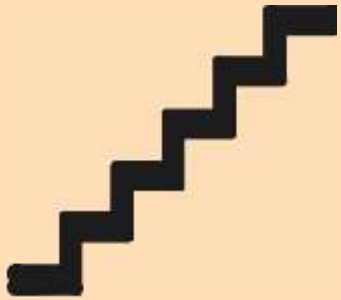
Here is our algorithm to the…

Example:
fd 6
rt 90
fd 3
rt 90

Create Your Algorithm

Create your own algorithms for different routes around school.

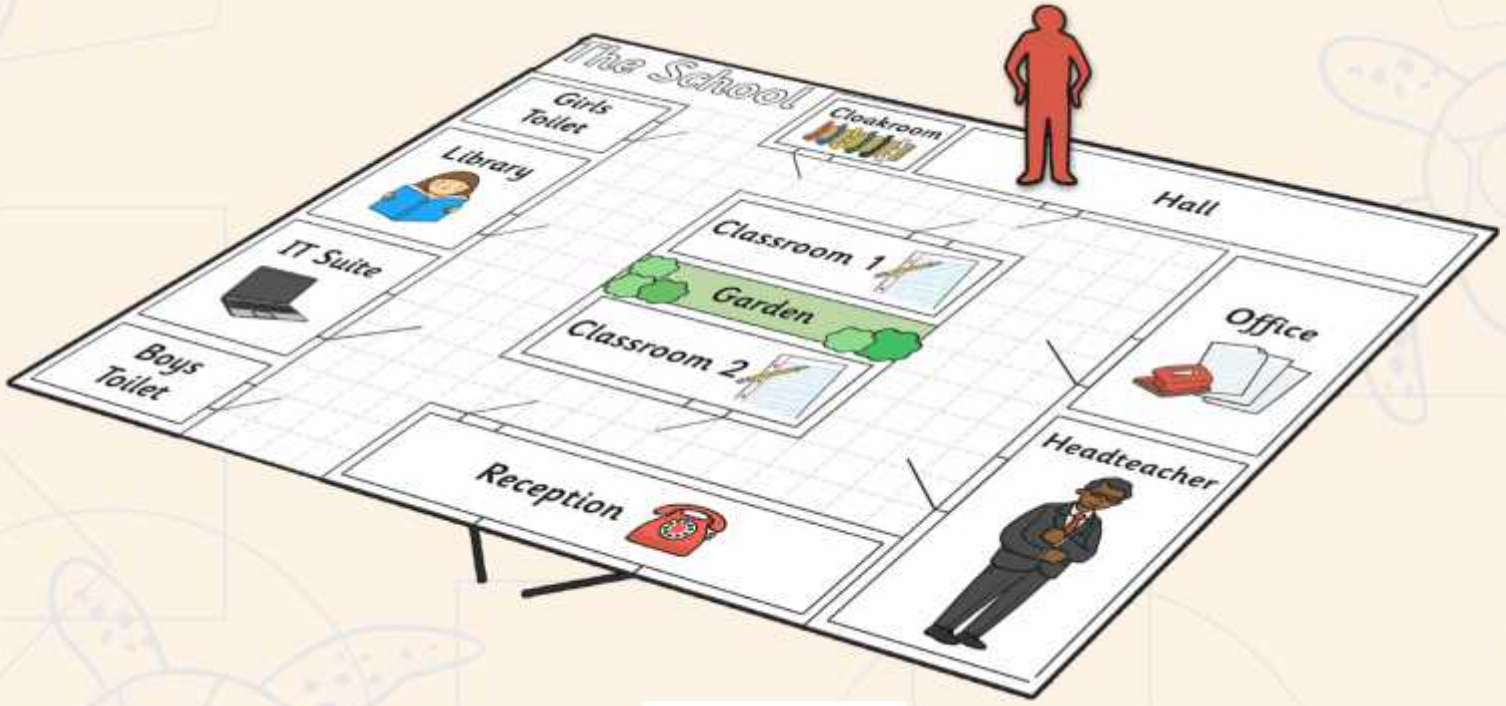
How will you indicate stairs?



Share your algorithms, check and debug if necessary.

In a Small World

Using a map of your school, how would a small figure get from one place to another?



In a Small World

From classroom 2
to reception

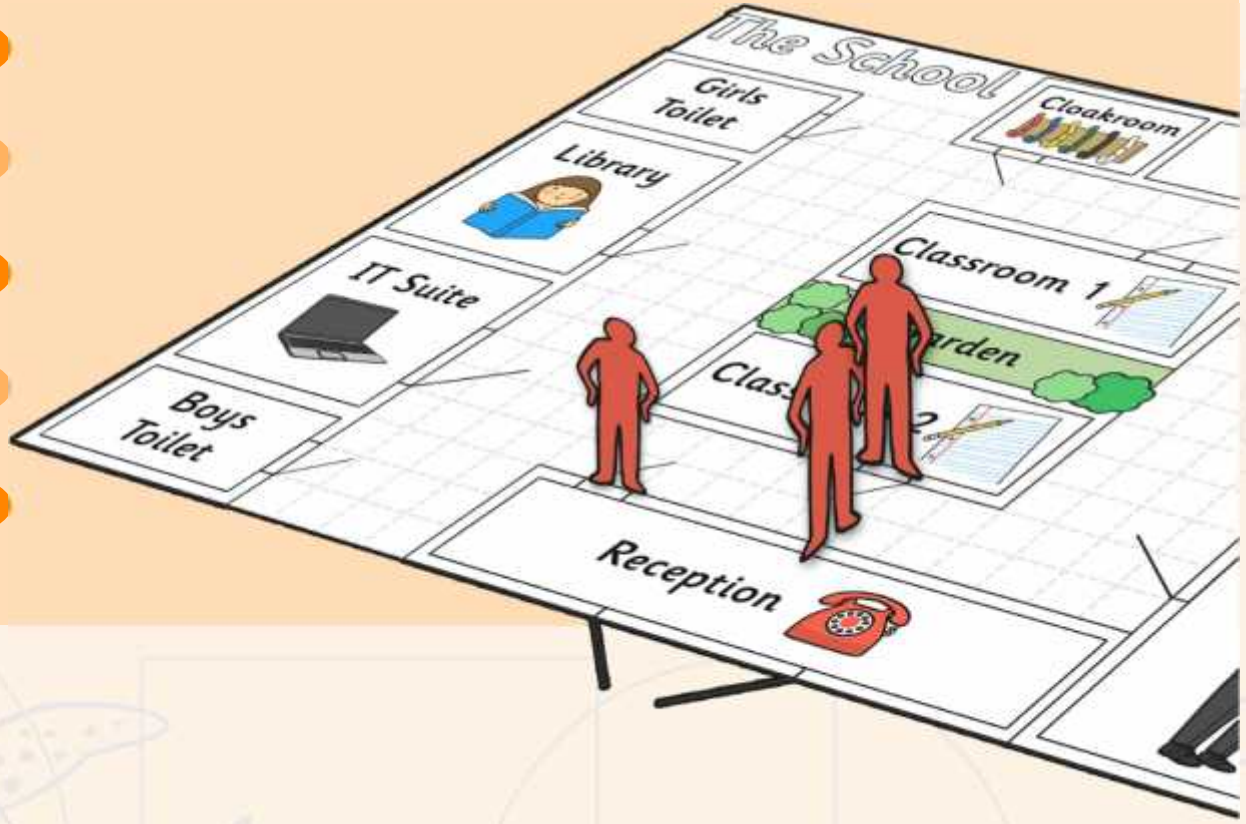
fd 2

rt 90

fd 4

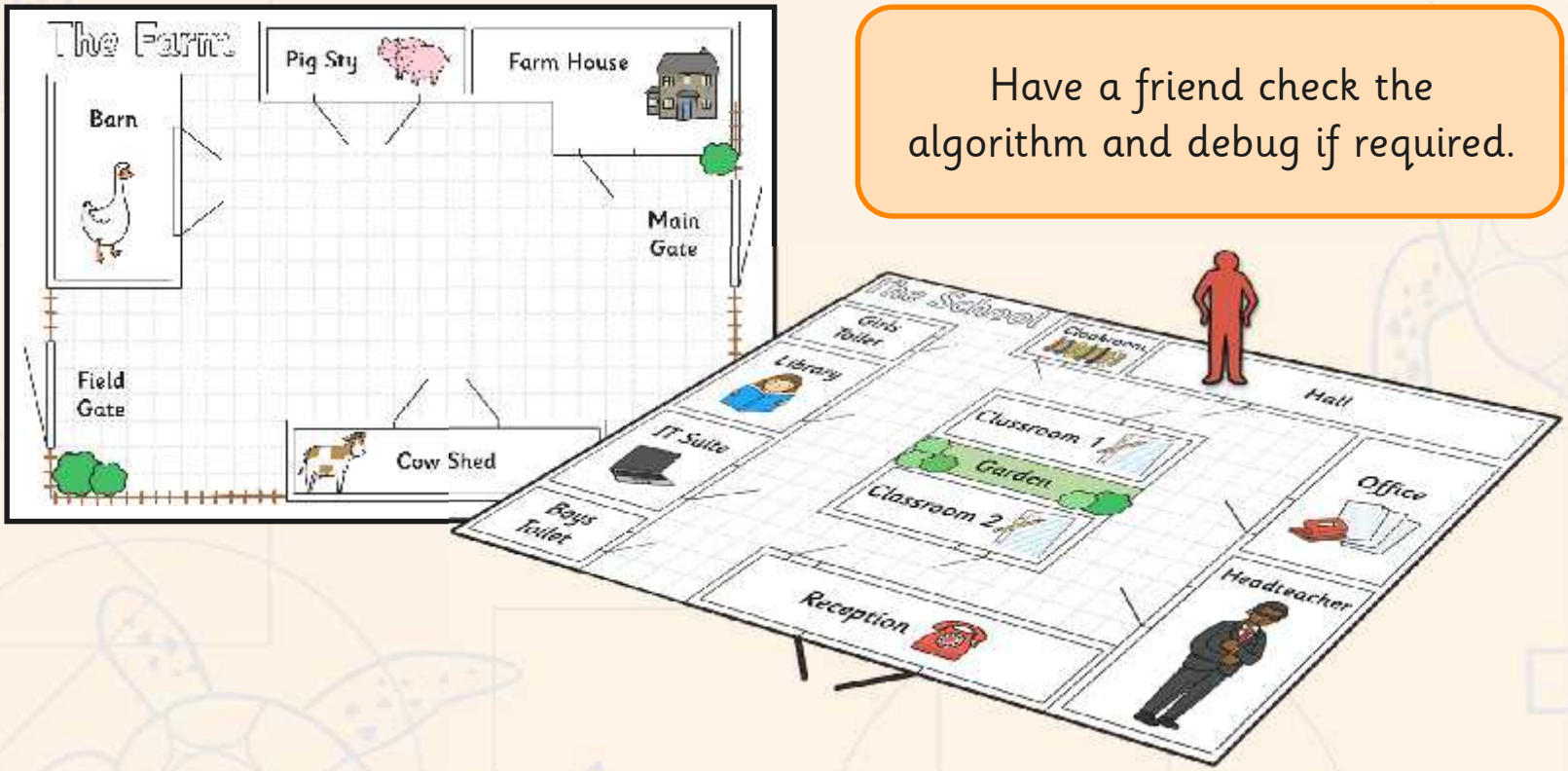
lt 90

fd 1



My Small World

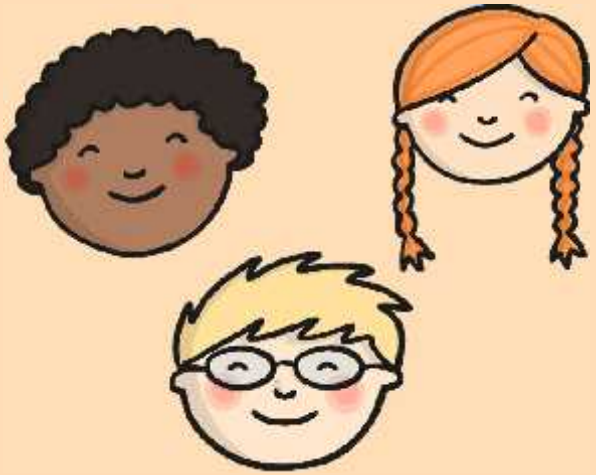
Using the prepared maps or your own, have a small figure move from one place to another and write the algorithm.



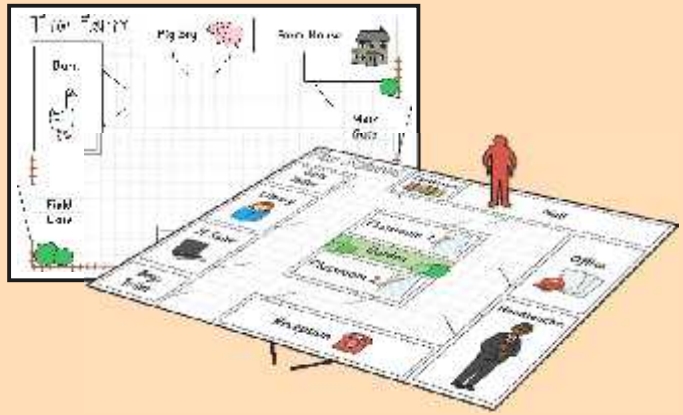
Have a friend check the algorithm and debug if required.

Share Your Algorithms

Share some of your algorithms with the rest of the class.



Why might you have different algorithms for the same route?



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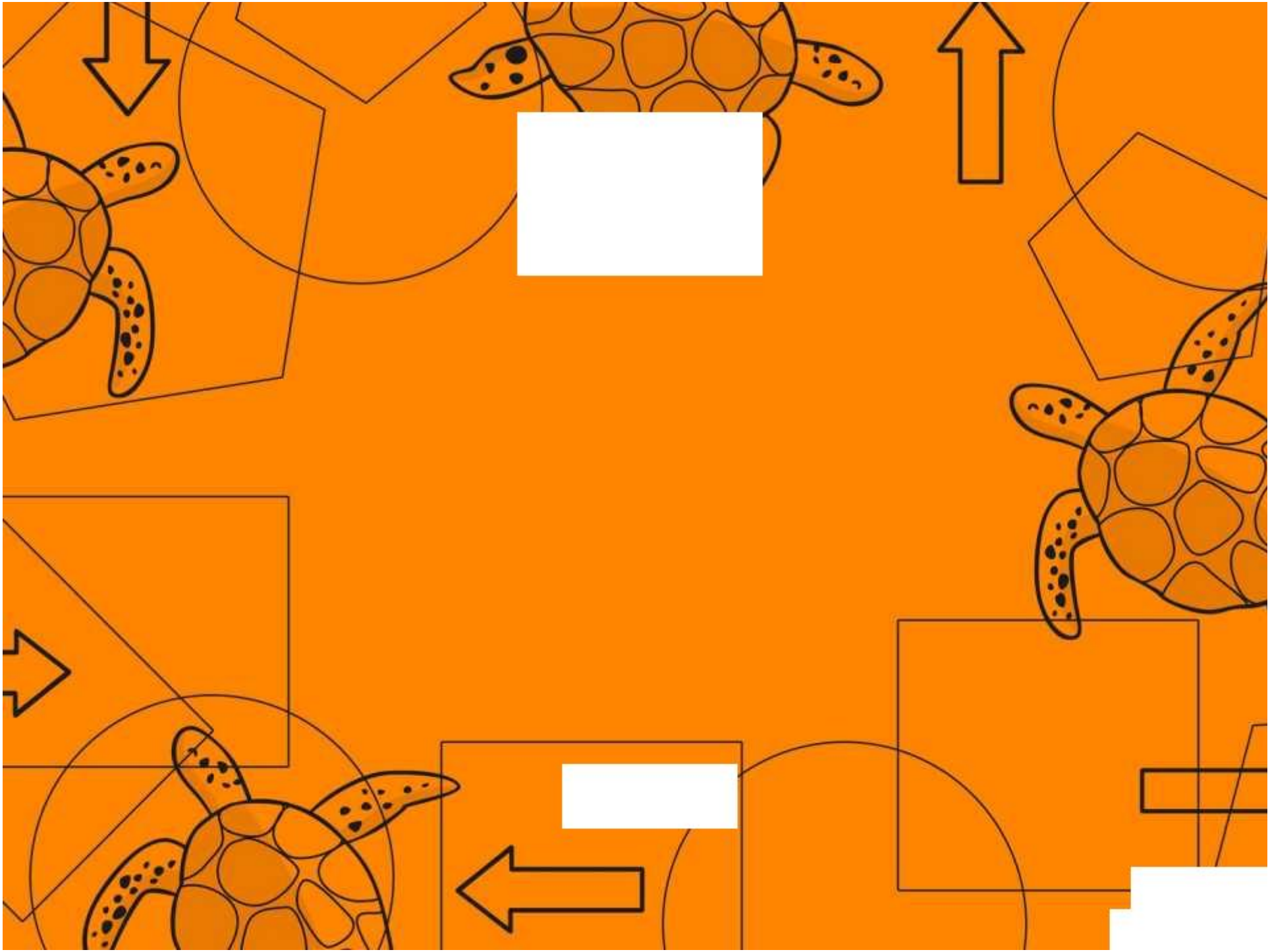

Avery Template: Name Badge Label, 8 per sheet | **Compatible Products**:15395, 25395, 42395, 45395, 48395, 5395, 8395, 88395, 85395.

Preparing for Turtle Logo | From Here to There

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From Here to There Farm Route

Use one of the farm route grids and write an algorithm for the following routes.

Route: Pig sty to Cow shed. **Algorithm:** _____

Route: Main gate to Field gate. **Algorithm:** _____

Route: Barn to Cow shed. **Algorithm:** _____

Route: Farm House to Pig sty. **Algorithm:** _____

Now make up your own routes and write an algorithm for each one:

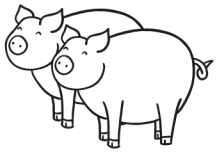
Route: _____ **Algorithm:** _____

Route: _____ **Algorithm:** _____

Remember to use the commands: fd 10 (forward ten steps) rt 90 (quarter turn to the right) lt 90 (quarter turn to the left)

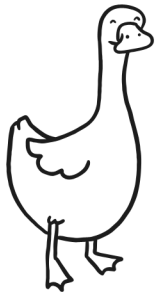
The Farm

Pig Sty



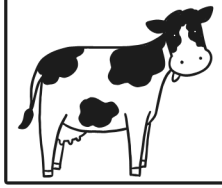
Farm House

Barn



Main Gate

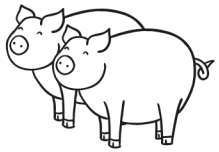
Field Gate



Cow Shed

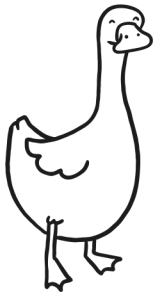
The Farm

Pig Sty



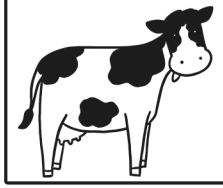
Farm House

Barn



Main Gate

Field Gate



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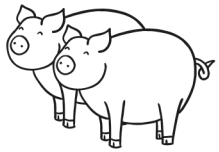
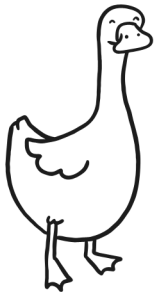


Farm House

Barn



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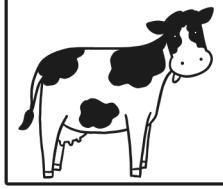

Cow Shed

From Here to There Farm Route

Use one of the farm route grids and write an algorithm for the following routes.

Route: Pig sty to Cow shed. **Algorithm:** _____

Route: Main gate to Field gate. **Algorithm:** _____

Route: Barn to Cow shed. **Algorithm:** _____

Route: Farm House to Pig sty. **Algorithm:** _____

Now make up your own routes and write an algorithm for each one:

Route: _____ **Algorithm:** _____

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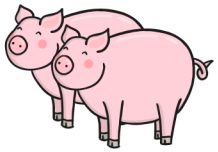
Remember to use the commands: fd 10 (forward ten steps) rt 90 (quarter turn to the right) lt 90 (quarter turn to the left)

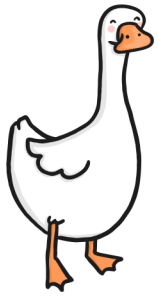
The Farm

Pig Sty



Farm House

Barn



Main Gate

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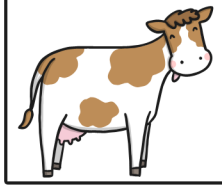

Cow Shed

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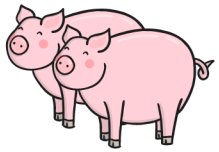
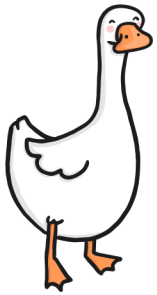


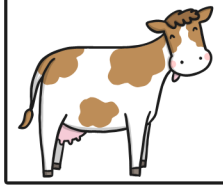
Farm House

Barn



Main Gate

Field Gate



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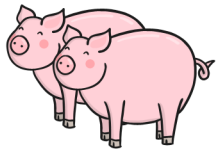

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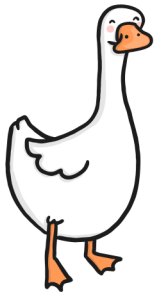

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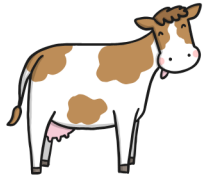

Cow Shed

From Here to There School Route

Use one of the school route grids and write an algorithm for the following routes.

Route: Classroom 2 to hall. **Algorithm:** _____

Route: Office to ICT suite. **Algorithm:** _____

Route: Library to Headteacher's office. **Algorithm:** _____

Route: Classroom 1 to Boys toilet. **Algorithm:** _____

Now make up your own routes and write an algorithm for each one:

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The Farm

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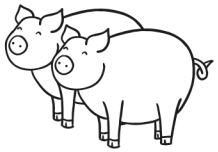
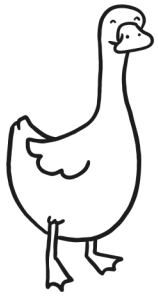


Farm House

Barn



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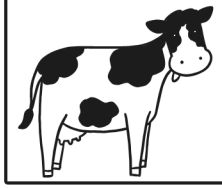

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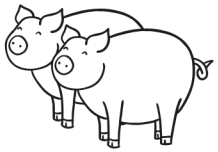

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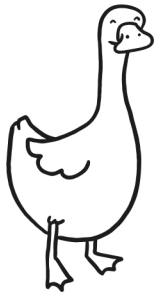

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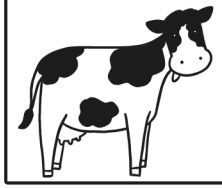

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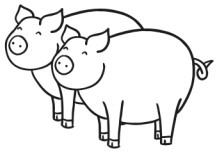

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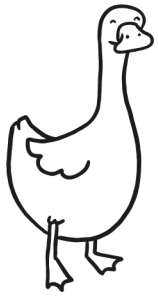

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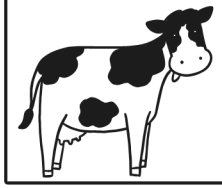

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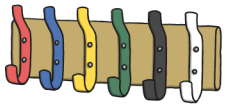
The School

Cloakroom



Hall

Girls Toilet

Library

IT Suite

Boys Toilet

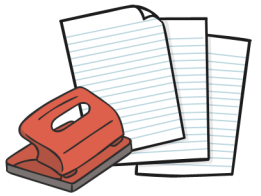
Classroom 1

Garden

Classroom 2

Reception

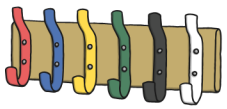
Office



Headteacher

The School

Cloakroom



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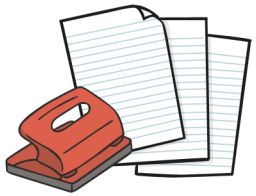

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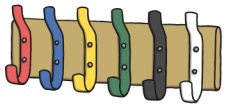

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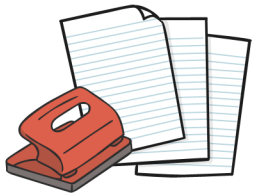
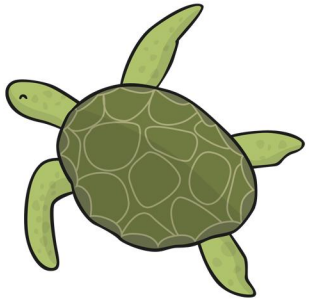


Headteacher

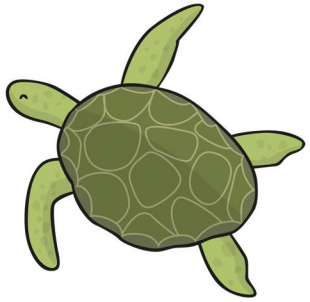
Preparing for Turtle Logo

From Here to There



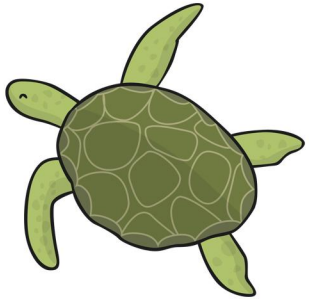
Preparing for Turtle Logo

From Here to There



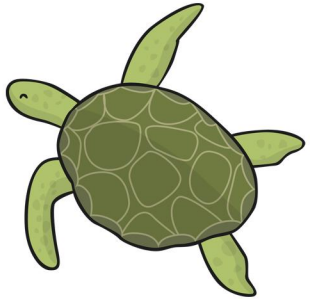
Preparing for Turtle Logo

From Here to There



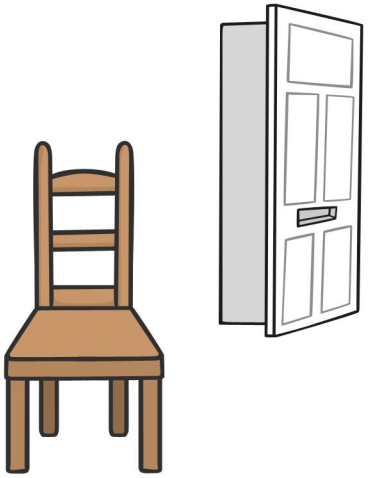
Preparing for Turtle Logo

From Here to There

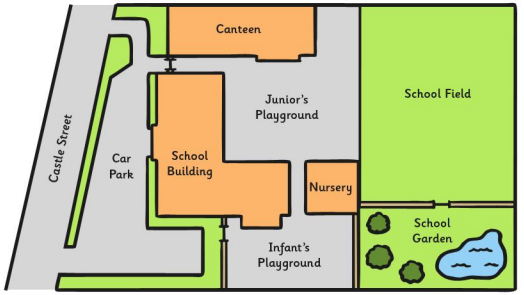


Create an algorithm for walking from your seat in the classroom to the door out of your classroom.

Have a friend check your algorithm and debug if required.



Create an algorithm for walking from the playground back to class. Have a friend check your algorithm and debug if required.



Make a simple map of an island on a piece of paper. Create an algorithm for a toy figure to walk on a route on the map. Have a friend check your algorithm and debug if required.

Make a simple map of some streets on a piece of paper. Create an algorithm for a toy figure to walk on a route on the map. Have a friend check your algorithm and debug if required.

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Preparing for Turtle Logo

I can move forward a number of steps.

Preparing for Turtle Logo

I can turn
right 90 and left 90.

Preparing for Turtle Logo

I can use the short cut command fd.

Preparing for Turtle Logo

I can use the shortcut commands rt and lt.

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I can move forward a number of steps.

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