Preparing for Turtle Logo: Moving Forward and Making Turns

Aim:	**Success Criteria:**	**Resources:**
Understand what algorithms are 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. I can give and follow an algorithm to turn right or left.	I can give clear accurate instructions. I can give instructions in order. I can write instructions. I can check instructions. I can move forward a number of steps. I can turn to the right or left.	**Lesson Pack.** Hall or space large enough for children to move around freely. Cones or similar to mark points. Small whiteboards and pens.
	Key/New Words: Algorithm, Instructions, Commands, Forward, Backward, Left, Right, Move, Turn.	**Preparation:** None needed.

Prior Learning: It will be helpful if children are familiar with basic shapes and using right and left.

Learning Sequence

	**Walk and Turn:** Spread the children out in the hall and give them instructions to move forwards and backwards, and then to make turns. Ensure children are able to walk forward the number of required steps and make quarter turns to the right or the left.	
	**Tell Your Partner:** Children to give their partner instructions to move. Set out some coloured cones and ask the children to move their partner on a route, which goes to different coloured cones. Ask the children to write down the instructions for another pair to try. **Walking Shapes:** Children to come up with instructions whereby one partner instructs their partner to walk a square that has 3 steps on each side. Write the instructions down and compare with another pair. Ensure the children walk the same size steps. They could mark the corners of their shapes with cones. **Different Shapes:** How would you make squares of different sizes? How would you make a rectangle with a longer side of 5 steps and a shorter side of 2 steps? Ask another pair to try your instructions. Are your instructions clear enough?	
	**How accurate are our algorithms?** Evaluate some of the written instructions children have written down. This could be done by asking some children read out their instructions for either an individual, group or whole class to follow. What improvements could be made? *(Answer slides are included at the end of the **Lesson Presentation** if required)*	

Task*it*

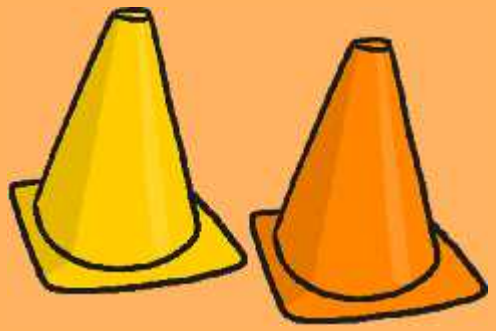
***Shape*it:** Children could make algorithms for different squares and rectangles.

***Challenge*it:** Use the **Challenge Cards** for extension activities.

Computing

Preparing for Turtle Logo

Moving Forward and Making Turns



Aim

- I can give and follow an algorithm to turn right or left.

Success Criteria

- 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 a number of steps.
- I can turn right or left.

Walk and Turn

Can you follow your teacher's instructions?

Tell Your Partner

Give your partner instructions to move forward and turn.

Using coloured cones tell your partner to move on a route which goes to a different coloured cone.

Write down the instructions for another pair to try.

Walking Shapes

Write instructions that instruct your partner to walk a square.
Each side should be 3 steps long.

Compare with another pair.

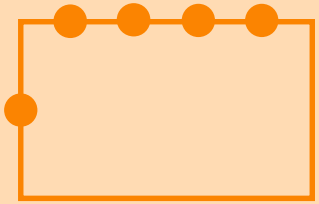
Make sure your steps are the same length.

You could use cones to mark the corners of your shapes.

Different Shapes

How could you make squares of different sizes?

How could you make a rectangle with a longer side of 5 steps and a shorter side of 2 steps?



Ask another pair to try your instructions.

Are your instructions clear enough?

How accurate are our algorithms?

What algorithm did we use?

Let's try some…

Did the algorithm work?

What improvements can be made?

A Square of 3 Step Sides

Here are suggested instructions for a square of 3 step sides.

Instructions

- Forward 3 steps
- Turn to the right
- Forward 3 steps
- Turn to the right
- Forward 3 steps
- Turn to the right
- Forward 3 steps
- Turn to the right

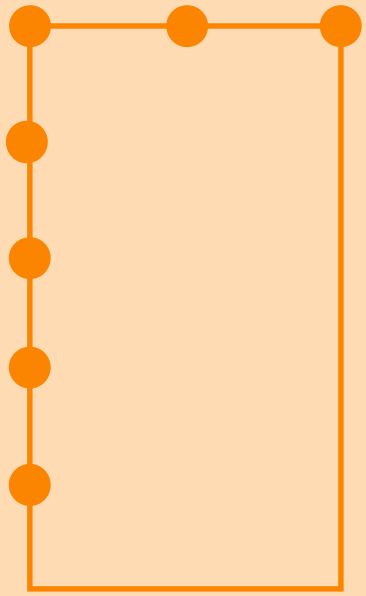
How do these compare with your instructions?

A Rectangle of 5 and 2 Step Sides

Here are suggested instructions for a rectangle of 5 and 2 step sides.

Instructions

- Forward 5 steps
- Turn to the right
- Forward 2 steps
- Turn to the right
- Forward 5 steps
- Turn to the right
- Forward 2 steps
- Turn to the right



How do these compare with your instructions?

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- I can give and follow an algorithm to turn right or left.

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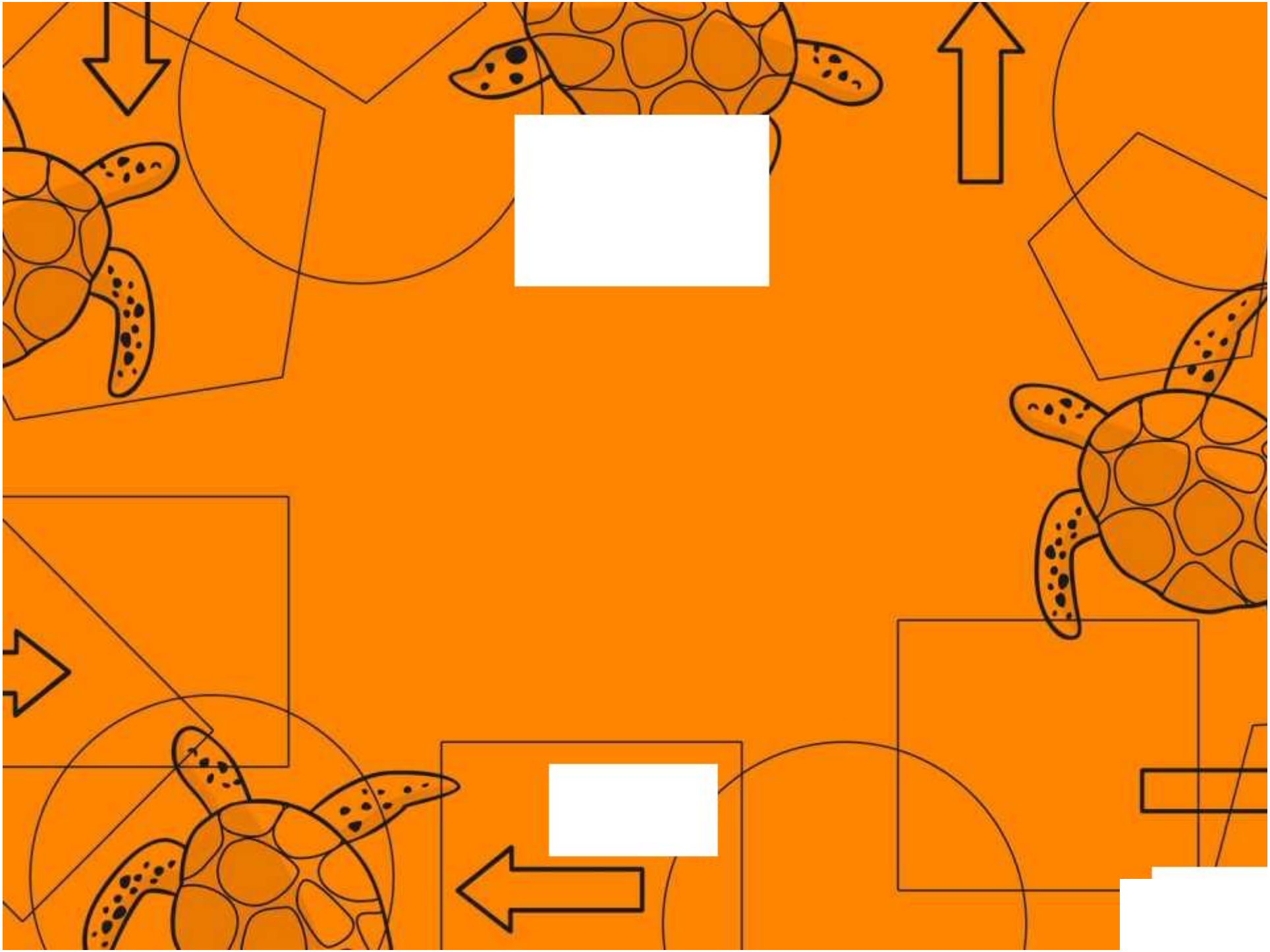

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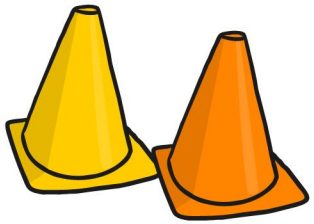
Moving Forward and Making turns



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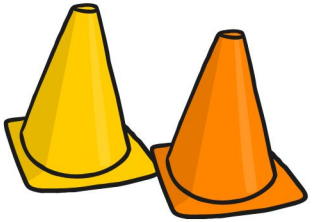
Moving Forward and Making turns



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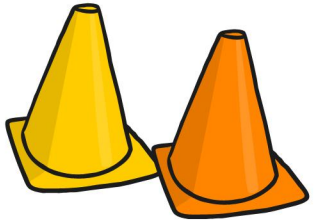

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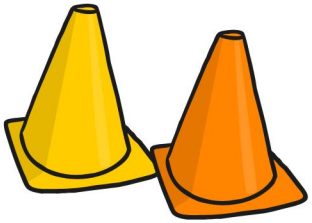
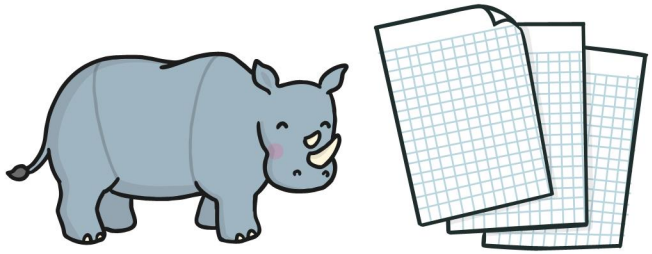
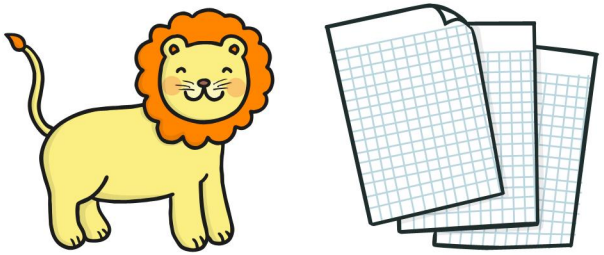


Take a small human or animal figure. On plain or large squared paper give instructions to the figure to move to make a square. Write the algorithm down.

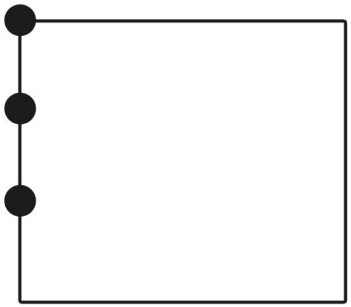


Take a small human or animal figure. On plain or large squared paper give instructions to the figure to move to make a rectangle. Write the algorithm down.



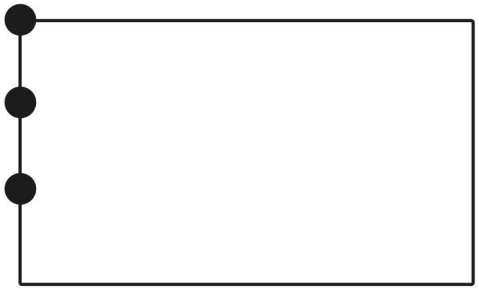
Write an algorithm to draw a square. Give it to a friend to try out. Does it work?

Debug the algorithm if needed.



Write an algorithm to draw a rectangle. Give it to a friend to try out. Does it work?

Debug the algorithm if needed.



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I can move forward a number of steps.

Preparing for Turtle Logo

I can turn to the right or left.

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