Year 1: Computational Thinking with Cubetto **Unit 1: Lesson 2: Cubetto's Directions**	• 6 Cubettos and 6 Boards • 6 City Maps • 6 Sets of Blocks (with 19 blocks in each)	**Cross-curricular area: Maths**

NC Objectives	**Outcomes**	**Computational Thinking**		**Resources Provided**	**Resources Needed**
To understand how algorithms are implemented on devices	• I can describe an urban environment • I can use forwards, backwards, left and right	**Concept** Algorithms	**Approach** Tinkering		• Photos of urban environment (buildings, traffic, shops, taxis – to match map) • Large coloured arrows on A4 paper

Preparation Needed

- Check batteries.

Teacher-led introduction

1. Gradually reveal images of urban environment and ask: What kind of place is this? Have you been somewhere that looks like this?
2. Ask: Has anyone visited our capital **city**? What did you see? What did it smell like? What did you hear?
3. Explain that these photos show parts of **towns** and cities: buildings, roads, bricks and concrete. We call this kind of place **urban**.
4. Show the City Map and ask: How do we know this is urban? What can you see on the map that we saw in the photos?
5. Explain that Cubetto has gone on a visit to the city and has got lost! Ask: How did it feel when you have been lost before?
6. Ask the children to find the bank and explain that this is where Cubetto is. Cubetto is meeting a friend at the market to go shopping but can't work out which way to go, and feels scared. Ask: What can Cubetto do? *Ask a person who works in the bank for **directions**.*
7. Tell the children that they are going to work out how they would direct Cubetto. Reminder: he can only move one square at a time.
8. Ask pupils to suggest different routes to get from the bank to the market and draw on arrows to show the path.
9. Show the Board and ask pupils to try out which blocks they would use to move Cubetto.
10. Explain that when a set of blocks is put in order to direct Cubetto, this is called an **algorithm**.

Key Vocabulary

City
Towns
Urban
Directions
Algorithm

Challenge

Can you move from the taxi to the bridge using two turns?

Guided activity

1. Show the green, red, yellow and purple blocks to the group and ask: What do we use these for? Are they different? What do you think each one does?
2. Allow time for pupils to experiment with the blocks, pressing the Go button after each and discussing what each one does. Try using all the same blocks and all different blocks.
3. Place Cubetto on the bicycle square and ask children to find the traffic lights. Ask: What blocks do we need to get Cubetto to the lights?
4. Support children to choose blocks and lay them on the squares on the map.
5. When pupils agree on a series of blocks, ask children to write an algorithm for Cubetto and to try it out. Ask: What happened? Would you change anything? Why/why not?

Independent activity

1. Choose a set of arrows in the same colour.
2. Choose a start and an end point in the classroom, just like we do when using Cubetto's map.
3. Lay out the arrows to show the directions from your start to your end point, ready for someone else to follow.
4. Ask a friend to follow your arrows, calling out what direction they are moving in each time (e.g. forwards, left, right).

Creative Play Draw an advert for Cubetto to put on the billboard.	**Plenary and assessment** 1. Ask: <u>What does an urban place look like? What would you hear or see there? Can you tell me somewhere urban that you have visited?</u> 2. Explain that you want to get to the other side of the classroom. Close your eyes and ask two children to hold your hands to keep you safe. 3. Ask the class to call out directions to get you safely across the classroom, one person at a time. *This will be hard for them!* After a few tries, explain that writing algorithms is often hard and takes a lot of goes before it works out. Planning is important! 4. Play some music and pass Cubetto's block bag around the room. When the music stops, pupils take out a block and say what it does. 5. Clarify that each coloured block does a different thing, but that all blocks of the same colour do the same thing (e.g. all greens make Cubetto move forward).