NC Objectives	**Outcomes**	**Computational thinking**		**Resources provided**	**Resources needed**
To use logical reasoning to predict behaviour of simple programmes	• I can predict what a programme will do • I can investigate floating and sinking	**Concept** Logic	**Approach** Persevering		• Rubber, ball, feather • Variety of algorithms for children to predict • Water bowls (ideally transparent) & objects to test • Materials to make floats

Preparation needed	**Teacher-led introduction**
• Check batteries. • Prepare tanks/ bowls filled with water.	1. Sit the class in a circle with the map and Cubetto in the middle. 2. Ask for three volunteers to stand up and hand out the ruler, ball and feather to each child. Ask pupils to hold them up high. 3. Ask the class: What do you think will happen when they let go of the rubber? Collect ideas and write on the board. 4. Repeat for the ball and feather and ask: Why do you think that will happen? What do you already know that helps you decide that? 5. Explain that when we use our knowledge to think about what will happen in the future, this is called a **prediction**. 6. Ask the volunteers to drop the objects and compare the pupils' predictions with what happened. 7. Ask: Did anything surprise you? 8. Explain that today pupils will be predicting what happens to different objects in water. 9. Ask: What is the name of the longest river in the world? Introduce the water bowl as the **Nile** and show the objects that might fall in!

Key vocabulary Prediction River Nile Float Sink	**Guided activity**
	1. In pairs, ask the pupils to describe the properties of the different objects in front of them. 2. Taking each one in turn, ask: If we drop this in the water, what do you predict will happen? Will it **float** or **sink**? 3. Encourage pupils to compare two objects and predict which will sink lower. Ask: Which of the objects will sink fastest and slowest? 4. Ask: Why do you predict this will happen? What do you know or have you seen before that helps you? 5. When all their predictions have been made, allow pupils time to test, and re-test, their predictions. 6. Ask: Was your prediction correct? If so, how? If not, what happened instead?
Challenge Can you put four random blocks in the board & predict where Cubetto will end up?	7. Pick an object that sank and ask: What could you do to make this object float? 8. Show materials e.g yoghurt pots and allow time for pupils to explore making floats for different objects. **Independent activity** 9. Look at the first algorithm to make Cubetto move. 10. Where do you predict Cubetto will end up? Why do you think this? 11. Test out your prediction using Cubetto. Were you right? What happened? 12. Repeat for the other algorithms and test out your predictions.
Creative play Design and make an Egyptian mask.	**Plenary and assessment** 1. Ask volunteers to share their predictions for the algorithms and discuss why they predicted this. 2. Ask: How do we make predictions? Why is it helpful to make predictions when using Cubetto? 3. Ask pupils to share their algorithm predictions and what they found out.