Digital Technologies @ Home
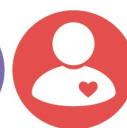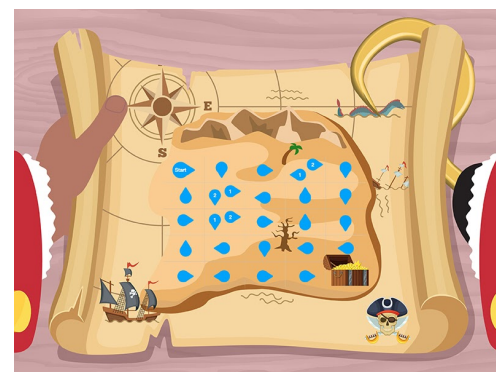Unplugged activities for students

This activity is for: Years 3-4, 5-6

Pirate Treasure Hunt

This activity teaches...
Data representation, algorithms, decision making (branching) and iteration (loops).

This activity is a non-programming activity which introduces the key concepts of making decisions (using the IF...THEN...ELSE construct) and iteration (with simple loops).

We use algorithms to solve all sorts of problems around us. Algorithms are sequences of steps, or procedures, that lead us from a starting position to a goal. The data in the map represents instructions that students need to understand and interpret correctly in order to move to the correct next field.

This activity will take between **15-30 minutes**.

The activity is targeted towards primary school students. It consists of two parts. The first map is for students to get acquainted with the concept of the activity. The second map is an extension activity for students that have mastered the first activity and who are eager for a greater challenge.

Getting started (read this with your child):
Your fellow pirates have found a map but can't quite figure out what it means. All they see are strange shapes that look like drops of water. You are the smartest pirate on the ship, so they come to you for help. Can you solve the puzzle and show them the way to the treasure?

Analysing the map very carefully, you found these instructions on the back of the map.

Symbol	Meaning
Start	Start here and follow the pointed end of the drop to the next square.
(drop)	Continue to the next square in the direction of the pointed end of the drop.
1	When you reach this square the first time, follow the direction of the pointed end of the drop.
2	When you reach this square for the second time, follow the direction of the pointed end of the drop.

Pirate Treasure Hunt

Solve the maze to get to the treasure.
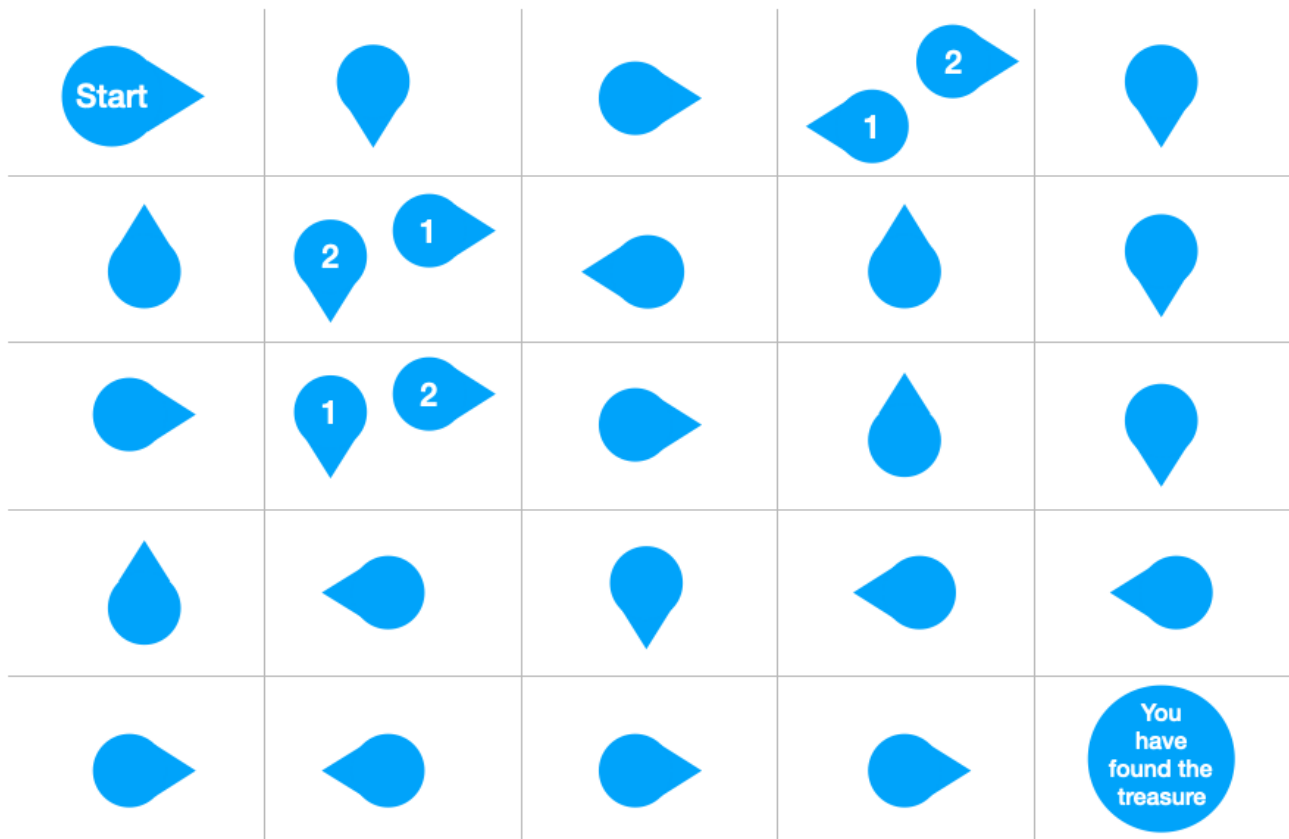
Step 1

Start at the **Start** drop and move to the next square in the direction of the point.

Step 2

Use a pen to show your path from drop to drop.

Step 3

When a square contains more than one drop, you need to decide if you have entered the square for the first or second time.

- If you enter the square the very first time, follow the pointed end of the drop with a **1** .

- If you enter the same square a second time, follow the pointed end of the drop with a **2** .
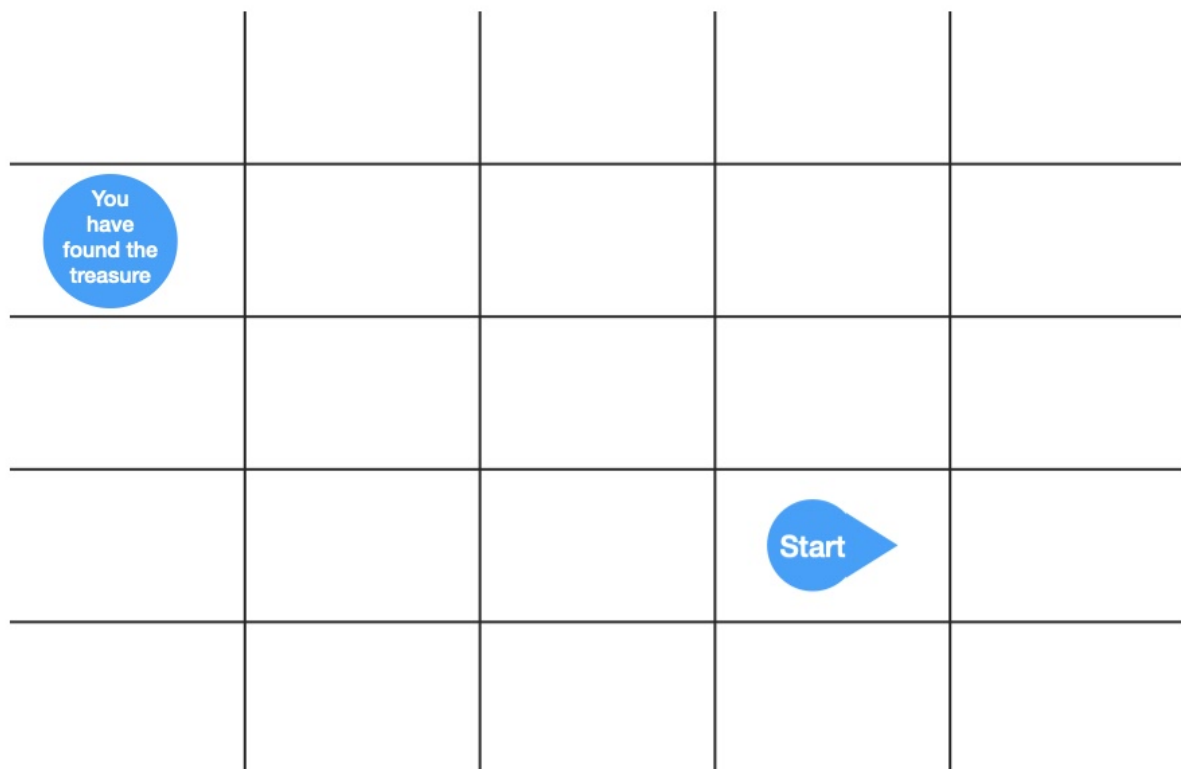
Step 4
The game is finished when your path has led you to the treasure.

Step 5
Create your own set of instructions to get from start to the treasure on the map below.
Draw the drops. Include at least two squares that have more than one drop in them.
Ask a friend or family member to follow your instructions. Did they arrive at the treasure? If not, have another go.
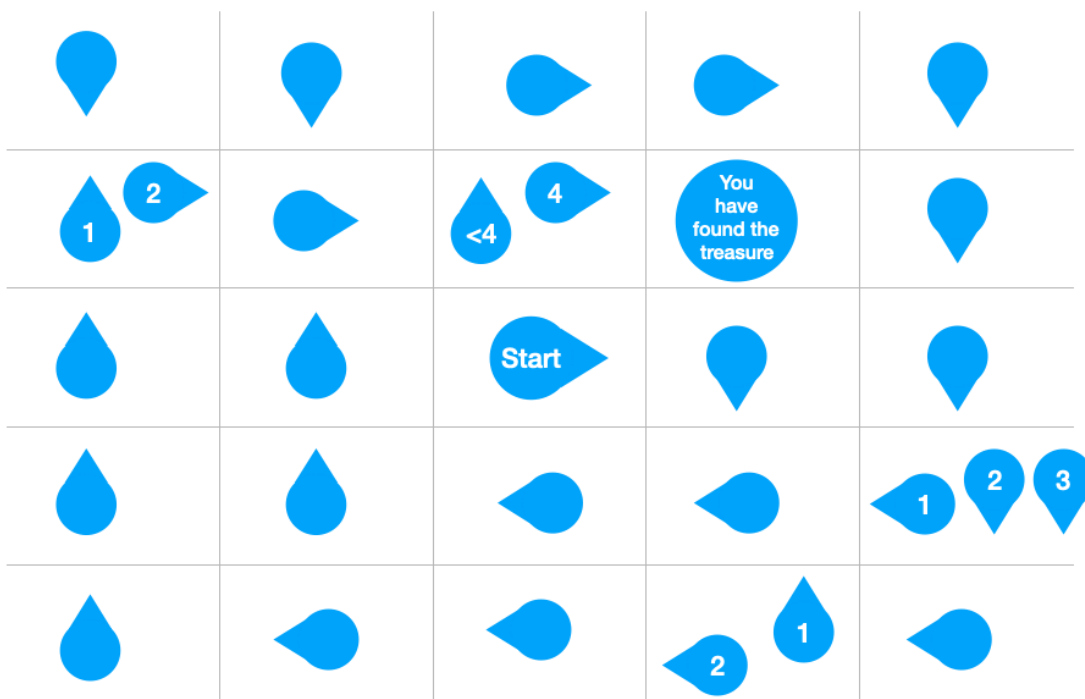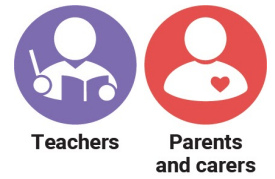
Pirate Treasure Hunt

Map 2 - extension activity

The pirates are super-impressed with your problem-solving skills and ask you to solve another map for them. The same rules apply.

Hint: '<' means less than

Answer key

Choose if you want to print this for your kids
or keep it to yourself!

Map 1

Here is the solution to this game. The main challenge is for students to decide which of the dots
they should connect to first and second when they enter a square. To keep track, students can
count the arrows that go into a square, or add a tally in the corner of the square.
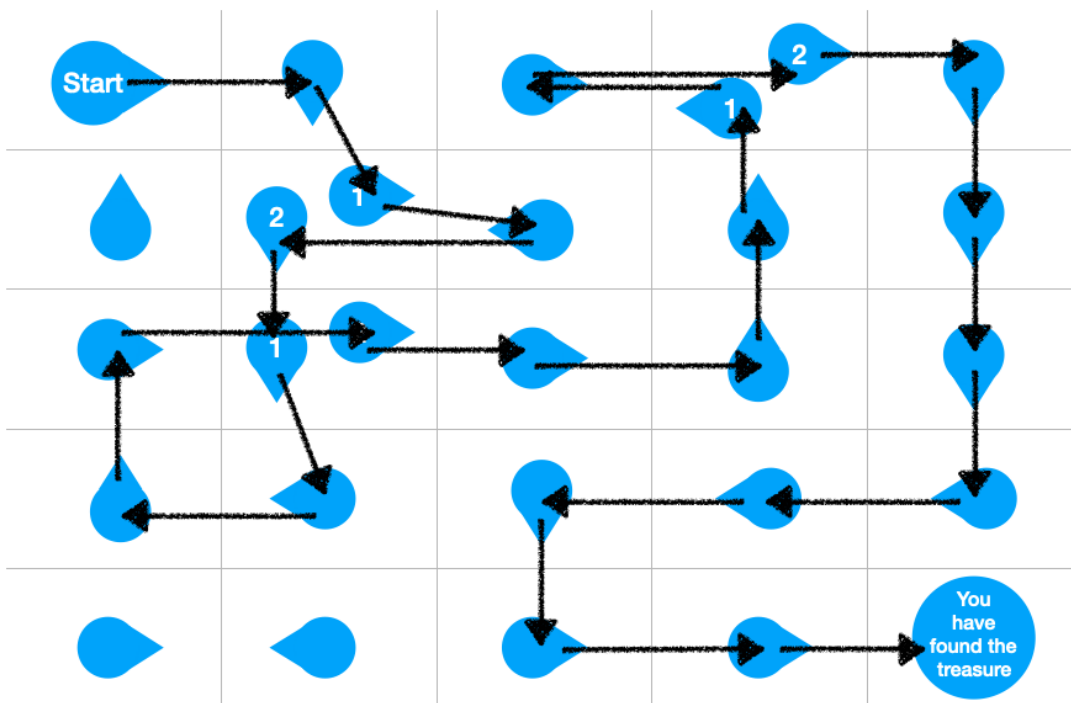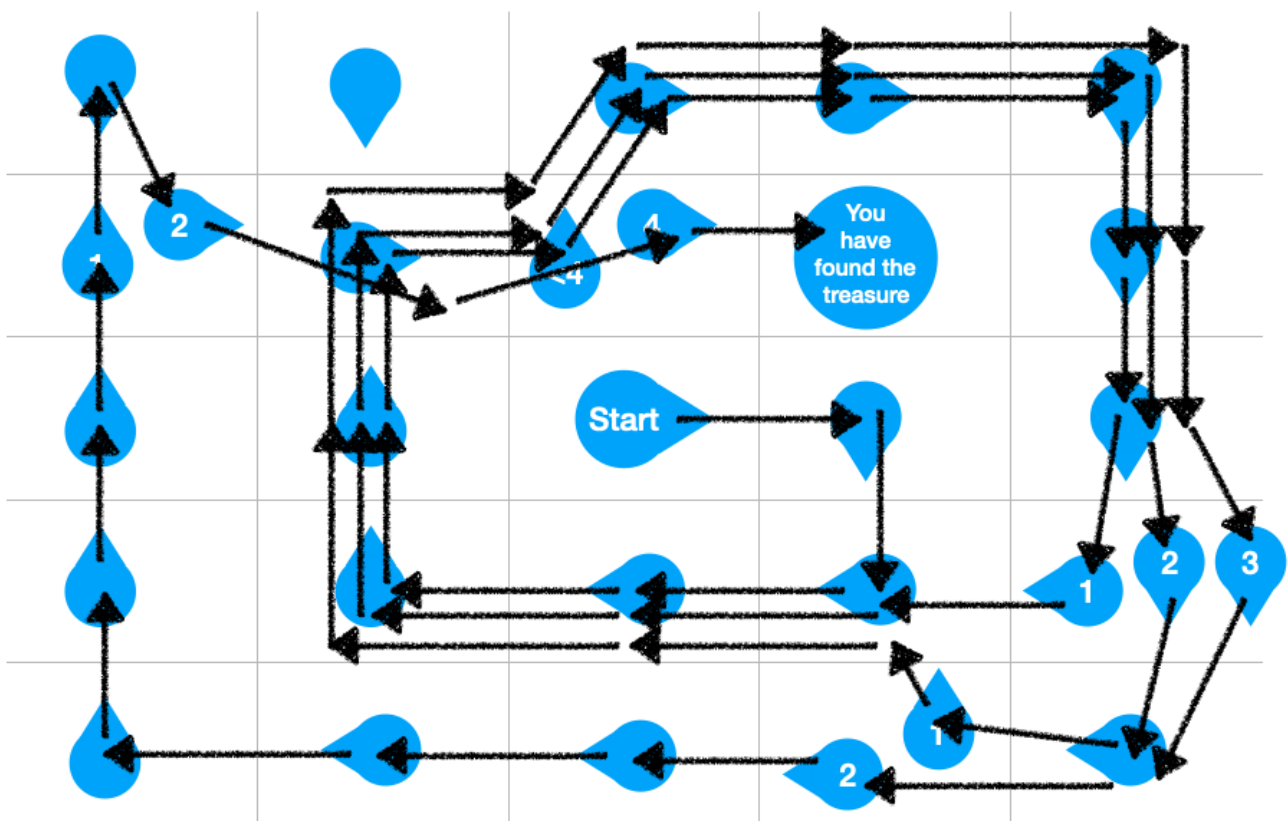
Answer key for map 2

Choose if you want to print this for your kids
or keep it to yourself!

Teachers

**Parents
and carers**

Want more?

Here are some further activities, online resources, assessment ideas and curriculum references.

Adapting this activity

If your students are keen to keep going with this activity, you could draw more drops and use them in an open space: perhaps draw a grid with chalk on the ground, or use masking tape.

Ask students to create some more symbols to create another treasure map: how would you tell the hunter to move two squares?

Keep learning

Students can continue to learn about iteration and loops by learning to program using our DT Challenges - we suggest the chatbot activity cmp.ac/chatbot for students in year 5 and 6.

For year 3 and 4 students we recommend the wombot activity: cmp.ac/blockly-wombot
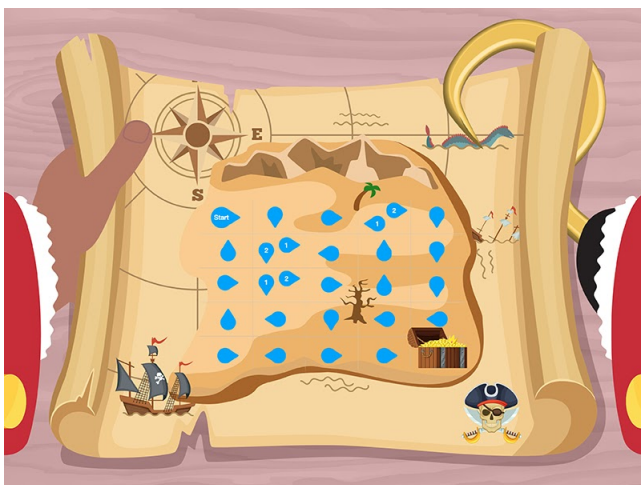
For teachers creating a portfolio of learning or considering this task for assessment

Ask students to submit their completed treasure maps and the additional map they have created.

Linking it back to the Australian Curriculum: Digital Technologies

Algorithms
Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them. (ACTDIP010 - see cmp.ac/algorithms)

Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition). (ACTDIP019 - see cmp.ac/algorithms)

Refer to aca.edu.au/curriculum for more curriculum information.