

TESCO

Labs

STEM Activity Playbook

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Brief

Design and execute an event for children aged 5–6 (KS1), to last 90 minutes and engage a group of 30. The event should promote technology, and work around the theme of retail. The aim is to enthuse children about technology, and to dispel any stereotypes of careers in technology being predominately male-oriented.

Layout

Divide children into groups of 6 (if possible, work with the teacher(s) to pre-determine these groups, as this saves time on the day).

Divide room into sections so that different groups can operate simultaneously.

Each section should have its own Cubetto, activity mat and accessories so that each station is self-sufficient.

Each group of children is allocated to a different area, and will do all their work there (no need to move round).

Tools

Cubetto (1 per group of children) – please note that each Cubetto will need batteries.

Coloured programming blocks:

-  Forward (moves forward 15cm)
-  Left (turns left 90 degrees)
-  Right (turns right 90 degrees)
-  Function (executes a function)

Printed floormat showing a grid and pre-determined path which the children must programme the Cubetto to move around (1 per group).

Produce cards, to be laid out on the corresponding squares of the mat.

Shopping lists (set of 3).

Flat-packed mini trolley (1 per child).

Additional pens, stickers, etc for personalising / decorating the trolleys (variety per group).

Agenda

Activity	Content	Length	Run by
Intro	<p>Who we are and what we do.</p> <p>Short overview of the activities for the session.</p> <p>Introduction to Cubetto.</p> <p>Divide children into groups.</p>	10 mins	Nominate lead contact for group.
Walk the store	Use printed floor mats to demonstrate the direction the Cubetto will need to move in order to collect the items from the shopping list(s).	15 mins	Appoint team members to supervise groups.
Build the trolley	Each child is given a flat packed mini-trolley to put together. They can then personalise this with colours, stickers, etc.	15 mins	Appoint team members to supervise groups.
Program the trolley	Use the Cubetto system to program the trolley to complete the challenge.	15 mins	Appoint team members to supervise groups.
Test the trolley	Trial trolleys around floor mats.	15 mins	Appoint team members to supervise groups.
Retrospective	Talk to the children about what they thought of the session and what they have learnt.	15 mins	Teacher
Roundup	Thank you to everyone who participated.	5 mins	Lead contact for group.
Total time		90 mins	

Notes:

1. Depending on how advanced the children are, it may work well to split them into 2 teams of 3, or 3 pairs. They should then work as groups to complete the challenge, rather than attempting it as one group of 6. This can be decided by the team member supervising the group, in conjunction with the teacher if necessary.
2. It works well to have an additional 2-3 teachers / teaching assistants in the room during the activity to support if necessary.
3. The speed at which the children complete the challenge of collecting the items from the shopping list will determine how many lists are used. It's not mandatory to use all 3 lists.

Script

Introduction:

Welcome group.

Introduce team, introduce Tesco. Ask the question “what is technology?” (Have items / pictures to hand to demonstrate what we mean by technology).

You all know what a supermarket looks like, but did you know that technology is an exciting part of shopping?

Today we're going to play some games which will show you how much fun technology can be – who knows, you might even want to work with technology one day!

Our activities are going to be played using this toy – which is called Cubetto. I can guide Cubetto forward, backward, left and right, using just this board [demo]. And today we're going to show you how you can do this too.

Divide into groups, introduce to team members.

Walk the store:

The idea here is to direct Cubetto around this shop (show the group the mat).

To do this we use these coloured coding blocks:

 Forward  Left  Right

Demonstrate left and right to the group.

When you add one of these blocks to the board, you're giving Cubetto an instruction. So, we need to work out the instructions that we want to give. Let's walk through this map and work out where we want the Cubetto to go.

Work out route around store:

Adult to be “robot” and ask children to direct them.

Tip: One method which can work well is to give the children coloured stickers which match the colour of the Cubetto instruction blocks to plan the route around the mat. When they come to add the blocks to the control board, they will simply have to mirror the pattern of the stickers.

Build the trolley:

Each of you has one of these puzzles – we’re going to unpack them and put them together so that everyone has their own mini-trolley that we can race round the store! We’ve also got lots of fun things that you can add to your trolley once it’s built. Maybe you’d like to make it look like it can go really fast, or colour it in your favourite colour...

Tip: If you divide the children into groups to programme Cubetto, they can switch between decorating their trolley and programming, ensuring that they always have something to do.

Tip: Once the trolley is built, it will sit neatly on top of the Cubetto!

Program trolley:

We’re now going to programme our trolleys to move around the shop. We’ll be using this board to add instructions – it’s like a remote control for the trolley. We need to add the coloured blocks to the board to tell the trolley what to do.

You have a shopping list, which shows the list of items you need to collect from around the store. Your challenge is to collect all the items, in the right order, and get to the till.

The blocks we can use are:

-  Forward (moves forward 15cm)
-  Left (turns left 90 degrees)
-  Right (turns right 90 degrees)

To give Cubetto instructions, you need to place the blocks in order on the board. Can you see how the queue curves? This is the order you have to follow. Once you’ve put all the blocks in order, hit the “Go” button and watch the trolley move!

If there is extra time...

- **Swap shopping lists round**

There are 3 versions per group

- **Try out the Function Line**

If you want to give the same set of directions more than once, put that sequence in the Function Line (at the bottom of the board). Now you can use the blue block in the queue every time you want to recall that sequence. (This is called a subroutine).

Retrospective:

Run by the teacher

Get the children back into one big group and find out how they felt about the session. We asked the following questions:

What did you enjoy?

What did you learn?

What did you like about working in your group?

Tip: This section can be made interactive – we asked them to write their answers on post-it notes and stick them to the wall in different areas of the hall we were in.

Roundup:

A huge thank you for letting us come to your school this morning and work with you on these activities! Thanks to *[teacher]* for organising for us to be here. Next time you go to Tesco, don't forget to look out for the technology in the store!

Tip: This is a good time to give out any gifts / prizes. The children should also take their decorated trolleys as reminders of the activity.

Contact us

If you've got a question about this activity, or if you'd like to share the way in which you've used these tools, email us at Tesco.labs@uk.tesco.com, or tweet us @TescoLabs.