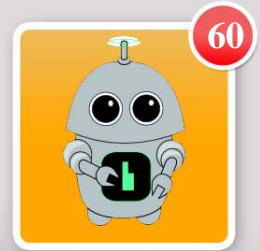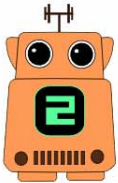# Flow Charts for a Real World Problem (Supermarket Self-Checkout)

DFE Computing Curriculum Subject Content Covered:

Key Stage 3 Subject Content:
· design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems.

Resources and Preparation:

Find a YouTube video that shows a self-checkout system. http://www.youtube.com/watch?v=g17DLQ1fgcA This one is good but a bit jumpy!

Maybe prepare a resource that displays the flowchart symbols and their meanings. You can get one from here: http://rfranksblog.files.wordpress.com/2013/03/t8-flowcharts-cheat-sheet1.pdf Large paper and pens are needed for planning in groups. You also may want some props! (e.g. a chocolate bar and a bag)

Lesson Outline:

Prepare the learners so that they understand the relevance of flowchart symbol shapes. Discuss and highlight the use of computational systems in supermarkets Use YouTube video clip to highlight the process.

Explain that during the activity they will model the behaviour of the system and they will work together in groups to devise the flowchart for this system.

Together students brainstorm the key processes, decisions, inputs and outputs in a simple event. Keep it fairly simple by using one product to purchase... eg. Bar of chocolate. They are likely to highlight the following steps...

Assistant Required | Another item | Waiting for customer | Scan the item | "Unexpected Item in the Bagging Area" | Item list state | Pay| Bags Removed | Choose payment method | Bags Removed.

Using the processes they identify which flowchart symbol each function belongs to and write these on the symbol. It is probably sensible to group them into teams of 10 with one student overseeing the process. They deconstruct, debug and refine the procedure until the process works. To add a competitive element you may like to reward the winning team with the bar of chocolate (or a certificate) possible, successful outcomes could be rewarded with the chocolate bar.

Highlight a current topic in the news... "Tesco Petrol Stations Use Face Scan Tech to Target Ads", BBC News, 04.11.13. Open up for discussion and touch on other issues such as privacy etc.

This lesson would best suit...

Less able/Gender Neutral

Resource Contributor/s:
Matt, @awitts,@SAPS_News,Ben,Alex,Emma

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