

Workshop: Raspberry Pi Bake Off – Connectivity Workshop

Aim: To train about 30 students aged 11-16 (in 3 separate sessions), such that they can build simple network connected systems with a Raspberry Pi			Outcomes: All: Explain key networking terminology. Configure networking. Send messages between two Raspberry Pi's Most: Build and test a complete internet chat application Some: Experiment by adding new features to the chat application	
Logistics: Work in pairs (15 pairs of 30 kids) Pairs double up with each other (and additional instructors Pi) to make 8 groups of 4, each with a client and a server Lead teacher, and about 3 or 4 support assistants At start, we need 8 Raspberry Pi all plugged in. Children bring and use SDCards provided at registration				
Time	Title	Resources	Teaching Staff	Students
T-60 (10)	role play: buzzword bingo	worksheet: <u>bingo cards</u> string, post it notes, envelopes staff for machines post-it notes for address & port card on necklace for port/service map	role play sending a message network, ethernet, internet, IP address, netmask, gateway, router, static, dynamic(DHCP), TCP/IP, message, port, client, server	watch our role play shout out when they hear words shout out house when got all
T-50 (10)	practical: network configuration	worksheet: <u>configure and ping</u> connect network cable edit network config reboot, ifconfig, ping	support the worksheet and questions eval: ping works	follow worksheet, configure network test
T-40 (10)	practical: write server	worksheet: <u>write your own server</u> enter snippet of code and test	support the worksheet and questions eval: telnet to local server works	follow worksheet write server test
T-30 (10)	practical: write client	worksheet: <u>write your own client</u> enter snippet of code and test	support the worksheet and questions eval: client to local server works	follow worksheet write client test
T-20 (10)	practical: internet chat	worksheet: <u>internet chat</u> enter snippet of code connect and test	support the worksheet and questions eval: chat between two Pi's works	follow worksheet cut and paste chat test
T-10 (10)	demo: internet of things demonstrator	handout: <u>connected hardware</u> code listing showing LED/switch example group "what does switch mean" "what does led mean" "what processing" "what have you invented"	Describe that adding hardware from other workshops is a small step away Shutdown Pi's remove SD Cards/cables	shout out ideas

