



Buffer Box Answers

These are possible solutions to the Exercises on page 547:

LED Sequencing (I)

```

10 REM CBM 64 VERSION 2.1
20 DDR=&FE679: DATREG=&FE677
30 POKE DDR,255: REM ALL OUTPUT
40 POKE DATREG,255: REM ALL LEDS OFF
50 GET A#
60 FOR N=1 TO 7
70 POKE DATREG,255-(2^N)
80 NEXT N
90 IF A#="" THEN 50
100 END

10 REM BBC VERSION 2.1
20 DDR=&FE62: DATREG=&FE60
30 ?DDR=127: REM ALL OUTPUT
40 ?DATREG=255: REM ALL LEDS OFF
50 REPEAT
60 A#=INKEY#(1)
70 FOR N=0 TO 7
80 ?DATREG=255-(2^N)
85 FOR D=1 TO 200: NEXT D
90 NEXT N
100 UNTIL A#<>" "
110 END

```

LED Sequencing (II)

```

10 REM CBM 64 VERSION 2.2
20 DDR=&FE679: DATREG=&FE677
30 POKE DDR,127: REM L7 INPUT
40 POKE DATREG,255: REM ALL LEDS OFF
50 GET A#
60 FOR N=0 TO 7 STEP 5
70 POKE DATREG,255-(2^N)
80 NEXT N
90 IF PEEK(DATREG) AND 128=0 THEN S=-1
100 IF PEEK(DATREG) AND 128=1 THEN S=1
110 IF A#="" THEN 50
120 END

10 REM BBC VERSION 2.2
20 DDR=&FE62: DATREG=&FE60: S=1
30 ?DDR=127: REM L7 INPUT
40 ?DATREG=255: REM ALL LEDS OFF
50 REPEAT
60 A#=INKEY#(1)
70 FOR N=0 TO 7 STEP 5
80 ?DATREG=255-(2^N)
85 FOR D=1 TO 200: NEXT D
90 IF DATREG AND 128=0 THEN S=-1 ELSE S=1
100 NEXT N
110 UNTIL A#<>" "
120 END

```

LED Sequencing (III)

For the train of three LEDs, make the following changes to answer (2):

```

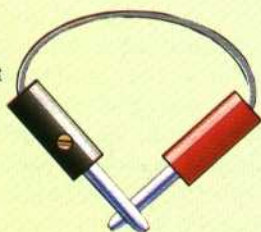
CBM VERSION
60 FOR N=2 TO 7 STEP 5
70 POKE DATREG,255-((2^N)+2^(N-1)+2^(N-2))

BBC VERSION
70 FOR N=2 TO 7 STEP 5
80 ?DATREG=255-((2^N)+2^(N-1)+2^(N-2))

```

PATCH CORD

Use 8 cm of insulated wire (a single line from the ribbon cable, for example) to connect a red plug to a black plug. This is called a patch cord, and is used to 'patch' one socket to another. Make eight such cords



KEVIN JONES

Dice Throwing

```

10 REM CBM 64 VERSION 2.3
20 DDR=&FE679: DATREG=&FE677
30 POKE DDR,127: REM L7 INPUT
40 POKE DATREG,255: REM ALL LEDS OFF
50 GET A#
60 IF PEEK(DATREG) AND 128<>0 THEN 60
70 NR=INT(RND(1)*6)+1: REM SELECT NO.
80 POKE DATREG,255-((2^NR)-1)
90 IF PEEK(DATREG) AND 128<>1 THEN 90
100 IF A#="" THEN 50
110 END

10 REM BBC VERSION 2.3
20 DDR=&FE62: DATREG=&FE60: S=1
30 ?DDR=127: REM L7 INPUT
40 ?DATREG=255: REM ALL LEDS OFF
50 REPEAT
60 A#=INKEY#(1)
70 REPEAT UNTIL (?DATREG AND 128)=0
80 NUMBER=RND(6): REM SELECT NUMBER
85 FOR D=1 TO 200: NEXT D
90 ?DATREG=255-((2^NUMBER)-1)
100 REPEAT UNTIL ?DATREG AND 128=1
110 UNTIL A#<>" "
120 END

```

Traffic Lights (I)

```

10 REM CBM 64 VERSION 2.4
20 DDR=&FE679: DATREG=&FE677
30 POKE DDR,255: REM ALL OUTPUT
40 POKE DATREG,255: REM ALL LEDS OFF
45 REM BIT2=RED,BIT1=AMBER,BIT0=GREEN
50 RD=255-4: AM=255-2: GN=255-1
60 GET A#
70 POKE DATREG,RD
80 FOR N=1 TO 200: NEXT: REM DELAY LOOP
90 POKE DATREG,RD+AM
100 FOR N=1 TO 40: NEXT: REM DELAY LOOP
110 POKE DATREG,GN
120 FOR N=1 TO 200: NEXT: REM DELAY LOOP
130 IF A#="" THEN 60
140 END

10 REM BBC VERSION 2.4
20 DDR=&FE62: DATREG=&FE60: S=1
30 ?DDR=255: REM ALL OUTPUT
40 ?DATREG=255: REM ALL LEDS OFF
50 REM BIT2=RED, BIT1=AMBER, BIT0=GREEN
60 RD=255-4: AMBER=255-2: GREEN=255-1
70 REPEAT
80 A#=INKEY#(100)
85 FOR D=1 TO 200: NEXT D
90 ?DATREG=RD
100 FOR N=1 TO 200: NEXT: REM DELAY LOOP
110 ?DATREG=RD+AMBER
120 FOR N=1 TO 40: NEXT: REM DELAY LOOP
130 ?DATREG=GREEN
140 FOR N=1 TO 200: NEXT: REM DELAY LOOP
150 UNTIL A#<>" "
160 END

```

Traffic Lights (II)

Make the following changes to answer (4):

```

CBM VERSION
30 POKE DDR,127: REM L7 INPUT
65 T=TI: REM INIT TIMER
75 IF PEEK(DATREG) AND 128=0 THEN C=C+1
76 IF PEEK(DATREG) AND 128<>1 THEN 76
77 IF C<=10 AND T-TI<3600 THEN 75

BBC VERSION
30 ?DDR=127: REM L7 INPUT
75 T=0: C=0
95 REPEAT
96 IF ?DATREG AND 128=0 THEN C=C+1
97 REPEAT UNTIL ?DATREG AND 128=1
98 UNTIL T>6000 OR C>10

```