

MODULE 2

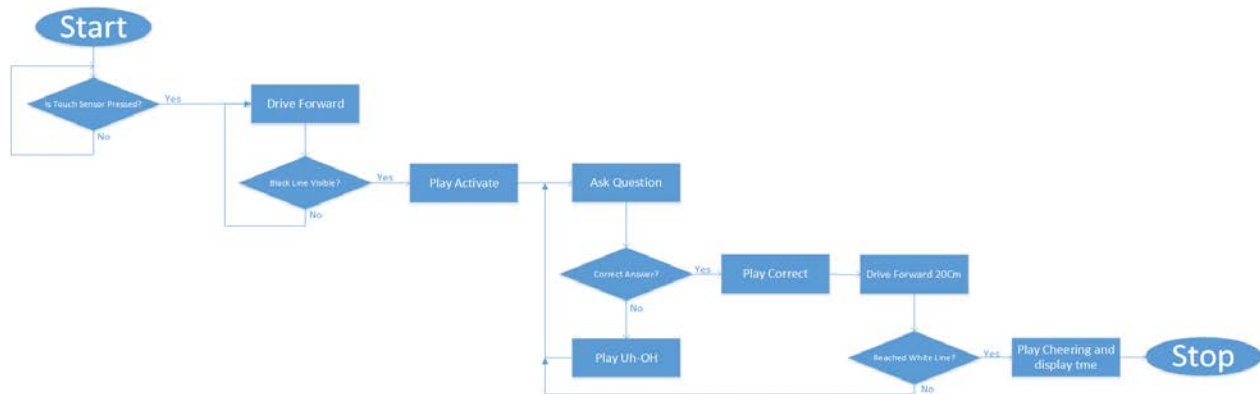
Technology inzetten in het basisonderwijs

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2.1 Camel race

Flow-Chart



Link voor betere weergave

<https://drive.google.com/open?id=1B-IYXPB1uSaZpWDp1falolwQOYql-Dz8>

Code

```
1  bool waitanswer = false;
2  bool finished = false;
3  float time;
4  bool correctleft = true;
5  string options;
6
7  task main()
8  {
9      //wacht tot de touch sensor wordt ingedrukt
10     while(getTouchValue(S1) != 1){};
11     clearTimer(T1);
12
13     //rijd naar voren totdat de zwarte lijn gevonden wordt
14     while(getColorReflected(S3) > 7)
15     {
16         setMotor(motorB, 50);
17         setMotor(motorC, 50);
18     }
19
20     //stop en play Activate
21     setMotor(motorB, 0);
22     setMotor(motorC, 0);
23     playSoundFile("Activate");
```

```

25 while(!finished) //herhaal zolang de witte lijn nog niet gevonden is
26 {
27     //pak random random waarden en bereken antwoord
28     int value1 = 1 + random(9);
29     int value2 = 1 + random(9);
30     int answer = value1 * value2;
31
32     //display vraag
33     string question;
34     stringFormat(question, "wat is %d X %d?",value1,value2);
35     displayBigTextLine(4,question);
36
37     //voeg mutatie toe aan een van de waarden en maak een fout antwoord
38     switch(random(3))
39     {
40     case 0:
41         value1++;
42         break;
43
44     case 1:
45         value1--;
46         break;
47
48     case 2:
49         value2++;
50         break;
51
52     case 3:
53         value2--;
54         break;
55     }
56     int notanswer = value1 * value2;
57
58     //display antwoorden
59     switch(random(1))
60     {
61     case 0:
62         stringFormat(options, " %d %d ",answer,notanswer);
63         correctleft = true;
64         break;
65
66     case 1:
67         stringFormat(options, " %d %d ",notanswer,answer);
68         correctleft = false;
69         break;
70     }
71     displayBigTextLine(10,options);

```

```

72
73 //wacht tot knop wordt ingedrukt
74 waitUntil(getButtonPress(buttonLeft) || getButtonPress(buttonRight));
75 waitanswer = true;
76 while(waitanswer == true)
77 {
78
79 //als het antwoord fout is wacht 0,2 seconden play "Uh-oh" en verlaat loop
80 if((getButtonPress(buttonLeft) && !correctleft) || (getButtonPress(buttonRight) && !correctleft))
81 {
82     playSoundFile("Uh-oh");
83     delay(200);
84     waitanswer = false;
85 }
86
87 //als het antwoord goed is:
88 else if(!getButtonPress(buttonLeft) && correctleft) || (getButtonPress(buttonRight) && !correctleft)
89 {
90     //play good en start motor
91     playSoundFile("Good");
92     setMotor(motorB,50);
93     setMotor(motorC,50);
94
95 //check gedurende 1 seconde of de grond wit is
96 clearTimer(T2);
97 while(getTimerValue(T2) < 1000)
98 {
99     //zo ja stop motor en stop vragen stellen
100     if(getColorReflected(S3) >40)
101     {
102         finished = true;
103
104         setMotor(motorB,0);
105         setMotor(motorC,0);
106     }
107 }
108
109 //na 1 sec stop motoren wacht op nieuwe vraag
110 setMotor(motorB,0);
111 setMotor(motorC,0);
112 waitanswer = false;
113 }
114 }
115 }
116 //play cheer
117 playSoundFile("Cheering");
118
119 //clear display
120 displayBigTextLine(10,"");
121 displayBigTextLine(4,"");
122
123 //bereken tijd in seconden
124 time = getTimerValue(T1) / 1000;
125
126 //display eindtijd
127 displayBigTextLine(6,"eind tijd:");
128 displayBigTextLine(8,"%d sec", time);
129
130 wait(3000);
131 }
132

```

C-Code Bestand:

<https://drive.google.com/open?id=1us4uIBfAqiZ5NpGsPfu7yliwrknZPbEB>

Bronnen

<https://stackoverflow.com/questions/822323/how-to-generate-a-random-number-in-c>

<https://stackoverflow.com/questions/2751406/while-with-multiple-conditions>

<https://sites.google.com/site/ev3basic/ev3-basic-programming/using-buttons-the-screen-and-the-leds/lego-ev3-standard-bitmaps><https://msdn.microsoft.com/en-us/library/f355wky8.aspx>

<https://msdn.microsoft.com/en-us/library/f355wky8.aspx>

https://www.tutorialspoint.com/cprogramming/c_break_statement.htm

http://help.robotc.net/WebHelpVEX/index.htm#Resources/topics/ROBOTC_Debugger/Debug_Windows/Motors.htm