

Assistive Device Worksheet

Step 1: Consider the problem.

1. What kinds of challenges do you think your neighbor would face since his or her accident?

2. Are there certain rooms or daily situations where someone living in this apartment would be less likely to hear the fire alarm or notice that there is an ongoing emergency?

3. What kinds of alarms, signals, or existing technology help people with these challenges in emergency situations?

Step 2: Design your solution.

1. Summarize the problem you are going to solve.

2. Describe how you will test your program.

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3. Describe or use images to show how you will use Sphero to assist your neighbor in each stage of emergency.

Stage 1 Emergency

Stage 2 Emergency

Stage 3 Emergency

4. Describe or draw a flow chart to show the steps of what your program will do to solve the problem at each stage of emergency.

Stage 1 Emergency

Stage 2 Emergency

Stage 3 Emergency

[illegible]

Step 3: Test and improve your solution.

Document the results of your testing.

Did your program work as expected?

1. Describe or illustrate something that worked well and something that did not work well, or did not work as expected.

Worked Well

Did Not Work Well or As Expected

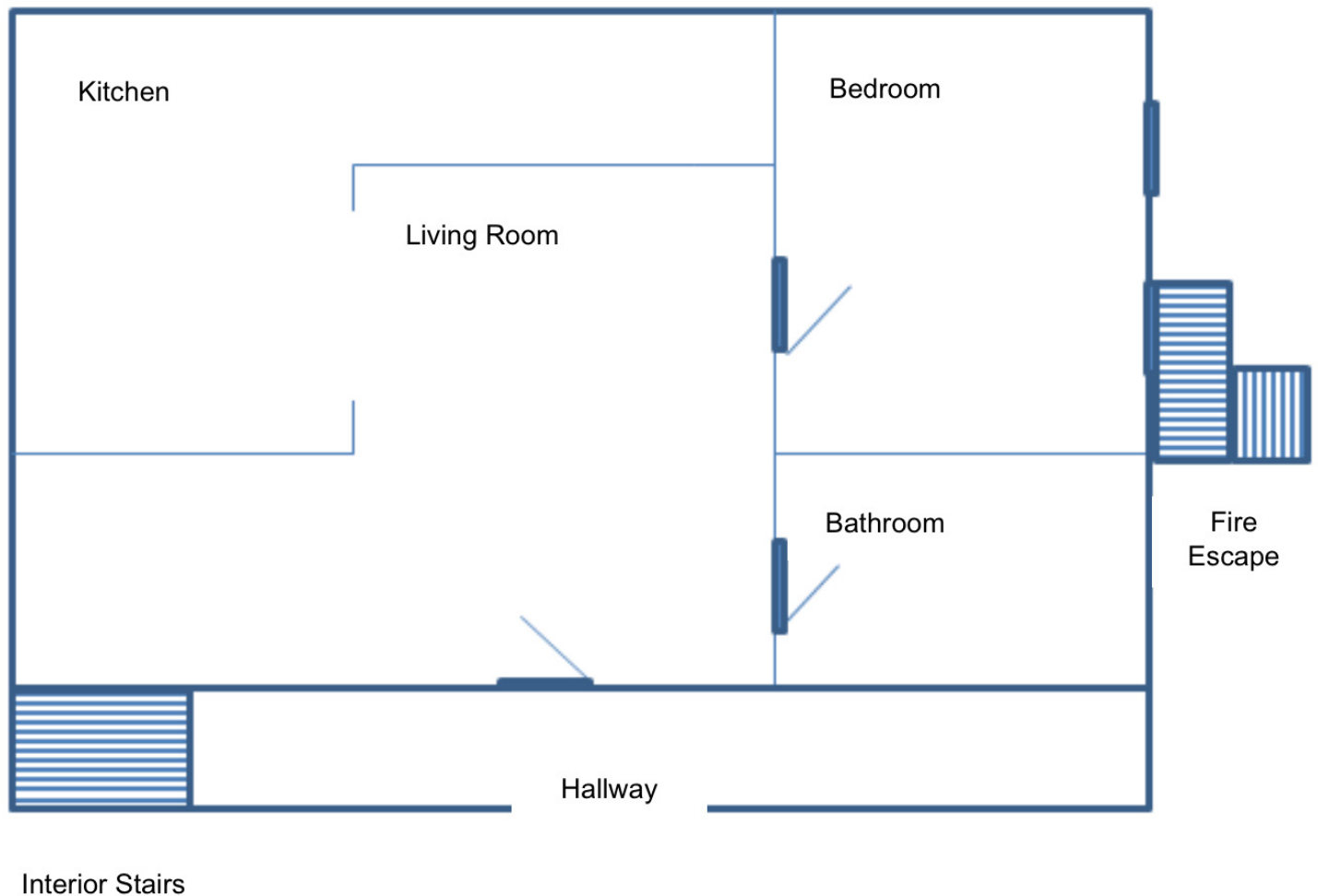
2. Describe any revisions or improvements you have made.

Illustrate how the device will work.

Imagine that the floor plan below shows the basic structural layout of your neighbor's apartment, or create an original blueprint.

Add furniture, icons, and other details to demonstrate how and where your neighbor spends time in the apartment, as well as the location of alarms or emergency exits.

Add illustrations to show where Sphero could be located to be most effective at notifying your neighbor of an emergency and if actions are part of your program, illustrate where or how Sphero would move.



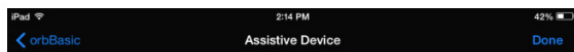
Overview:

This program will visually notify someone of an escalating danger in increments of 15 seconds.

In stage 1 of the program (lines 10-40), Sphero will change colors each second, for a total of 15 seconds.

In stage 2 of the program (lines 45-80), Sphero will add movement to the alarm, turning 90 degrees and moving forward for 1 second for total of 15 seconds, creating a square shape on the floor.

In stage 3 of the program (lines 90-130), Sphero will jump back and forth (in a forward direction for 1



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10 for x = 1 to 15 step 1
20 if x % 2 = 0 then LEDC 3 else LEDC 0
30 delay 1000
40 next x
45 LEDC 7
50 for x = 1 to 15 step 1
60 goroll 90,100,2
70 delay 1000
75 heading 0
80 next x
90 LEDC 1
100 for x = 1 to 15 step 1
110 if x % 2 = 0 then raw 1,255,1,250 else raw 2,255,2,250
120 delay 1000
130 next x
```

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