Smart Walker

Class: 6A

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1) **Idea description** -

Currently, a big problem in our society is that older people are tripping, slipping and falling. This can cause severe injury or even death. My robot/idea can decrease the chance of (older) people getting injured. Both medical/ health care and elderly care will benefit from my robot. The overall benefit of this robot is that it has sensors, so that it can turn or stop automatically when it senses something that is in the way. Elderly people might have problems with sight , and therefore it will be much easier for them to walk (and feel safe) if they have some kind of support. The walker itself is a great support , but the sensors are making it a lot better.

2) **Target group** -

Health / medical care and elderly are the target groups that will benefit the robot. A few adjustments / changes could be made so that the robot benefits other target groups too. If the robot was made from recycled materials , it could benefit the environment .

3) **Design**

My robot is designed so that it's used easily and doesn't cost much money. A regular

walker is there to support and help people to move around. It is important for people to know how to safely walk, sit , turn and go up and down stairs.

The robot works like this:

I'm sure that you have heard about a regular walker. It is a (usually) metal support that helps you with walking after a (ex.) Leg injury. Anyways, this walker also has sensors that automatically turn when they sense something that's in the way, such as a wall or a table. The walker will also have lights, which will automatically turn on when the sensors sense darkness.

4) **Technical solutions** -

As I was saying before, I am trying to make this robot as cheap as possible, and in order to do that, we will need to build it with cheap materials.

Materials needed for this robot:

- Regular walker (metal)
- Sensors (electrical/battery)
- Wheeles (are attached to the walker)

The walker will have wheels that will allow the walker to automatically turn when it's needed.

5) **Threats and opportunities** - A robot is any automatically operated machine that usually replaces human effort.

The good parts of robots are that they often improve product quality , which in other words could be said that they increase the quality of most products (such as clothes or furniture).

The bad side of robots are that they can take the place of many humans in (ex.) factories , so the people have to find new jobs or be retrained. This we know because people will often choose robots over humans.

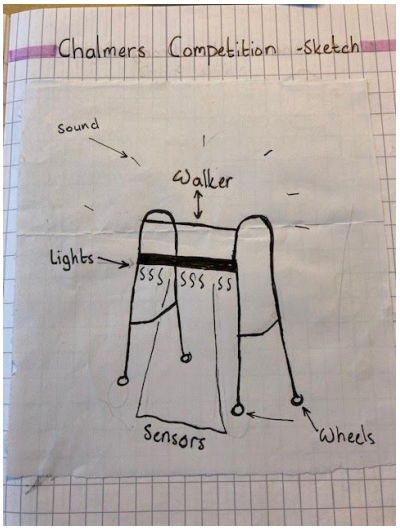
This is because they are usually..

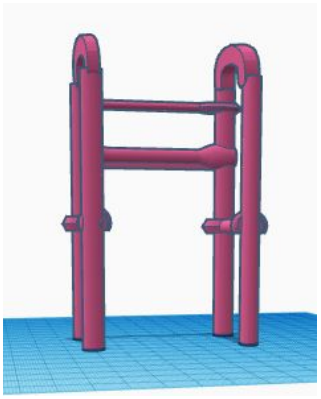
1. cheaper.
2. Think faster.
3. Do the job “better”.

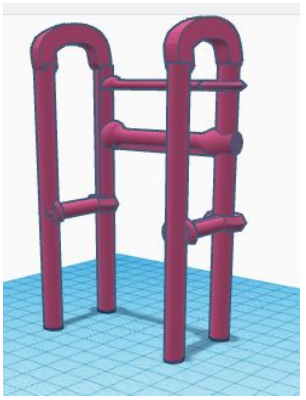
6) **Sketches** dimensioned in three views (does not have to be scalable)

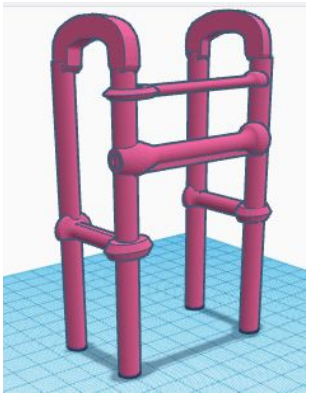
In notebook (and tinkercad)

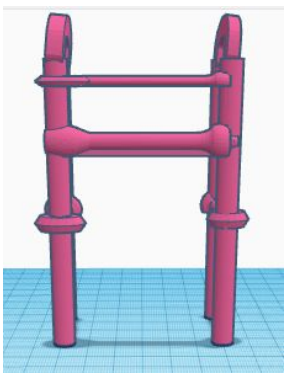
https://www.tinkercad.com/things/7iLmABK9JgM-terrific-migelo/edit







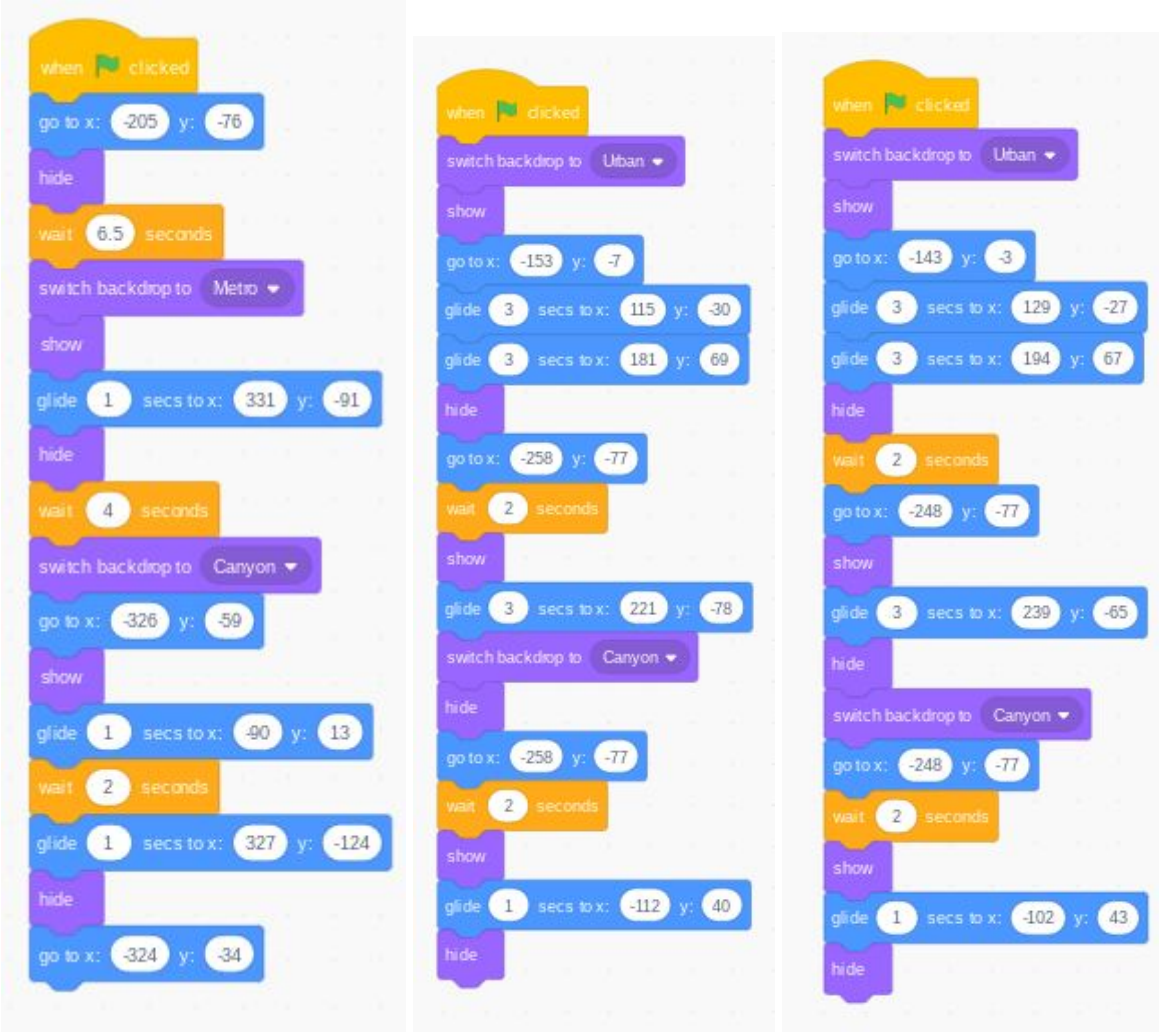




7) **Flowchart** that describes how the robot is programmed (in eg scratch)

https://scratch.mit.edu/projects/450826290/editor

Three separate scratch programs for three different spirits. Video of the program is attached with the file.



8) **Logbook** - simple documentation and evaluation of the work process

We used a website called “Tinkercad”, where we designed our model (in 3D). We were then supposed to print it out using the 3D printer. https://www.tinkercad.com/things/7iLmABK9JgM-terrific-migelo/edit