Lifecycle of a KODAK Single Use Camera

a. Functional Components:
   - Packaging
   - Viewfinder
   - Counter Mechanism
   - Flash Mechanism
   - Red LED Light
   - Shutter Mechanism
   - Spring
   - Lens
   - Circuit Board
   - Gears
   - Energy Cell
   - Batteries
   - Film
   - Casing & Frame

b. How It Works
   
   - First, the numbered dial is turned, which pulls the empty film and places it behind the lens so a new picture can be taken. This also prepares the shutter so the picture will be taken properly. Next, the user would charge the flash. To do this, he/she would press the flash charge button that causes the circuit to open and the battery begins to charge. Then, the current causes the LED light to light up which indicates that the flash/camera is ready. Finally, the user would focus the frame using the viewfinder lens and press the shutter button to take the picture. After the button is pressed, the energy in the spring is used to open the shutter and light enters which takes the picture. The picture is then stored on the film. Chemical changes take place inside for storage then the process is repeated.

c. Materials & Assembly/Disassembly
   
   - The materials used for the eternal components of the camera like the framework are mainly polystyrene plastic.
The lenses and gears of the camera are also plastic but a slightly different kind; ASB plastic. There are a few wires and a spring for the button on top of the camera to activate the shutter. There are alkaline batteries, which operate the camera and the circuit board, which is made up of copper, aluminum, and plastic.

- Assembly and disassembly of these cameras are fairly easy and can be done mostly by hand in a short amount of time. The pieces for the camera are made to just be able to be snapped onto the frame of the camera, or snap onto other items of the camera. This allows for the camera to be cheap and an easy process of assembly. The only tool that is basically needed is a small screwdriver, but that’s it. Everything else can be snapped on. For us, the assembly was a little more difficult than the disassembly because there are many small parts that caused some confusion where some parts went. However, for those who assembly and disassembly these cameras for a living, this should be fairly easy.

d. Recycling of Parts
- The KODAK One-Time Use Recycling Program allows people who are finished with their camera to send the camera (including other manufacturers' models) to a centralized collection facility. In this warehouse, the disposable cameras are taken apart, and the most parts as possible are taken off of the camera to be reused. The parts that are not reused will get recycled into raw materials, which create the new parts for a new camera. Due to the recycling process, we figured that the plastic products of the camera would be the ones to be melted back down and reused in new cameras. Items like the circuit board, lens, flash LED light, and gears could be placed into new cameras. Also, the springs and shutter, which are made out of steel, could be broken down and placed into other cameras too. The only parts that really couldn’t be reused would be the batteries, film, and possibly some of wires. Also, anything that is in bad condition couldn’t be reused.
e. Redesign of the Camera

- After taking a part the camera, playing around with it, and figuring out how it was engineered, we figured out a few small changes that could improve the life of the camera. For one, the batteries could use some improvement. Since the batteries would typically not be reused, why not change to rechargeable batteries. With this, batteries would be able to be passed down to other cameras and it could save money and we wouldn't have to throw away batteries as often! Batteries can be harmful to our planet if not disposed of properly so this could be another plus! Also, since the world is moving up in the technologic world, it would be a good idea for them to change film into a flash memory or a memory card. This would make it easier because one wouldn't have to deal with film and the processing. For a memory card, you could just take the memory card out, place a new one in, and recycle the entire camera unless some minor changes needed to be made. This would improve the cameras ability to be recycled easily and help with the technology improvement. On the other side with flash memory, this requires no energy. Flash memory holds information until it is erased. Producers could make the memory as small or as big as they want and it would take up very little space and cost way less! It is a new, effective way that could improve production.

Camera Flow Chart

Crank the wheel to turn the film and place the film behind the lens.

Hold the button on the front to charge the flash of the camera. This allows the battery to charge. LED lights up indicating charged.

Look through the lens and press the shutter button to take the picture.

The shutters quickly moves from the spring allowing light to enter. The picture is then stored on the film with chemicals.

Take the camera to a professional to get film processed and dispose of the camera.