Engineering Silver Nanoparticles

Cleaning water the green way!

The many uses of silver

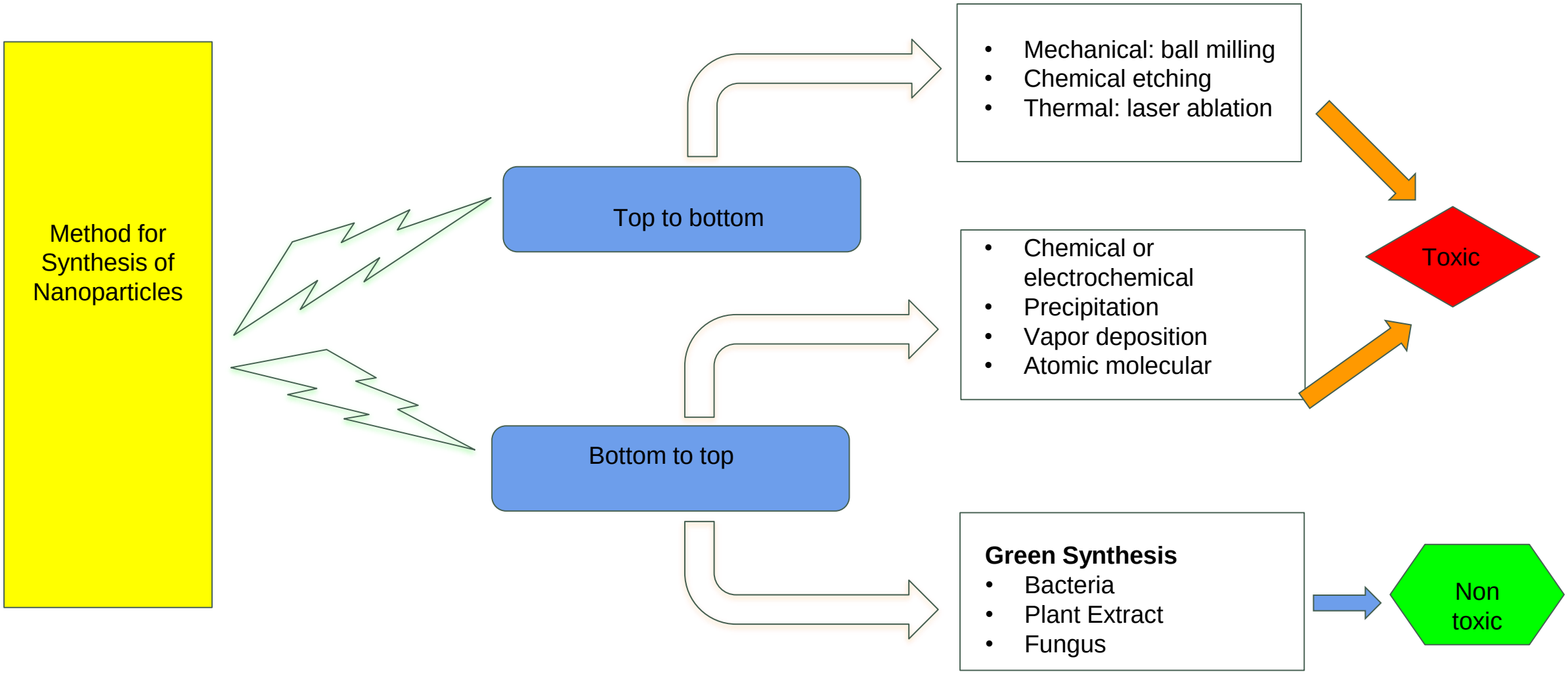
- On your whiteboard, write all the different ways we use and interact with silver in our lives.

Silver Nanoparticles and Biofouling

Individual Research

- Use the internet to conduct scientific research to find out more about the following topics:
  - What is nanotechnology?
  - What classifies something as a silver nanoparticle?
  - How can silver nanoparticles be used to clean water?

Problem: Current procedure is expensive and can be toxic

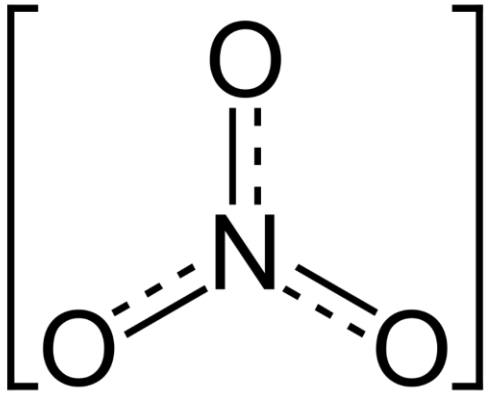


Using plants and being green!

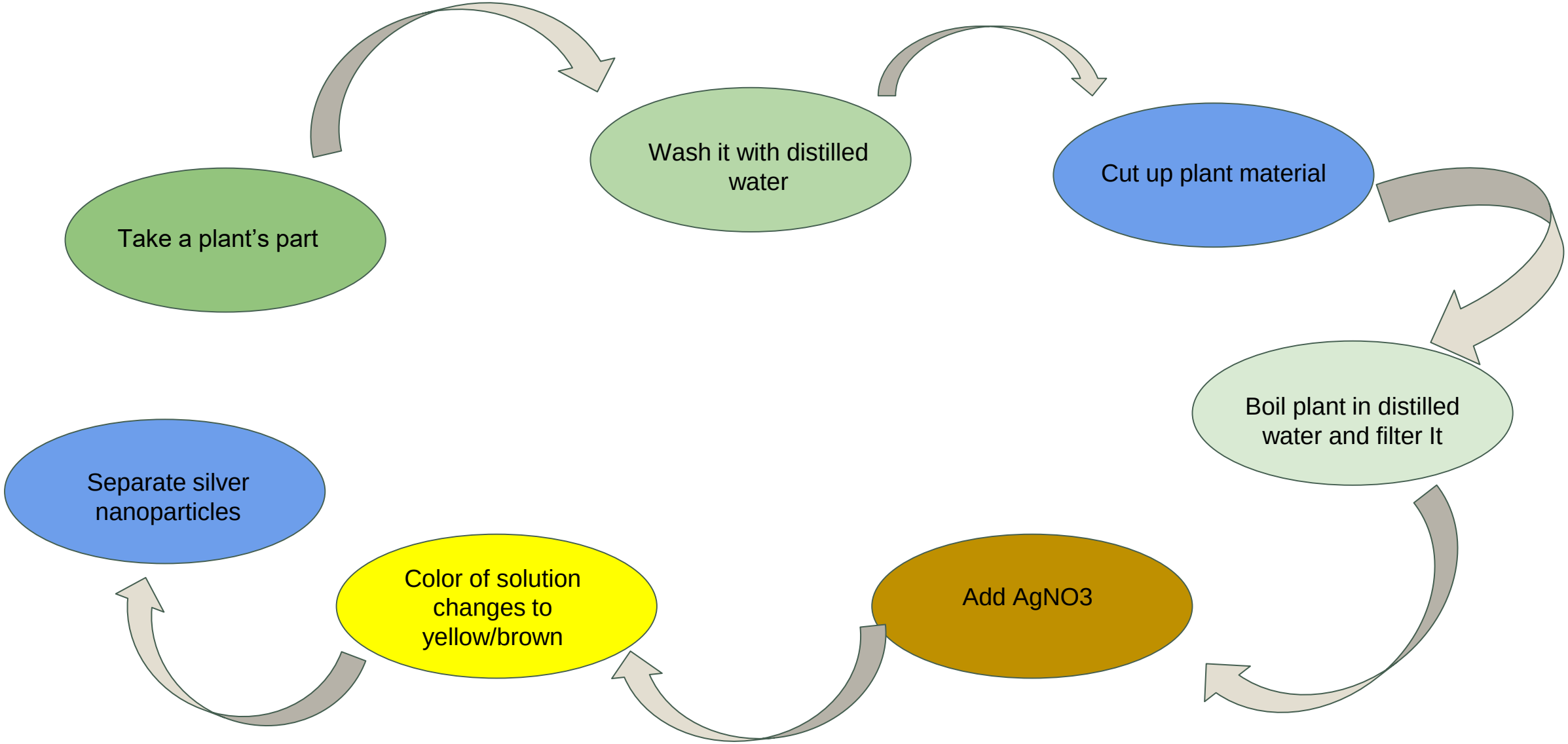
One pot green synthesis of silver nanoparticles

Making silver NPs

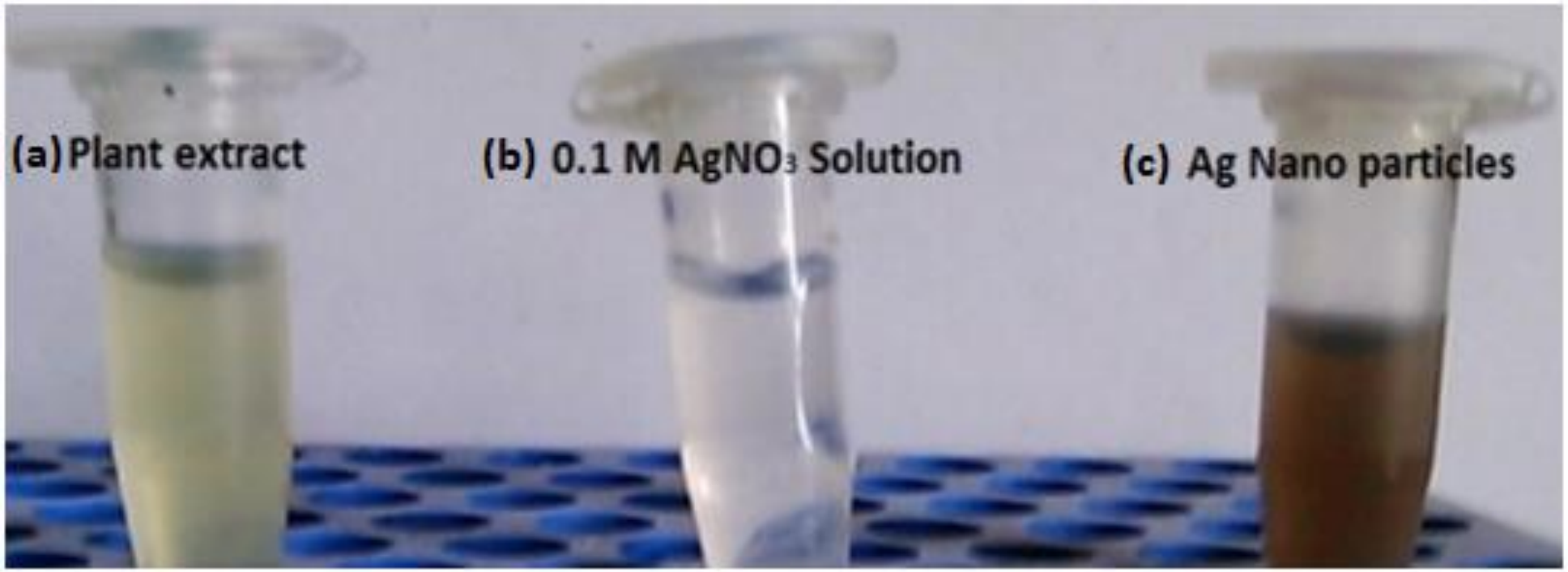
- Plants act as a reducing agent to add electrons to the silver and change silver ions (Ag+) to nanosilver Ag^0

+ Ag^+  = Silver Nanoparticles!

Procedure for making Ag NPs using plants



The end product!



Class results

Group Names	Plant Name	Observations

Retest

- Talk with group on how you want to retest
- Options:
  - Same plant- use different part of plant, use a different amount of plant, cut up differently
  - Different plant
  - Multiple plants
  - Goal: To make smaller nanoparticles so that there can be more added to a water filter or water filtration column.

Letter to Water Plant

- Write a letter to the foreman of your local water plant.
- Explain what a silver nanoparticle is and how it can be used to clean water.
- Describe the problem with the current method with making silver nanoparticles and why doing it the green way with plants is better.
- Describe the process of how to get silver nanoparticles from plants.
- Include your suggestion for what plant should be used and justify your recommendation using data.