1. intro to Energy - types, light energy, solar panels, kinetic vs. potential, energy conservation and transfer 🡪 from sun to human. **(3-5 min)**

2. intro to Photosynthesis itself 🡪 process plants use to get energy from the sun, store it, and release components animals use. **(5 minutes)**

* Go over steps of photosynthesis on printed handout.
* Talk about CO2, O2, chlorophyll which is IN the chloroplast 🡪 what makes plants green. That shows us their energy – the color they emit. Green leaves have the chlorophyll, but petals do not.

3. Have them put plant life cycle in order – at the tables 🡪 this is where we are splitting up into smaller groups. **(give 5 minutes)**

**-**volunteer at each table can fill in with asking more questions about plants, their own experiences, farm/gardens, favorite fruits and veggies to eat, etc.

4. After successfully putting sheets in order from seed to seedling to mature plant to flower to fruit, we will have them plant their sprouted beans.

🡪 here Emily and Chelsea will make an announcement about the process to sprout the beans (that happened over the last few days at Emily’s house)

-pre-sprouted beans

-cups (no wax, compostable paper)

-soil

-water

All at front for them to get.

Each student will plant a bean – this will likely all only take **2 minutes**

5. photosynthesis relay race **(5-10 minutes)**

As a group, go over each component of the formula (water + CO2 + light 🡪 O2 + sugar + water)

Have each group come select what goes where - > make an “in” pile and an “out” pile. Go over this and make sure each team has it correct.

Set up the game so that students have access to all the inputs at the “start line” and then the outputs are in the envelope of the “out” labelled side of the leaf at the “finish line”

Now they split into teams and race to deliver each input one at a time and then pick up each output.

(print out has this race as a separate document).

6. worksheet, debrief – **(10 min)**

- what would happen without the sun?

-why do leaves turn different colors in the fall?

-we talked about sugar being energy storage – is this kinetic or potential energy?

citation:

<https://betterlesson.com/lesson/639493/day-1-making-food-through-photosynthesis-a-recipe-for-plants-cornerstone-lesson>

Video if there is a projector: <https://drive.google.com/drive/u/1/folders/1TVPpkrzpNhibXSmRIwdmx1no1qQ5p5sc>