# Lesson 1: Electron Transport Chain—Photosynthesis

## Objective:

This lesson introduces students to the electron transport chain in photosynthesis.

## Next Generation Science Standards (NGSS):

HS-L1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS1.C Organization for Matter and Energy Flow in Organisms

## Essential Question:

* What are the steps of the electron transport chain in photosynthesis?

## Materials:

* Diagrams and visuals for sighted students of the steps of the electron transport chain.\*
* Printed diagrams and visuals, on capsulated paper, of the steps of the electron transport chain.
* 3-D-printed pieces to represent the following with braille on the pieces to identify them:
* Protons
* Thylakoid membrane
* Membrane proteins
* Water—that can split into protons, oxygen, and electrons
* Electrons

*\*References for the electron transport chain and diagram, with explanations, can be found at:* [*https://biologydictionary.net/electron-transport-chain*](https://biologydictionary.net/electron-transport-chain)*.*

## Directions:

1. Provide sighted students with directions to use the visual aids to arrange the steps in order and to label the parts of each step.
2. Give students with visual impairments the 3-D-printed pieces along with an accompanying paper with braille that shows the diagram in detail.
3. Allow the students to place the 3-D-labeled pieces in order to show the steps of the electron transport chain.
4. Allow all students to repeat this process at least 2–3 times to understand the electron transport chain.
5. For students who are struggling with this activity, they may need to reference materials/descriptions online to help them to create the chain.

## Assessment:

The students will be assessed by giving them a short quiz or exit slip at the end of the period to check their understanding.