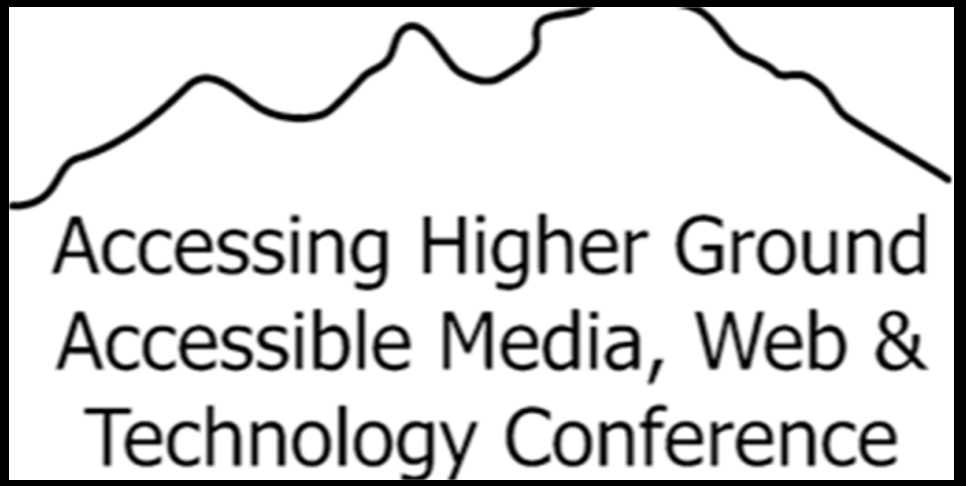
Digital Accessibility; We know it's important but how do we make it happen?

DEBBIE DORSEY, MS
ASSISTANT PROFESSOR OF HEALTH

HARFORD COMMUNITY COLLEGE

My Journey Into Accessibility

Voluntold (Randomly)




POWTOON
FOR EDU

Ensuring accessibility….not easy

- **Technology constantly evolves**
- **Learning theory revises (all the time)**
- **The Gen Z Brain**

BUT....

Breaking hardcopy habits...that's on us.

HEALTH 106, NUTRITION FOR PERSONAL WELLNESS

Instructor: Deborah Dorsey, M.S., Assistant Professor of Health

E-mail: ddorsey@harford.edu

Phone: 443.412.2064

Semester: Spring 2024

Dates: January 29 to May 18, 2024

Spring Break: March 24 – 30, 2024

OFFICE HOURS

On-campus: Monday, 1:45 p.m. to 3:15 p.m., Fallston 106

CATALOG COURSE DESCRIPTION

This class introduces students to practical nutrition information. Emphasis on the role of nutrients in health management, weight control, and disease prevention, as well as behavioral influences on eating habits are discussed. Students assess personal nutritional status, develop individual nutrition plans, and learn positive eating behavior modification strategies.

Accessibility

Accessibility is about whether

all people can **perceive** information and **act on** information.

It's good for everyone

WCAG

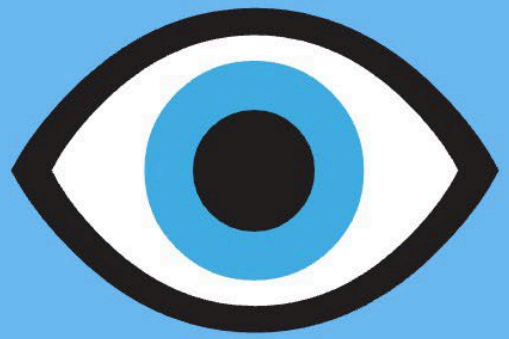
Web Content Accessibility Guidelines

Fun read...if you're into coding

What it means to we the faculty

Informs our process of creating *stuff*

(digital information)



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- **Sensory:** If non-text content is primarily intended to create a specific sensory experience, then text alternatives at least provide descriptive identification of the non-text content.
- **CAPTCHA:** If the purpose of non-text content is to confirm that content is being accessed by a person rather than a computer, then text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.
- **Decoration, Formatting, Invisible:** If non-text content is pure decoration, is used only for visual formatting, or is not presented to users, then it is implemented in a way that it can be ignored by assistive technology.

Guideline 1.2 Time-based Media §

Provide alternatives for time-based media.

Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded) §

(Level A)

Understanding Audio-only and Video-only (Prerecorded)
How to Meet Audio-only and Video-only (Prerecorded)

For prerecorded audio-only and prerecorded video-only media, the following are true, except when the audio or video is a media alternative for text and is clearly labeled as such:

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Perceivability

Instructor: Deborah Dorsey, M.S., Assistant Professor of Health

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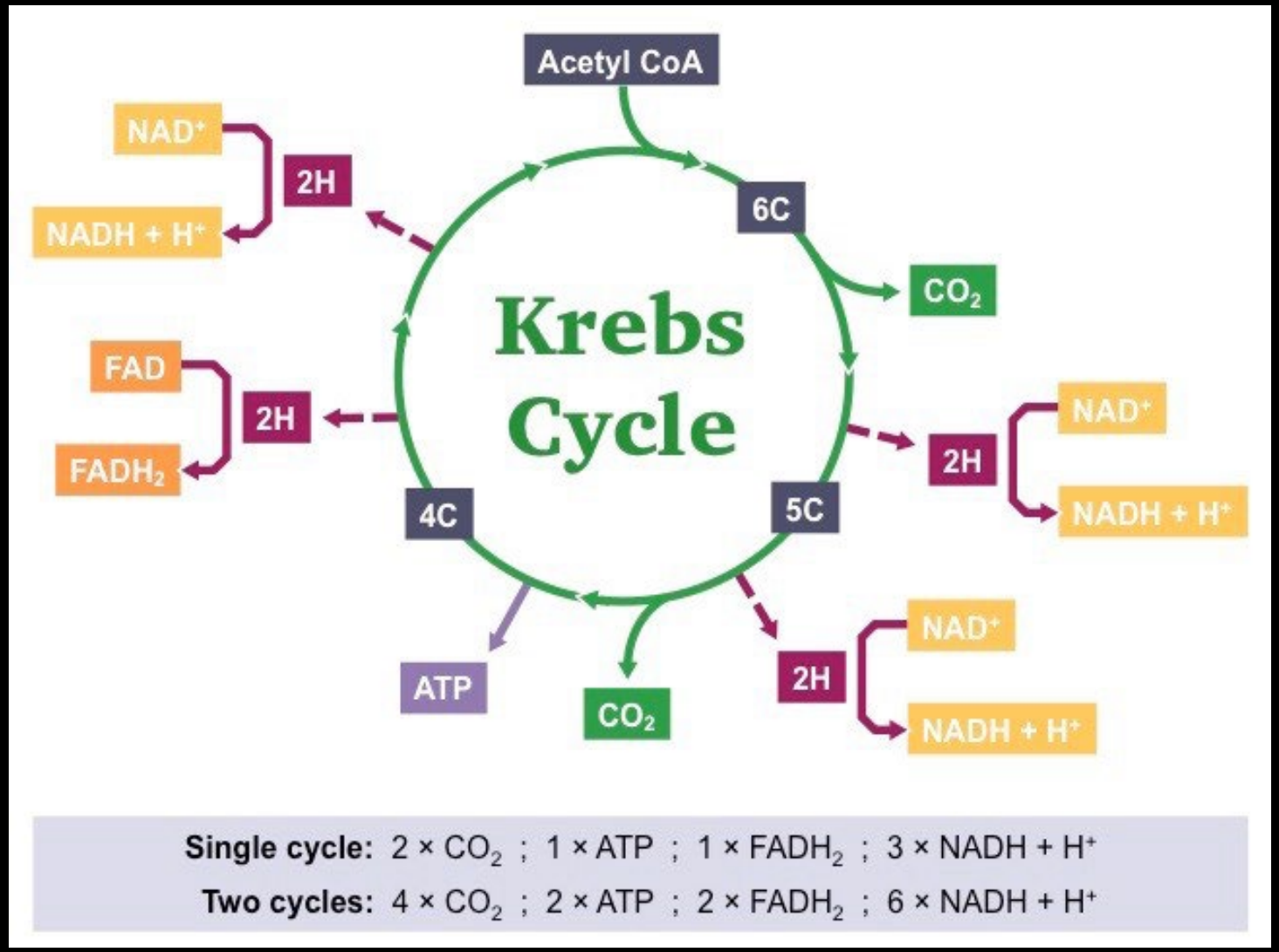
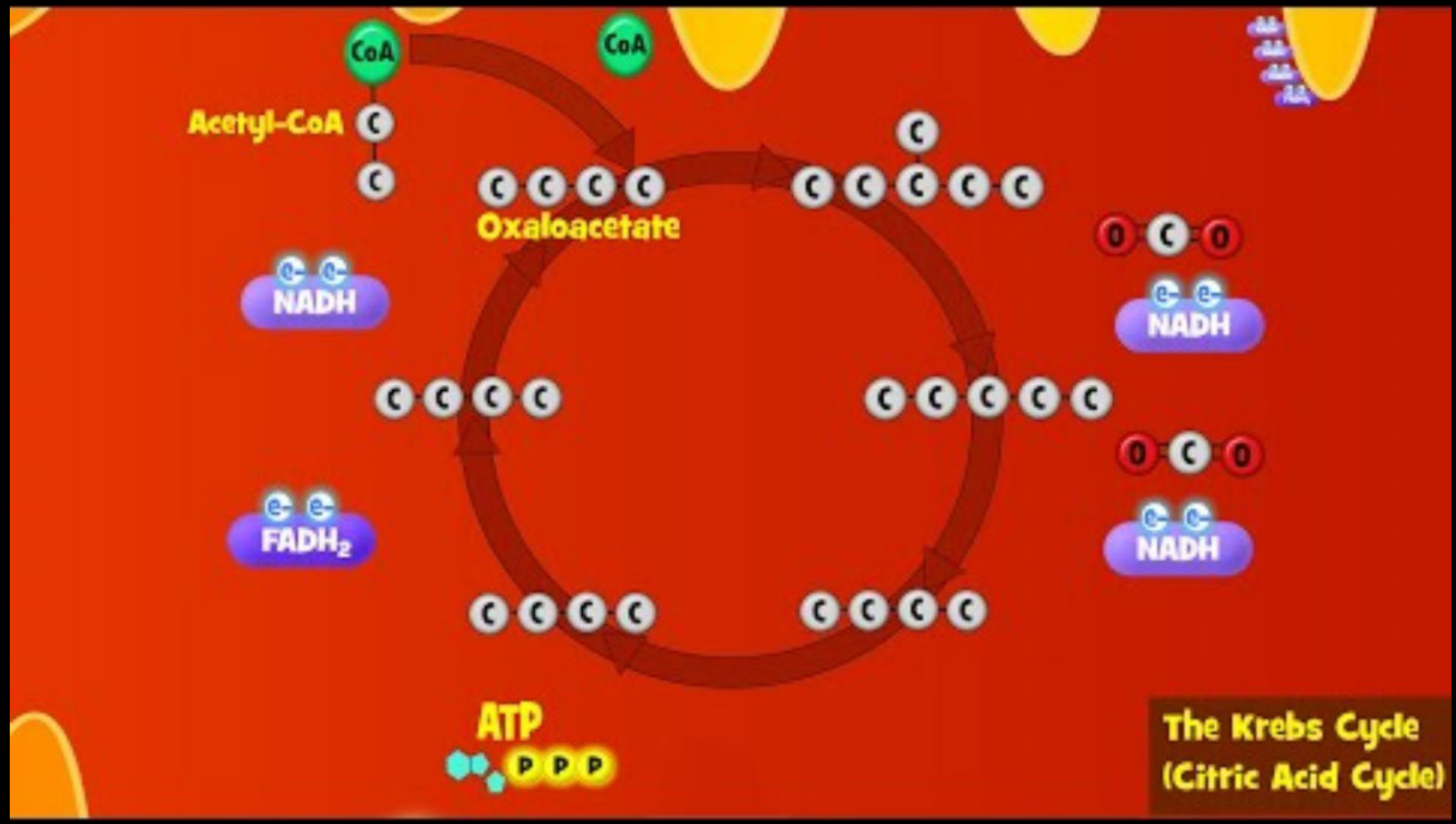
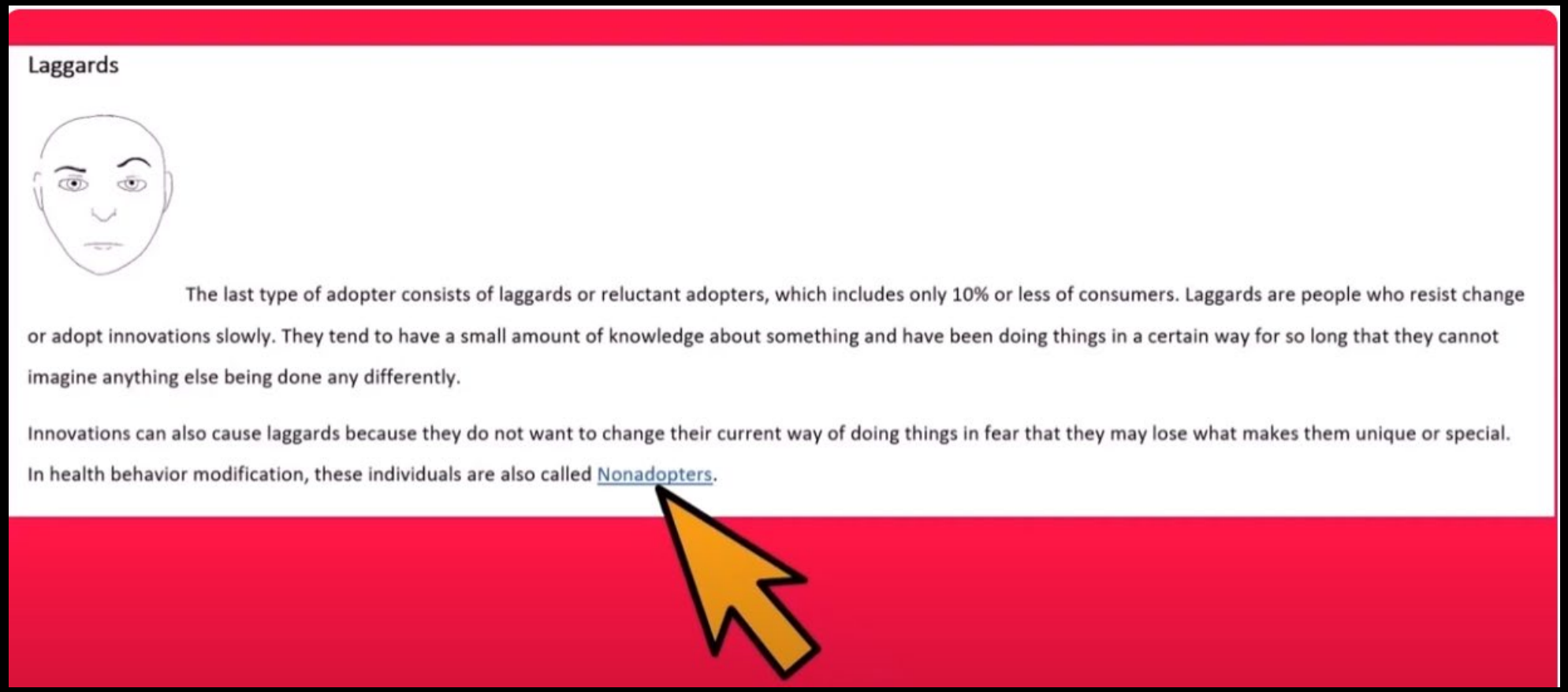
This is text (not good, but...)



This is an image



This is a captioned video



This is anchor text that will take me elsewhere

Perceivability

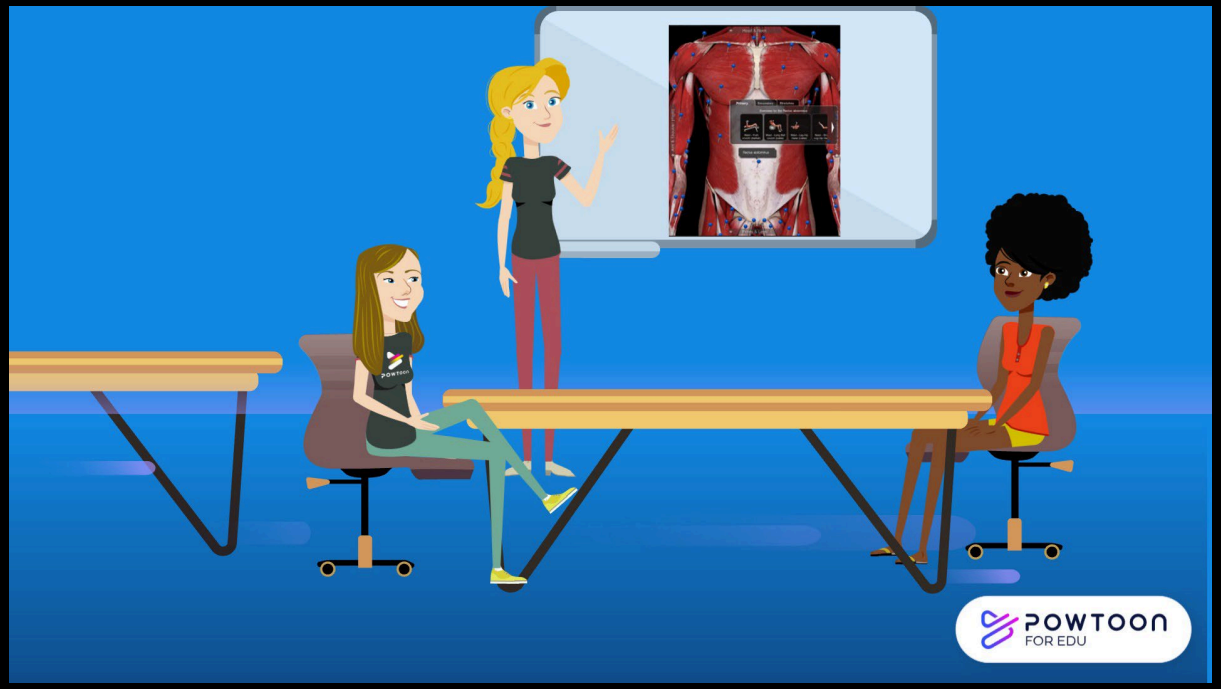
≠

Understandability

Perceivability = Purpose

First step towards

learning.



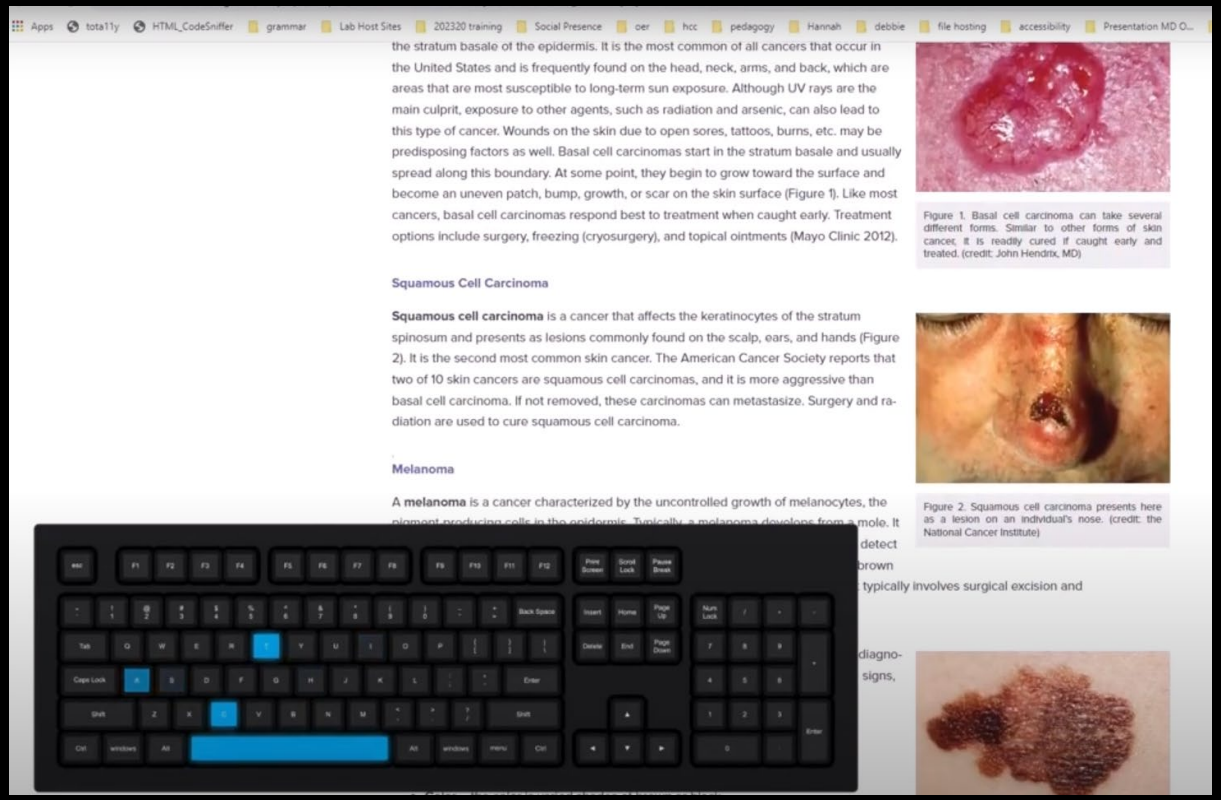
Perceivability in the classroom

I:

- Speak **words**
- Write **text** on the whiteboard
- Show **images**
- Give hardcopy of **words**
- Make **sounds** of frustration

Perceivability in the digital classroom

If it's accessible, we can be reasonably sure that any student can perceive our stuff.

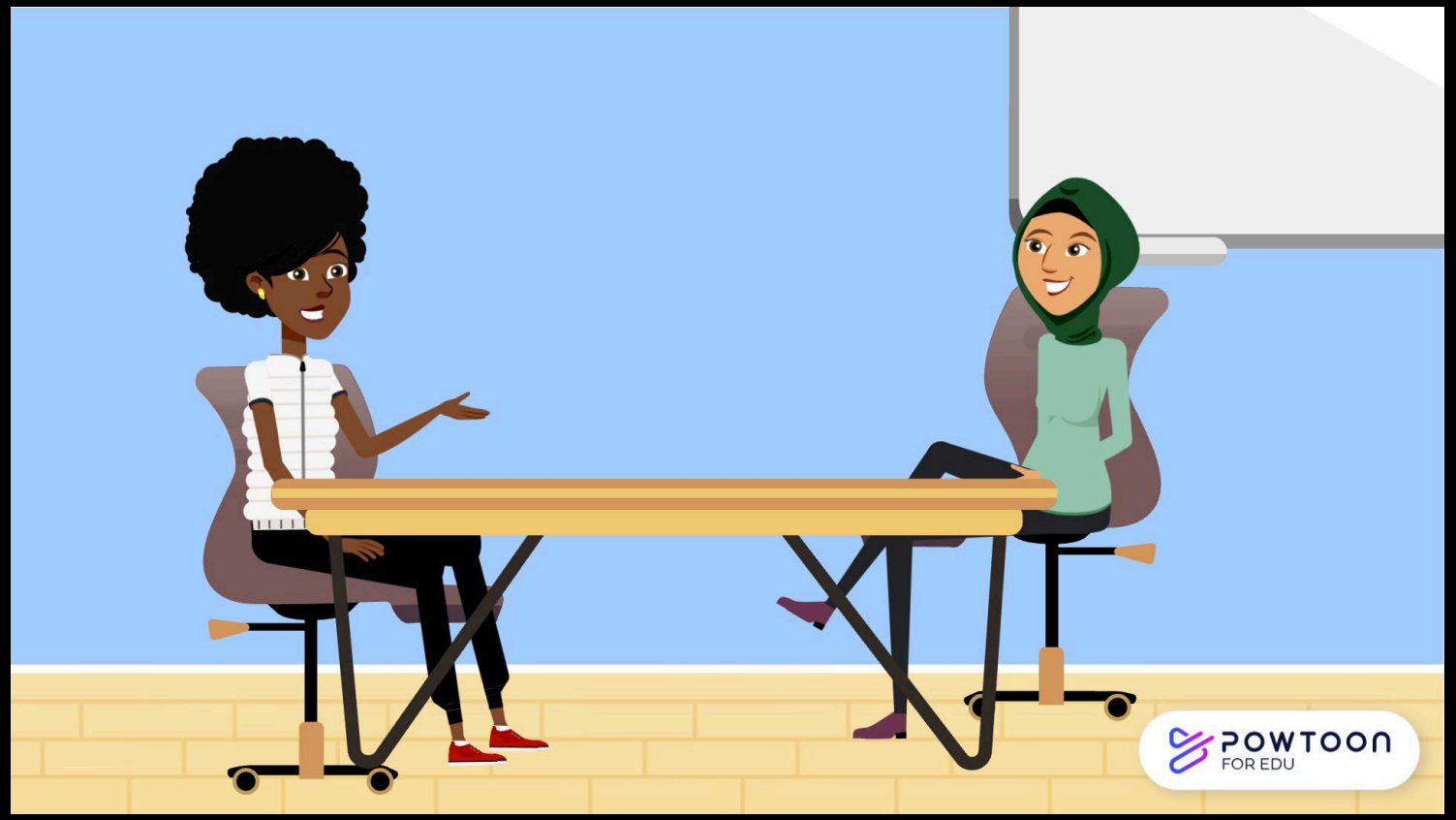


Operable

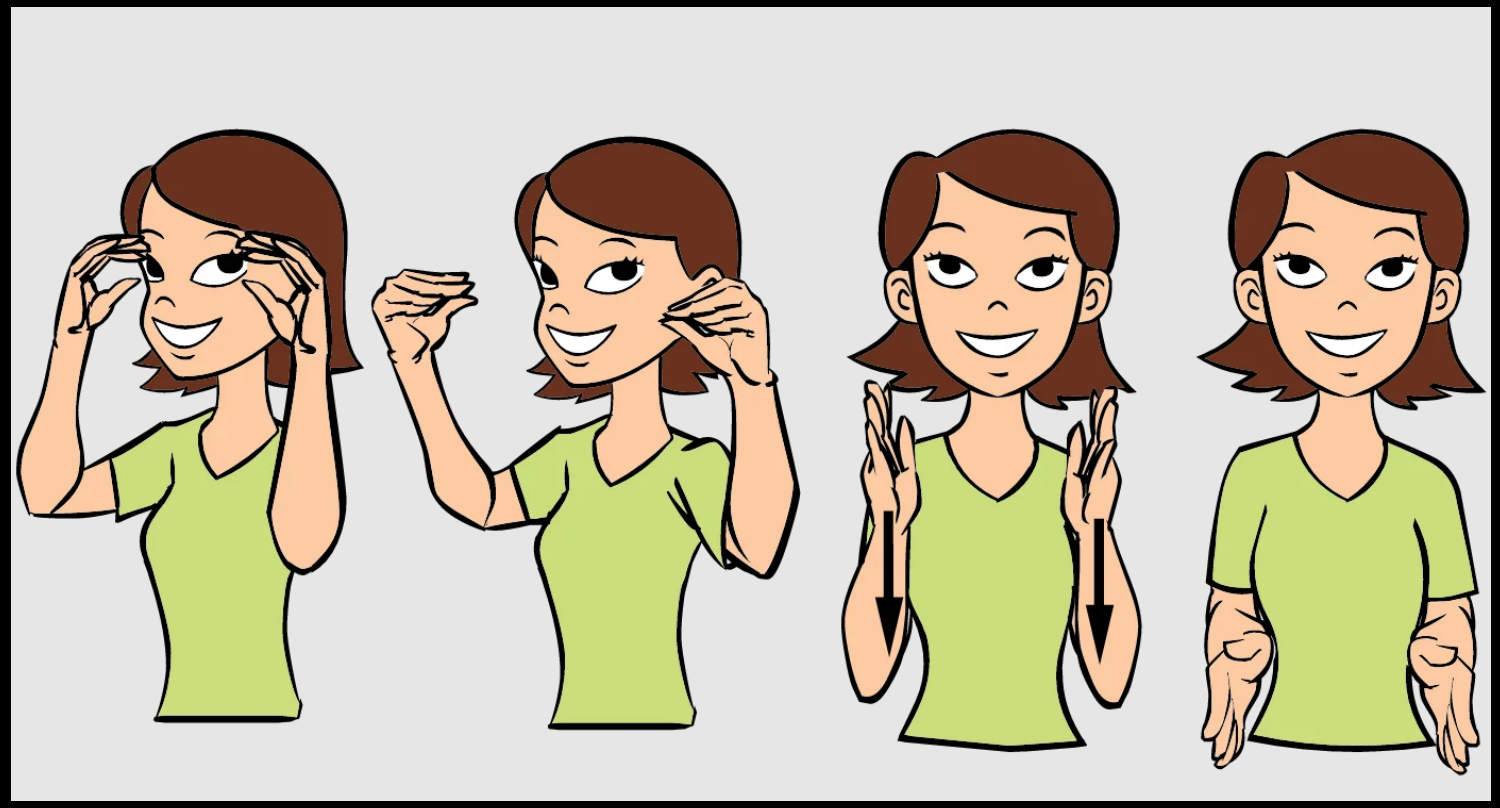
—

I can **act** on this

In the classroom – I **hear** your words

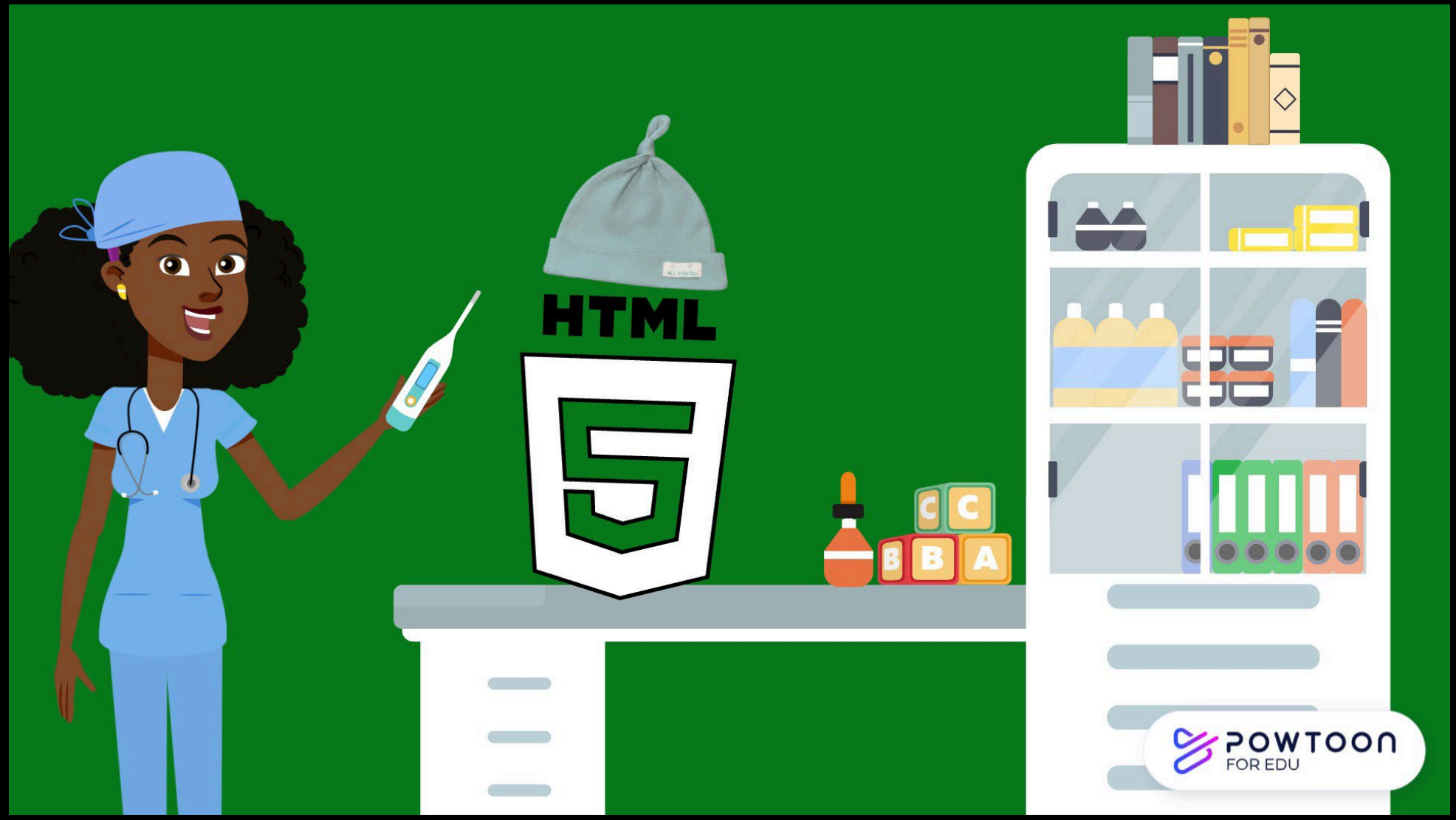


I **see** your words



I **read** your words

It's easier because....


HTML
5
POWTOON
FOR EDU

Gene-Environment Interactions

Putting It Together: Biopsychology

Discussion: Biopsychology

States of Consciousness

Why It Matters: States of Consciousness

Learning Hacks: Mindset

Introduction to Consciousness and Rhythms

Consciousness and Biological Rhythms

Psych in Real Life: Consciousness and Blindsight

When Biological Clocks Get Disrupted

Introduction to Sleep and Dreams

Sleep and Why We Sleep

Stages of Sleep

Dreams and Dreaming

Sleep Problems and Disorders

Introduction to Drugs and Other States of Consciousness

Psychoactive Drugs and Addiction

Alcohol and Other Depressants

Stimulants

Opioids

Hallucinogens

Hypnosis and Meditation

Putting It Together: States of Consciousness

Discussion: States of Consciousness

Attraction and Love

Psych in Real Life: Love and Pain

Introduction to Prejudice, Discrimination, and Aggression

Prejudice and Discrimination

Why do Prejudice and Discrimination Exist?

Aggression

Putting It Together: Social Psychology

Discussion: Social Psychology

Personality

Why It Matters: Personality

Introduction to Psychodynamic Approaches to Personality

What Is Personality?

Freud and the Psychodynamic Perspective

Neo-Freudians: Adler, Erikson, Jung, and Horney

Introduction to Explaining Personality

Learning Approaches

Humanistic Approaches

Biological Approaches

Trait Theorists

Cultural Understandings of Personality

Introduction to Measuring Personality

Personality Assessment

Psych in Real Life: Blirtatiousness, Questionnaires, and Validity

In the digital world

This is anchor text (perceive).

I can **select** the link.

Oh and...

Stop saying "click."

I'm redirected

- Differentiate between REM and non-REM sleep
- Describe the stages of sleep

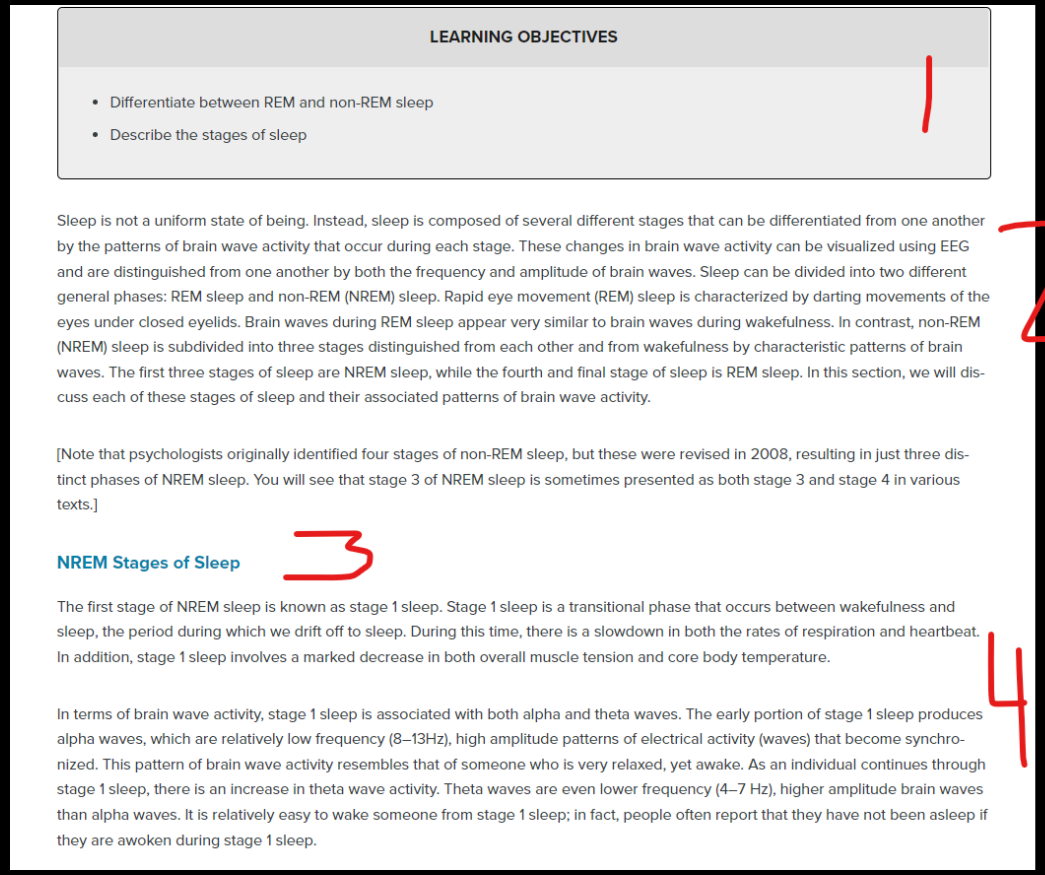
Sleep is not a uniform state of being. Instead, sleep is composed of several different stages that can be differentiated from one another by the patterns of brain wave activity that occur during each stage. These changes in brain wave activity can be visualized using EEG and are distinguished from one another by both the frequency and amplitude of brain waves. Sleep can be divided into two different general phases: REM sleep and non-REM (NREM) sleep. Rapid eye movement (REM) sleep is characterized by darting movements of the eyes under closed eyelids. Brain waves during REM sleep appear very similar to brain waves during wakefulness. In contrast, non-REM (NREM) sleep is subdivided into three stages distinguished from each other and from wakefulness by characteristic patterns of brain waves. The first three stages of sleep are NREM sleep, while the fourth and final stage of sleep is REM sleep. In this section, we will discuss each of these stages of sleep and their associated patterns of brain wave activity.

[Note that psychologists originally identified four stages of non-REM sleep, but these were revised in 2008, resulting in just three distinct phases of NREM sleep. You will see that stage 3 of NREM sleep is sometimes presented as both stage 3 and stage 4 in various texts.]

Makes sense...because anchor text made sense.

Operability

Navigate in logical order



LEARNING OBJECTIVES

- Differentiate between REM and non-REM sleep
- Describe the stages of sleep

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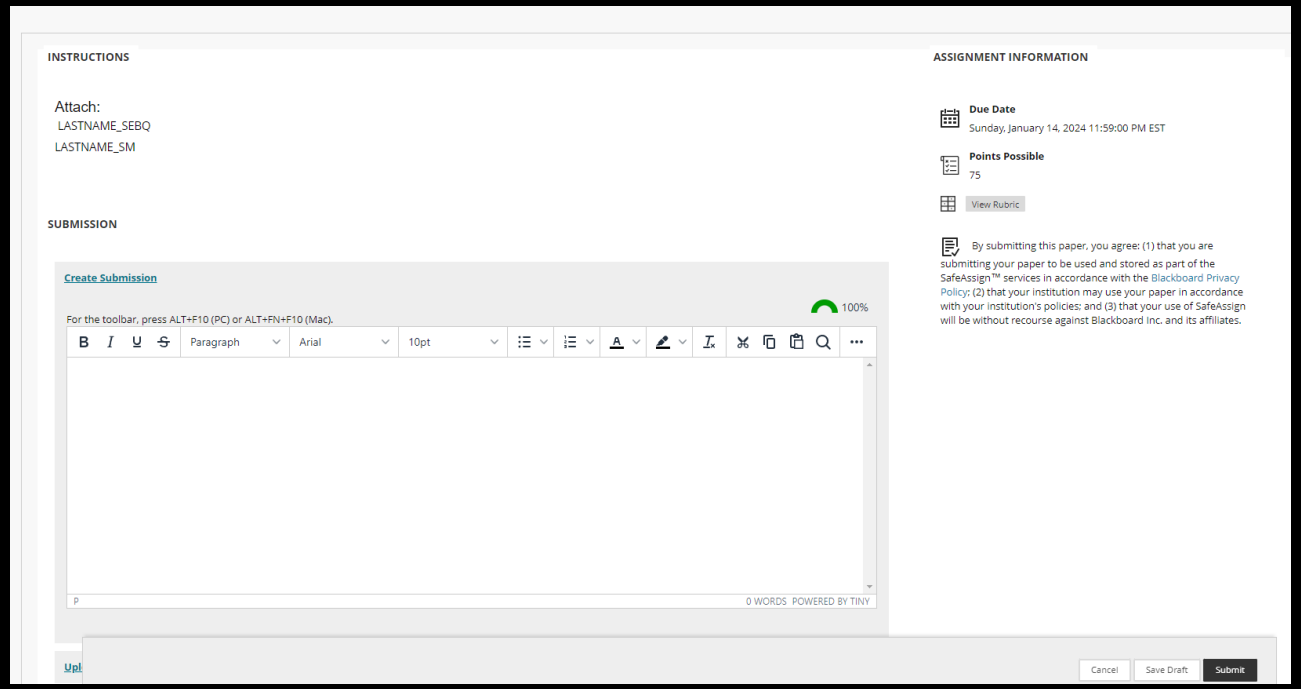
NREM Stages of Sleep

The first stage of NREM sleep is known as stage 1 sleep. Stage 1 sleep is a transitional phase that occurs between wakefulness and sleep, the period during which we drift off to sleep. During this time, there is a slowdown in both the rates of respiration and heartbeat. In addition, stage 1 sleep involves a marked decrease in both overall muscle tension and core body temperature.

In terms of brain wave activity, stage 1 sleep is associated with both alpha and theta waves. The early portion of stage 1 sleep produces alpha waves, which are relatively low frequency (8–13Hz), high amplitude patterns of electrical activity (waves) that become synchronized. This pattern of brain wave activity resembles that of someone who is very relaxed, yet awake. As an individual continues through stage 1 sleep, there is an increase in theta wave activity. Theta waves are even lower frequency (4–7 Hz), higher amplitude brain waves than alpha waves. It is relatively easy to wake someone from stage 1 sleep; in fact, people often report that they have not been asleep if they are awoken during stage 1 sleep.

Enter response in text box



INSTRUCTIONS

Attach:
LASTNAME_SEBQ
LASTNAME_SM

SUBMISSION

Create Submission

100%

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph | Arial | 10pt

P

0 WORDS POWERED BY TINY

Cancel | Save Draft | Submit

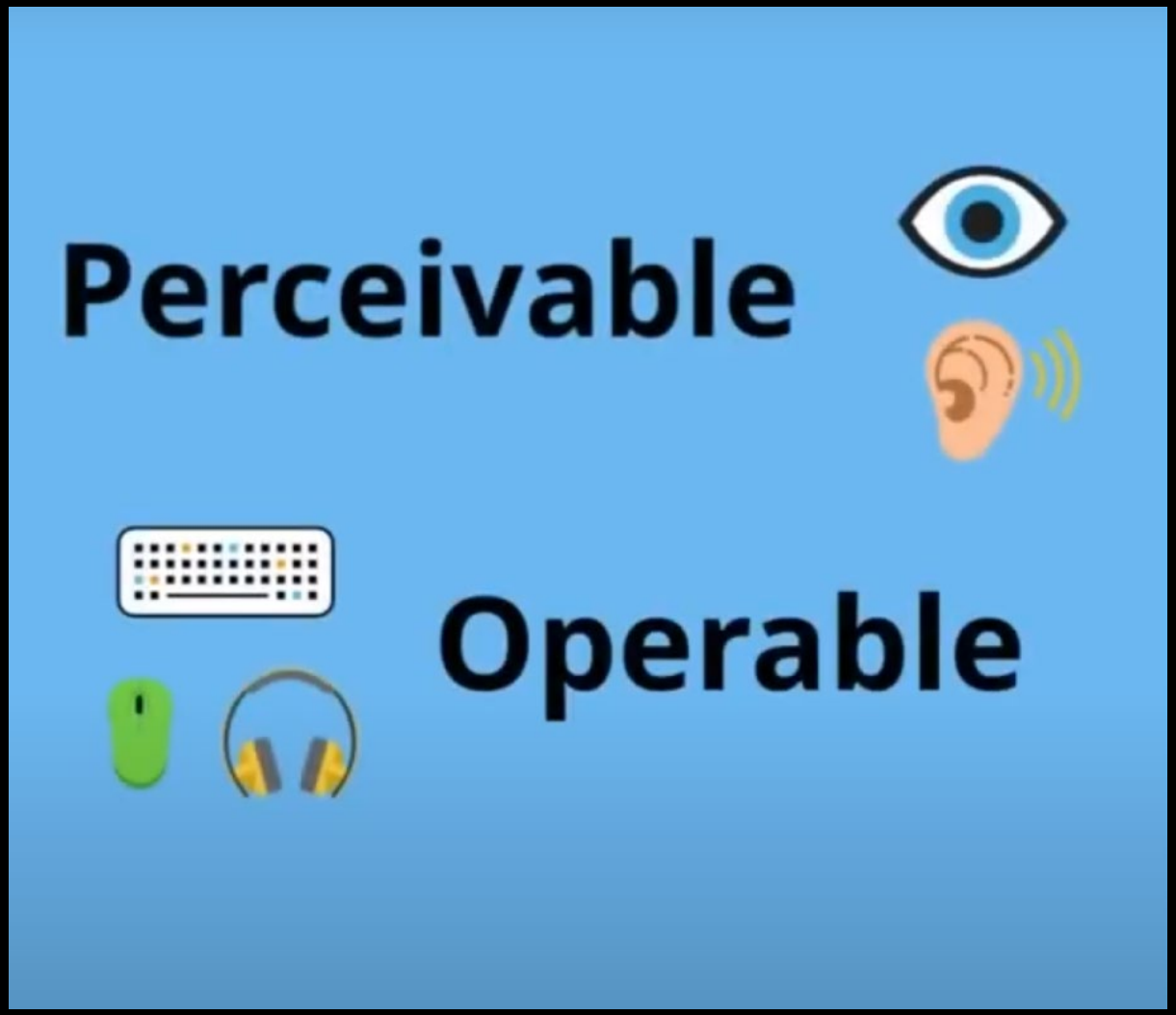
ASSIGNMENT INFORMATION

Due Date
Sunday, January 14, 2024 11:59:00 PM EST

Points Possible
75

View Rubric

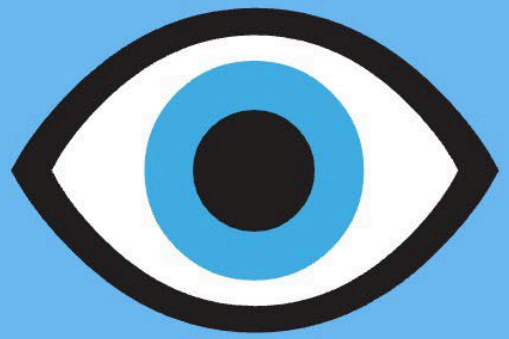
By submitting this paper, you agree: (1) that you are submitting your paper to be used and stored as part of the SafeAssign™ services in accordance with the Blackboard Privacy Policy; (2) that your institution may use your paper in accordance with your institution's policies; and (3) that your use of SafeAssign will be without recourse against Blackboard Inc. and its affiliates.



Overlap

Reasonably certain that perceivable digital information is also operable...most of the time.

Assistive Technology



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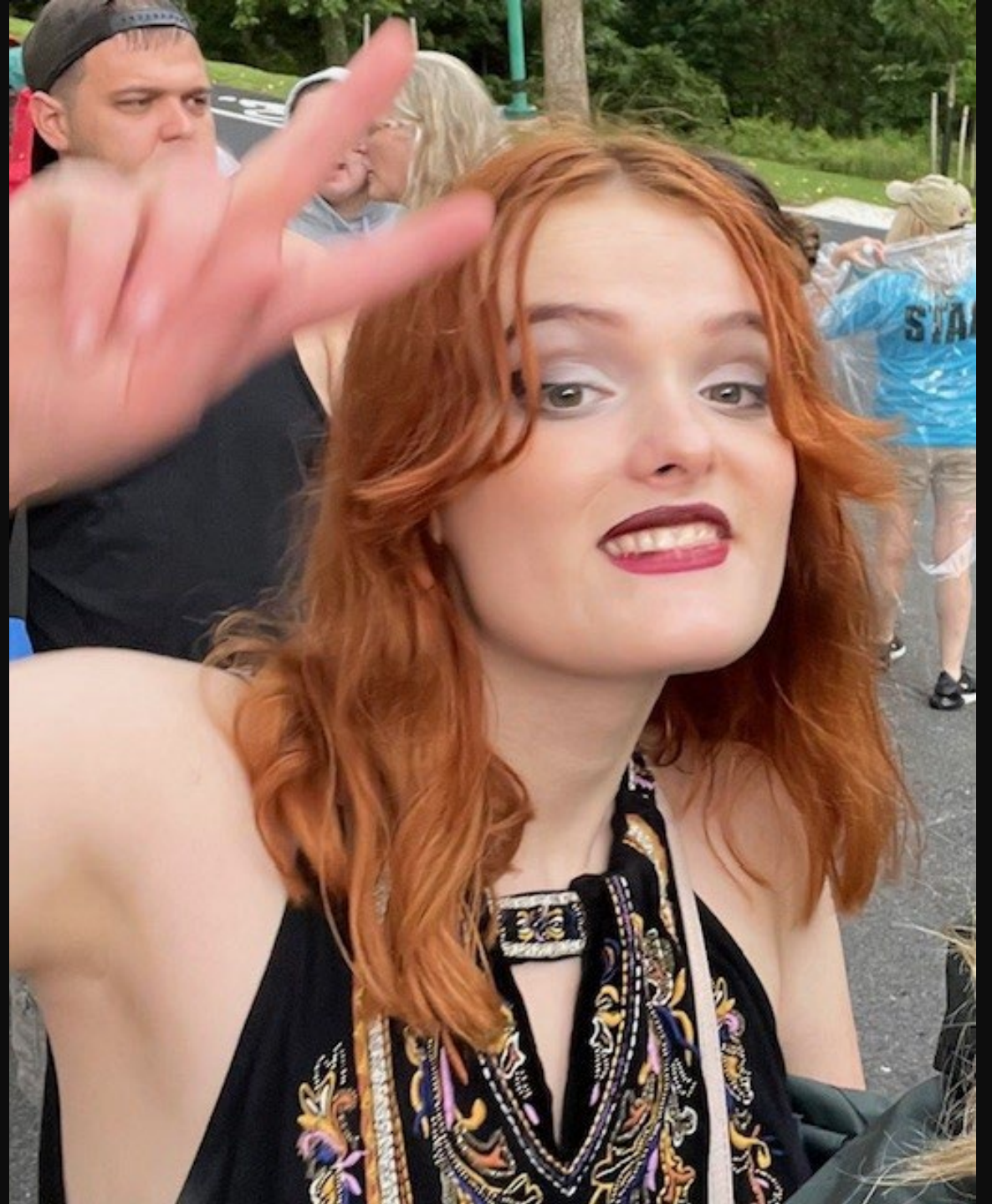
Perceivability

Not just about disability.....

Example

Wanted for Netflix thievery.



I recently became annoyed....

I'm Gen X

Captions obstruct my view...
And...
Given that I represent one of the most individualistic generations ever....
This was a personal affront.

Seriously?

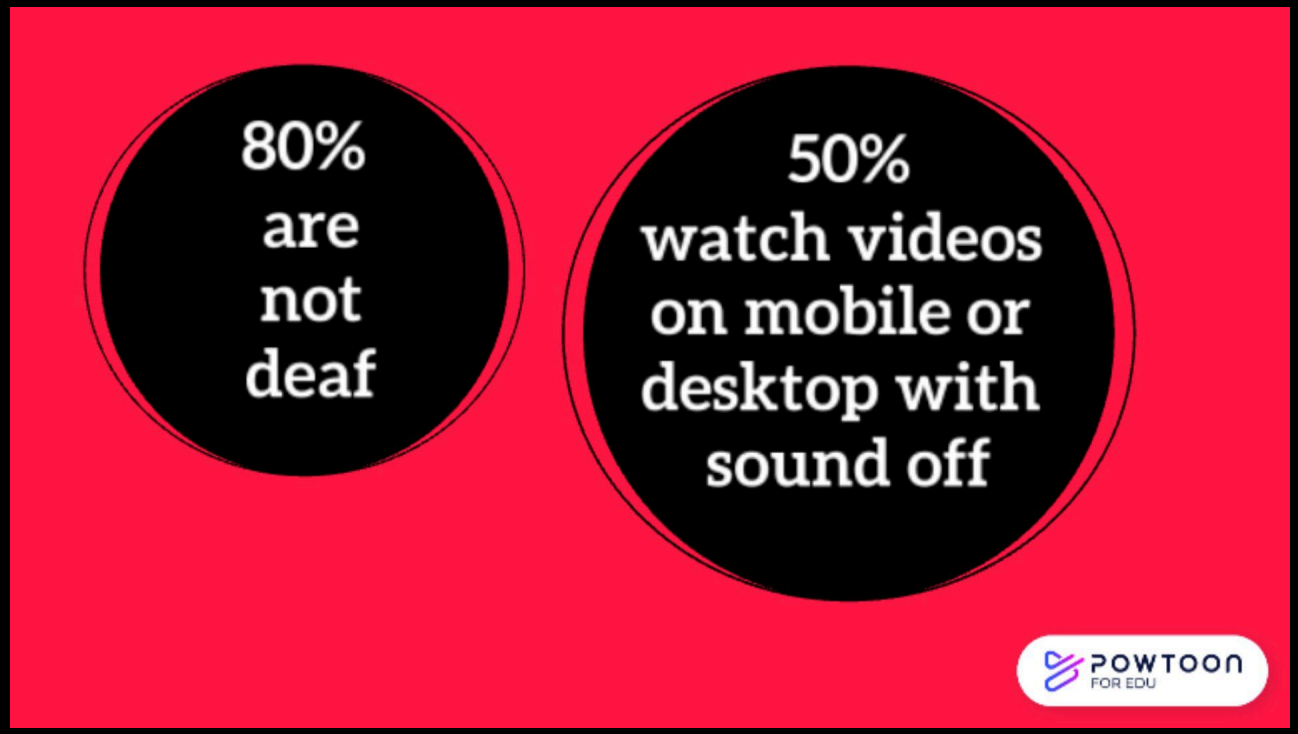

but there's other indicators
of whether or not you're making progress.
POWTOON
FOR EDU


W&M
POWTOON
FOR EDU

Purveyor of digital content (Verizon)

2019 survey:

- 5600 people
- 18 to 54 years

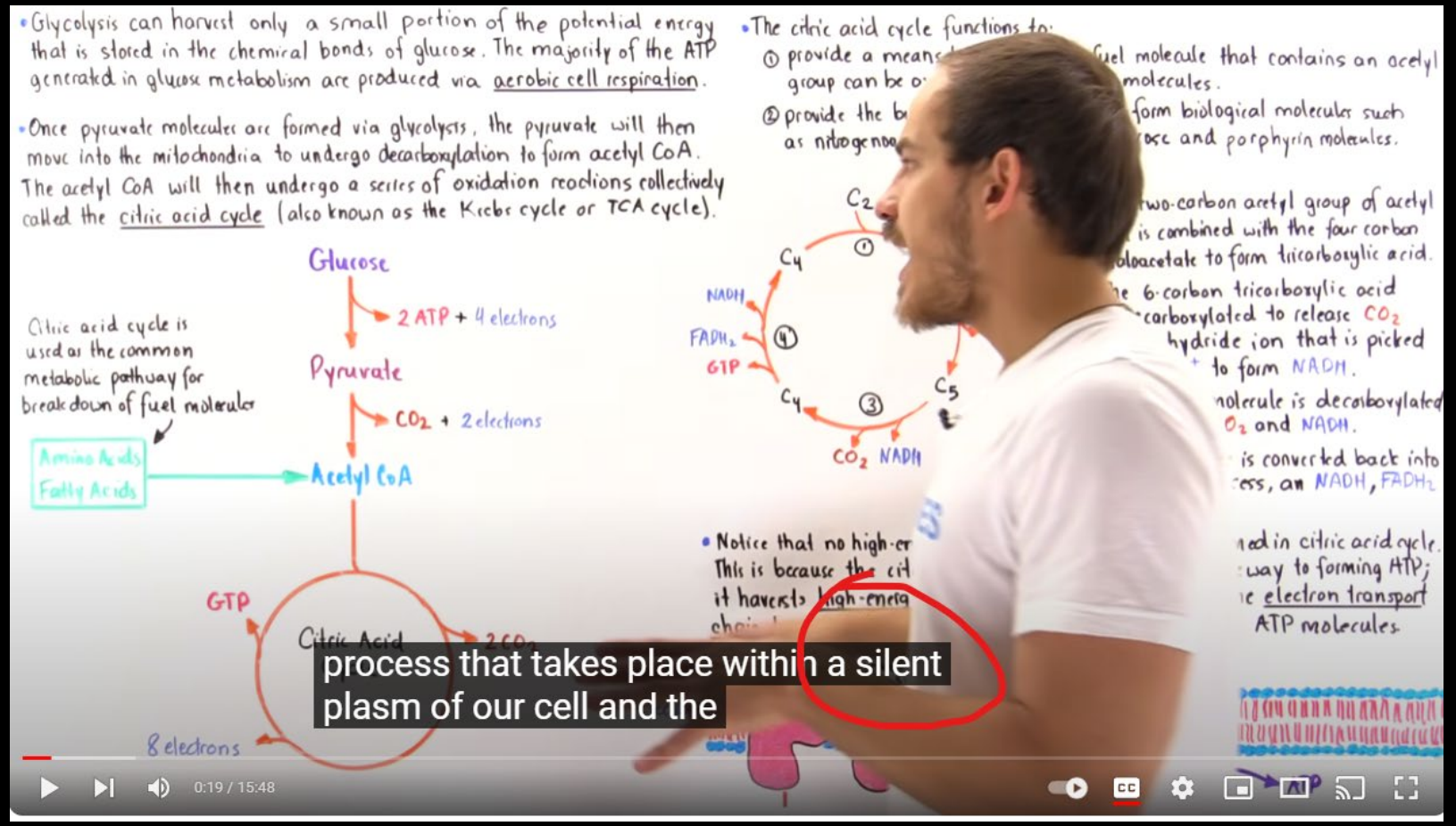


Streaming Media

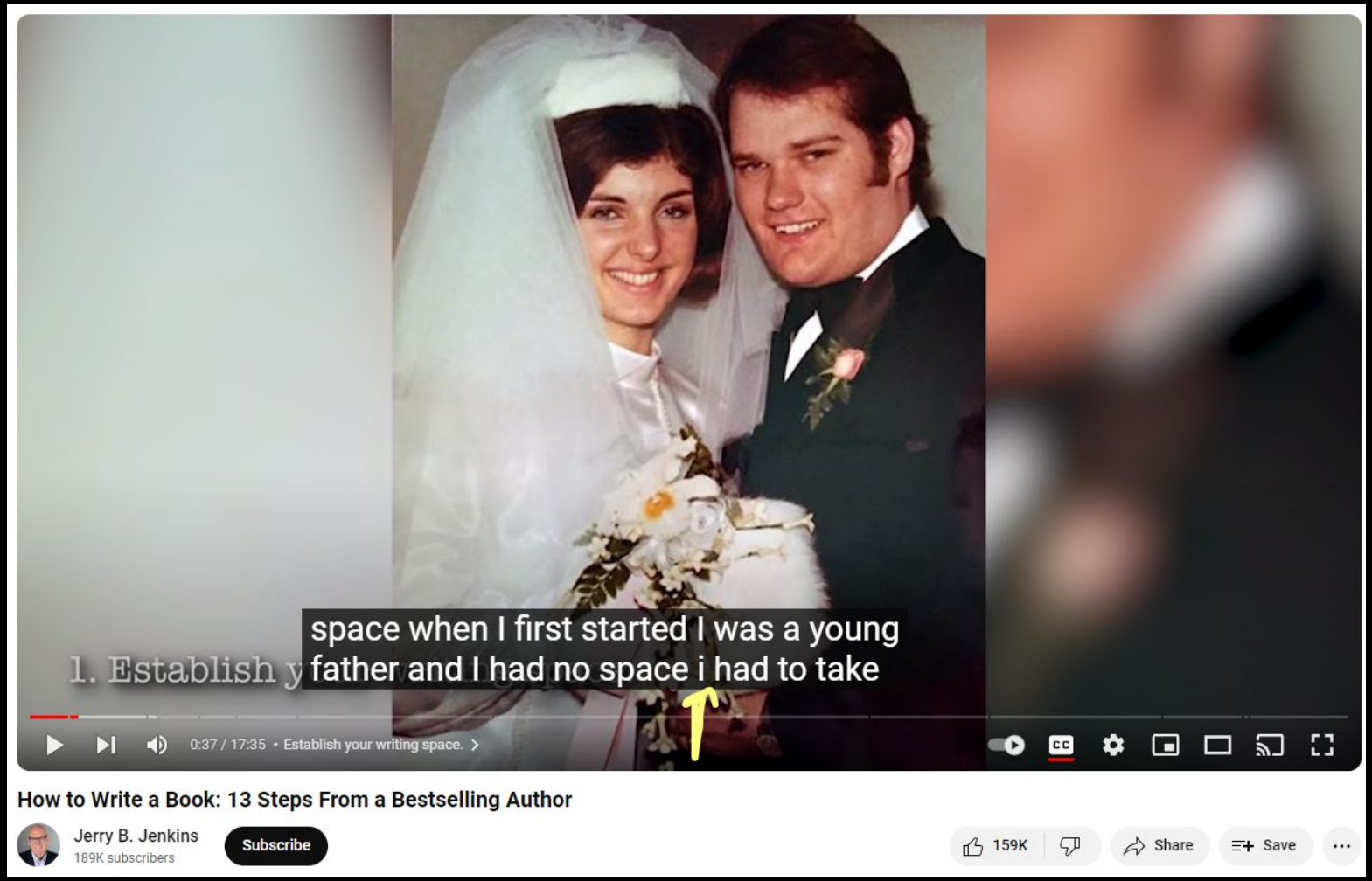
Captions for pre-recorded video

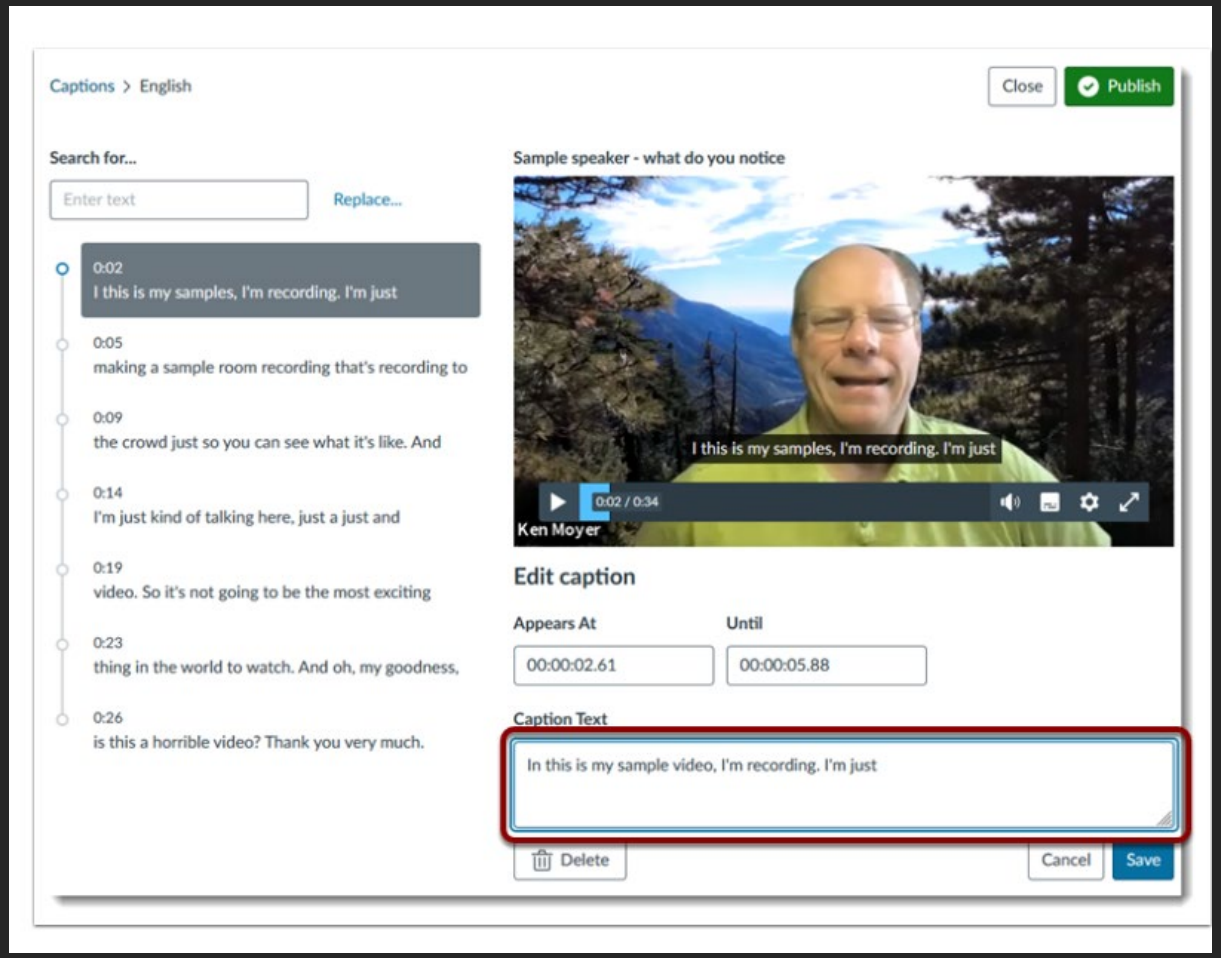
- Synchronized
- Accurate
- Speech-to-text has come a long way, but.....

STEM fail


Glycolysis can harvest only a small portion of the potential energy that is stored in the chemical bonds of glucose. The majority of the ATP generated in glucose metabolism are produced via aerobic cell respiration.
Once pyruvate molecules are formed via glycolysis, the pyruvate will then move into the mitochondria to undergo decarboxylation to form acetyl CoA. The acetyl CoA will then undergo a series of oxidation reactions collectively called the citric acid cycle (also known as the Krebs cycle or TCA cycle).
Glucose
2 ATP + 4 electrons
Pyruvate
CO2 + 2 electrons
Acetyl CoA
Citric acid cycle is used as the common metabolic pathway for breakdown of fuel molecules
Amino Acids
Fatty Acids
GTP
Citric Acid
2 CO2
8 electrons
The citric acid cycle functions to:
provide a means
provide the
as nitrogenous
fuel molecule that contains an acetyl
molecules.
form biological molecules such
ose and porphyrin molecules.
two-carbon acetyl group of acetyl
is combined with the four carbon
loacetate to form tricarboxylic acid.
e 6-carbon tricarboxylic acid
carboxylated to release CO2
hydride ion that is picked
to form NADH.
molecule is decarboxylated
O2 and NADH.
is converted back into
ess, an NADH, FADH2
ed in citric acid cycle.
way to forming ATP;
e electron transport
ATP molecules
C2
C4
C5
NADH
FADH2
GTP
CO2 NADH
Notice that no high-er
This is because the cit
it harvests high-energ
process that takes place within a silent
plasm of our cell and the
0:19 / 15:48

Grrrrrr


space when I first started I was a young
father and I had no space i had to take
1. Establish y
0:37 / 17:35 • Establish your writing space.
How to Write a Book: 13 Steps From a Bestselling Author
Jerry B. Jenkins
189K subscribers
Subscribe
159K
Share
Save



Canvas Studio
D2L Media Center
Microsoft Streams

—

- Auto-caption
- Edit

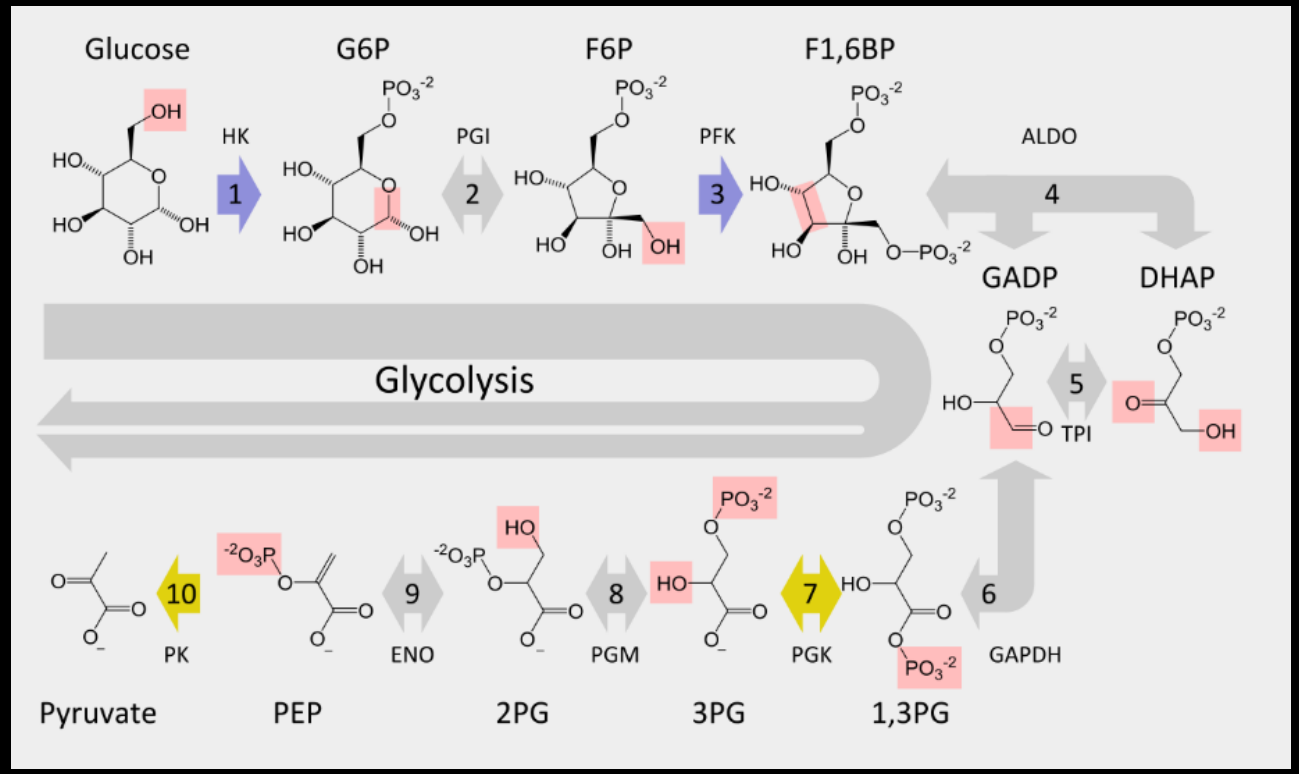
Why is this both easy and difficult?

- Frequency of producing *stuff*
- Time crunch
- "Good enough"

Alt Text

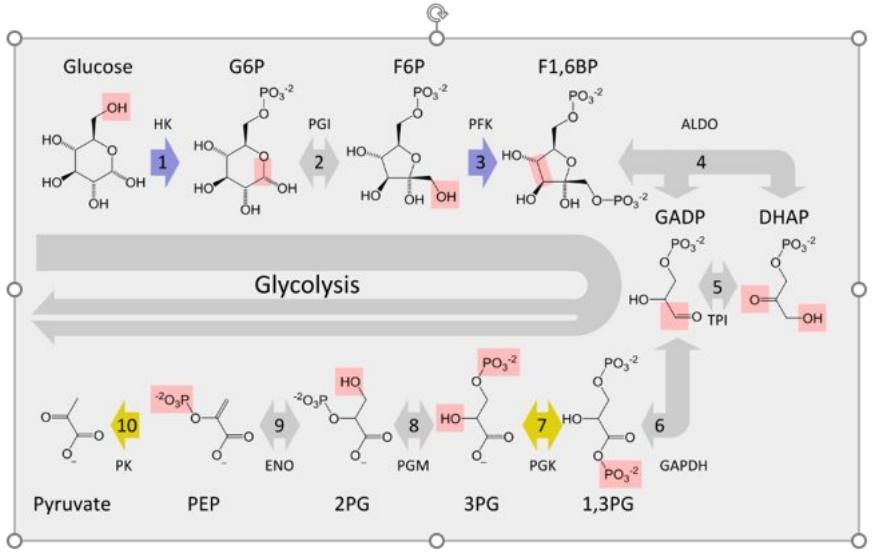
Textual substitute for non-text content.

Alternative text...challenging



PowerPoint autogenerated....no duh.

Alternative Text...Challenging



How would you describe this object and its context to someone who is blind or low vision?
- The subject(s) in detail
- The setting
- The actions or interactions
- Other relevant information

(1-2 sentences recommended)

A diagram of a chemical structure

Description automatically generated

Approve alt text

Mark as decorative

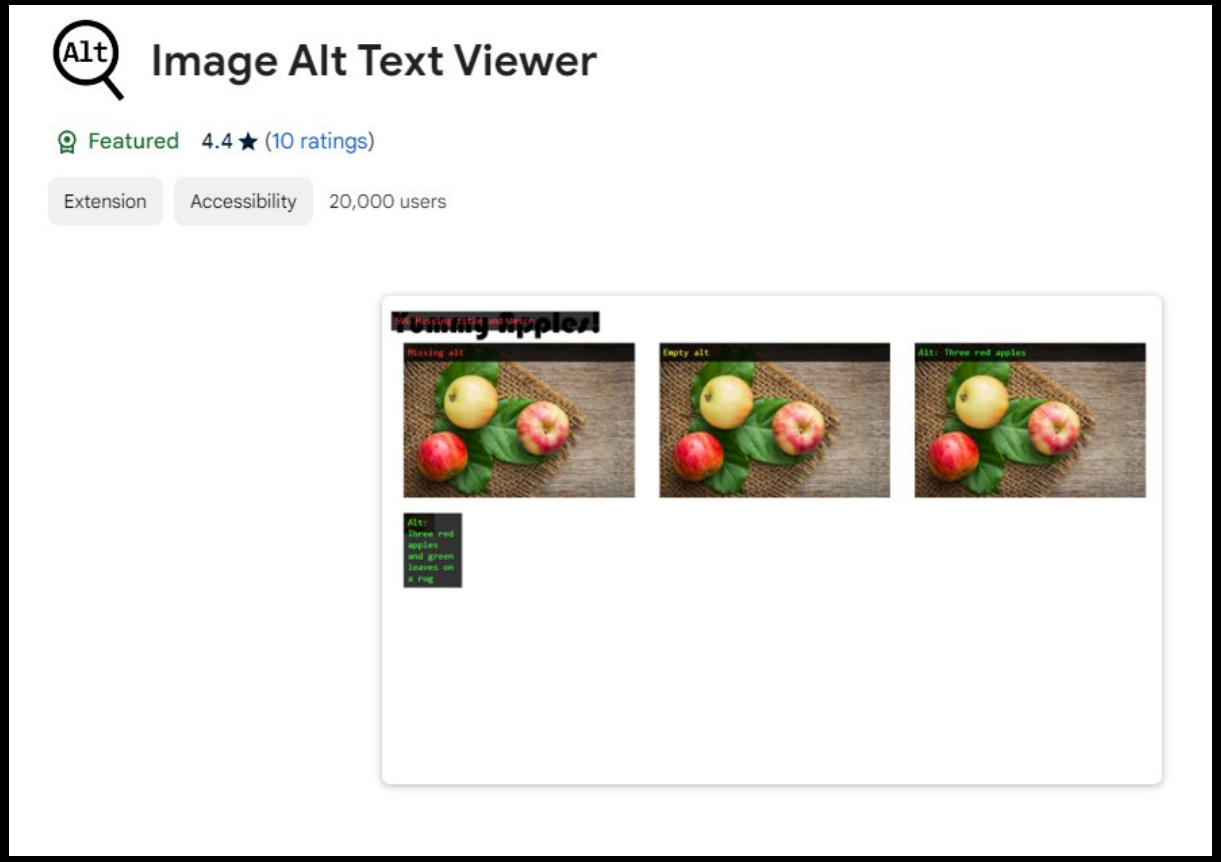
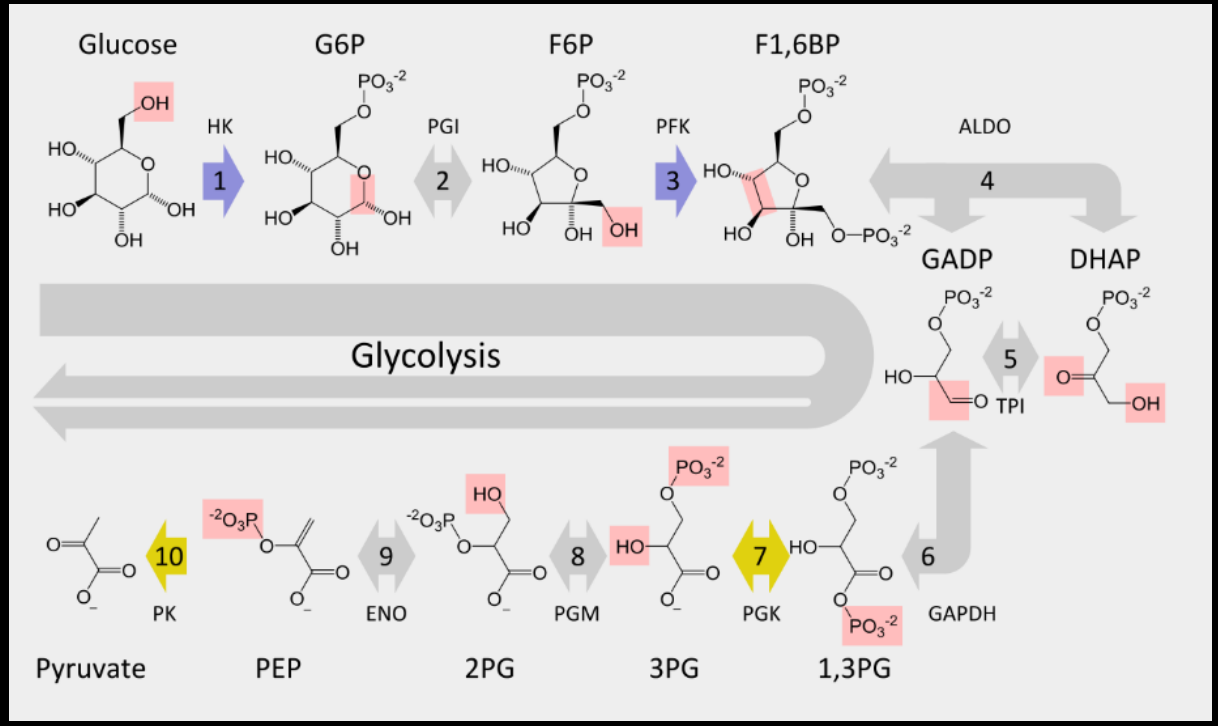


Image Alt Text Viewer for Chrome

- [Image Alt Text Viewer for Chrome]
- No copy/ paste
- Created by someone else
- Jump off point
- "Good" AI = $$$$$$$
- I am a lowly professor



Yes, I Wrote This Out

The metabolic pathway of glycolysis converts glucose to pyruvate via a series of intermediate metabolites. Each chemical modification (red box) is performed by a different enzyme. Steps 1 and 3 consume ATP (blue) and steps 7 and 10 produce ATP (yellow)/ Since steps 6 through 10 occur twice per glucose molecule, this leads to a net production of energy.

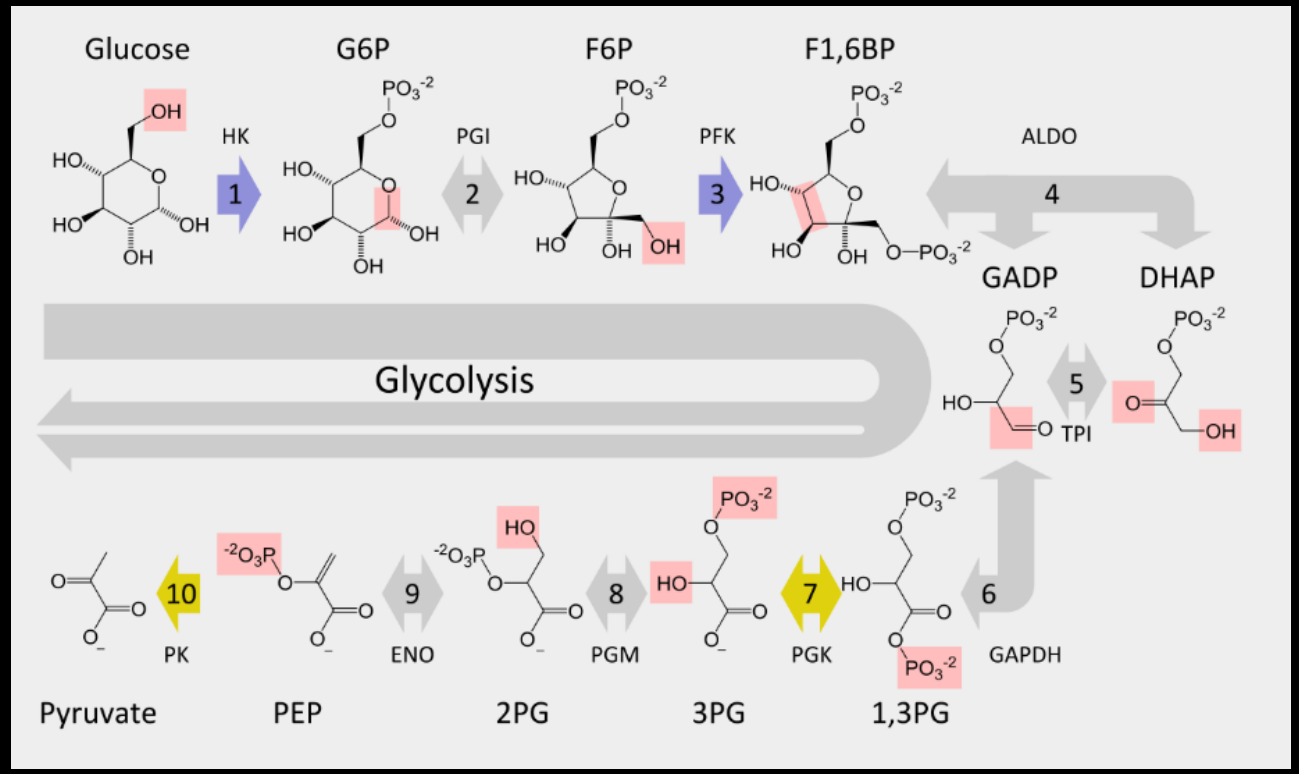
An image should have sufficient alternative text that the learner **does not have to rely on surrounding text**, including **image captions**, to **perceive its purpose** *and* it **should not be redundant** to the same information as **text near the image**.

So why alt text?

"Okay, well if the text around it does explain the image, why does it need alt text?"

My challenge to you....

Why do we use this in the first place?



This vs. That

Outcomes of Glycolysis

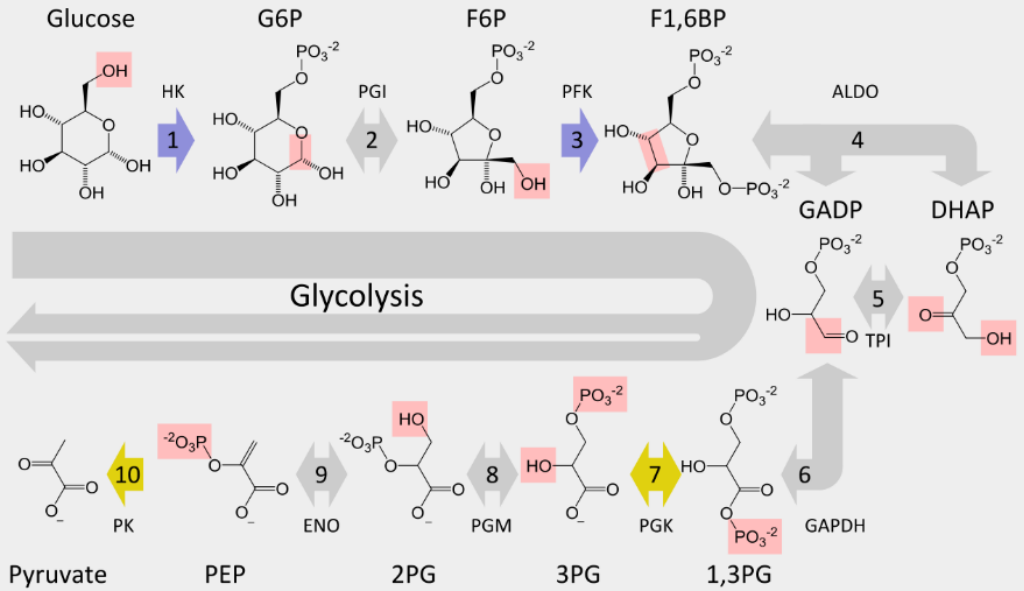
Glycolysis starts with glucose and ends with two pyruvate molecules, a total of four ATP molecules and two molecules of NADH. Two ATP molecules were used in the first half of the pathway to prepare the six-carbon ring for cleavage, so the cell has a net gain of two ATP molecules and two NADH molecules for its use.

If the cell cannot catabolize the pyruvate molecules further, it will harvest only two ATP molecules from one molecule of glucose. Mature mammalian red blood cells are not capable of **aerobic respiration**—the process in which organisms convert energy in the presence of oxygen—and glycolysis is their sole source of ATP. If glycolysis is interrupted, these cells lose their ability to maintain their sodium-potassium pumps, and eventually, they die.

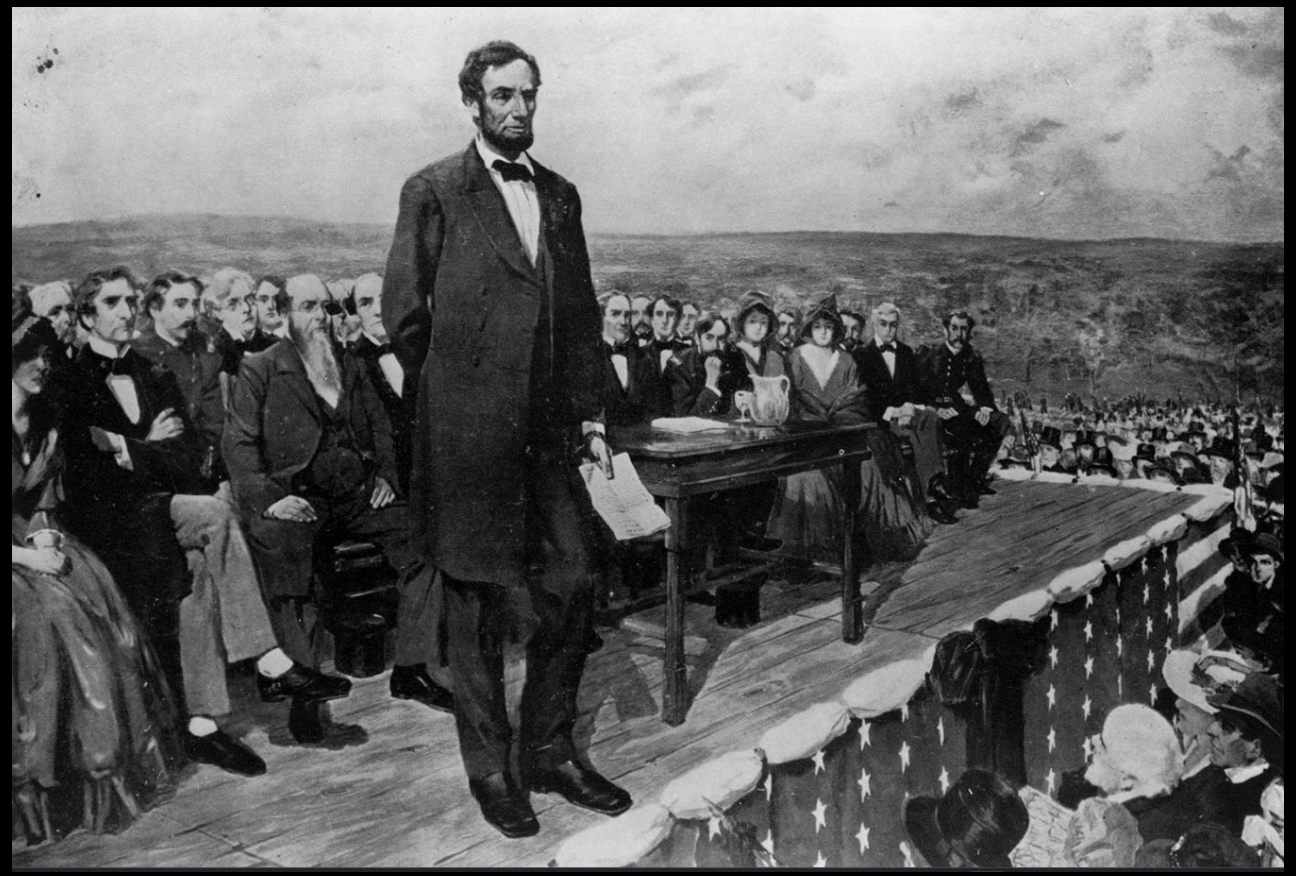
The last step in glycolysis will not occur if pyruvate kinase, the enzyme that catalyzes the formation of pyruvate, is not available in sufficient quantities. In this situation, the entire glycolysis pathway will proceed, but only two ATP molecules will be made in the second half. Thus, pyruvate kinase is a rate-limiting enzyme for glycolysis.

Glycolysis is the first pathway used in the breakdown of glucose to extract energy. It was probably one of the earliest metabolic pathways to evolve and is used by nearly all of the organisms on earth. Glycolysis consists of two parts: The first part prepares the six-carbon ring of glucose for cleavage into two three-carbon sugars. ATP is invested in the process during this half to energize the separation. The second half of glycolysis extracts ATP and high-energy electrons from hydrogen atoms and attaches them to NAD^+. Two ATP molecules are invested in the first half and four ATP molecules are formed by substrate phosphorylation during the second half. This produces a net gain of two ATP and two NADH molecules for the cell.

Figure 4 shows the entire process of glycolysis in one image:

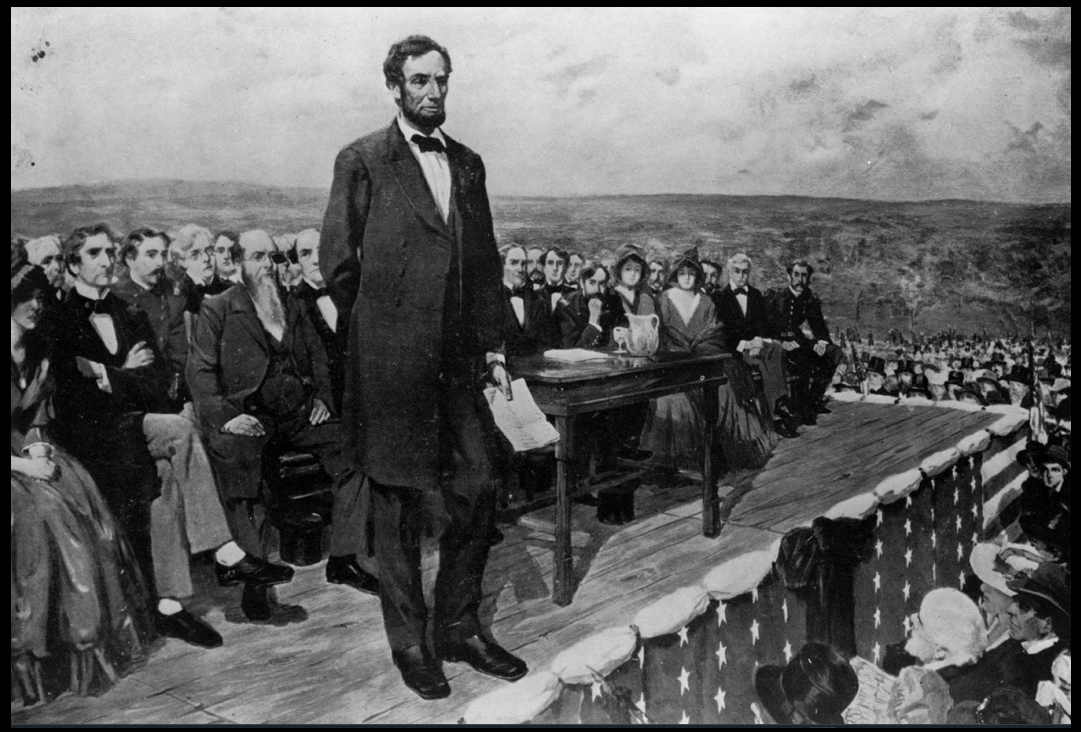


Alternative way to *perceive* information

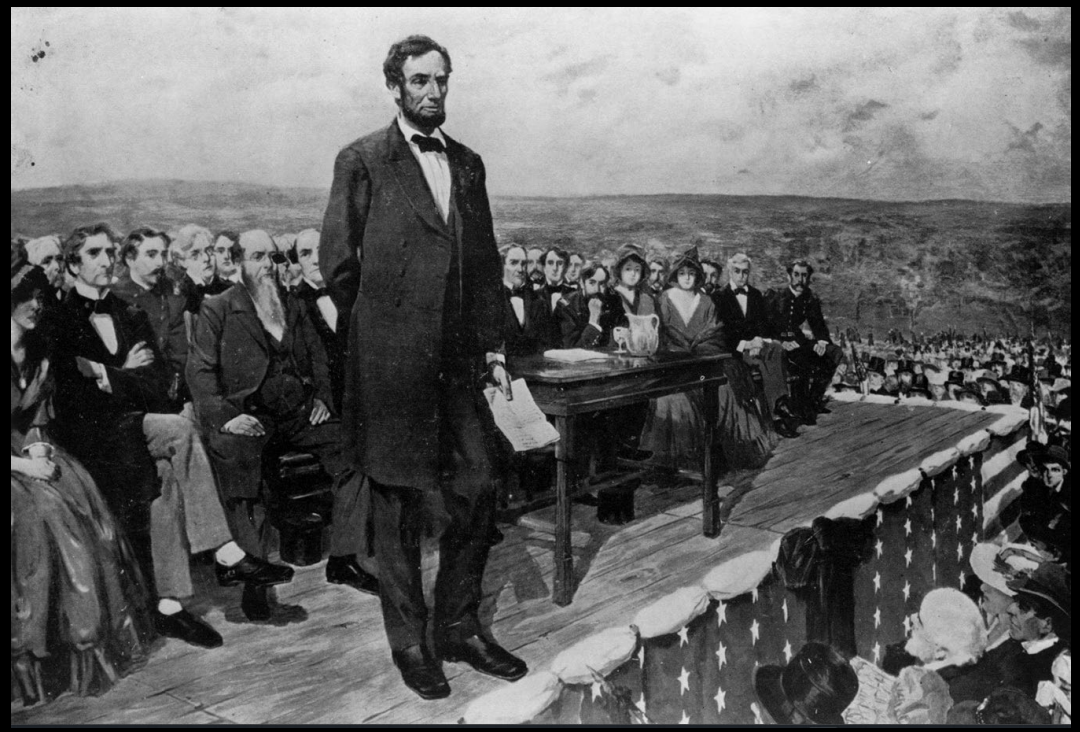


Tell an educator to describe this in 1 sentence

American History



Art History



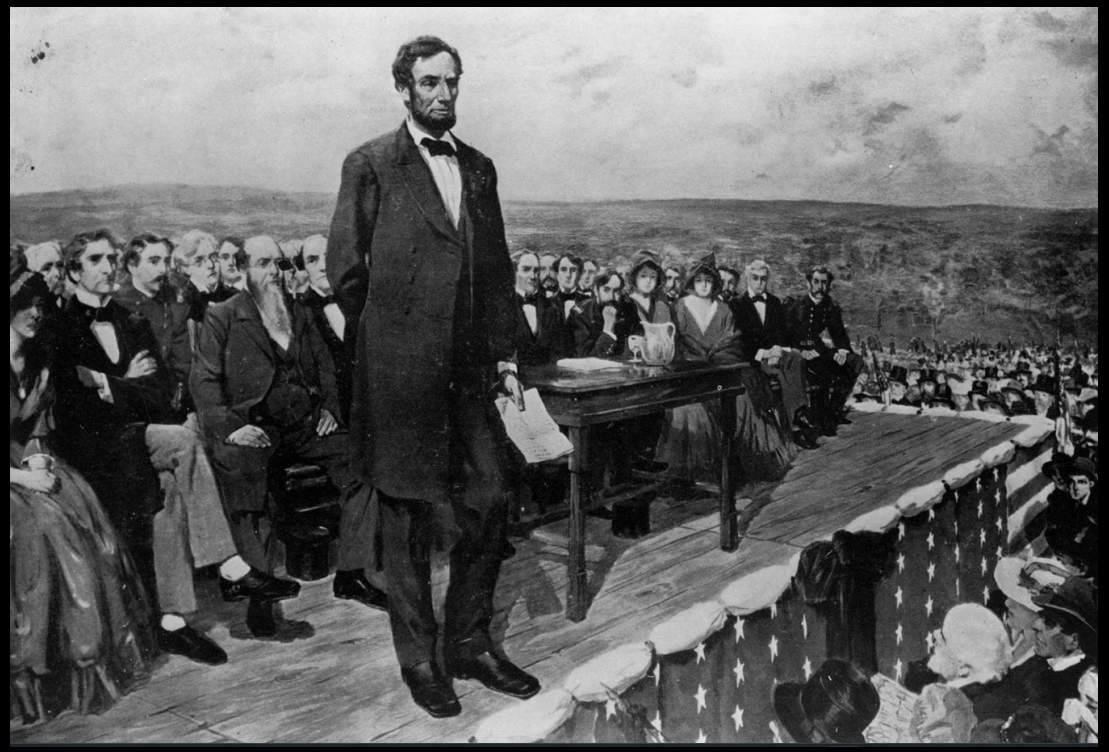
Low tech alternative to AI

- Just Press Record app
  - Pretend I'm in the classroom
  - Converts speech to text file
  - Clean it up/ endeavor to be succinct.

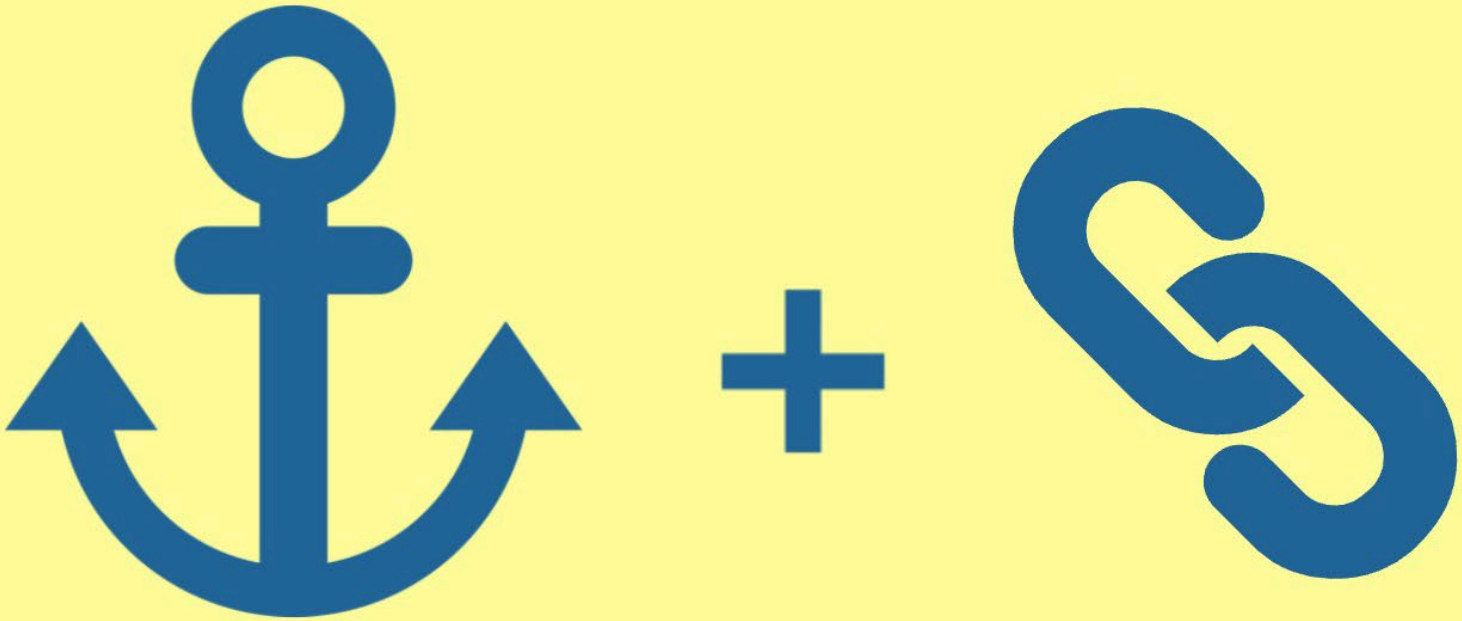
Don't do this

- Start with "image of"
- The screen reader already does this

It would sound like this…

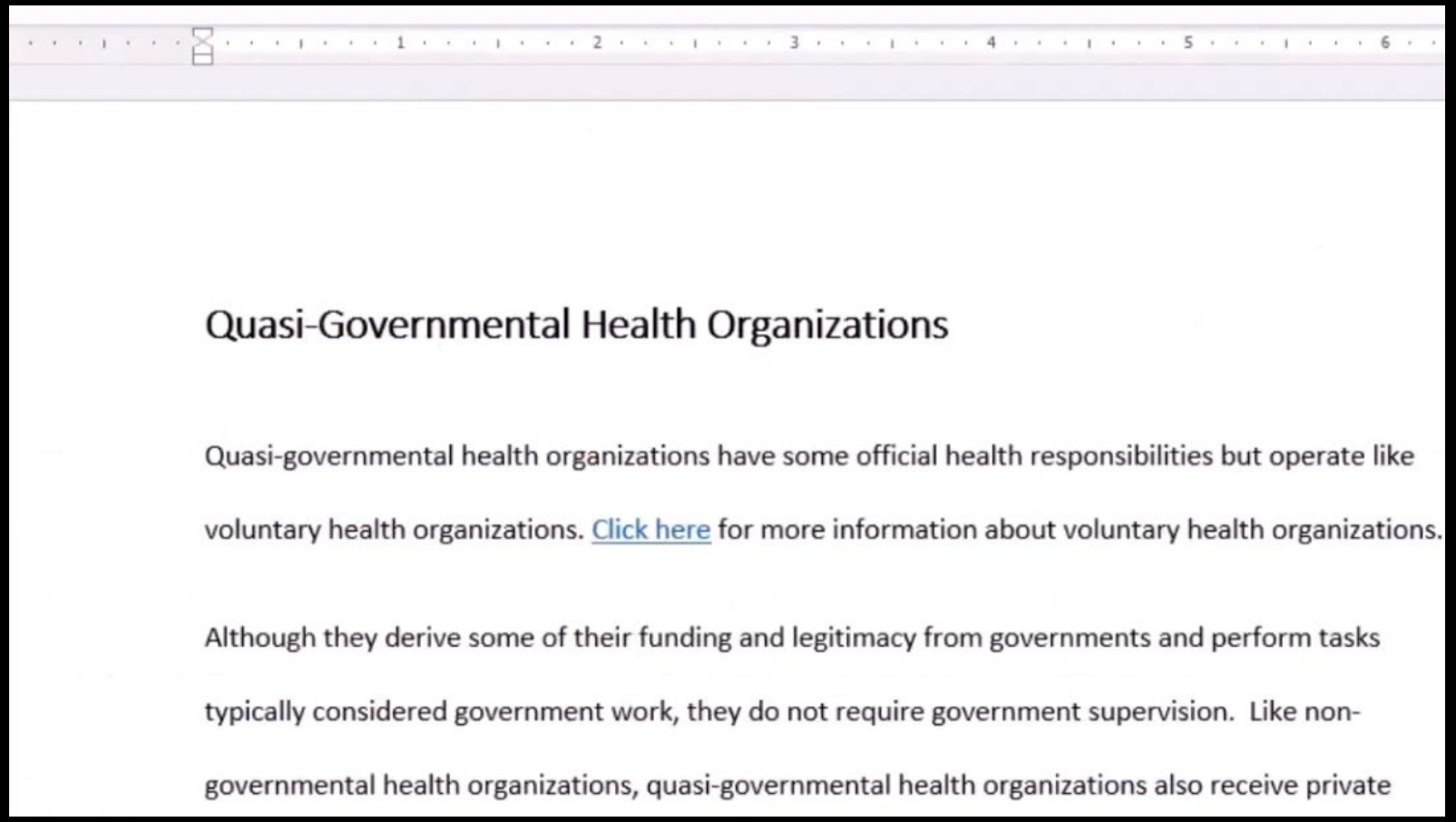


Graphic image of image of Abraham Lincoln standing on a raised platform while delivering the Gettysburg Address. Politicians are seated behind him. A crowd of citizens stand below him.



Anchor Text

Break this bad habit



Quasi-Governmental Health Organizations

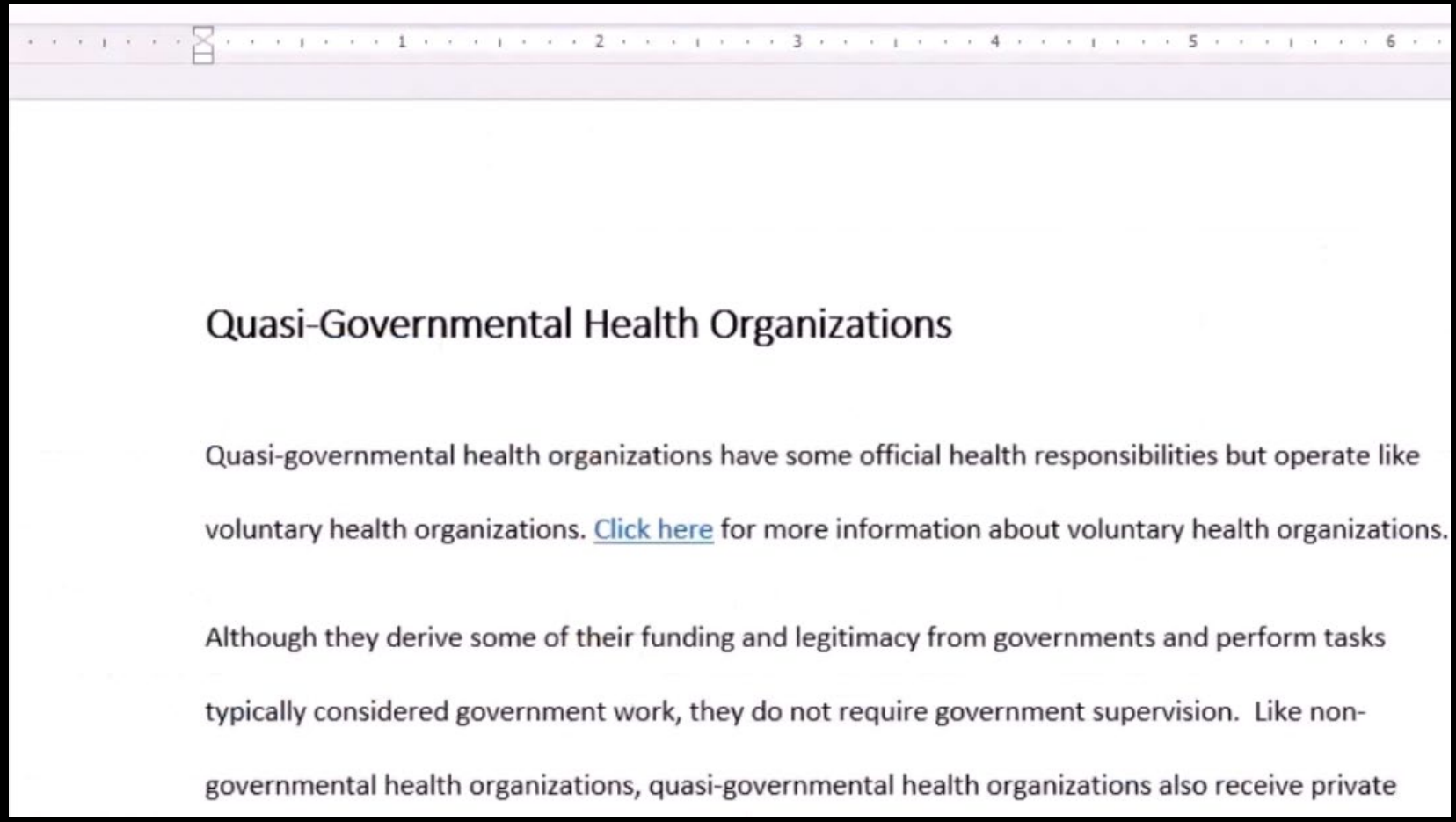
Quasi-governmental health organizations have some official health responsibilities but operate like voluntary health organizations. Click here for more information about voluntary health organizations.

Although they derive some of their funding and legitimacy from governments and perform tasks typically considered government work, they do not require government supervision. Like non-governmental health organizations, quasi-governmental health organizations also receive private

Reasons

- Not all learners use a mouse
- Where does *here* take me?

Sounds like this



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Not sure why this pops up from time to time

Quasi-Governmental Health Organizations

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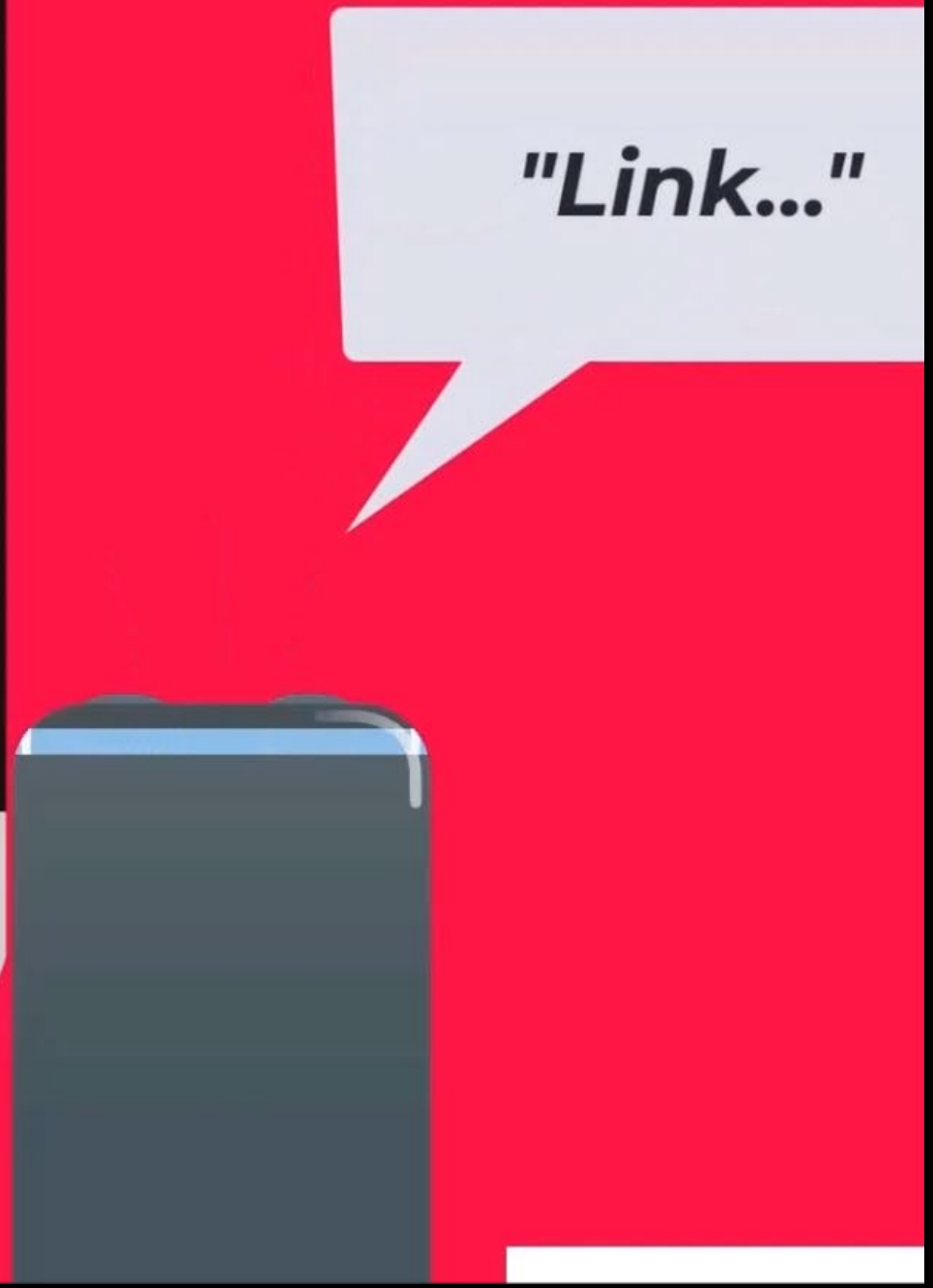

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Do these 3 things

- Fix your auto-caption errors.
  - Punctuation
  - Spelling
- Provide meaningful alternative text.
  - Concise
  - Context
- Avoid ambiguous anchor text.
  - Meaningful independent of surrounding text

Keep in touch

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- Harford Community College
- ddorsey@harford.edu