Digital Learning Workshop Series

Cultivating Digital Fluency in the Classroom

WORKSHOP FOUR

University of Houston-Downtown
Center for Teaching and Learning Excellence

About this Workshop

Our Team

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Graphic Designer, CTLE

The Goal of this Workshop

Build awareness of Digital Fluency competencies and strategies for helping students enhance their digital fluency skills.

The Outcomes:

- Attendees will be able to articulate relevant **Digital Fluency competencies** appropriate for their context.
- Attendees will be able to **implement a creative digital project or assignment** in their course using a specific technology tool available at UHD.

Session Outline

Digital Fluency vs Digital Literacy

Discussion: Where do you students struggle in these areas?

Strategies for Enhancing Digital Fluency

Activity: Pick a Strategy and Tool for Your Context

Design Thinking Framework

Resources

What is Digital Fluency

The ability to create new content and solutions using digital tools, involving **critical thinking**, **problem-solving**, and **creativity**. It includes adapting to new technologies and effectively **communicating and collaborating** in a tech-driven world.

ursinus.edu/library/teaching-learning/digital-fluency/defining-digital-fluency/

What is Digital Literacy

The ability to understand and use digital tools and technologies. It involves **foundational technical skills** such as using computer systems, emails, websites, and other online applications. It is like being able to read, write, and **comprehend in the digital world**.

ursinus.edu/library/teaching-learning/digital-fluency/defining-digital-fluency/

Digital Literacy vs. Fluency

	Digital Literacy	Digital Fluency
Short Definition	**Understanding** and using digital tools and technologies	**Creating** new content and solutions using digital tools
Distinguishing Characteristics	**Basic** technical skills, comprehension, foundational knowledge	Critical thinking, problem-solving, creativity, adaptability
Practical Tasks	• Browsing and searching data, information and digital content, • Protecting devices, • File & account management, • Information literacy • AI Literacy	• Developing digital content, • Collaborating online, • Adapting to new technologies, • Creating multimedia presentations, Effective virtual communication, • Design thinking

https://w3-lab.com/digital-literacy-vs-digital-fluency/

DIGCOMP

Information & Data Literacy

- Browsing, searching and filtering data, information and digital content
- Evaluating data, information, and digital content
- Managing data, information and digital content

Communication & Collaboration

- Interacting through digital technologies
- Sharing information and content through digital technologies
- Engaging in citizenship through digital technologies
- Collaborating through digital technologies
- Netiquette
- Managing digital identity

Digital Content Creation

- Digital Content Creation
- Developing Digital Content
- Integrating and re-elaborating digital content
- Copyright and licenses
- Programming

Safety

- Protecting devices
- Protecting personal data and privacy
- Protecting health and well-being
- Protecting the environment

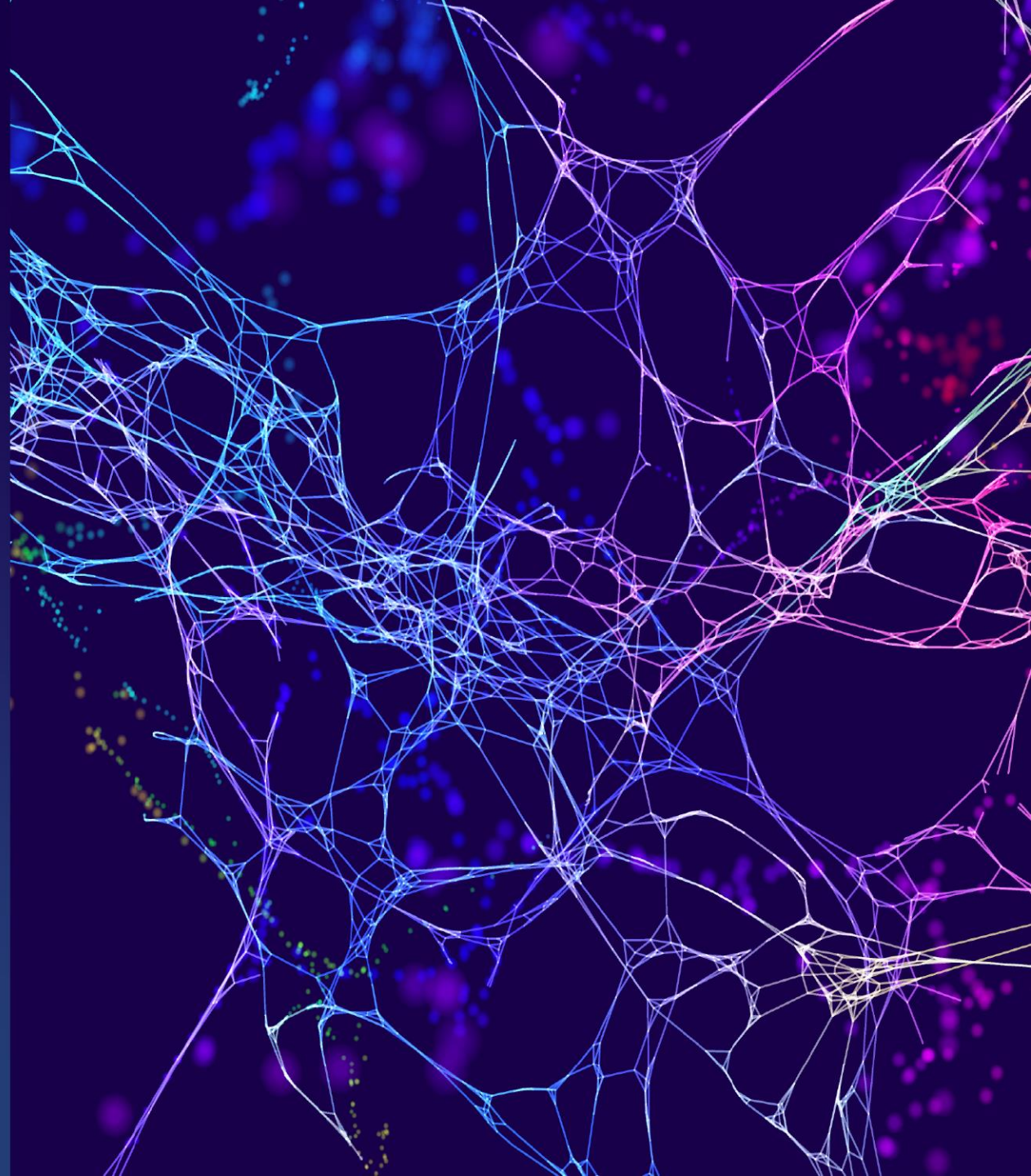
Problem Solving

- Solving technical problems
- Identifying needs and technological responses
- Creatively using digital technologies
- Identifying digital competence gaps

https://joint-research-centre.ec.europa.eu/scientific-activities-z/education-and-training/digital-transformation-education/digital-competence-framework-citizens-digcomp/digcomp-framework_en

Think Pair Share

Which areas of digital literacy surprised you that students were lacking in? Are there activities that you've implemented to improve digital literacy?



UHD Digital Literacy Resources

CTLE Learning Continuity

LC1: Communicate Transparently

Provide clear instructions detailing the purpose, task(s), and success criteria for assignments and activities.

LC2: Normalize Digital Learning

Introduce and normalize use of the LMS and key digital learning tools.

LC3: Emphasize Outcomes

Communicate how learning outcomes align with course activities, assignments, and assessments.

LC4: Facilitate Discourse

Provide guidelines for digital and offline communication.

LC5: Maintain Active Learning

Utilize active learning approaches that leverage digital learning tools.

LC6: Provide Flexible Resources

Replace physical resources with flexible and accessible digital resources where possible.

LC7: Highlight Academic Support

Refer students to academic support resources via an online course guide or syllabus.

LC8: Design for Equity, Access, and Care

Design for equity, access, and care through incorporating universal design for learning (UDL) principles.

CTLE Learning Continuity Project Link: bit.ly/4aObZta

Normalize Digital Learning to Enhance Digital Literacy

Engage with Students in Canvas

- Provide tutorials and resources for navigating your course in Canvas.
- Follow Regular & Substantive Interaction (RSI) Policy
- Canvas Portal: Resources for Recommended Course Components

Provide a Course Technology Guide

- Learning Continuity (LC2- Pauline Blaimont)
- Be transparent about why you are using certain tech tools
- Provide guidelines for getting the most out of each tech tool

LC2: Normalize Digital Learning

Get Students Using Digital Tools Early

- Student introductions with a digital tool (LC2 – Susan Henney)
- Digital Storyboard Introductions (LC2 – Ed Cueva)
- Getting Started Escape Room (LC2 – Meghan Minard)

Enhancing Digital Fluency in Students

Student Activities that Integrate Technology

- Podcasts on focused topics
- Digital storytelling (Multimedia and Story Map deliverables)
- Collaborative blog
- Digital alternative to an essay/discussion (Voicethread, Perusall – Cueva –LC5 Project)

Blend Methodology with Technology

- Project-based learning to build information literacy skills
- Digital collaboration (Shared docs, Kialo Argument mapping)

Encourage Good Netiquette

- Showing respect for others
- Content sharing, creating a positive digital footprint, and online privacy
- Instill healthy skepticism (Information Literacy)

https://blog.kialo-edu.com/teaching-strategies/how-to-increase-digital-fluency/

Challenges Teaching with Digital Modalities

Isolation & Collaboration Challenges

Lack of in-person interaction can make students feel isolated and hinder spontaneous collaboration.

Delayed Feedback

Professors find it difficult to provide immediate feedback and engage in real-time discussions.

Connectivity Issues

Internet problems can disrupt and delay the learning process.

Motivation Struggles

Students may find it hard to stay motivated with passive learning methods like livestreamed lectures and presentation decks.

Technology Access

Not all students have access to essential technologies like reliable Wi-Fi, adequate devices, and necessary software.

The Case for Creative Digital Projects

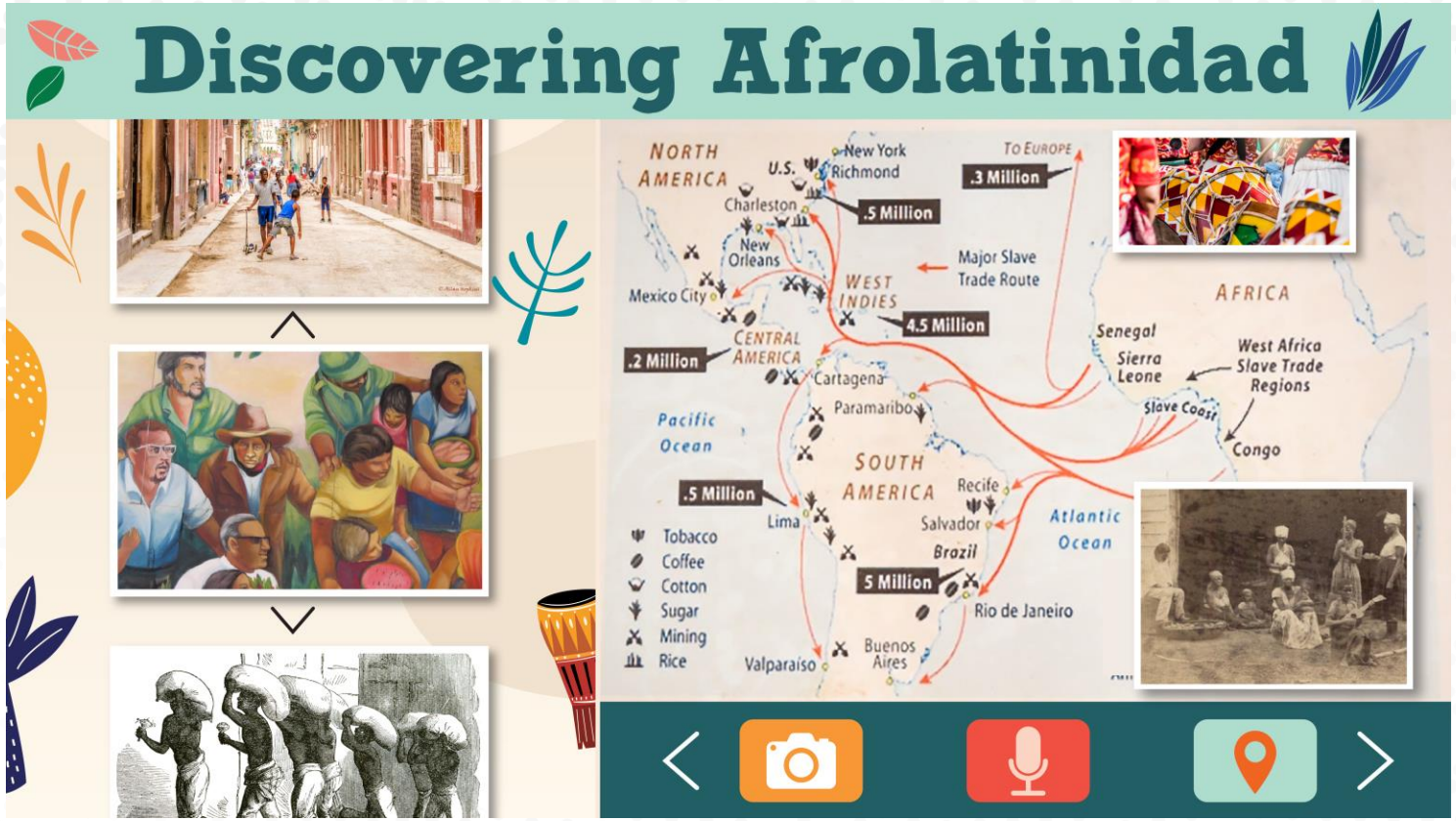
"Students who know how to use creative digital tools can communicate, inform, and persuade more effectively."

Adobe Education: Digital Literacy in Higher Education

Creative Digital Project Ideas and Tools

Creative Digital Projects

- Video Essays for Literature Courses
- Interactive Lab Reports for Science Classes
- Animations to Explain Concepts for Math Classes
- Creation of a Digital Portfolio
- Digital Storytelling with ArcGIS Story Maps



Relevant Tools

- Image and Video Editors
- Report & Presentation Apps
- Web and Mobile Design Apps
- Character Animators
- Collaborative Platforms

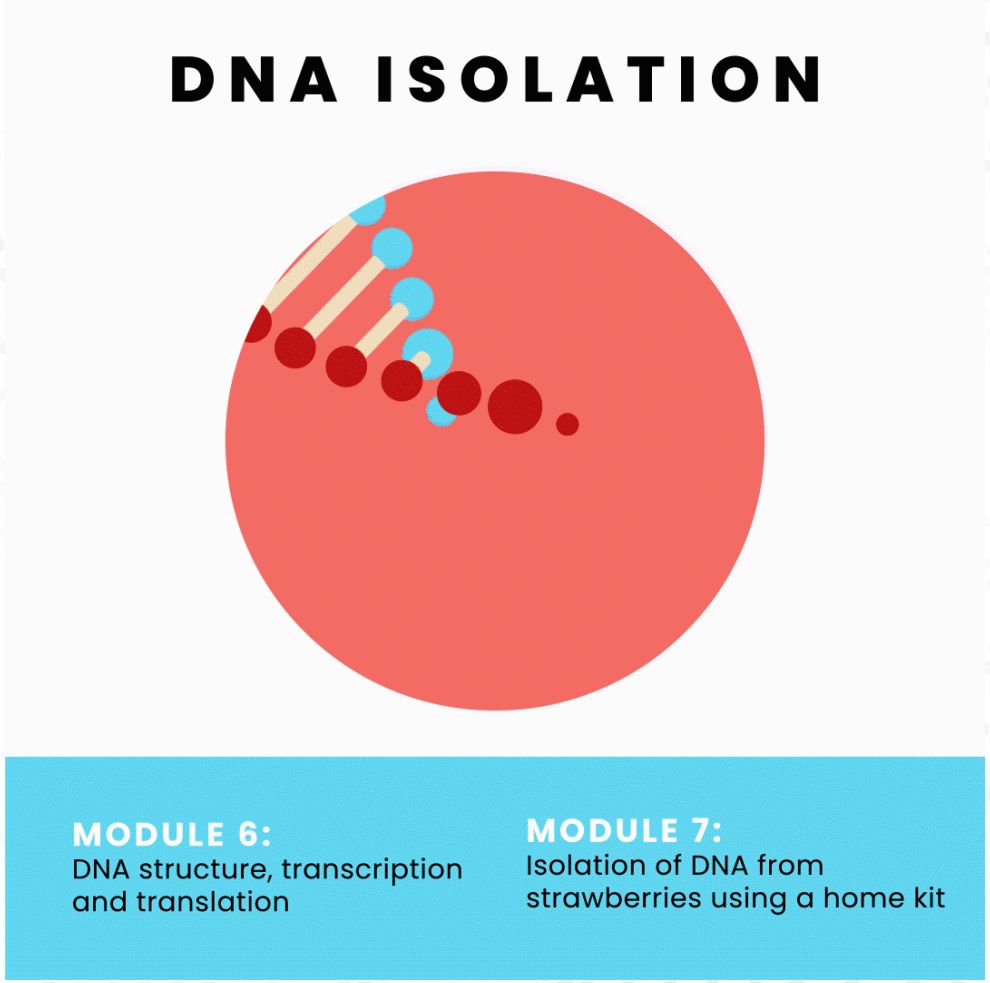
https://www.adobe.com/content/dam/cc/uk/education/higher-education/Digital-Literacy-in-Higher-Edu_More_Now_than_Ever.pdf

Interactive Lab Reports for Science Classes

Tool Used: Adobe After Effects
Prof. Saha

Recreate this project using:

- Canva or Adobe Express

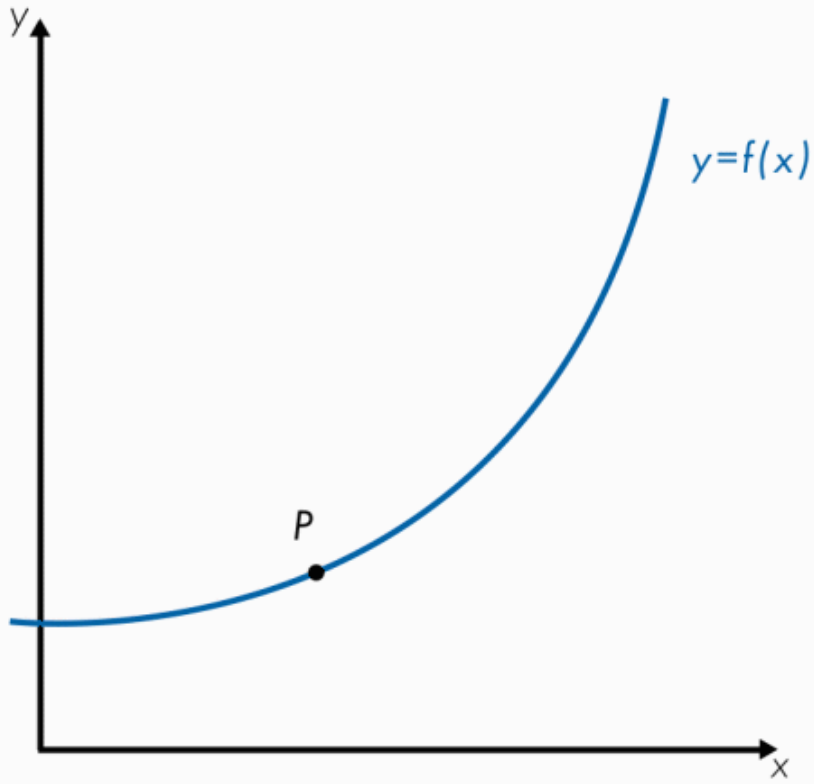


Animations to Explain Concepts for Math Classes

Tool Used: Adobe After Effects
Prof. Ban

Recreate this project using:

- Desmos | Secant Line to Tangent Line
- Zoom

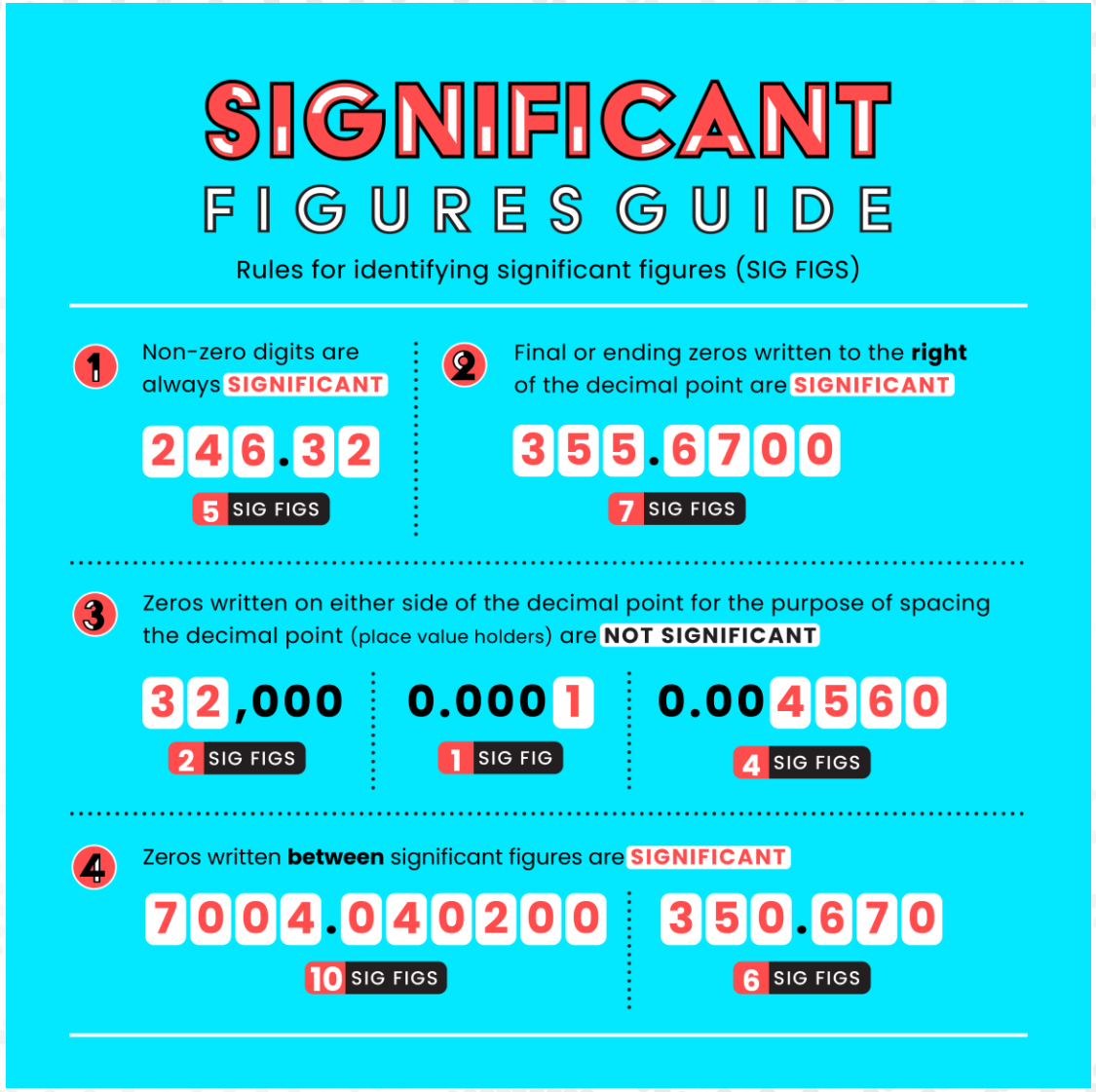


Concept Infographic

Tool Used: Adobe Illustrator

Recreate this project using:

- Canva or Adobe Express
- Or PowerPoint



Single Page Webpage Study Guide

Tool Used: Adobe Express

Recreate this project using:

- Adobe Express Webpage
- Microsoft Sway Page

Word Document to Infographic

Tool Used: PowerPoint

FOOD JOURNAL ANALYSIS LAB

LEARNING OUTCOMES

- Calculate caloric intake and create an action plan to maintain a healthy weight
- Utilize scientific processes to develop hypotheses, collect and analyze data using quantitative and qualitative measures

INTRODUCTION

According to Houston State of Health, young adults (18-29), African Americans, and Hispanics are more susceptible to obesity in the greater Houston Area. In order to understand how to maintain a healthy weight, we must first understand our eating habits. Obesity increases the risk of many diseases and health conditions, including heart disease, type 2 diabetes, cancer, hypertension, among many others (Houston State of Health, 2019). Maintaining a healthy weight helps prevent and control many of these diseases.

LAB PROCEDURE

Part 1. Caloric Intake

For this week's lab, you will calculate your caloric input and output based on last week's food journal. Using WebMD's Food Calculator, you will determine the calories consumed last week. If you cannot find the food item you are looking for on the calculator, find the closest item or estimate the calories based on what is in the dish.

For example, if you had a peanut butter and jelly sandwich, find the individual ingredients and add them up.

Peanut butter	188 calories
Grape Jelly	50 calories
Bread (2 slices)	131 calories
Total	377 calories

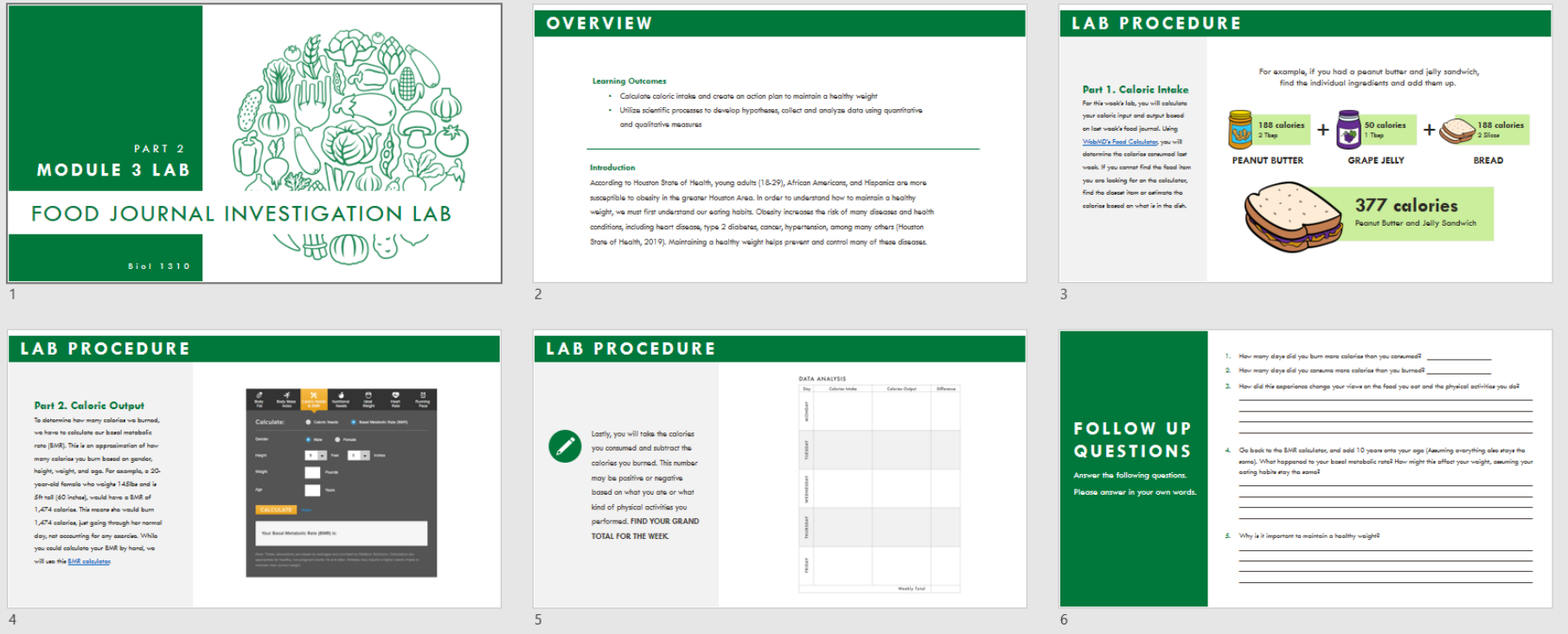
Part 2. Caloric Output

To determine how many calories we burned, we have to calculate our basal metabolic rate (BMR). This is an approximation of how many calories you burn based on gender, height, weight, and age. For example, a 20-year-old female who weighs 145lbs and is 5ft tall (60 inches), would have a BMR of 1,474 calories. This means she would burn 1,474 calories, just going through her normal day, not accounting for any exercise. While you could calculate your BMR by hand, we will use this BMR calculator.

If you exercised, then you would burn additional calories. To identify how many extra calories you burned while exercising, use WebMD's Exercise Calculator. Again, try to find the closest item or estimate based on the type of exercise you did. Add the calories burned to your BMR value to identify how many calories you burned in a single day.

Lastly, you will take the calories you consumed and subtract the calories you burned. This number may be positive or negative based on what you ate or what kind of physical activities you performed. Find your grand total for the week.

	Calories Output	Difference
THURSDAY		
FRIDAY		
Weekly Total		



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PART 2
MODULE 3 LAB
FOOD JOURNAL INVESTIGATION LAB
Biol 1310

2

OVERVIEW

Learning Outcomes

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- Utilize scientific processes to develop hypotheses, collect and analyze data using quantitative and qualitative measures

Introduction

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3

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For example, if you had a peanut butter and jelly sandwich, find the individual ingredients and add them up.

188 calories (2 Tbsp) PEANUT BUTTER + 50 calories (1 Tbsp) GRAPE JELLY + 188 calories (2 Slices) BREAD

377 calories
Peanut Butter and Jelly Sandwich

4

LAB PROCEDURE

Part 2. Caloric Output

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Calculate:
Gender
Height
Weight
Age
CALCULATE

5

LAB PROCEDURE

Lastly, you will take the calories you consumed and subtract the calories you burned. This number may be positive or negative based on what you ate or what kind of physical activities you performed. FIND YOUR GRAND TOTAL FOR THE WEEK.

DATA ANALYSIS

Day	Calories Intake	Calories Output	Difference
MONDAY			
TUESDAY			
WEDNESDAY			
THURSDAY			
FRIDAY			
Weekly Total			

6

FOLLOW UP QUESTIONS

Answer the following questions.
Please answer in your own words.

1. How many days did you burn more calories than you consumed? _____
2. How many days did you consume more calories than you burned? _____
3. How did this experience change your views on the food you eat and the physical activities you do?
4. Go back to the BMR calculator, and add 10 years onto your age (Assuming everything else stays the same). What happened to your basal metabolic rate? How might this affect your weight, assuming your eating habits stay the same?
5. Why is it important to maintain a healthy weight?

UHD Tool Selection Checklist

Digital Tools	Purpose	Learn More
Adobe CC Cloud	Graphic & Video Creation	Contact Department
Voicethread	Interactive collaboration and sharing tool	VoiceThread Resources at UHD
Perusall	Interactive social learning platform	Perusall: Getting Started
Zoom	Video conferencing / Lecture Capture	What is Zoom
Panopto	Video Editing / Posting	What is Panopto
Canvas	Study, post, collaborate	Canvas Support and Resources
Office 365	**Office Suite** – Word, Excel, PowerPoint **Teams** – Sharing, collaborating **Sway** – Create interactive reports and presentations **Engage** – Share info and organize around projects **Visio** – Communicate complex information visually **Clipchamp** – Make and edit videos **Loop** – Think, plan, and create together	Microsoft 365 Training

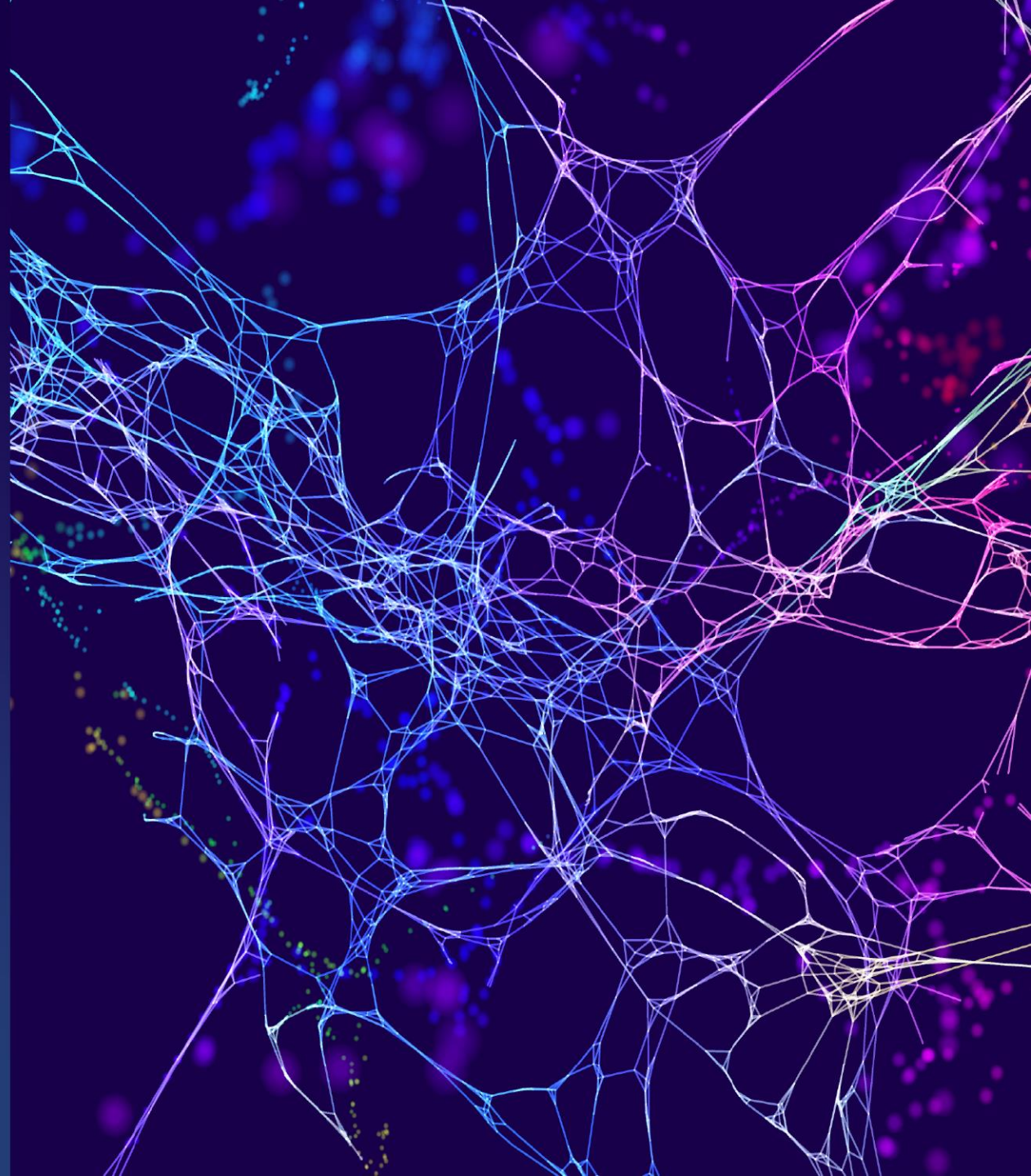
Activity

1. Pick a target course you would like to focus on.

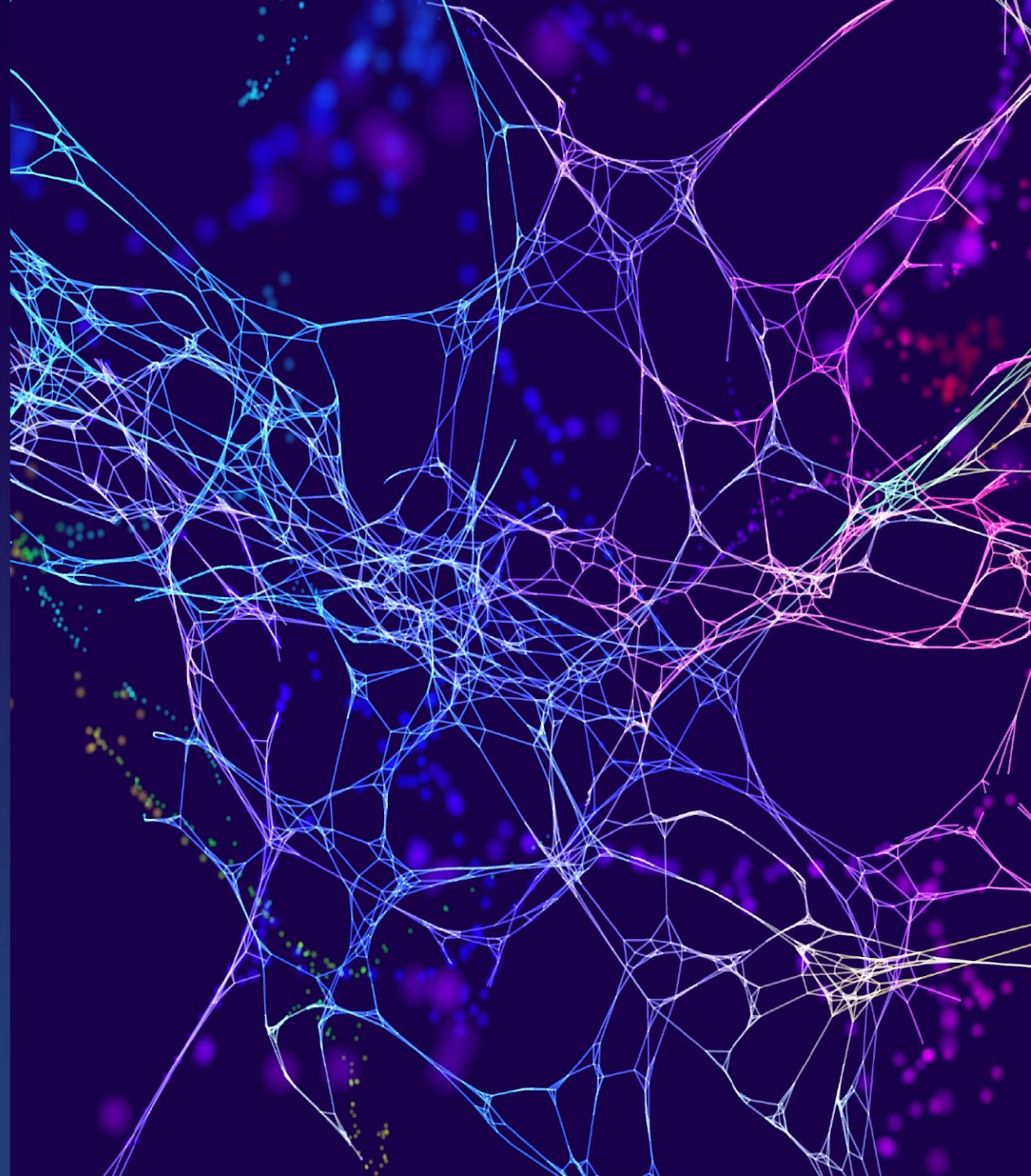
2. Write down several creative digital tasks or projects that students might do, or already do, in your class.

3. List the digital tools students need to use for this task or project.

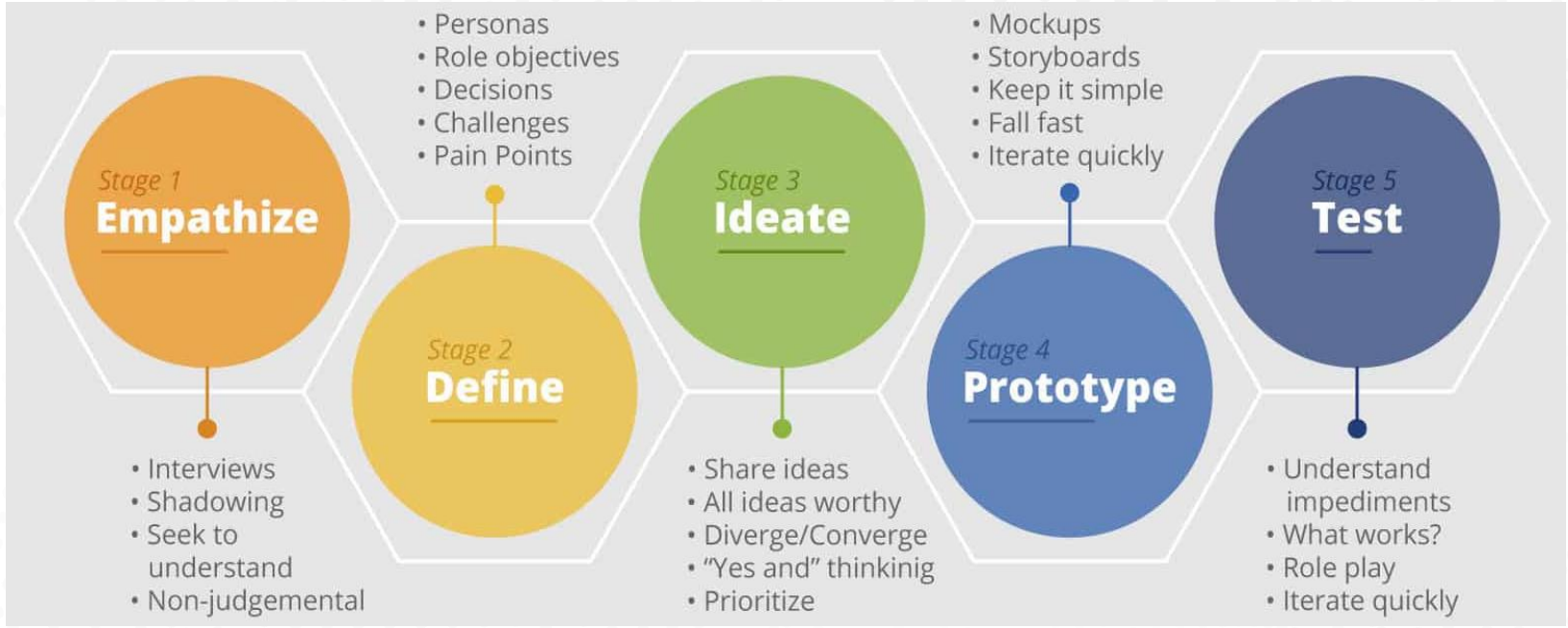
4. Share your ideas with your table.



Design Thinking



Design Thinking Framework and Digital Fluency



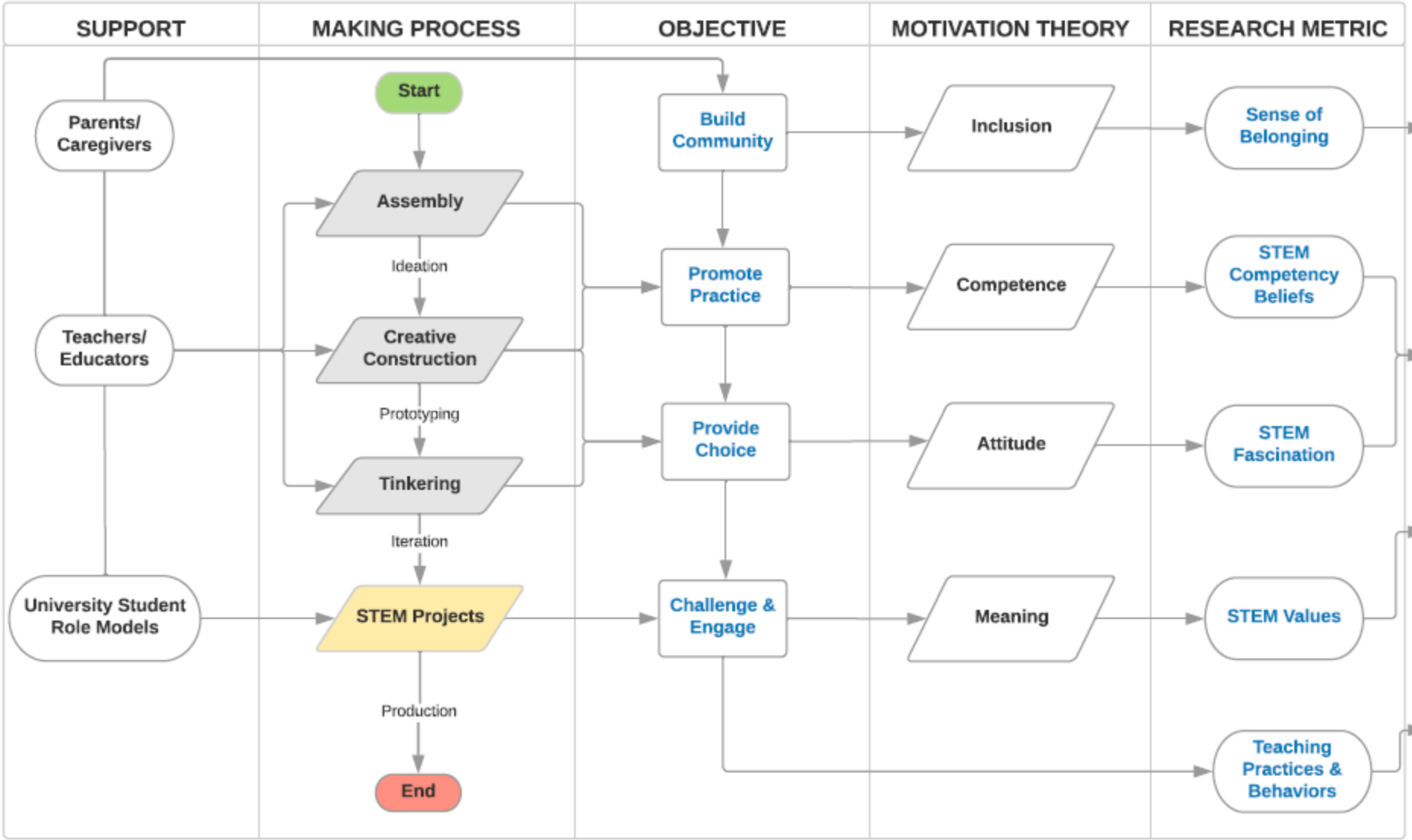
Design Thinking is Inherently Human-Centered

The process enables:

- Scaffolded Learning
- Decelerated Pedagogy
- Building Self-Efficacy
- Flexible Implementation
- AI-Resistance
- Tech Industry Processes

https://web.stanford.edu/~mshanks/MichaelShanks/files/509554.pdf

Design Thinking Pedagogical Design



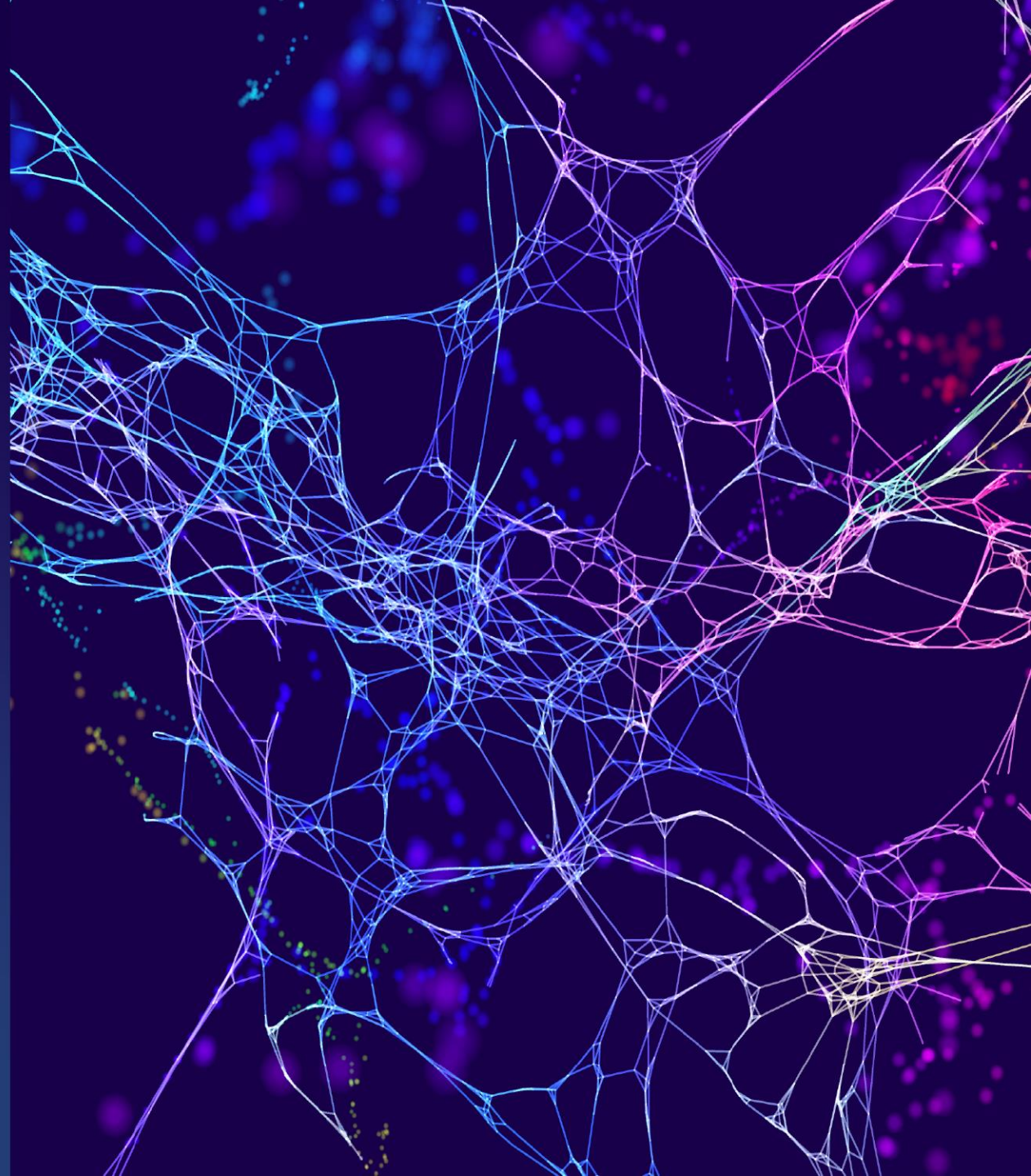
Research Question 1: Does creating a community of learners among students, educators, and role models engaged in the making-process enhance achievement of select STEM competencies?

Research Question 2: Does promoting practice and providing choice during the educative making process enhance students' STEM self-efficacy as measured by STEM competency beliefs and fascination with STEM concepts?

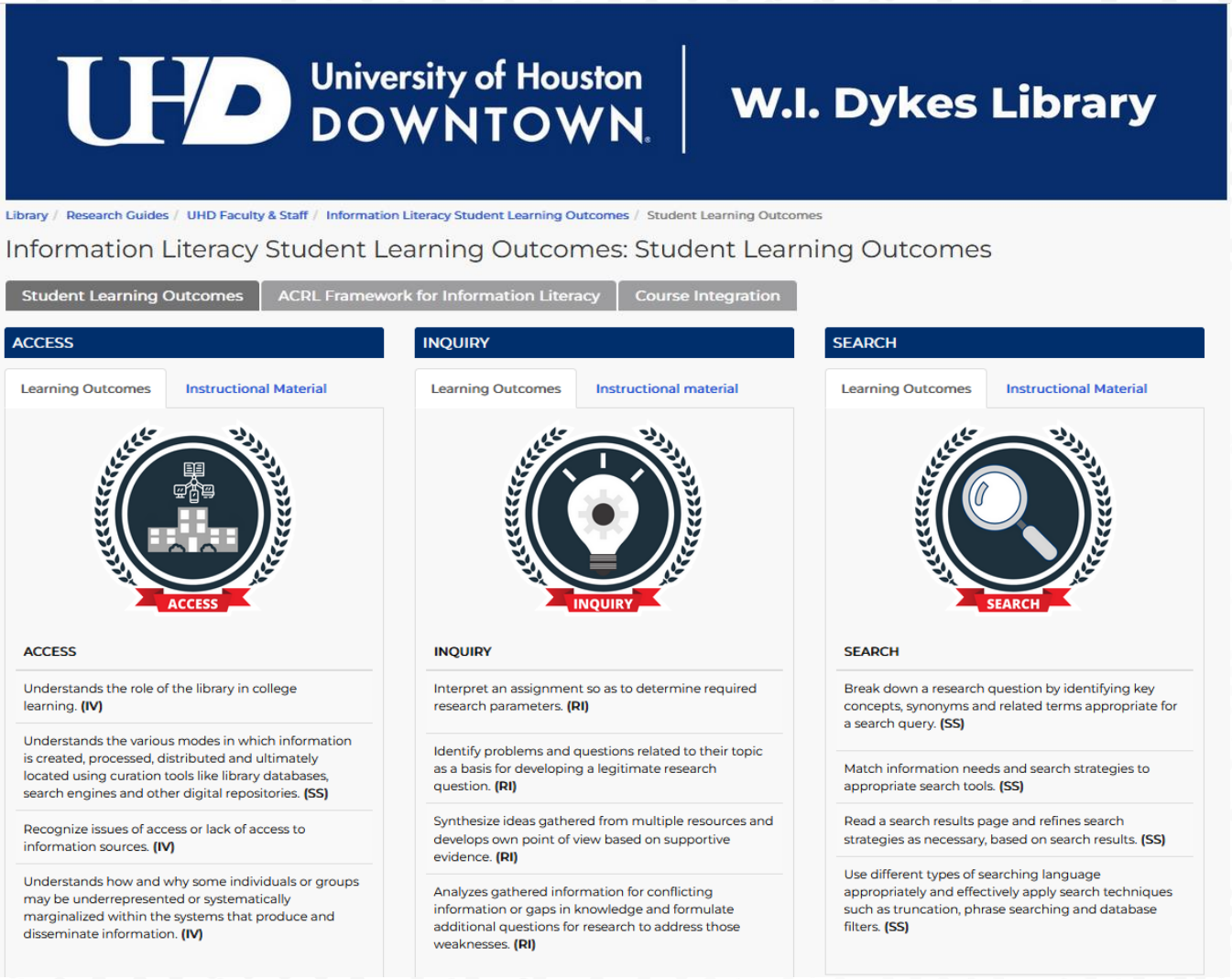
Research Question 3: Does challenging students to solve STEM-related problems in their communities enhance the value they place on STEM knowledge and skills.

Research Question 4: Does involvement of teachers in the making-process and professional development regarding maker-based learning enhance their STEM competency beliefs, fascination, and values as measured by self-reported changes to teaching practices and behaviors?

Digital Fluency Resources



UHD Digital Literacy Resources



Information Literacy Student Learning Outcomes Research Guide

Research Guide Link:

library.uhd.edu/ilslc

Librarian Contact:

Jesús Serrato | serratoj@uhd.edu

Popular External Digital Literacy Resources

Google Products

productivity and collaboration tools

Canva

Content Creation Tool

Padlet

Visual Collaboration

Adobe Express

Content Creation Tool

Miro

Digital Communication

External Digital Literacy Resources | Adobe

Wednesday, November 6, 2024

Adobe Digital Literacy Café Webinars: Exploring In-class Exercises and Lesson Plans that Integrate Generative AI

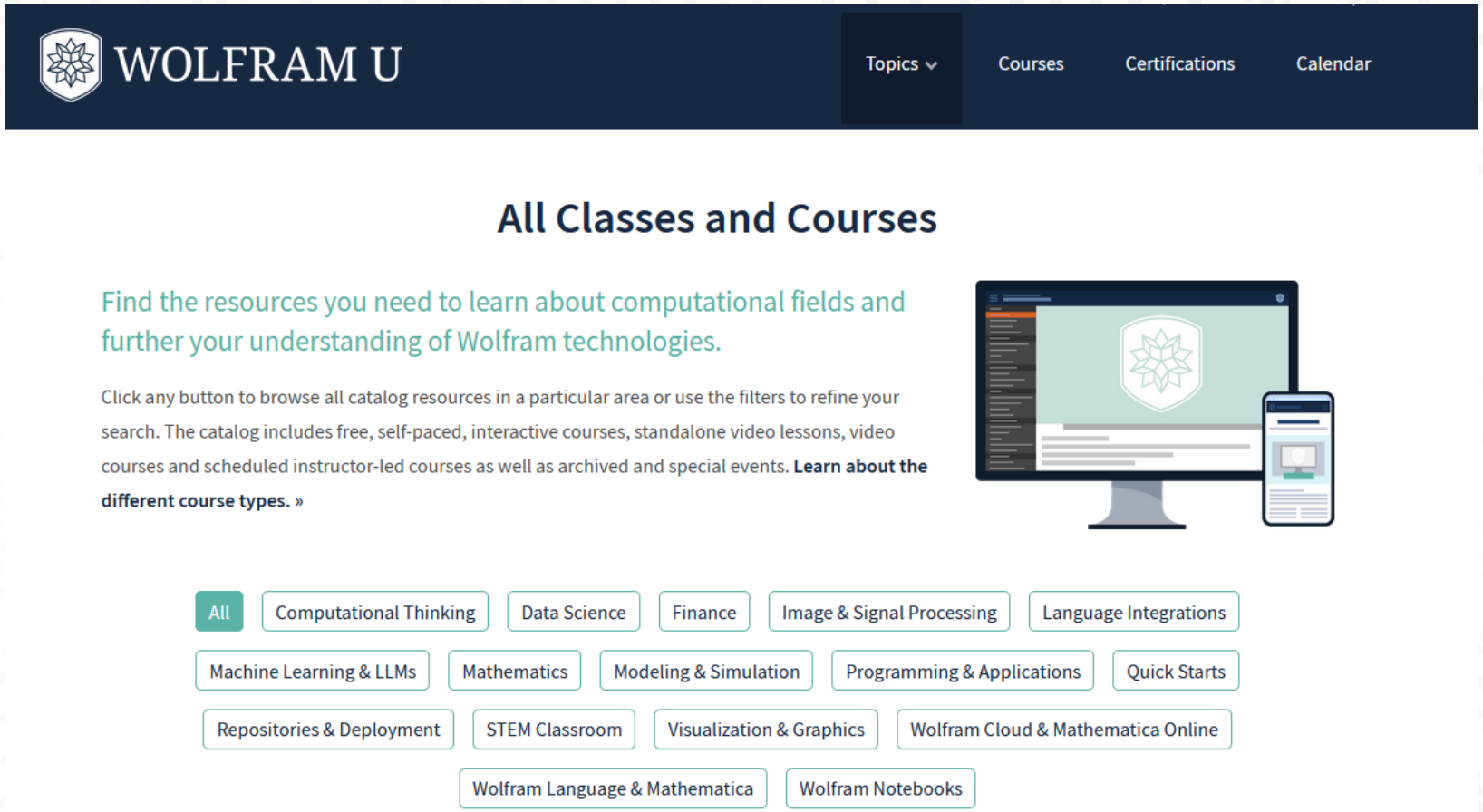
Adobe for Education

- What is digital literacy?
- How to improve digital literacy skills

Professional Development

- Cultivating Digital Literacy Course | 3 Hours

Digital Literacy Resources | Wolfram



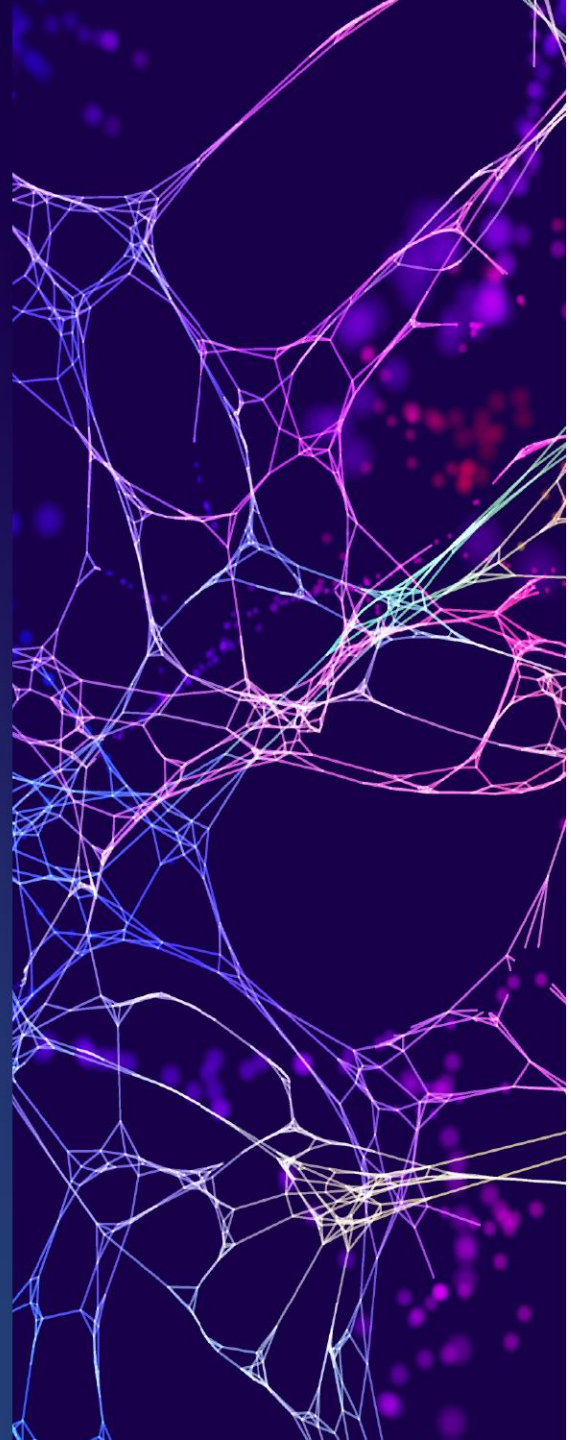
Downloading Mathematica
wolfram.com/siteinfo/

Wolfram Contact
Katherine Bautista

Free Mathematica Courses and Certificates

wolfram.com/wolfram-u/courses/catalog/

THANK YOU



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UHD.EDU /CTLE
ctle@uhd.edu

Instructional Design Support
Bit.ly/CTLEpedagogy

Graphic Design & Video Support
bit.ly/CTLEdesign