Power Up Your Economics & Personal Finance Instruction with Design Thinking!

April 21, 2026
7:00-8:00pm ET

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NAEE National Economics Pedagogy Scholar
ACTE Professional Development Committee Chair

CENTER FOR ECONOMIC EDUCATION VIRGINIA TECH

NCSS National Council for the Social Studies

CTECS Career and Technical Education Consortium of States

CEE

Association for Career and Technical Education ACTE

COABE The Voice Of Adult Education

AAACE AMERICAN ASSOCIATION FOR ADULT AND CONTINUING EDUCATION

EconEdLink a CEE program

VIRGINIA COUNCIL ON ECONOMIC EDUCATION

PITSCO EDUCATION

U.S. ECONOMIC EMPOWERMENT Project

Webinar Objectives

1) Explain how the **5-step design thinking process** functions as an effective instructional strategy for teaching **economics and personal finance** while developing students' innovative, problem-solving, and **workplace readiness skills** for the Innovation & Gig Economy.
2) Identify **opportunities to integrate** design thinking into existing economics and personal finance curricula, including the use of simple **Design Challenges** as engaging, real-world assessment tools.

Webinar Value Proposition

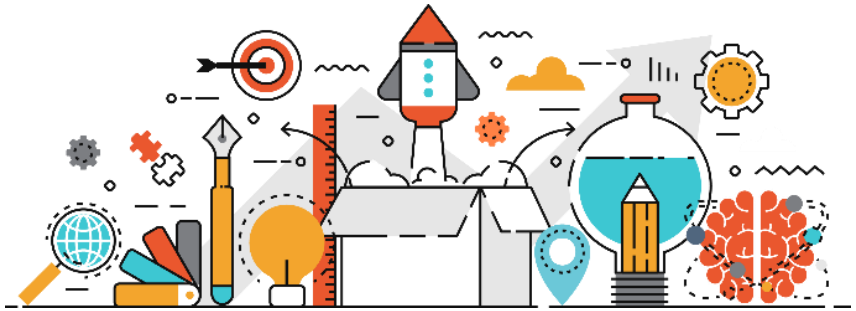
design thinking (creative, innovative, problem-solving skills for school, work, and life)

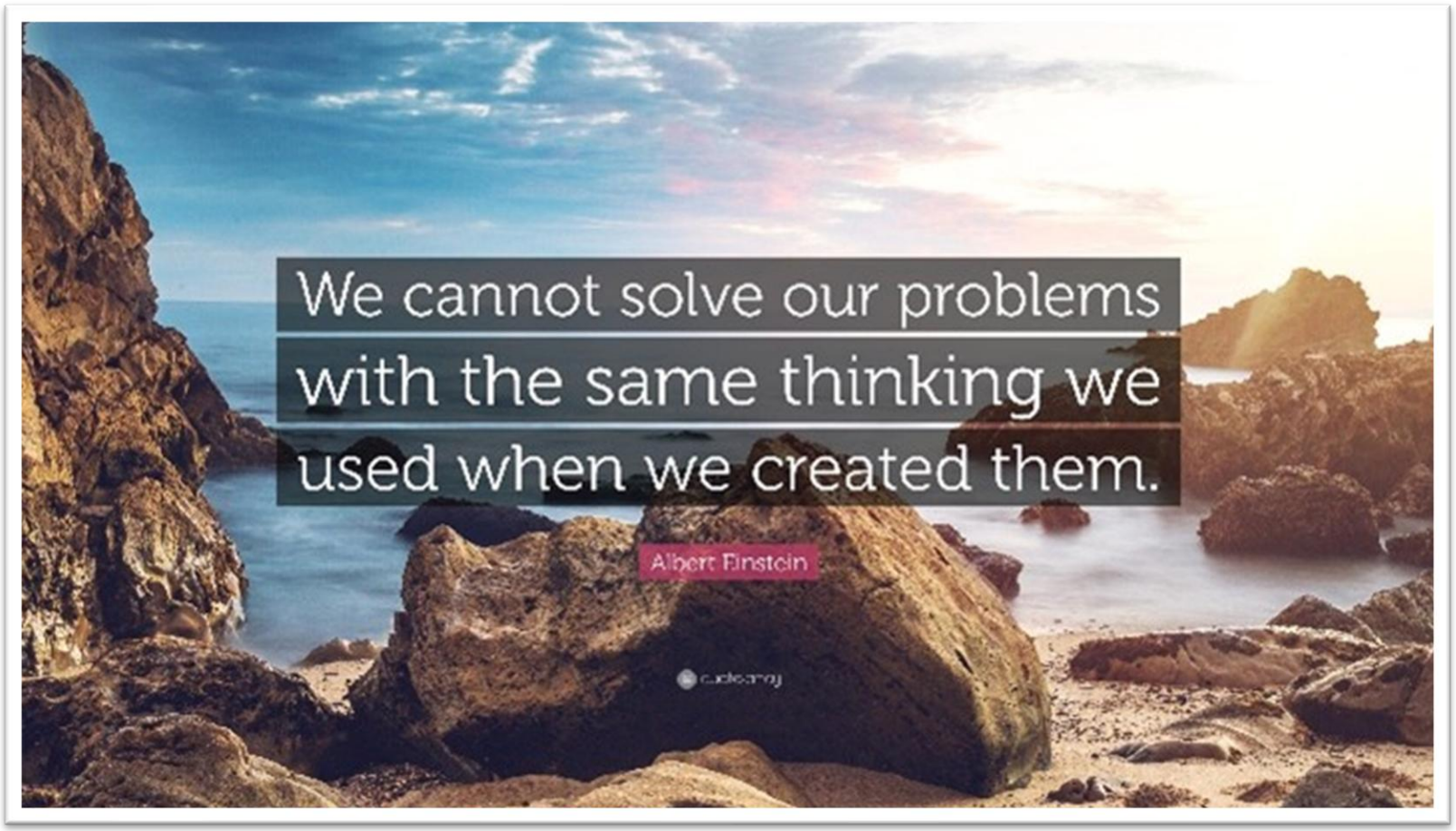
+

**cost-benefit analysis, PACED decision-making model,
and economic way of thinking principles**

=

even more informed decision-making under scarcity!




We cannot solve our problems
with the same thinking we
used when we created them.
Albert Einstein

Entrepreneurship Archived Webinars

By Dr. Cheryl Ayers

Association for Career and Technical Education ACTE

Top 10 Reasons to Integrate Entrepreneurship Across CTE Courses & Career Pathways

Integrating Entrepreneurship with Career-Ready Practices Across Technical Fields

Power Up Your Teaching with Design Thinking

BOOK CHAPTER
Modernizing CTE Curricula and Workplace Readiness Skills with the Entrepreneurial Mindset
Effective Methods for Teaching Business and Related Topics (2026)

COABE The Voice Of Adult Education

Top 10 Reasons to Integrate Entrepreneurship Education & Certifications Across Adult Education Programs

Integrating Entrepreneurship Education & Certification Across Correctional Education Programs

Entrepreneurship Bridges & IETs for the Innovation & Gig Economy - Getting Started

Success Stories – Integrating Entrepreneurship in ABE/ESOL Programs

Adult Education Entrepreneurship Showcase

CEE

Current Events in the Innovation & Gig Economy

Empowering Young Entrepreneurs: Cultivating an Entrepreneurial Mindset Across Grades K-5 Subjects

Empowering Young Entrepreneurs: Cultivating an Entrepreneurial Mindset Across Grades 6-12 Subjects

NCSS National Council for the Social Studies

Power Up Your Instruction with Social Entrepreneurship

Free on-demand webinar recordings are accessible on organization's website (free account).

INTEGRATING ACADEMIC AND CAREER TECHNICAL EDUCATION

A Choice Multiplier for College and Career Readiness

ADVANCE CTE
State Leaders Connecting Learning to Work

Reasons to Integrate Entrepreneurship in Economics & Personal Finance Instruction

Increased Student Interest

Nearly 50% of today's young people say they intend to start their own business someday

(40% of Americans had a side hustle in 2022)

A real-world instructional context to **optimize student engagement** by unleashing student potential to pursue their own unique interests, hobbies, and passions in the classroom

Empowered to start their own businesses **or** grow within existing businesses as **intrapreneurial employees, leaders, innovators, and trailblazers** in their respective fields

The National Career Clusters® Framework

Entrepreneurship is a career cluster and cross-cutting cluster.

Capstone courses in entrepreneurship count towards any program of study.

Career Clusters - Advance CTE

Innovation & Gig Economy

Entrepreneurial Mindset Skills = Modernized Workplace Readiness Skills

Career Clusters
Pathways to College & Career Readiness

National Career Clusters® Framework
12 Career-Ready Practices

Lead as a contributing & professional employee	Communicate clearly, effectively, & with reason	Think critically to make sense of problems & persevere in solving them	Collaborate productively while using cultural & global competencies
Use digital skills & technologies to enhance productivity & make data-informed decisions	Remain resilient in a changing workplace & world of work	Manage time & space effectively	Demonstrate a creative & innovative mindset
Act as a good steward of organizational & personal finances & resources	Navigate an education & career path aligned to strengths, work style, interests, & goals	Consider the environmental & social impacts of decisions	Apply appropriate academic & technical skills

Gig/Entrepreneurship Opportunities
12 Career-Ready Practices Examples

Think critically to make sense of problems & persevere in solving them

Career-ready individuals readily recognize problems in the workplace, understand the nature of each problem, and effectively plan to solve the problem efficiently. Individuals can research reliable and valid solutions, analyze information, and evaluate various courses of action for future success. This Career Ready Practice prepares individuals to tackle complex challenges, innovate solutions, and contribute to strategic planning and operational efficiency. Individuals also use lessons learned from previous projects to continuously improve future projects, systems, or processes.

SKILLS: Analytical thinking, problem-solving, research skills, logical reasoning, continuous improvement

ENTREPRENEURSHIP EXAMPLE: **Handyman or Handywoman**

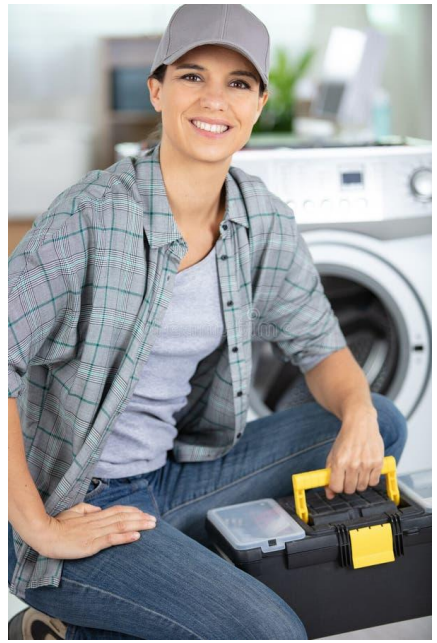
1. Analytical Thinking
- Assessing a leaky faucet to determine whether the issue is a worn washer, loose connection, or a bigger plumbing problem.
- Examining a broken door hinge to decide if it can be repaired with new screws or if the frame needs reinforcement.
- Comparing different materials (e.g., wood types for shelving) to balance cost, durability, and customer needs.

2. Problem-Solving
- Figuring out how to fix a warped cabinet door when replacement parts are unavailable by adjusting hinges or sanding for alignment.
- Developing a workaround for a tight workspace when installing a new sink by modifying tools or adjusting the installation sequence.
- Finding safe, effective ways to complete a job when unexpected issues arise, like electrical wiring behind a wall you're repairing.

3. Research Skills
- Looking up manufacturer manuals or tutorials to understand how to repair a newer appliance model.
- Researching building codes or safety standards before making structural repairs to ensure compliance.
- Comparing online reviews for tools and materials to select the most reliable options for a job.

4. Logical Reasoning
- Prioritizing repair steps to fix the root cause before addressing surface issues (e.g., sealing a water leak before patching drywall).
- Creating a step-by-step plan for assembling furniture or installing fixtures to avoid mistakes and wasted materials.
- Weighing the pros and cons of repair vs. replacement to recommend the most cost-effective solution to the customer.

5. Continuous Improvement
- Keeping a notebook of past repairs with what worked and what didn't to improve efficiency on future jobs.
- Learning new techniques or tools after each project to expand service offerings and avoid repeating mistakes.
- Asking customers for feedback on completed jobs and using it to refine processes for better service.



Effective Teaching Practices 101

MULTIDISCIPLINARY
REAL-WORLD CONTEXT

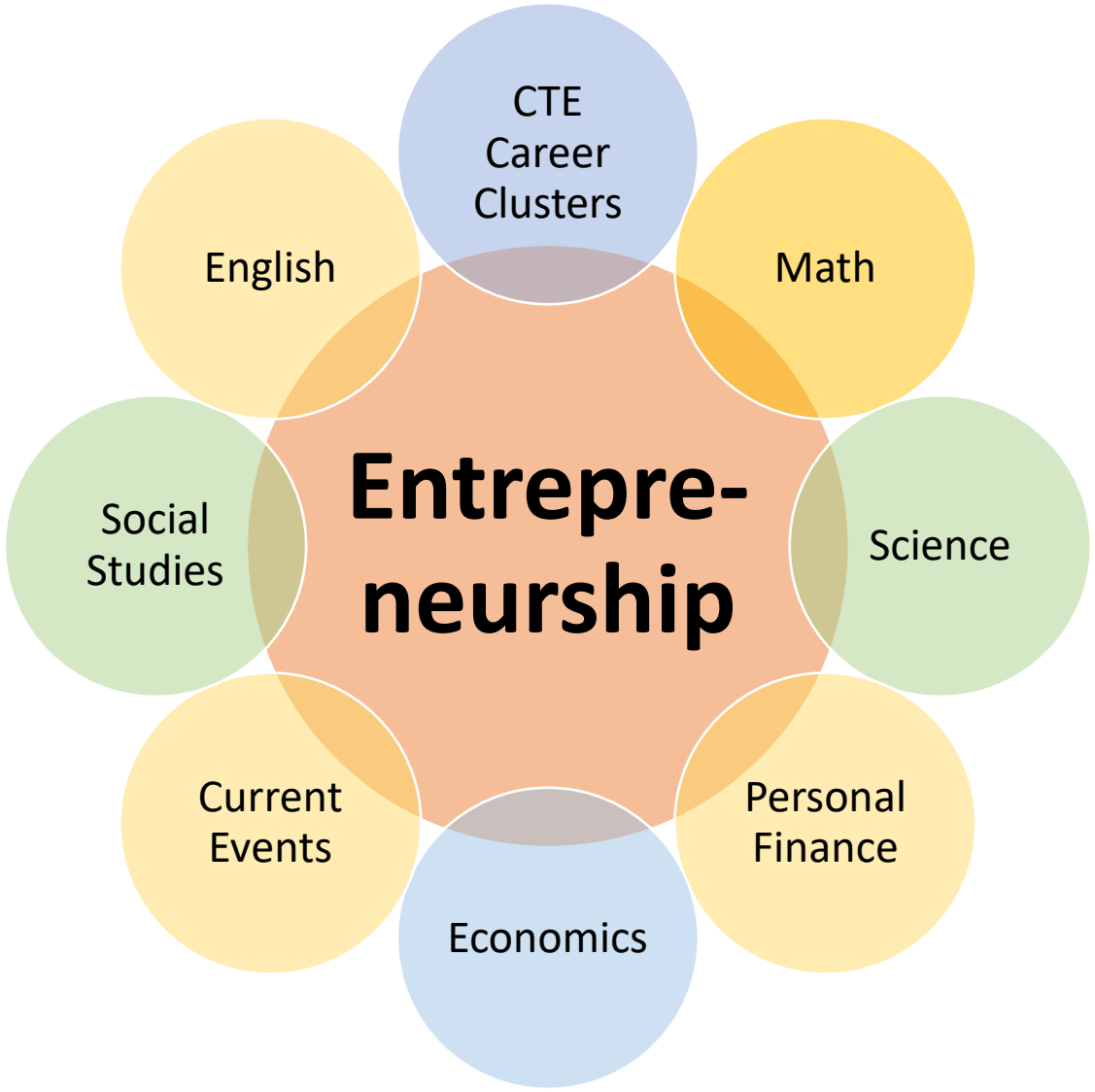
math, English, social studies, science, current events, digital literacy, etc.

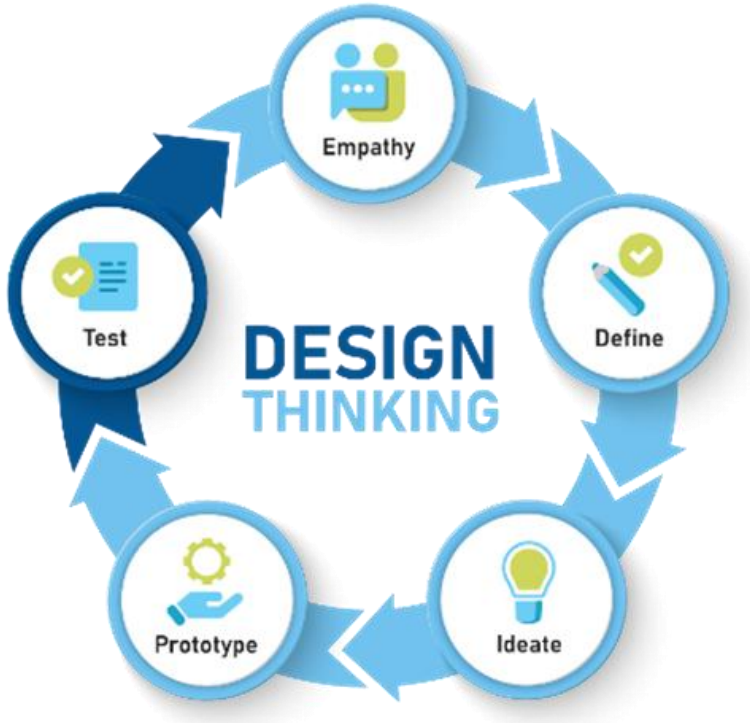
INFORMED
LIFE DECISIONS

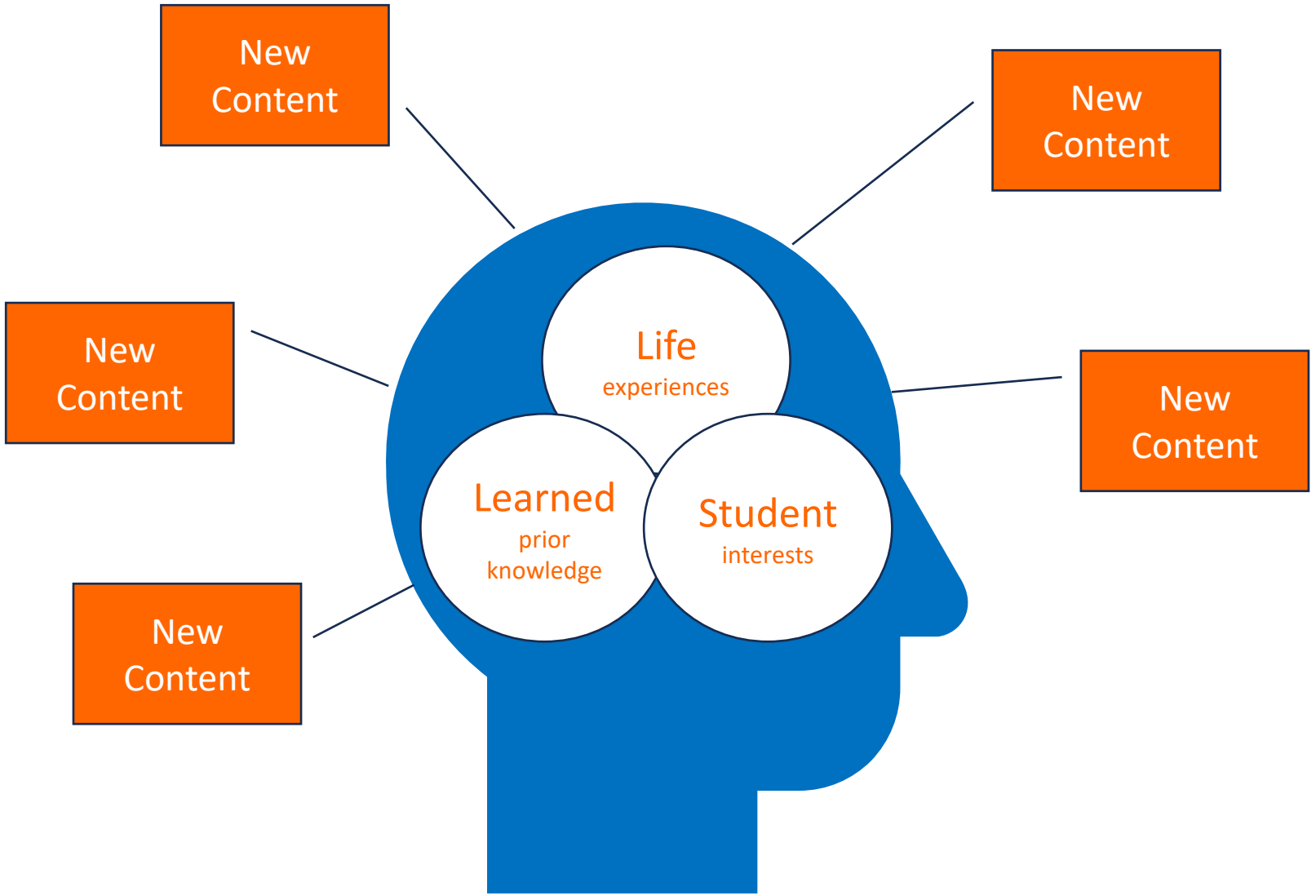
consumers, entrepreneurs, employees, citizens, voters, family, etc.

21st CENTURY WORKFORCE
INTRUCTIONAL PRACTICES

performance-based, competency-based, project-based, inquiry-based, contextualized, personalized, **design thinking,** etc.


CTE Career Clusters
English
Math
Entrepre-neurship
Social Studies
Science
Current Events
Personal Finance
Economics


Empathy
Define
Ideate
Prototype
Test
DESIGN
THINKING



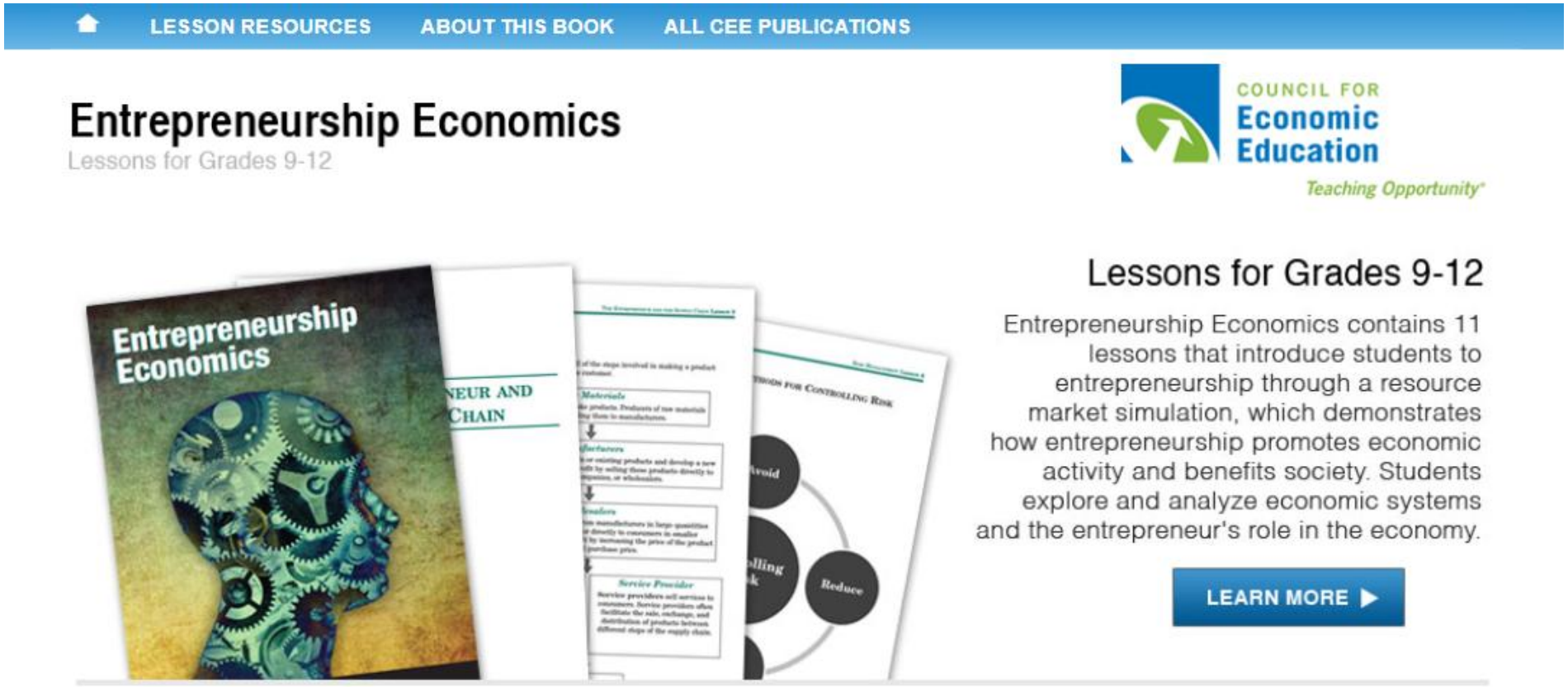
Ayers, C. A. (2018). A first step toward a practice-based theory of pedagogical content knowledge in secondary economics. *Journal of Social Studies Research, 42*, 61-79.

Entrepreneurship Touchpoint

Real-World Lens for Economics & Personal Finance Courses

Integrating Entrepreneurship in Economics & Personal Finance Instruction

Conceptual Integration



Skills-Based Application = Business Launch

Economics Standards	Entrepreneurship Integration	Personal Finance Integration	Student Action - Economics	Student Action - Personal Finance
Standard 1: Scarcity & Allocation	Scarcity = unmet needs → business opportunities	Spending & Saving: • Individuals must allocate limited income across needs, wants, saving, and investing • Scarcity drives personal budgeting decisions	• Identify a problem caused by scarcity • Define a target customer pain point • Begin Lean Canvas (Problem + Customer Segments)	• Create a simple personal budget showing how scarcity affects spending choices • Identify how customers currently spend or go without due to limited income
Standard 2: Decision-Making	Cost-benefit analysis = choosing viable ideas	Earning Income & Spending: • Individuals make decisions based or trade-offs between income, time, and cost • Opportunity cost applies to both career and financial decisions	• Compare 2–3 business ideas • Evaluate costs, benefits, risks • Select best opportunity to pursue	• Analyze personal opportunity cost (time, money, effort) of starting the business • Compare potential income from the business vs other earning options
Standard 3: Specialization & Exchange	Businesses exist because people specialize and trade value	Earning Income: • Income is influenced by skills, education, and productivity • Investing in human capital increases earning potential	• Define what value they provide • Identify partners, suppliers, collaborators • Map who does what in the business	• Identify personal skills that increase earning potential • Determine what additional skills or training may be needed
Standard 4: Markets	Markets = customers + demand	Spending: • Consumer spending decisions are influenced by price, preferences, advertising, and income	• Conduct customer interviews and surveys • Identify demand + willingness to pay • Validate problem-solution fit	• Analyze how customers make spending decisions • Identify how much target customers can realistically afford

Online Entrepreneurship Institute for Middle/High School Teachers → U.S. Entrepreneurship Certification Examination

Design Thinking Skills

Design Thinking Lite

AKA, Entrepreneurial Mindset

Problems/Gaps = Opportunities
Creating Workplace, Marketplace, or Societal Value

Intrapreneurship (workplace) | **Entrepreneurship (marketplace)** | **Social Entrepreneurship (society)**

IDEATION PERFORMANCE TASK

1) **What is the problem, frustration, or unmet need?** *opportunity recognition*
   - *Employees are stressed out at the end of the day.*
   - *Customers need safe and efficient transportation.*
   - *Unsheltered people living in the streets*

2) **How is the problem currently being solved?** *current practices/products*
   - *Some employees stay home for mental health days.*
   - *Customers pay taxi drivers with long wait times and unfriendly service.*
   - *Occasionally share food and blankets*

3) **What is a better solution to the problem?** *better practices/products*
   - *Offer mindfulness, massages, or exercise classes.*
   - *Uber provides cheaper transportation and feedback system to rate drivers.*
   - *Entrepreneurship program to collect kindle wood and sell during winter*

These are entrepreneurial ways of thinking, which are also life skills!

SCHOOL OF LIFE: How to Be an Entrepreneur (video)
https://www.youtube.com/watch?v=lJjILQu2xM8

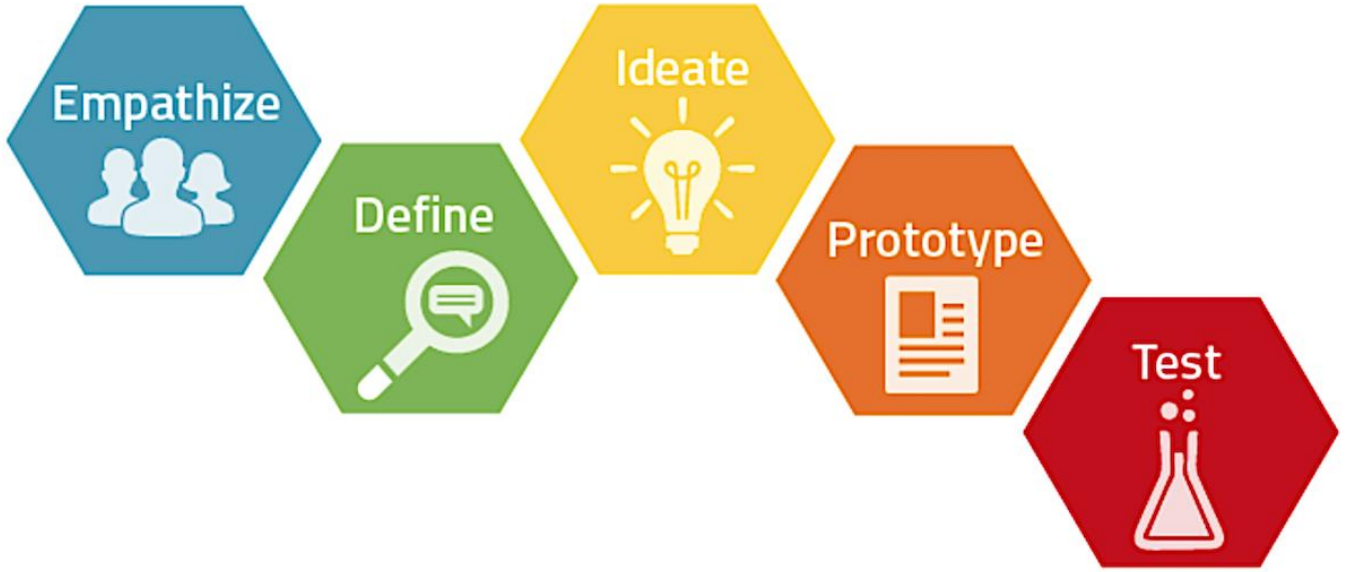
Design Thinking Lite

AKA, Entrepreneurial Mindset

Across K-12 Grades & Subjects & Life!

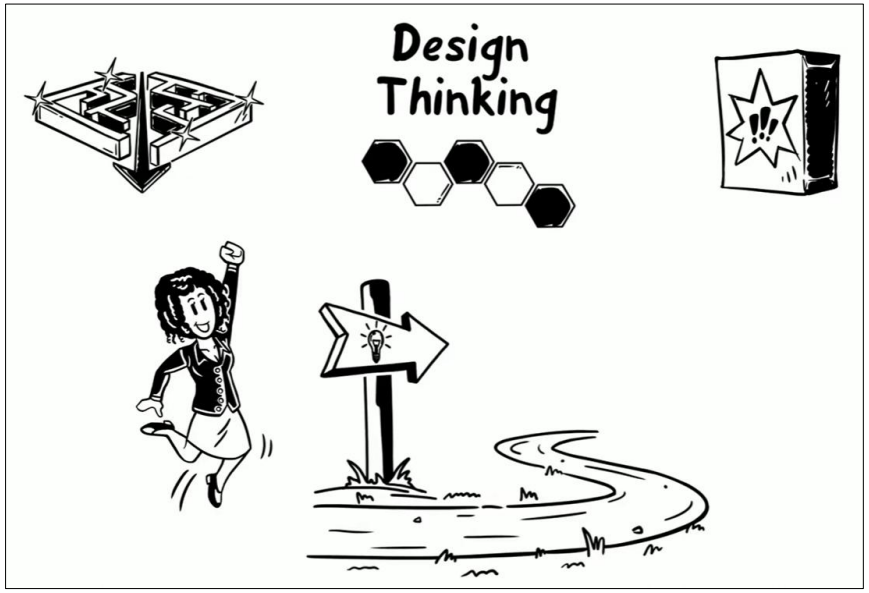
	Social Studies	Science	English	Econ	Personal Finance	Relation-ships	Recess/ After School	CTE
1) What is the problem, frustration, or unmet need?	Civics K-5 How to improve community safety?	Ecosystems K-5 How to conserve water?	Literature K-5 How to protect self from Big Bad Wolf?	Emplymt K-5 How to manage class-room jobs?	Savings K-5 How to increase savings for book fair?	Friendship K-5 How to prevent fights on playground?	Personal K-5 How to deal with toy shortage?	WBL How to improve workplace (intra) and market-place (entre)?
2) How is the problem currently being solved?	6-12 How to improve voter turnout?	6-12 How to reduce water pollution?	6-12 How to better solve a main character's dilemma?	6-12 How to increase youth employ-ment?	6-12 How to increase savings for prom?	6-12 How to prevent bullying on social media?	6-12 How to make better grades?	
3) What is a better solution to the problem?								

Design Thinking



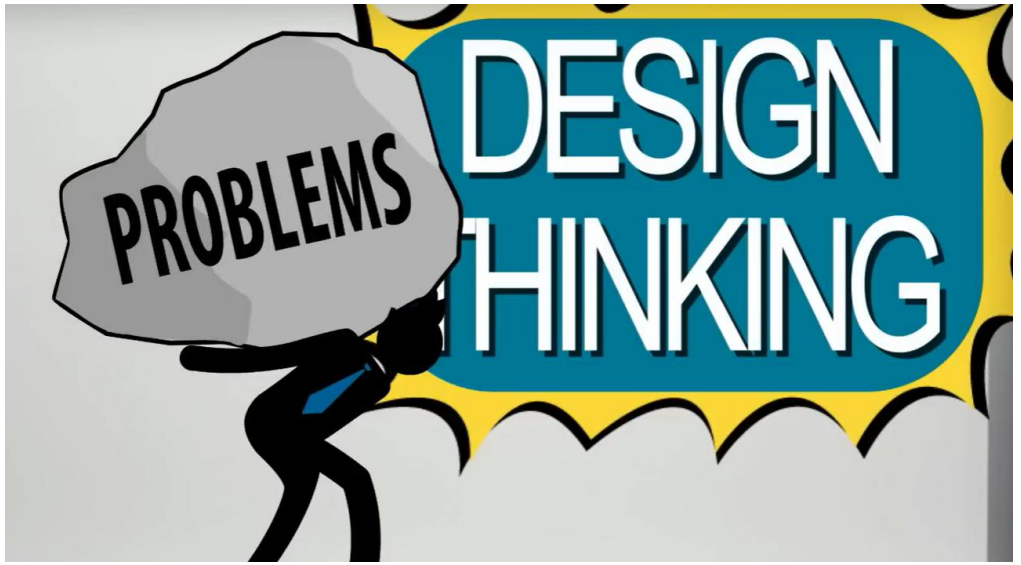
Design Thinking
What is it?

Career-Related



https://www.youtube.com/watch?v=Jmg0o_-BPpw

General



https://www.youtube.com/watch?v=a7sEoEvT8l8

Design Thinking Example #1
Personal Finance

Design Thinking
Examples for Economics & Personal Finance

Entrepreneurial Mindset & Design Thinking Examples for Economics and Personal Finance

ECONOMICS

Problem	Inefficient School Lunch System Leading to Long Lines and Wasted Time	Local Businesses Struggling to Hire High Sch and Scheduling
Design Thinking Steps	**1. Empathize** ▪ Interview students, cafeteria staff, teachers supervising lunch, and school administrators. ▪ Observe lunchroom flow, line length, menu availability, and bottlenecks. ▪ Identify pain points such as long wait times, inconsistent food choices, inefficient payment processes, or lack of seating. **2. Define the Problem** Problem Statement: Students are losing valuable instructional and social time due to long cafeteria lines and inefficient lunch distribution systems, resulting in frustration, reduced meal participation, and inequitable access to preferred food options. **3. Ideate** ▪ A redesigned lunch line system with separate stations for hot meals, cold meals, and grab-and-go items. ▪ Pre-order or mobile ordering options to reduce on-site wait times. ▪ A payment-flow redesign such as additional checkout stations, scanning kiosks, or cashless tap systems. ▪ Rotating schedules or staggered access to minimize peak-time congestion. **4. Prototype** ▪ Create a visual map of a new cafeteria layout showing traffic flow and serving stations. ▪ Build a simple mock-up of a mobile ordering screen or QR-code menu system. ▪ Draft a revised bell/lunch schedule or pass system that staggers student groups. ▪ Develop signage samples to direct students to different lunch stations. **5. Test** ▪ Pilot the new system with one grade level or a small student group. ▪ Track line duration, number of students served, and average wait time. ▪ Collect feedback through quick surveys, teacher observations, and student focus groups. ▪ Compare before-and-after data to measure improvements in efficiency and student satisfaction.	**1. Empathize** ▪ Interview local employers, high school students seeking staff. ▪ Observe hiring practices, job postings, and interview pro ▪ Identify pain points such as unclear job requirements, li systems, or skill gaps (communication, reliability, teamw **2. Define the Problem** Problem Statement: Local employers are unable to recruit expectations, required skills, and scheduling needs are not resulting in labor shortages and missed economic opportu **3. Ideate** ▪ A streamlined student job-matching platform highlightin ▪ A short training program (micro-credential) teaching wo ▪ A communication tool that helps businesses clearly outli ▪ Partnerships between schools and local businesses to cr ▪ A "student talent showcase" event where employers me **4. Prototypes** ▪ Design mock-ups of a student–employer job-matching w ▪ Create a sample micro-credential badge and outline its s ▪ Draft improved job posting templates written in teen-fri ▪ Build a visual schedule model showing how flexible shift **5. Test** ▪ Pilot the matching system or job postings with a small gr ▪ Measure changes in application rates, interview success ▪ Gather feedback on clarity, usability, scheduling feasibili ▪ Adjust system tools, communication formats, or training
Real-World Example	Many school districts, including Los Angeles Unified and New York City Public Schools, have implemented redesigned cafeteria flow models, grab-and-go stations, and digital menu systems to reduce wait times and improve meal participation—closely aligning with design thinking principles of user feedback and iterative improvement.	Workforce programs like YouthBuild, JAG (Jobs for America teen employment initiatives use design thinking principles preparation, improving job placement and retention.
Solution Impact	▪ Reduced lunch line wait times ▪ More equitable access to food options ▪ Increased student satisfaction and participation in school meal programs ▪ Improved use of instructional time and smoother transitions between classes	▪ Increased student employment and access to income ▪ Better alignment between local business needs and teer ▪ Reduced turnover and improved job satisfaction ▪ Stronger school–community partnerships supporting loc

Entrepreneurial Mindset & Design Thinking Examples for Economics and Personal Finance

PERSONAL FINANCE

Problem	Students Overspend Due to Peer Pressure and Social Expectations	Difficulty Managing Irregular Income From Part-Time or Gig Work
Design Thinking Steps	**1. Empathize** ▪ Interview students about moments when they felt pressured to spend money (clothes, outings, snacks, events, trends). ▪ Talk with parents and counselors to understand emotional and financial impacts. ▪ Identify pain points such as fear of missing out, social comparison, limited savings, and lack of strategies for saying "no" confidently. **2. Define the Problem** High school students often overspend because of peer pressure and social expectations, leading to financial stress, reduced savings, and difficulty making independent choices aligned with their personal goals. **3. Ideate** ▪ A peer-pressure "response strategy" toolkit to help students decline spending invitations confidently. ▪ A personal spending plan that sets boundaries for social purchases. ▪ A social comparison reflection tool that helps students identify triggers. ▪ A "spend-free challenge" campaign with rewards for sticking to goals. ▪ A values-based budgeting template that aligns spending with long-term goals instead of trends. **4. Prototype** ▪ Create sample cards or scripts that offer polite, confidence-building responses to spending pressure. ▪ Build a visual budgeting sheet with a dedicated category for social spending. ▪ Design a digital or paper journal to track emotional triggers related to overspending. ▪ Develop branding and sample graphics for a school-wide "mindful spending challenge." **5. Test** ▪ Have students test the response strategies in real or simulated peer-pressure scenarios. ▪ Track spending for one week to measure changes in behavior. ▪ Gather feedback through discussions, reflection sheets, or anonymous surveys. ▪ Refine the toolkit by simplifying strategies or adding new options based on feedback.	**1. Empathize** ▪ Interview students who work part-time, participate in gig-style jobs (babysitting, lawncare, tutoring), or earn money seasonally. ▪ Talk with parents, coaches, and employers to understand expectations and scheduling challenges. ▪ Identify pain points such as unpredictable paychecks, inconsistent hours, trouble saving, difficulty budgeting, and lack of tracking tools. **2. Define the Problem** Problem Statement: Teens with irregular income struggle to manage expenses, save consistently, and plan ahead because their earnings fluctuate week to week, leading to financial stress and ineffective budgeting habits. **3. Ideate** ▪ A simple budgeting tool that adapts to weekly income changes. ▪ A percentage-based savings system (e.g., save 10% automatically no matter how much is earned). ▪ A visual cash-flow tracker using color coding for needs, wants, and savings. ▪ An app mock-up that predicts "average income" to help plan spending. ▪ A monthly spending plan template designed specifically for variable income. **4. Prototype** ▪ Create a paper or digital prototype of the flexible budgeting tool or cash-flow tracker. ▪ Build a mock-up of a percentage-based savings calculator. ▪ Draft sample income logs for three different types of weeks (high, medium, low earnings). ▪ Design a visual system (charts, sliders, color bars) that shows how money should be allocated under varying income levels. **5. Test** ▪ Have students test their budgeting tool for one week using real or simulated income. ▪ Collect feedback on ease of use, clarity, and how well the tool helped them make decisions. ▪ Track changes in spending and saving behavior to measure improvement. ▪ Revise the tool by adjusting categories, simplifying inputs, or adding reminders.
Real-World Example	Organizations promoting financial wellness—such as Next Gen Personal Finance (NGPF) and Council for Economic Education (CEE)—use values-based decision-making and behavioral strategies to help teens resist social spending pressure and build healthier financial habits.	Apps such as YNAB (You Need a Budget) and EveryDollar use percentage-based rules and flexible categories to help people with variable income plan, save, and adjust budgets—reflecting core design thinking strategies inspired by user feedback.
Solution Impact	▪ Reduced impulsive or socially driven spending ▪ Increased savings and better alignment with personal financial goals ▪ Improved confidence in making independent financial decisions ▪ Healthier peer norms around money and social activities	▪ Improved ability for teens to manage fluctuating income ▪ More consistent savings habits ▪ Reduced financial stress and better short-term planning ▪ Increased confidence in budgeting and real-world money management

Design Thinking
Personal Finance Example

PROBLEM: Students Overspend Due to Peer Pressure and Social Expectations

Key Personal Finance Concepts & Skills

scarcity, opportunity cost, trade-offs, incentives, consumer behavior, social influence on purchasing, budgeting, spending plans, saving, goal setting, needs vs. wants, self-regulation, delayed gratification, values-based decision-making, behavioral biases, etc.

Design Thinking
Example

Student Overspending

Step 1: Empathize

Definition

Understand the people affected by the problem.

Learn the root causes by understanding how people feel, what they need, and what challenges they face by listening, observing, and asking questions.

Identify pain points using empathy maps and user personas.

Example

- Interview students about moments when they felt pressured to spend money (clothes, outings, snacks, events, trends).
- Talk with parents and counselors to understand emotional and financial impacts.
- Identify pain points such as fear of missing out, social comparison, limited savings, and lack of strategies for saying “no” confidently.

Empathy Map

What do they think and feel?

What Really Counts
Major Preoccupations
Worries & Aspirations

What do they hear?

What Influencers Say
What Boss Say
What Friends Say

What do they see?

Enviroment
Friends
What the Market Offers

What do they say and do?

Behavior towards others
Attitude in public
Appearance

PAIN

Fears
Frustrations
Obstacles

GAIN

Wants/Needs
Measures of Success
Obstacles

"I design with all my heart thinking about the users"

Age	29
Job Title	UX Designer
Status	Single
Location	Atlanta, GA

PASSIONATE	**EMPATHETIC**
CURIOUS	**ADVENTUROUS**

Favorite Brands

User Persona

Jane Doe

About

Jane is a UX Designer that works for Fortune 500 company in Atalanta, GA. Ever since she was a child, she loved to make stuff onn her own and show them to her parents, friends, and classmates. Over the course of her childhood and throughout her school, she won nummerous design prizes at various well known competitions across the Unites States and Canada. Due to her passion for design, she decided to pursue a Master's desgree in Human Computer Interacion andd learn more about User Experience (UX) and how she can become a better designer.

Goals

Become a deigner who communicates well of her idea at any place

Easily explain her design ideas to other designers' researchers and engineers

Needs

Looking for a design tool that helps to cut down unnecessary time and effort

Receive feedback on her progress whenever needed before presentation

Pain Points

There are too many tools that forces her to spend time learning them

Cannot rely on other people's opinion because they are highly subjecitve

Certain situations require different tools to communicate her thoughts

Personality

Introvert	Extrovert
Analytical	Creative
Busy	Time rich
Messy	Organized
Independent	Team Player

Design Thinking
Example

Student Overspending

Step 2: Define the Problem

Definition

Clearly describe the problem to solve.

Use what you learned to write a focused problem statement that explains who is affected and why the problem matters. Include constraints and opportunities.

Example

Problem Statement

High school students often overspend because of peer pressure and social expectations, leading to financial stress, reduced savings, and difficulty making independent choices aligned with their personal goals.

Design Thinking
Example

Student Overspending

Step 3: Ideate

Definition

Brainstorm many possible solutions.

Think creatively and generate lots of ideas without judging them at first.

Then evaluate ideas using social impact, feasibility, cost, sustainability, and scalability as decision-making criteria.

Example

- A peer-pressure “response strategy” toolkit to help students decline spending invitations confidently.
- A personal spending plan that sets boundaries for social purchases.
- A social comparison reflection tool that helps students identify triggers.
- A “spend-free challenge” campaign with rewards for sticking to goals.
- A values-based budgeting template that aligns spending with long-term goals instead of trends.

Design Thinking
Example

Student Overspending

Step 4: Protype

Definition

Create a simple version of your solution.

Build a model, drawing, demonstration video, slide deck, website, app mock-up, role-play, etc. that shows how your idea would work—that is, create a MVP (minimum viable product).

The goal is to make your idea real enough that people can understand it and give feedback.

Example

- Create sample cards or scripts that offer polite, confidence-building responses to spending pressure.
- Build a visual budgeting sheet with a dedicated category for social spending.
- Design a digital or paper journal to track emotional triggers related to overspending.
- Develop branding and sample graphics for a school-wide “mindful spending challenge.”

Design Thinking
Example

Student Overspending

Step 5: Test

Definition

Try it out and improve it.

Share your prototype with others, get feedback (interviews, surveys, panels, etc.), and make changes to improve the solution.

Iterate or pivot.

Example

- Have students test the response strategies in real or simulated peer-pressure scenarios.
- Track spending for one week to measure changes in behavior.
- Gather feedback through discussions, reflection sheets, or anonymous surveys.
- Refine the toolkit by simplifying strategies or adding new options based on feedback.

Design Thinking
Example

Student Overspending

Solution Impact

Reduced impulsive or socially driven spending
Increased savings and better alignment with personal financial goals
Improved confidence in making independent financial decisions
Healthier peer norms around money and social activities

Design Thinking
K-12 Grades Curricula

Create a new sport for elementary grades

Design Thinking: Prioritizing Process Skills - YouTube (5:15)

Make a new bike seat

Create Something Amazing with Design Thinking (3:22)

Develop a water filtration system using natural resources on World Water Day

Design Thinking: A Problem Solving Framework – YouTube (5:00)

Design Thinking Example #2
Economics

Design Thinking
Personal Finance Example

PROBLEM: Inefficient School Lunch System Leading to Long Lines and Wasted Time

Key Economics Concepts & Skills
scarcity, opportunity cost, trade-offs, incentives, efficiency vs. equity, supply, demand, productivity, systems thinking, cost-benefit analysis, resource allocation, data-based decision making, etc.

Design Thinking
Example

Inefficient Lunch Lines

Step 1: Empathize

- Interview students, cafeteria staff, teachers supervising lunch, and school administrators.
- Observe lunchroom flow, line length, menu availability, and bottlenecks.
- Identify pain points such as long wait times, inconsistent food choices, inefficient payment processes, or lack of seating.

Design Thinking
Example

Inefficient Lunch Lines

Step 2: Define the Problem

Problem Statement: Students are losing valuable instructional and social time due to long cafeteria lines and inefficient lunch distribution systems, resulting in frustration, reduced meal participation, and inequitable access to preferred food options.

Design Thinking
Example

Inefficient Lunch Lines

Step 3: Ideate

- A redesigned lunch line system with separate stations for hot meals, cold meals, and grab-and-go items.
- Pre-order or mobile ordering options to reduce on-site wait times.
- A payment-flow redesign such as additional checkout stations, scanning kiosks, or cashless tap systems.
- Rotating schedules or staggered access to minimize peak-time congestion.

Design Thinking
Example

Inefficient Lunch Lines

Step 4: Protype

- Create a visual map of a new cafeteria layout showing traffic flow and serving stations.
- Build a simple mock-up of a mobile ordering screen or QR-code menu system.
- Draft a revised bell/lunch schedule or pass system that staggers student groups.
- Develop signage samples to direct students to different lunch stations.

Design Thinking
Example

Inefficient Lunch Lines

Step 5: Test

- Pilot the new system with one grade level or a small student group.
- Track line duration, number of students served, and average wait time.
- Collect feedback through quick surveys, teacher observations, and student focus groups.
- Compare before-and-after data to measure improvements in efficiency and student satisfaction.

Design Thinking
Example

Inefficient Lunch Lines

Solution Impact

Reduced lunch line wait times
More equitable access to food options
Increased student satisfaction and participation in school meal programs
Improved use of instructional time and smoother transitions between classes

Design Thinking
Rubric

Design Thinking Rubric

Criteria	Beginner (1)	Proficient (2)	Expert (3)
STEP 1 Empathize	Gathers limited information about users; shows minimal understanding of their needs	Conducts user research and interviews; demonstrates basic empathy for user experiences	Thoroughly investigates user needs through multiple methods; shows deep empathy and insight into user perspectives
STEP 2 Define	Struggles to identify the problem; problem statement is vague or unfocused	Articulates a clear problem statement based on user needs	Crafts a compelling, user-centered problem definition that reveals deep understanding
STEP 3 Ideate	Generates few ideas; lacks creativity in proposed solutions	Produces several creative ideas relevant to the defined problem	Demonstrates exceptional ideation skills; generates numerous diverse and innovative solutions
STEP 4 Prototype	Creates a basic or incomplete prototype with minimal effort	Builds a functional prototype that adequately represents the proposed solution	Develops a refined, detailed prototype that effectively communicates the solution
STEP 5 Test	Conducts minimal testing; struggles to gather or interpret feedback	Adequately tests the prototype and gathers user feedback for improvements	Executes comprehensive testing; skillfully analyzes feedback and implements meaningful iterations

Source: Brisk Teaching

OTHER EXAMPLES

Economics
Personal Finance
CTE

Design Thinking
Examples by National Standards in Economics

1. Scarcity & Allocation
Limited school resources (parking spots, lunch options, club funding)
2. Decision-Making & Incentives
Lack of motivation for saving, studying, or attendance
3. Specialization & Exchange
Group projects where work is uneven or inefficient
4. Markets
School events with low turnout or overpriced tickets
5. Business Decisions & Competition
School or student-run businesses struggle to attract customers
6. Market Failure
Pollution or trash problems in school/community spaces
7. Role of Government
School rules/policies students feel are unfair or ineffective
8. Labor & Income
Students want jobs but lack experience or connections
9. International Trade
Products students use (clothing, phones) tied to global supply chain shortages
10. Technology
Overuse of technology impacting spending, focus, or well-being
11. GDP
Community economic growth vs. quality of life (e.g., new development vs. green spaces)
12. Unemployment
Teens struggling to find part-time jobs
13. Money
Difficulty managing cash vs. digital spending
14. Banks, Interest Rates & Financial Markets
Confusion about borrowing, saving, and investing options
15. Inflation
Rising prices of food, gas, and everyday items affecting students/families
16. Growth & Fluctuations
Economic downturns affecting family income or job stability
17. Monetary Policy
Interest rate changes affecting student loans or family finances
18. Fiscal Policy & Taxation
How tax dollars are spent in schools or communities

Design Thinking

Examples by National Standards for Personal Financial Education

I. Earning Income
- Students struggle to find jobs without experience
- Teens don't know how to increase their earning potential (skills, credentials)
- Students choose jobs/careers without understanding income differences
- Lack of awareness of employee benefits (health insurance, retirement)
- Students underestimate taxes and take-home pay

II. Spending
- Students overspend due to peer pressure and social media influence
- Students don't follow or create realistic budgets
- Impulse buying (online shopping, food delivery, gaming purchases)
- Students struggle to compare price vs. quality when purchasing
- Overuse of digital payments leading to loss of spending awareness

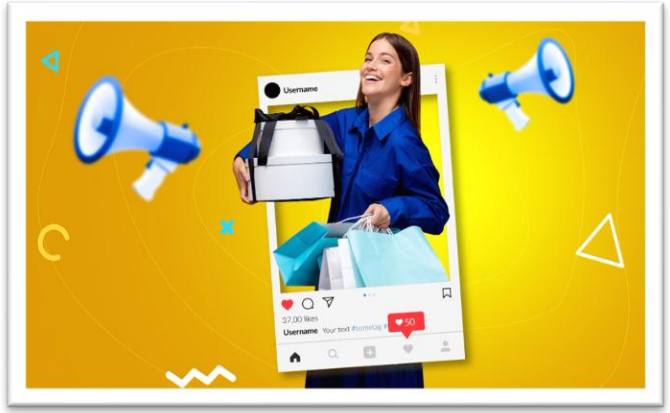
III. Saving
- Students don't save consistently or at all
- Lack of motivation to save for long-term goals
- Students don't understand how interest helps savings grow
- Students don't know where or how to open savings/checking accounts
- Difficulty balancing saving vs. spending priorities

IV. Investing
- Students think investing is only for wealthy adults
- Lack of understanding of risk vs. return
- Students influenced by social media investing trends (crypto, stocks)
- Students don't start investing early despite long-term benefits
- Fear of losing money prevents investing altogether

V. Managing Credit
- Students misuse or misunderstand credit cards
- Lack of understanding of credit scores and long-term impact
- Students take on debt (especially student loans) without full awareness
- Confusion about interest rates, fees, and repayment terms
- Limited access to or knowledge of building credit responsibly

VI. Managing Risk
- Students and families lack understanding of insurance (health, renters, auto)
- Students are vulnerable to scams and identity theft
- Students don't protect personal financial information online
- Lack of emergency planning for unexpected financial shocks
- Misunderstanding of risk vs. cost when deciding on insurance

Design Thinking
Examples by CTE Career Clusters



Employee Onboarding
Guest Experiences for International Travel
Post-Harvest Crop Waste
Last Mile Delivery in Urban Logistics
Human Service Support (Unemployment)
Inefficient School Lunch Lines
Hiring Students with Restricted Schedules
Young Adults Managing Personal Finances
Overspending Due to Social Influences
Managing Gig Work Income

Design Thinking
Examples by CTE Career Clusters

Entrepreneurial Mindset & Design Thinking Examples by Career Clusters

ChatGPT Prompt: What is a practical application of the design thinking process in the _____ industry?

	Business Administration	Tourism	Agriculture	Transportation
Problem	Employee Onboarding	Guest Experiences for International Travelers	Post-Harvest Crop Waste	Last-Mile Delivery in Urban Logistics
Design Thinking Steps	**1. Empathize** ▪ Interview new hires, HR personnel, and managers. ▪ Observe new employees during their first days/weeks. ▪ Identify pain points such as confusing paperwork, lack of guidance, or poor tech setup. **2. Define the Problem** Problem Statement: New employees feel overwhelmed and unsupported during the onboarding process, leading to slower adaptation, lower morale, and decreased productivity. **3. Ideate** ▪ A digital onboarding portal with checklists, video tutorials, and company FAQs. ▪ Welcome kits with personalized items and department overviews. ▪ A buddy system that pairs new employees with experienced staff for the first 30 days. **4. Prototype** ▪ Mockup of the digital portal using a tool like Google Sites or Notion. ▪ Sample welcome kit with branded materials and a "first-week survival guide." ▪ Slack or Teams channel specifically for onboarding questions. **5. Test** ▪ Implement with a small group of new hires. ▪ Gather feedback: Was it clear? Helpful? Easy to navigate? ▪ Adjust the platform, content, or delivery method based on user input.	**1. Empathize** ▪ Conduct interviews and surveys with international guests. ▪ Watch how guests interact with hotel services—from check-in to local sightseeing. ▪ Discover pain points like language barriers, difficulty navigating local attractions, and limited cultural meal options. **2. Define the Problem** Problem Statement: International guests feel disconnected and overwhelmed due to language challenges and lack of personalized, culturally relevant experiences. **3. Ideate** ▪ Mobile concierge app with multilingual support. ▪ Curated cultural welcome packages. ▪ Personalized itineraries based on guest nationality and interests. ▪ Local experience partnerships (e.g., cooking classes, artisan workshops). **4. Prototypes** ▪ A basic app mockup that translates hotel services into multiple languages. ▪ Sample cultural welcome kits including snacks, maps, and guidebooks in native languages. ▪ Trial of a local host program pairing guests with bilingual staff or community ambassadors. **5. Test** ▪ Test the app and kits with a select group of international guests. ▪ Gather feedback on ease of use, cultural relevance, and perceived value. ▪ Refine offerings based on guest input.	**1. Empathi** ▪ Interview buyers to ▪ Visit farm observe transport ▪ Discover vegetable lack of co **2. Define th** Problem St access to a storage sol spoilage be **3. Ideate** ▪ Low-cost, ▪ Reusable ▪ Mobile a or storag **4. Prototyp** ▪ Create a cooler us ▪ Design ar airflow ch **5. Test** ▪ Work wit prototype ▪ Collect fe life? Were	
Real-World Example	Organizations like Zendesk and Shopify have used design thinking to streamline administrative systems—creating employee-centered onboarding experiences that reduce confusion and build engagement from day one.	Companies like Airbnb used design thinking to create the "Experiences" platform, allowing locals to offer curated activities (e.g., tea ceremonies, hikes, art tours) to travelers seeking immersive, authentic experiences—solving a common problem for tourists who want more than just a place to stay.	Companies design thin powered w store perish spoilage. Th	
Solution Impact	▪ Faster employee ramp-up time ▪ Reduced administrative burden on HR staff ▪ Enhanced productivity and morale	▪ Enhanced guest satisfaction and loyalty ▪ Increased bookings from international markets ▪ Differentiation through culturally thoughtful service	▪ Increase ▪ Reduce ▪ Greater chain	

Design Thinking Examples by Career Clusters

ChatGPT Prompt: What is a practical application of the design thinking process for the _____ industry?

	Marketing	Finance	Human Services	
Problem	Social Media Campaign for New Product	Young Adults and Personal Finances	Services and Support	
Design Thinking Steps	**1. Empathize** ▪ Interview potential customers, social media followers, and sales team members. ▪ Observe online behavior and comments on competitor posts. ▪ Identify pain points such as lack of awareness, low engagement, or unclear product benefits. **2. Define the Problem** Problem Statement: Target customers are not engaging with our new product launch on social media due to unrelatable content, unclear value messaging, and limited brand visibility. **3. Ideate** ▪ A themed social media campaign with customer testimonials and before/after use cases. ▪ Interactive polls, stories, or giveaways to boost engagement. ▪ Collaborations with micro-influencers who reflect the target audience's lifestyle and values. **4. Prototype** ▪ Create sample posts, short videos, and story templates using Canva or Adobe Express. ▪ Design a content calendar that outlines post frequency, tone, and platform. ▪ Develop a sample influencer pitch email and content brief. **5. Test** ▪ Launch the campaign on one platform (e.g., Instagram or TikTok) with a small audience. ▪ Monitor likes, comments, shares, click-through rates, and conversion data. ▪ Collect feedback through comments, direct messages, and quick polls.	**1. Empathize** ▪ Interview clients, especially young adults or first-time account holders, about their financial habits and challenges. ▪ Observe user behavior on banking apps or financial literacy websites. ▪ Identify pain points such as confusion about budgeting, fear of debt, or difficulty understanding financial terms. **2. Define the Problem** Problem Statement: Many young adults feel overwhelmed and uninformed when managing their personal finances, leading to poor budgeting habits, missed savings goals, and a lack of confidence in financial decision-making. **3. Ideate** ▪ A simple, gamified budgeting app with visuals, goal tracking, and personalized tips. ▪ Short, engaging video explainers on key financial topics like credit scores or compound interest. ▪ A financial wellness challenge on social media that encourages saving small amounts weekly with peer encouragement. **4. Prototype** ▪ Use Figma or Canva to design a mockup of the budgeting app interface. ▪ Create a storyboard or sample video using animation tools like Powtoon or Biteable. ▪ Draft a social media calendar and sample posts for the savings challenge campaign. **5. Test** ▪ Pilot the budgeting app or videos with a group of target users (e.g., recent high school graduates or entry-level employees). ▪ Collect feedback: Was it engaging? Easy to use? Did it help them make better financial choices? ▪ Iterate the tools and messages based on user responses and usability data.	**1. Empathize** ▪ Interview caseworkers, social workers, clients, and support staff. ▪ Observe interactions during intake, referral, or counseling sessions. ▪ Identify pain points such as long wait times, confusing paperwork, or limited awareness of available services. **2. Define the Problem** Problem Statement: Clients seeking human services often feel frustrated and discouraged due to a lack of clear information and guidance during the intake and referral process, resulting in missed services and delayed support. **3. Ideate** ▪ A user-friendly intake guide or checklist in plain language with visuals. ▪ A centralized online resource hub that matches clients to services based on their needs. ▪ Community "Welcome Orientation" sessions to explain how to access available services. **4. Prototype** ▪ Design a printed intake guide using Canva with icons and step-by-step instructions. ▪ Create a sample webpage or mobile-friendly resource map using Google Sites or Notion. ▪ Draft a PowerPoint presentation or flyer for a welcome orientation session. **5. Test** ▪ Pilot the intake guide and digital resource hub with a small group of new clients. ▪ Collect feedback: Was it easy to follow? Did it reduce confusion? ▪ Refine materials based on client experiences and staff input.	**1. Emp** ▪ Inte aide ▪ Obser levels. ▪ Identify pain points such as stu lack of differentiated instruction, or confusi learning objectives. **2. Define the Problem** Problem Statement: Many students feel disengaged and disconnected from classroom lessons because the instructional materials do not reflect their interests, learning styles, or real-world experiences—leading to lower motivation and academic performance. **3. Ideate** ▪ A project-based learning unit that connects core subjects to real-life careers and challenges. ▪ Interactive digital tools (e.g., quizzes, simulations, or choice boards) to accommodate different learning preferences. ▪ Peer-led discussions or learning stations that promote student voice and collaboration. **4. Prototype** ▪ Draft a lesson plan that includes hands-on activities and multimedia resources. ▪ Create a sample digital learning module using platforms like Google Slides, Canva, or Nearpod. ▪ Design feedback forms or student reflection journals to gauge engagement. **5. Test** ▪ Implement the prototype lesson with a small group of students. ▪ Collect feedback through quick surveys, classroom observations, and informal check-ins. ▪ Revise the lesson content, delivery methods, or tools based on student responses and performance.
Real-World Example	Brands like Glossier and HelloFresh have used design thinking to co-create campaigns with their audiences, refining social media content based on direct user feedback and behavior insights.	Fintech companies like Mint and Acorns have used design thinking to create intuitive financial tools that simplify budgeting, saving, and investing for everyday users—especially those new to managing money.	Organizations like United Way and 211 Networks have used design thinking to simplify access to social services—streamlining communication tools and creating client-centered systems that reduce barriers.	Schools and organizations like High Tech High and Summit Learning have applied design thinking to co-create personalized learning experiences that empower students, improve engagement, and elevate learning outcomes.
Solution Impact	▪ Increased product engagement and visibility ▪ Better alignment between content and audience needs ▪ Higher ROI on social media marketing efforts	▪ Increased financial literacy and confidence ▪ Better money habits among young or underserved populations ▪ Reduced stress and financial errors	▪ Faster access to critical services for clients ▪ Improved clarity and confidence during the intake process ▪ Reduced workload for front-line staff	▪ Increased student engagement and ownership of learning ▪ More inclusive and responsive instructional practices ▪ Improved academic performance and collaboration

From Ordinary to Rockstar Employees: Developing the Entrepreneurial Mindset

NEXT STEPS

Authentic Assessments – Design Challenges
Lean Start-Ups – Lean Canvas & Lean Pitch

Design Challenges

An Interdisciplinary Approach to Human-Centered Design

Dr. David Gray, collegiate assistant professor in Engineering Education, leads a group of Virginia Tech engineering students through a human-centered design program as part of the Stanford Longevity Challenge. They collaborate with students from a variety of disciplinary backgrounds at Clemson University Architecture, Boston College Applied Psychology, and Wentworth Institute of Technology Industrial Design.

Watch Video

VIRGINIA TECH™

Design Challenges

CALIFORNIA ACADEMY OF SCIENCES

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Our Hungry Planet: Design Thinking Challenge

Appropriate for: 6th Grade
Grade
Standards for: 6th Grade, 7th Grade, 8th Grade
Prep Time: 10 minutes
Activity Time: 60 minutes
Subjects: Constructing Explanations, Earth & Space Science, Engineering & Technology, Flipside Science

Attached Files

Teacher Guide

Flipside Science

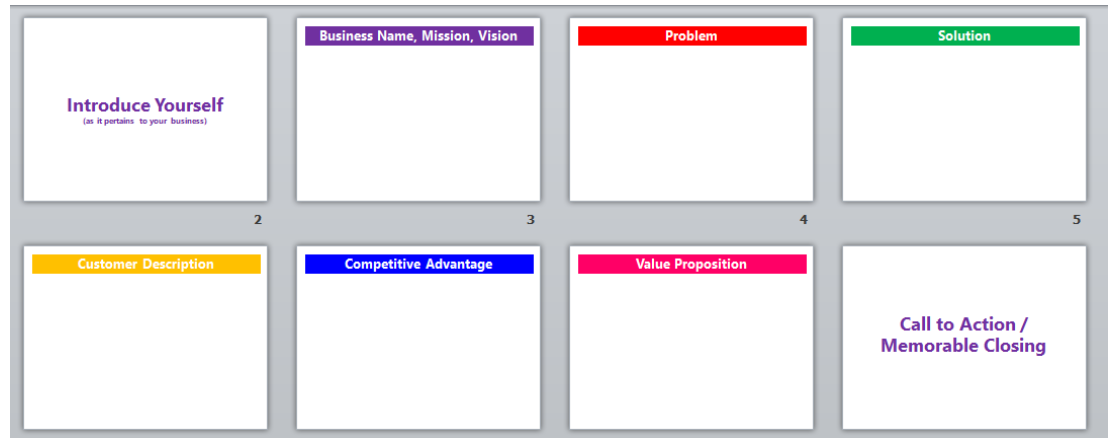
Food, water, energy—we need solutions to the environmental issues of our day.

Are your students ready to tackle a food system issue at home or in their school? The following guide will help you facilitate a structured design challenge in your classroom related to food at home, at school, or in the community.

Design Thinking + Economics & Environmental Entrepreneurship = PROCESS SKILLS for solving career-specific real-world problems

[Lesson Plan | Our Hungry Planet: Design Thinking Challenge]

Lean Canvas & Lean Pitch



Virginia

Entrepreneurship Lean Pitch Challenge

A Virtual Competition for Budding High School Entrepreneurs

CASH PRIZES

1st Place - $150

2nd Place - $100

3rd Place - $50

Winners gain access to real-world entrepreneurs for mentorship and regular check-ins (optional)

Teachers of winning entrepreneurs receive The Entrepreneur Game® boardgame

practice the entrepreneurial mindset and innovative problem-solving skills required by employers and self-employment opportunities

Kolton & Tolin

Theme It Properties

Salem High School
Salem City Public Schools
Mr. Reid

Lilly & Myah

Rejeweled

Salem High School
Salem City Public Schools
Ms. Harless

Chloe

Sunni Sol

Kempsville High School
Virginia Beach City Public Schools
Ms. Houchins

Sequoia

Sequoia's Candles

Warren County High School
Warren County Public Schools
Ms. Rutz

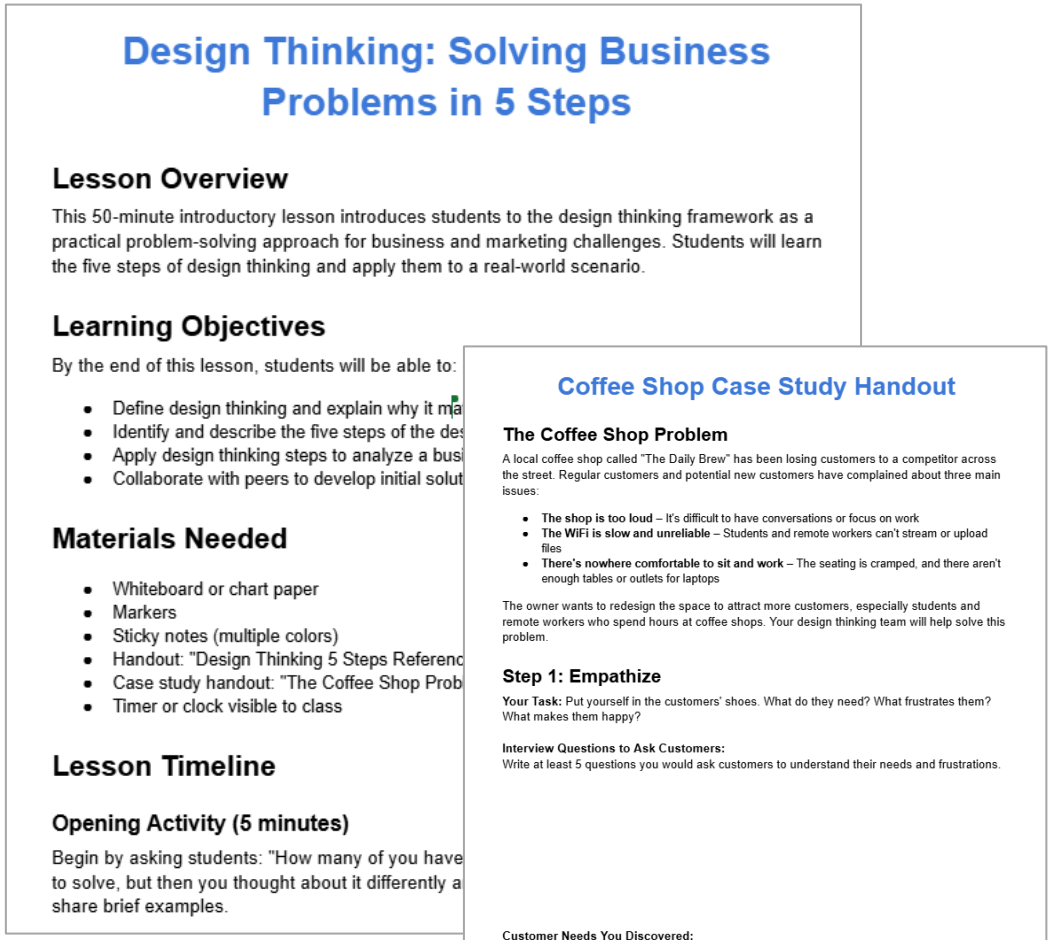
Taylor

Baked By Tay

Highland Springs High School
Henrico County Public Schools
Mr. Mayo

Wrap-Up

Introductory Webinar Resources



Design Thinking: Solving Business Problems in 5 Steps

Lesson Overview

This 50-minute introductory lesson introduces students to the design thinking framework as a practical problem-solving approach for business and marketing challenges. Students will learn the five steps of design thinking and apply them to a real-world scenario.

Learning Objectives

By the end of this lesson, students will be able to:

- Define design thinking and explain why it ma
- Identify and describe the five steps of the des
- Apply design thinking steps to analyze a busi
- Collaborate with peers to develop initial solut

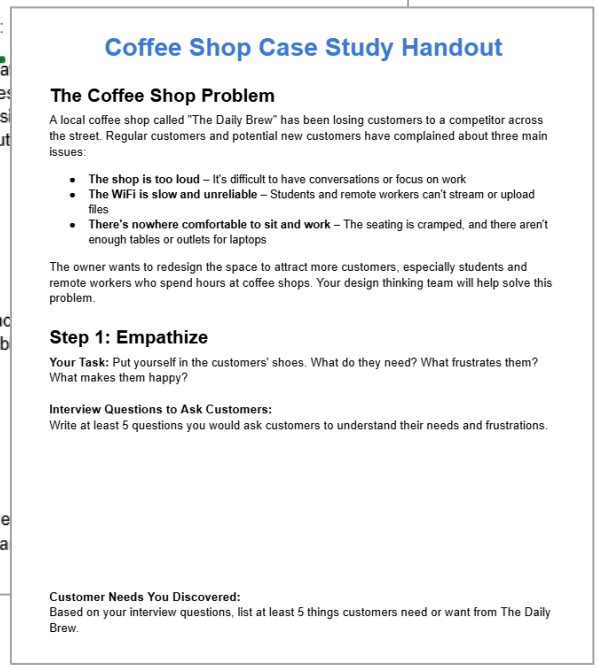
Materials Needed

- Whiteboard or chart paper
- Markers
- Sticky notes (multiple colors)
- Handout: "Design Thinking 5 Steps Referenc
- Case study handout: "The Coffee Shop Prob
- Timer or clock visible to class

Lesson Timeline

Opening Activity (5 minutes)

Begin by asking students: "How many of you have
to solve, but then you thought about it differently a
share brief examples.



Coffee Shop Case Study Handout

The Coffee Shop Problem

A local coffee shop called "The Daily Brew" has been losing customers to a competitor across the street. Regular customers and potential new customers have complained about three main issues:

- **The shop is too loud** – It's difficult to have conversations or focus on work
- **The WiFi is slow and unreliable** – Students and remote workers can't stream or upload files
- **There's nowhere comfortable to sit and work** – The seating is cramped, and there aren't enough tables or outlets for laptops

The owner wants to redesign the space to attract more customers, especially students and remote workers who spend hours at coffee shops. Your design thinking team will help solve this problem.

Step 1: Empathize

Your Task: Put yourself in the customers' shoes. What do they need? What frustrates them? What makes them happy?

Interview Questions to Ask Customers:
Write at least 5 questions you would ask customers to understand their needs and frustrations.

Customer Needs You Discovered:
Based on your interview questions, list at least 5 things customers need or want from The Daily Brew.

[Google Drive Folder]

Online Entrepreneurship Institute

for Middle & High School Teachers

Using experiential learning theory and a free field-tested curriculum, teachers **simultaneously** learn entrepreneurship **content** and instructional **best-practices** by reviewing classroom-ready resources and completing Institute assignments that they can **turnaround and use** with their students with little to no further preparation.

PART A Entrepreneurial Mindset
collection of co-created lessons (modernize workforce readiness skills)

PART B Business Plan
first draft of a business plan

https://www.ctecs.org/usece/online-entrepreneurship-institute

- 400+ Free, classroom-ready, multimedia resources and curriculum
- Real-world context for teaching economics and personal finance classes while simultaneously developing workforce readiness skills
- Live Zoom breakout groups for national networking and collaboration
- Live Zoom classes feature supportive community resources and entrepreneurs who share "lessons learned"
- Certified Entrepreneurship Educator credential, Certificate of Completion, and Digital Badge (3-hours of under/graduate credit for $135 is optional)

The Institute is aligned with the U.S. Entrepreneurship Certification Examination, equipping teachers with the content knowledge, instructional strategies, curriculum, and resources that they need to need to teach entrepreneurship and prepare students to pass the exam.

U.S. Entrepreneurship Certification Exam

Exam Resources Package

https://www.ctecs.org/usece

Study Guide
curriculum framework, CTSO prep, self-study guide (28 pages)

Reading Guide
free e-textbook for educators and students

2 Practice Exams
written on different literacy levels

Exam Manual
blueprint, competencies, accommodations, etc.

Vocabulary Lists
12 content areas (ESL version, too)

3 hours of Credit for Prior Learning (CPL) at community colleges


The secret to success: find something you love to do so much, you can't wait for the sun to rise to do it all over again.
Chris Gardner

Dr. Cheryl Ayers
cheryl42@vt.edu

Webinar Resources

Institute & Exam Details

Email Dr. Ayers for complimentary
preview copy of Exam Resources Package