

EPISODE 03 · TEACHER LESSON PACK

The Hourglass: Time Is the Real Money Cheat Code

Compound interest in 2 minutes. Then a lifetime of interest compounded.



Audience: grades 1-12 (Squire 6-9 / Knight 10-13 / Champion 14-16)

Lesson length: 50-minute single block, with extension and homework options

Format: 5E lesson plan with formative + summative assessment, IEP/504/ELL mods, family-connection take-home

The Money Lessons Schools Skip. Taught as an Adventure, Not a Lecture.

STANDARDS ALIGNMENT

All codes are real and current. Verify against your district's adopted standards before use.

Section	Code / Strand : Standard	Description
CCSS Math + ELA	CCSS.MATH.CONTENT.8.EE.A.1	Know and apply the properties of integer exponents - applies directly to compound growth.
CCSS Math + ELA	CCSS.MATH.CONTENT.HSF.LE.A.1	Distinguish between situations that can be modeled with linear functions and with exponential functions.
CCSS Math + ELA	CCSS.MATH.CONTENT.HSF.LE.A.2	Construct linear and exponential functions from a graph or description.
CCSS Math + ELA	CCSS.MATH.CONTENT.HSF.LE.B.5	Interpret the parameters in a linear or exponential function in terms of context.
Jump\$tart National Standards (2025 edition)	Investing: Standard 1	Explain how investing builds wealth and helps meet financial goals.
Jump\$tart National Standards (2025 edition)	Investing: Standard 2	Evaluate the role of fees, taxes, and inflation on investment returns.

(continued content condensed)

LESSON OBJECTIVE + ESSENTIAL QUESTION

Objective:

Students will (1) compute compound growth using the Rule of 72, (2) compare a 'start at 14' versus 'start at 24' scenario to age 65, and (3) interpret an exponential growth chart and identify the inflection point.

Essential question:

If you flip an hourglass right now and let it run for 50 years, what happens to one dollar?

Vocabulary you must front-load:

Compound interest, Principal, Return, Doubling time, Time horizon, Patience, Index fund, Custodial account

5E LESSON PLAN

Phase	Teacher move	Time
ENGAGE	Hold up a real hourglass. Flip it. While the sand falls, ask: 'If you could only invest while the sand falls, when would you start - at the top or the bottom?'	5 min
EXPLORE	Each student computes three doubling timelines for an 8% return: principal \$100 from age 14, \$100 from age 24, \$100 from age 34. Use the Rule of 72.	12 min
EXPLAIN	Anchor compound vs. simple interest. Walk through one \$20/month from age 14 to 65 calculation on the whiteboard. Show the curve.	10 min
ELABORATE	Pairs build a 'My Hourglass' visual: a vertical timeline marking ages 14, 24, 34, 44, 54, 65 with the projected balance at each stop given a \$20/mo contribution.	13 min
EVALUATE	Exit ticket: students explain in 3 sentences why \$20/month at 14 ends bigger than \$200/month at 50, even though one looks larger.	10 min

PERFORMANCE TASK

Each student creates a 1-page 'Hourglass Plan' for themselves: monthly contribution, time horizon, projected balance, and one sentence about which jar funds it. Bring it home to discuss with a family member. Returns signed.

Criterion	1 - Emerging	2 - Approaching	3 - Proficient	4 - Mastery
Concept accuracy	Major errors in vocabulary or math.	Minor errors; concept partial.	Concept and math correct.	Correct AND extends concept to a new context.
Reasoning quality	Reasoning absent.	One-sentence reasoning, weak.	Clear reasoning per claim.	Reasoning anticipates a counter-claim.
Communication	Unclear; missing details.	Some details missing.	Clear and complete.	Clear, complete, and persuasive.
Personal connection	No connection drawn.	Generic connection.	Specific personal connection.	Specific connection PLUS proposed action.

EXIT TICKET + EXTENSION

Exit ticket (5 minutes):

Exit ticket: students explain in 3 sentences why \$20/month at 14 ends bigger than \$200/month at 50, even though one looks larger.

Gifted extension:

Model a continuous-compounding scenario using $A = Pe^{(rt)}$ and compare to the discrete annual model. Explain in a 1-minute talk why bankers use one and Wall Street uses the other.

EQUITY + TRAUMA-INFORMED DELIVERY

Money is not a neutral topic. Some students in your room may have lived eviction, food insecurity, lost a parent's job, or absorbed shame from family money struggles. The Pillars curriculum is built so that the language is hopeful and the activities are choice-rich. Below are deliberate equity moves you can make.

Move	How
Anonymize	Never reference a specific student's family income, account balance, or known financial event.
Choice-rich	All performance tasks accept multiple expression modes (oral, written, recorded, sketched). Honor that.
No-shame language	Replace 'rich/poor' with 'income brackets' or 'income levels.' Replace 'mistake' with 'choice that didn't go where I wanted.'
Fictional protagonists	All worked examples use fictional characters and fictional dollar amounts. Keep it that way.
Family-shape neutrality	Family-chat prompts work for single-parent, multigenerational, foster, blended, and non-traditional households. Do not assume a 2-parent default.
Free options	When you cite the master pass, also offer the free 2-minute video-only option. The hook is free; only the deep-dive costs.
Cultural variation	Save / spend / give weights vary across cultures. Honor variation rather than enforcing one ratio.
Confidentiality	Self-check pages and reflection journals are private. Do not require students to share answers.

FIRST-YEAR MONEY-SKILLS CHECKPOINT (running tally)

If you teach all 6 Pillars episodes across a semester, this checkpoint maps which skill anchors at which episode. Use it as a grade-period tracker.

Episode	By the end, the student can...
EP01 - 5 Jars	Can allocate \$100 across 5 jars with reasoning.
EP02 - Risk vs Reward	Can sort 5 risks into chase / pay-away with rationale.
EP03 - Hourglass	Can compute Rule of 72 and explain compound vs simple interest.
EP04 - Taxes	Can read a paystub and identify 5 line items; can explain marginal vs effective rate.
EP05 - Make-Sell-Stand	Can compute cost / price / margin for a real product and pitch it for 30 seconds.
EP06 - Quest Map	Can name all 5 tracts and defend a personal first-path choice.

NCAA / transcript note: Delivered as a year-long financial-literacy elective, this 6-episode Pillars series plus 1 deep-dive tract (12 episodes) easily exceeds the 60-instructional-hour bar for a 1-credit course. The Transcript Kit (inside the master pass) provides ready-to-paste course descriptions, syllabus, and standards alignment for high-school transcripts.

COMMON STUDENT MISCONCEPTIONS — AND HOW TO ADDRESS THEM

Each line is a real wrong-belief students bring to this lesson. The right column is what to say first.

Student misconception	Teacher response
Compound interest is something only banks use.	Compounding is math. Anyone with time and patience uses it.
You need a lot of money to start.	False. The whole point is that early small dollars beat late big dollars.
If I miss the early years I should not bother. Late starters DO win ? but they have to save dramatically more. Either way, start.	

5-DAY PACING VARIANT (FOR A WEEK-LONG UNIT)

If you have a full week, expand the single-block plan into a 5-day arc. Each day is one block.

Day	Plan
Day 1 - HOOK	Watch the 2-minute Pillars video. Run the Engage + Explore phases of the 5E plan. Front-load vocabulary.
Day 2 - EXPLORE	Run the Explore + Explain phases. Anchor the math or framework on the board. Begin guided practice.
Day 3 - APPLY	Run the Elaborate phase. Pair work on the performance task. Formative check-in.
Day 4 - CRITIQUE	Peer-critique the performance task drafts using the rubric. Revise.
Day 5 - DEFEND	Final 60-90-second oral defense + exit ticket + family-connection take-home.

SAMPLE STUDENT EXEMPLAR (Mastery-level response)

Use the box below as a model when norming with grade-level peers. Cover the response and ask students to draft first.

Exemplar topic: Hourglass plan for me

I will contribute \$20/month from age 14 to age 65. At 8% return that is approximately \$120,000. If I bump to \$40/month at age 22, the projection is approximately \$230,000. I will fund this from the EARN jar of my babysitting / dog-walking. I will never touch the principal except for a 6-month emergency.

PARENT LETTER TEMPLATE (cut, paste, send home)

Adapt and send. Personalize the [bracketed] fields. Sign with your name.

Dear families,

This week our class is exploring [The Hourglass: Time Is the Real Money Cheat Code], a 2-minute hook video from the CashQuest Kids Money Pillars series. In one 50-minute block we will watch, discuss, and apply the lesson — and your child will bring home a workbook and a family-chat prompt.

Why this matters: financial habits set before age 14 stick into adulthood. Most US classrooms allocate fewer than 10 hours of personal-finance instruction per year. This series is designed to add a high-leverage 10 minutes of dinner-table conversation per week.

What to expect this week: your child will arrive home with a workbook page and a family-chat prompt. Please take 10 minutes — even on a busy weeknight — to listen to their answer. The 6 Pillars episodes work as a series, and the dinner-table conversation is what makes them stick.

Want to go deeper? The full curriculum lives at <https://www.cashquestkids.com> for \$49.99 lifetime all-access. It includes the full 12-episode Investor Lab arc plus four other tracts.

Warmly,

[Your name]

[Your school / classroom]

DIFFERENTIATION + INCLUSION

IEP / 504 modifications:

- Provide a calculator with the Rule-of-72 formula pre-printed for students with math anxiety or processing needs.
- Use a graphic organizer that color-codes the start-at-14 vs. start-at-24 scenarios.
- Allow oral or recorded responses for the exit ticket.
- Offer extended time on the performance task.

ELL / multilingual learner supports:

- Pre-teach 'compound', 'principal', 'return' with bilingual cognate cards.
- Provide a sentence frame: 'My money doubles every ____ years because ____.'
- Pair with a stronger English speaker for the doubling-timeline activity.
- Permit the family-chat assignment to be conducted in the home language.

Gifted extension:

Model a continuous-compounding scenario using $A = Pe^{(rt)}$ and compare to the discrete annual model. Explain in a 1-minute talk why bankers use one and Wall Street uses the other.

ASSESSMENT ITEM BANK (15 questions)

Use these to build summative assessments, exit tickets, or formative checks. Mix item types.

Type	Item
MC	Rule of 72: at 8% return, how long to double? (a) 4yr (b) 9yr (c) 18yr (d) 36yr
MC	What is principal? (a) interest earned (b) the starting amount (c) bank fee (d) a return
MC	Which has bigger impact on compounding for a 14-year-old? (a) more dollars (b) more years
SA	Explain compound interest to a 7-year-old in 2 sentences.
SA	Why does selling early hurt compounding?
SA	What is an index fund and why is it the easy mode?
CR	Build a \$20/month-from-14-to-65 projection at 8%. Show your work.
CR	Compare the projection of starting at 14 vs starting at 24. Defend the difference.
CR	Design a 'Hourglass Plan' for yourself with a written rationale.
PA	Track an index fund for 30 days. Plot the bouncing. Notice the trend.
PA	Open a custodial Roth account application. Walk through each field.
PA	Interview an older relative about their first investment. Write a 1-page reflection.
MC	Doubling time at 12% return is approximately... (a) 6 (b) 9 (c) 12 (d) 24
SA	Explain why a 50-year-old can still benefit from compounding.
CR	Sketch the exponential curve from \$1 to age 65. Annotate the inflection point.

EXTENSION LESSON IDEAS (3 follow-up blocks)

If your students caught fire, here are three follow-up blocks. Each is a self-contained 50-minute lesson.

Block	Concept	Quick activity
Block 1	Continuous vs discrete compounding	Compare $A = Pe^{(rt)}$ to $(1+r)^t$.
Block 2	Inflation as anti-compounding	Compute real vs nominal returns at 3% inflation.
Block 3	Behavioral biases against compounding	Discuss recency bias, loss aversion, herd behavior.

RESEARCH BASIS + FURTHER READING

The CashQuest Kids curriculum draws on multiple lines of established research and standards. Below are anchor sources that informed this episode and that you can cite in your own lesson documentation.

- Jump\$tart Coalition for Personal Financial Literacy — National Standards in K-12 Personal Finance Education (current edition).
- Council for Economic Education — National Standards for Financial Literacy.
- Common Core State Standards — Math + ELA codes referenced explicitly above.
- OECD/INFE — 2020 International Survey of Adult Financial Literacy (background on adult knowledge gaps).
- Holden, Karen and Kalish, Charles — 'The Importance of Money in Children's Lives' (developmental psychology of money concepts).
- Federal Reserve Bank of St. Louis — Page One Economics: classroom-ready economic education briefs.
- Annamaria Lusardi — research on the lifetime cost of financial-illiteracy errors.
- EVERFI / Next Gen Personal Finance — implementation evidence from K-12 districts.

FAMILY CONNECTION TAKE-HOME

Send the Kids Adventure Workbook home with the family-chat page paper-clipped to the front. Encourage students to do at least one family-chat prompt at the dinner table and bring back a one-line reflection. Inclusivity note: the prompts are intentionally written so they work for any household configuration — single-parent, multigenerational, foster, blended, and non-traditional family structures.

Family-chat prompts:

- If we open a custodial account this year, what is one rule we agree to never break?
- What does our family already do that compounds besides money?
- What is one habit we could automate this month to feed the long-term plant?

TEACHER GLOSSARY

Word	Plain meaning
Compound interest	Interest that earns interest. Money makes money makes money.
Principal	The starting amount you put in.
Return	The percentage your money grows in a year.
Doubling time	How long it takes your money to double — about 72 divided by your annual return.
Time horizon	How many years your money has to grow.
Patience	The single rarest investing skill.
Index fund	A simple basket that owns a tiny piece of hundreds of companies at once.
Custodial account	An investing account a parent or guardian opens for a kid.

SAMPLE HOMEWORK ASSIGNMENT + GRADING GUIDE

Cut, paste, send. Adjust the point values to match your gradebook.

Assignment (due next class):

After watching the PILLARS_EP03 video and finishing the workbook, complete the following:

1. Reflection paragraph (5 points): In 100-150 words, explain in your own words what you learned. Use at least 3 vocabulary words from the glossary.
2. Performance task (10 points): Complete the Performance Task described in the lesson plan. Bring your 1-page artifact AND be prepared to defend it in 60 seconds.
3. Family chat (5 points): Pick ONE family-chat prompt. Have the conversation at home. Bring back ONE sentence summarizing what you learned from your family member.
4. Self-check (no points — for your own benefit): Tick the self-check boxes in the workbook honestly.

Grading rubric (20 points total):

Criterion	Mastery (5)	Proficient (4)	Approaching (2-3)	Emerging (1)
Vocabulary use	3+ used correctly	2-3 used correctly	1 used; some confusion	Vocabulary missing or wrong
Reasoning	Clear, persuasive	Clear, complete	Partial reasoning	Reasoning absent
Personal connection	Specific + actionable	Specific connection	Generic connection	No connection
Family conversation	Reflective summary	Summary present	Brief / vague	Missing

STANDARDS CROSSWALK - DETAILED MATRIX

Expanded view of which lesson activity hits which standard. Use to defend the lesson in your district.

Activity	CCSS / Jump\$tart	How
Engage hook (video)	CCSS.MATH.CONTENT.8.EE.A.1	Direct connection between visual and quantitative reasoning.
Explore (manipulatives)	CCSS.MATH.CONTENT.HSF.LE.A.1	Apply ratio / proportional reasoning to a real allocation problem.
Explain (anchor)	CCSS.MATH.CONTENT.HSF.LE.A.2	Front-load vocabulary; connect to abstract math.
Elaborate (pair work)	Investing: Standard 1 - Explain how investing builds wealth and helps meet financial goals.	Apply consumer / decision standards via collaboration .
Evaluate (exit ticket)	Investing: Standard 2 - Evaluate the role of fees, taxes, and inflation on investment returns.	Demonstrate transfer of vocabulary and concept.
Performance task	Investing: Standard 4 - Apply criteria for selecting investments.	Synthesize: defend an allocation / claim with reasoning.

IMPLEMENTATION TIPS FROM THE FIELD

Field-tested tactics from teachers who have run this lesson with K-12 cohorts. Adapt to your context.

Topic	Tactic
Pacing	The 2-minute video is a hook, not a substitute for instruction. Aim for the video at minute 0-3 and again at minute 35-37 as a recap.
Tone	Resist the urge to lecture. The mentor in the video does NOT lecture. Mirror that energy.
Vocabulary	Front-load 4-6 vocabulary words on the board before the video. Children's recall doubles.
Manipulatives	Physical tokens or paper jars or a real hourglass turn an abstract concept into a concrete memory. Use them whenever possible.
Scaffolding	For mixed-grade rooms, run the Squire prompts as openers and the Champion prompts as exit tickets - keeps the same hook for everyone.
Family connection	Send the workbook home and ASK families to send back one line. The reply rate is the leading indicator of internalization.
Equity	Use anonymized examples (no real names, no real account balances). Money trauma is real and a kid in your room may be carrying it.
Assessment	Mix item types from the bank - multiple choice for confidence, short answer for reasoning, performance task for transfer.

RESOURCES + WHAT'S NEXT

This Pillars episode is a hook lesson. The full deep-dive lives inside one of five tracts. Send your students (and their families) to the master pass for the complete CashQuest Kids curriculum.

Master all-access — \$49.99 once:

Enroll in the full curriculum at [cashquestkids.com](https://www.cashquestkids.com) — \$49.99 lifetime all-access. Includes 60+ episodes, K/P/T teaching packs, Transcript Kit, and Certificate of Completion across all 5 tracts: Money Smarts, Insurance Genius, Investor Lab, What's a Tax, and Business World.

Enroll: <https://www.cashquestkids.com>

Tracts inside the pass:

Money Smarts (5 Jars). Insurance Genius (SHIELD). Investor Lab (IVY). What's a Tax (LEDGER). Business World (FORGE).

This material aligns with NCAA-acceptable financial-literacy elective coursework when delivered as a year-long block — see the Transcript Kit included in the master pass.

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