THE BARATELLI INSTITUTE · **MENTORING AT SCALE**

Money *Smarts.*

Investing, retirement, and building real wealth.

Aligns to: exponential modeling and data analysis (high-school math); investing, diversification, retirement accounts, and compounding (personal finance / Jump$tart standards).

Grade 11 · Ages 16–17

1. Investing Basics
2. Risk & Diversification
3. Compound Growth of Investments
4. The Employer Match — Free Money
5. Roth vs. Traditional
6. Dollar-Cost Averaging
7. Start Young: the 13-Year Head Start
8. Investing for a Child

Project — Build a Retirement Projection

A free classroom tool · baratelliinstitute.com

How to use this packet

These are the wealth-building years: what stocks, bonds, and index funds are; risk and diversification; the employer match; Roth vs. Traditional; and why starting young wins. A child-investing page connects to the Institute's Every Child an Investor work.

1. Investing Basics	Stocks, bonds, funds.
2. Risk & Diversification	Spreading risk.
3. Compound Growth of Investments	Long-run market growth.
4. The Employer Match	Free retirement money.
5. Roth vs. Traditional	Two account types.
6. Dollar-Cost Averaging	Investing on a schedule.
7. Start Young	The early-saver advantage.
8. Investing for a Child	Compounding's longest runway.

The project. In the project, students design a retirement plan from a first job — capturing the employer match and projecting it to 65 — and choose between a Roth and a Traditional account. It pulls the skills together into one real-world task — assign it as a capstone, group work, or homework. **Print in black-and-white, single-sided.** Most worksheets take 15–20 minutes; the answer key with concept notes and differentiation tips is at the back. **Figures here are illustrations for learning — not financial, tax, or investment advice; past returns don't guarantee future results. A calculator is recommended.**

Key terms. Stock — part-ownership of a company · **Bond** — a loan you make that pays interest · **Index fund** — a low-cost fund tracking a whole market · **Diversification** — spreading money across many investments · **Employer match** — money your job adds to your retirement savings.

LEARN IT FIRST

The ideas behind this packet

Meet Priya, who started investing at 16. Read the story once, then the worksheets will make sense — the answers will be things you were *taught*, not things you had to guess.

Priya starts investing

Start with the basics: saving means keeping money safe, while **investing** means putting money to work so it can grow — and both rely on **compounding**, earning returns on your past returns. Priya puts it into action at 16.

She opens a custodial brokerage account and learns the building blocks: a **stock** is part-ownership of a company, a **bond** is a loan she makes that pays interest, and an **index fund** is a low-cost basket holding hundreds of companies at once. Because she **diversifies** — spreads her money across many holdings — one bad pick can't sink her. Markets have *historically* averaged about 7–8% a year (never guaranteed), and over decades $\mathbf{A = P(1 + r)^n}$ does powerful work. Her future job will offer a **401(k) with an employer match** — free money she'd be foolish to leave on the table. She chooses a **Roth** (pay tax now, withdraw tax-free later) and invests $200 every month no matter the price — **dollar-cost averaging**, which buys more shares when the market is cheap.

KEY TERMS IN THIS STORY

Saving vs. investing — keeping money safe vs. putting it to work to grow

Compounding — earning returns on your past returns

Stock / bond / index fund — ownership / a loan you make / a low-cost basket

Diversification — spreading money so one loss can't sink you

Employer match — money your job adds to your retirement — free

Roth vs. Traditional — tax now, free later vs. deduct now, tax later

Dollar-cost averaging — investing a fixed amount on a regular schedule

LESSON

What investing is

Saving keeps money safe; investing puts it to work so it can grow. Both rely on compounding.

Stocks, bonds, funds

A **stock** is part-ownership of a company; a **bond** is a loan you make that pays interest; an **index fund** is a low-cost basket holding hundreds of companies at once.

Risk & diversification

Higher potential return means higher risk. **Diversifying** — spreading money across many investments — means one bad pick can't sink you.

Compound growth

Over decades, $A = P(1 + r)^n$ does powerful work. **Example:** $10,000 at 7% for 40 years ≈ **$149,000** — mostly growth, not your deposit.

Now practice → the Investing Basics, Risk & Diversification, and Compound Growth worksheets.

Name: _____ Date: _____

1. Investing Basics

> *Four words to know. Match each to its meaning.*

Stock	A loan you make to a company or government that pays interest
Bond	A basket of many investments in one purchase
Mutual / index fund	A small piece of ownership in a company
Index fund	A low-cost fund that simply tracks a whole market

Draw a line from each term to its meaning.

Name: _____ Date: _____

2. Risk & Diversification

> *Higher potential return usually means higher risk. Diversifying spreads risk across many investments.*

a) Which is generally riskier: one company's stock, or an index fund of 500 companies?

_____

b) A 16-year-old saving for retirement can take _____ risk than a 64-year-old. (more / less)

c) In your words, why is “don't put all your eggs in one basket” good investing advice?

_____

Name: _____ Date: _____

3. Compound Growth of Investments

> *Markets have historically averaged about 7–8% a year over the long run — but past returns are not a guarantee of future results. Use $A = P(1 + r)^n$.*

a) $5,000 at 8% for 30 years ≈ _____

b) $10,000 at 7% for 40 years ≈ _____

c) What part of the final number is growth rather than your deposit?

_____

LESSON

Retirement accounts

Special accounts help your investments grow for the long haul.

The employer match

Many jobs add money to your 401(k) to match part of what you put in — free money, an instant return. **Example:** you put in $3,000, employer matches 50% = **$1,500** free.

Roth vs. Traditional

A **Roth**: pay tax now, withdraw tax-free later. A **Traditional**: deduct now, pay tax later. Young, low-bracket savers often pick Roth.

Now practice → the Employer Match and Roth vs. Traditional worksheets.

Name: _____ Date: _____

4. The Employer Match — Free Money

> *Many jobs match part of what you put in a 401(k). Not taking it is leaving pay on the table.*

Setup — Salary $50,000. You contribute 6% ($3,000). Employer matches 50% of that.

a) Your contribution = ☐

b) Employer match (50% of $3,000) = ☐

c) Total into your account this year = ☐. What's the return on the match alone?

_____

Name: _____ Date: _____

5. Roth vs. Traditional

> *Two retirement accounts, taxed at opposite times. Read, then choose.*

	Traditional	Roth
Tax break	Now (deduct contributions)	Later (withdrawals tax-free)
Taxed at withdrawal?	Yes	No

a) A young worker in a low tax bracket today often prefers a _____. Why?

_____

LESSON

Habits that build wealth

How and when you invest matters as much as what you pick.

Dollar-cost averaging

Investing the same amount on a schedule buys more shares when prices are low. **Example:** $300/month buys 10 shares at $30 but 20 at $15.

Start young

The earlier you start, the more doublings you get. **Example:** $200/month at 8% from age 22 ≈ $895,000 by 65, vs. $298,000 if you wait to 35.

Investing for a child

An account opened at a child's birth has the longest runway. **Example:** $1,000 at 7% for 65 years ≈ **$81,000** — from compounding alone.

Now practice → the Dollar-Cost Averaging, Start Young, and Investing for a Child worksheets.

Name: _____ Date: _____

6. Dollar-Cost Averaging

> *Investing the same amount on a schedule buys more shares when prices are low. You invest $300 each month.*

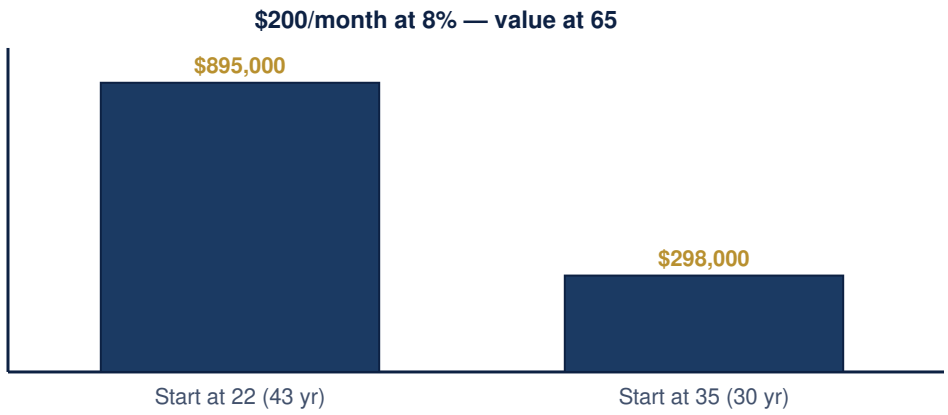
Month	Price/share	Shares bought ($300 ÷ price)
1	$30	
2	$20	
3	$25	
4	$15	

Total shares = ☐ Total invested = ☐ Your average cost/share = ☐

Name: _____ Date: _____

7. Start Young: the 13-Year Head Start

> *Two savers invest $200/month at 8%. One starts at 22, the other at 35.*



a) Starting at 22, about ☐ by age 65.

b) Starting at 35, about ☐.

c) The earlier saver invested fewer total years of money but ended with far more. Why?

_____

Name: _____ Date: _____

8. Investing for a Child

> *A child can have an investment account opened in their name and left to grow for decades.*

a) $1,000 invested at a child's birth at 7% for 65 years ≈ [ ] (use $A = P(1.07)^{65}$, ≈ ×81).

b) The family adds nothing else. What single force created all that growth? _____

c) Why is a child's account the most powerful place for compounding?

_____

Build a Retirement Projection

You'll design a retirement plan from your first job — choosing a contribution, capturing the employer match, and projecting it to age 65. Small choices now, huge differences later.

Step 1 — Your plan

Starting salary = _____ You contribute _____% = _____/year.

Employer matches 50% up to 6%. Your match = _____. Total annual = _____.

Step 2 — Project it

Using the Rule of 72 at 8% (doubles every 9 years), how many doublings between your age now and 65? _____

Roughly what could a single year's $_____ contribution become by 65? _____

Step 3 — The match is free money

Explain, in your own words and numbers, why skipping the employer match is like turning down a raise.

Step 4 — Roth or Traditional?

Pick one for your first job and defend it in two sentences.

Teacher’s Answer Key & Concept Notes

1. Investing Basics — Stock = ownership; Bond = a loan you make; Mutual/index fund = a basket; Index fund = low-cost fund tracking a market.

Differentiate: Support: define each aloud. Challenge: which is usually cheapest to own, and why?

2. Risk & Diversification — a) one company’s stock b) more c) one bad investment can’t sink the whole portfolio.

Differentiate: Support: use the eggs metaphor. Challenge: name a risk diversification can’t remove (market-wide drops).

3. Compound Growth of Investments — a) ≈ $50,313 b) ≈ $149,745 c) most of it — the deposit was small; the rest is compounding.

Differentiate: Support: compute $(1+r)^n$ first. Challenge: how much is growth vs. the $10,000?

4. The Employer Match — Free Money — a) $3,000 b) $1,500 c) $4,500; the match alone is an instant 50% return.

Differentiate: Support: 50% of $3,000. Challenge: 10-year value of just the matches at 8%.

5. Roth vs. Traditional — a) Roth — pay tax now while the rate is low, then withdraw tax-free after decades of growth.

Differentiate: Support: read the table together. Challenge: when would Traditional win? (high bracket now).

6. Dollar-Cost Averaging — Shares: 10, 15, 12, 20 = 57. Invested $1,200. Average cost ≈ $21.05 (below the $22.50 average price).

Differentiate: Support: divide each row. Challenge: compare to buying all 4 months at the average price.

7. Start Young: the 13-Year Head Start — a) ≈ $895,000 b) ≈ $298,000 c) the early money compounded through extra doublings — time matters more than amount.

Differentiate: Support: read the bars. Challenge: how much MORE did the late saver have to invest monthly to catch up?

8. Investing for a Child — a) ≈ $81,000 b) compounding c) a child has the longest possible runway — the most doublings.

Differentiate: Support: ×81 on a calculator. Challenge: add $50/month and re-estimate.

P. Project — Build a Retirement Projection — Open — match and totals correct; Rule-of-72 projection reasonable; Roth/Traditional defended.

Differentiate: Support: provide salary $45,000. Challenge: model contributing 10% vs 6%.