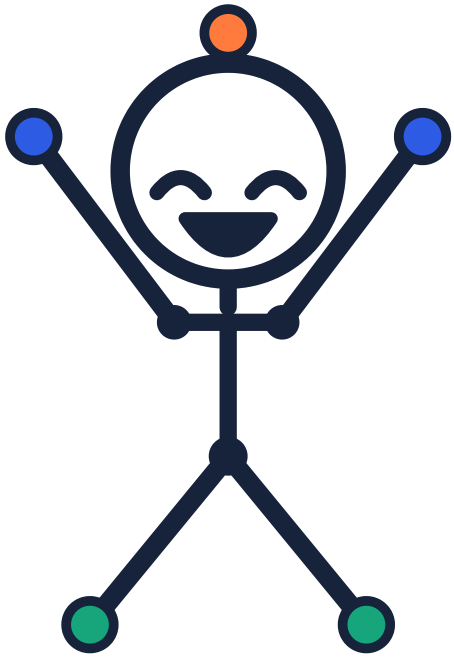
Young Innovators
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A FULL-YEAR FINANCIAL LITERACY PROGRAM · GRADE 5

The Keeping Year

36 weekly assignments. What a thing costs to keep, what it costs each time you use it, and what happens when somebody else pays half.



This book belongs to

_____

Teacher _____ School year _____

Free to print, copy and use. No license, no account, no cost to any student or school.

START HERE HOW THIS BOOK WORKS

The price is not the cost.

Two pages a week, front and back. About thirty-five minutes.

The shape of a week

Page 1 teaches one idea and gives you something to do with it. **Page 2** is practice, two questions to talk over, and a harder challenge. No computer needed.

Weeks 1 to 12 put the price tag in its place: what a thing costs to keep, what it costs each time you use it, and how to compare two options over the same stretch of time. Weeks 13 to 24 are money with other people, which is where it usually goes wrong. Weeks 25 to 36 are about deciding well when a decision has more than one number in it.

The boxes on the page

IN CLASS	The Grade 5 standard your class is most likely on that week. This book sits beside your math lesson, not against it.
MONEY WARM-UP	Two minutes of arithmetic with money in it. Decimals multiplied and divided, and fractions of an amount, which is what 5.NBT.7 and 5.NF are for.
WORDS TO KEEP	One or two words pinned down properly. Adults use these loosely; you will not have to.
COST BOOK	The one thing you build all year, in a notebook or stapled pages. 15 pages by week 36, about your own things and agreements or made-up ones.
TALK ABOUT IT	Two questions for someone at home or at school.
STUCK? TRY THIS	A way in when the page stops making sense.
CHALLENGE ZONE	Harder, and usually open. For whoever finishes early.

Three things this book does not do

Nothing is sold. No product, no customer, no market day. That is The Numbers Year, also Grade 5 and a different book.

Nobody is asked what anything costs at their house. Every amount is printed on the page or made up, or is your own if you choose, and nobody has to say which.

No decision is graded right or wrong. What can be graded is whether the arithmetic behind it is.

WEEK	TITLE	STRAND	WHAT IT SITS BESIDE IN CLASS
TRIMESTER 1 · WEEKS 1–12 · THE PRICE IS NOT THE COST			
1	**The Price Is Not the Cost**	Running Costs	Operations with decimals to hundredths (5.NBT.7)
2	**What It Costs to Keep**	Running Costs	Operations with decimals to hundredths (5.NBT.7)
3	**Price Plus Keeping**	Running Costs	Multiply and divide multi-digit numbers (5.NBT.5, 5.NBT.7)
4	**The Cheap One That Costs More**	Running Costs	Operations with decimals to hundredths (5.NBT.7)
5	**Cost Per Use**	Per Use	Divide with decimals (5.NBT.7)
6	**The Thing You Used Twice**	Per Use	Divide with decimals (5.NBT.7)
7	**How Long Will It Last?**	Per Use	Divide with decimals (5.NBT.7)
8	**Two Options, One Period**	Comparing	Generate and compare two patterns (5.OA.3)
9	**Where They Cross**	Comparing	Patterns and relationships (5.OA.3)
10	**The Number That Is Not Money**	Comparing	Convert measurement units (5.MD.1)
11	**Cheap, Good, or Soon**	Comparing	Operations with decimals to hundredths (5.NBT.7)
12	**The Cost Detective**	Review	Operations with decimals to hundredths (5.NBT.7)
TRIMESTER 2 · WEEKS 13–24 · MONEY WITH OTHER PEOPLE			
13	**Buying It Together**	Together	Divide with decimals (5.NBT.7)
14	**Not Everybody Pays the Same**	Together	Add fractions with unlike denominators (5.NF.1)
15	**What Each Share Comes To**	Together	Multiply a fraction by a whole number (5.NF.4, 5.NF.6)
16	**Share by Use**	Together	Multiply a fraction by a whole number (5.NF.6)
17	**Whose Is It?**	Together	A fraction as division (5.NF.3)
18	**You Owe, or You Are Owed**	Owing	Operations with decimals to hundredths (5.NBT.7)

WEEK	TITLE	STRAND	WHAT IT SITS BESIDE IN CLASS
19	**Paying It Back in Pieces**	Owing	Divide with decimals (5.NBT.7)
20	**The Friend Who Forgot**	Owing	Operations with decimals to hundredths (5.NBT.7)
21	**Lending, and Whether To**	Owing	A fraction as division (5.NF.3)
22	**An Agreement, in Writing**	Together	Operations with decimals to hundredths (5.NBT.7)
23	**When It Breaks**	Together	Multiply a fraction by a whole number (5.NF.6)
24	**The Sharing Page**	Review	Word problems with unlike denominators (5.NF.2)
TRIMESTER 3 · WEEKS 25–36 · DECIDING WELL			
25	**The Decision With Two Numbers**	Deciding	Operations with decimals to hundredths (5.NBT.7)
26	**And Then a Third**	Deciding	Operations with decimals to hundredths (5.NBT.7)
27	**What Would Change Your Mind?**	Deciding	Operations with decimals to hundredths (5.NBT.7)
28	**Deciding for Later You**	Deciding	Operations with decimals to hundredths (5.NBT.7)
29	**Every Month, Forever**	Per Use	Multiply and divide multi-digit numbers (5.NBT.5, 5.NBT.7)
30	**Own It or Borrow It**	Per Use	Divide with decimals (5.NBT.7)
31	**The Real Comparison**	Comparing	Operations with decimals to hundredths (5.NBT.7)
32	**A Decision You Already Made**	Deciding	Operations with decimals to hundredths (5.NBT.7)
33	**Was It Worth It?**	Deciding	Operations with decimals to hundredths (5.NBT.7)
34	**The One You Would Do Again**	Deciding	Operations with decimals to hundredths (5.NBT.7)
35	**Your Cost Book, Finished**	Review	Operations with decimals to hundredths (5.NBT.7)
36	**The Price Is Not the Cost**	Review	Operations with decimals to hundredths (5.NBT.7)

WEEK 1 RUNNING COSTS

The Price Is Not the Cost

What you pay at the counter is the first number, not the only one, and usually not the biggest.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
A $40 thing costs $5 a month to keep. What is a year? _____

WORDS TO KEEP

running cost	What a thing keeps costing after you have paid for it.
the whole cost	The price plus everything it costs to keep, over the time you will have it.



Look at the whole column

One costs $40 and $5 a month. One costs $90 and $1 a month. Over a year that is **$100** and **$102**, which is almost the same money.

It is easy not to compare those two things that way. People compare $40 with $90 and feel like they saved fifty dollars, because the price is the number written on the tag and the running cost is not written anywhere.

This year the price is the bottom block. Everything the thing goes on costing gets stacked on top of it, and the number you compare is the height of the whole column.

Price, or whole cost?

	Price	Each month	12 months of keeping	The whole cost
a	$40.00	$5.00	$60.00	$100.00
b	$90.00	$1.00		
c	$25.00	$3.50		
d	$120.00	$0.00		
e	$60.00	$2.25		

Put the five in order by price. Now put them in order by whole cost. How many changed places?

▶ ADD TO YOUR COST BOOK

Start your Cost Book with this page: one thing you own or make up, its price, and what it has cost since. Made-up prices are fine.

💬 TALK ABOUT IT

Name one thing people own that keeps costing money after it is bought.

Why does the store put the price on the tag and not the running cost?



STUCK? TRY THIS

Multiply the monthly amount by 12 first. Then add the price. Two steps, in that order.

★ CHALLENGE ZONE

Design two things where one has a price twice the other and a whole cost half the other. What has to be true about the running costs?

WEEK 2 RUNNING COSTS

What It Costs to Keep

Naming the running costs, because a cost nobody has named does not get counted.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$2.40 + $1.75 + $0.90 = _____

WORDS TO KEEP

running cost	What a thing keeps costing after you have paid for it.
the whole cost	The price plus everything it costs to keep, over the time you will have it.



Four kinds, and people forget the fourth

Things it needs to work. Things it needs to keep working. Things that get used up. And what it costs to replace when it stops.

A bike is the clearest case. It needs air in the tires, which is nearly free. It needs a chain oiled and a tube patched, which is not. It uses up brake pads. And in six years it is too small for you.

The fourth one is the easiest to forget when you are buying, which is why week 7 exists. If a thing has to be replaced, the replacement is part of what it costs to have one of these, and it always was.

What does it cost to keep?

	The thing	Needs to keep working	Gets used up	Wears out in
a	a bike	air	brake pads	about 6 years
b	a video game console			
c	a pair of school shoes			
d	a pet fish			
e	a phone			

The page gives no prices, so this is your judgment. Which of these five do you think costs least to keep, and which could cost more to keep than it cost to buy? Say why.

TALK ABOUT IT

Tell somebody at home or at school which running cost you think people forget most, and why. Which of the four kinds would you have forgotten if this page had not named it?



STUCK? TRY THIS

Ask what happens if you never spend another dollar on it. Whatever stops working is the running cost.

★ CHALLENGE ZONE

A thing is free to buy and expensive to keep. Name three real examples and say who is paying for them.

WEEK 3 RUNNING COSTS

Price Plus Keeping

One number for the whole thing, so two things can actually be compared.

IN CLASS THIS WEEK
Multiply and divide multi-digit numbers (5.NBT.5, 5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$3.25 a month for 12 months is _____

WORDS TO KEEP

over a year Twelve months of running cost, added to the price. One number you can compare.



Add it up once, properly

$30.00 and $3.25 a month. Twelve months is $39.00, so the first year costs $69.00 altogether.

The other one is $55.00 and $1.25 a month, which is $15.00 a year, so $70.00. A dollar apart, and their price tags are twenty-five dollars apart.

Notice what the whole cost depends on: **how long you keep it**. Over one year these are the same. Over three years they are not close, and week 8 is about choosing the stretch of time before you do the arithmetic rather than after.

The first year

	Price	Each month	A year of keeping	First year, altogether
a	$30.00	$3.25	$39.00	$69.00
b	$55.00	$1.25		
c	$18.00	$5.75		
d	$140.00	$0.75		
e	$72.00	$2.00		

Two of these come within five dollars of each other over the first year and their prices are twenty-five dollars apart. Which two?

▶ ADD TO YOUR COST BOOK

Add a page headed Price Plus Keeping, with two real things costed over their first year and the two columns side by side.

💬 TALK ABOUT IT

Explain row c to somebody at home or at school: why is the first year so much more than the price?

Is a year the right length to compare over? What would you use instead?



STUCK? TRY THIS

Twelve times the monthly amount, then add the price. Keep the cents in all the way to the end.

★ CHALLENGE ZONE

Two things cost the same over one year. Over three years one costs twice the other. Invent them.

WEEK 4 RUNNING COSTS

The Cheap One That Costs More

The reversal, and it happens more often than anybody expects.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$18 + 12 x $6.00 = _____

WORDS TO KEEP

over a year Twelve months of running cost, added to the price. One number you can compare.



Eighteen dollars, and then seventy-two

The $18.00 one costs $6.00 a month, so a year is $72.00 and the whole thing is $90.00. The $72.00 one costs 50 cents a month, so a year is $6.00 and the whole thing is $78.00.

The cheap one costs twelve dollars more. It was never the cheap one; it was the one with the cheap price, and those are different things.

This is not a rule that expensive things are secretly cheaper. Sometimes the expensive one is just expensive. The rule is that you cannot know which case you are in without the arithmetic, and the arithmetic takes about a minute.

Which one really costs more?

	Cheap price	Its monthly	Higher price	Its monthly	Both whole years, then which costs more
a	$18.00	$6.00	$72.00	$0.50	$90 and $78, the cheap one
b	$25.00	$2.00	$40.00	$1.00	
c	$60.00	$1.50	$85.00	$0.25	
d	$12.00	$8.00	$95.00	$0.00	
e	$30.00	$3.00	$50.00	$2.00	

In three rows the cheaper price is also the cheaper year. In two it is not. Which two, and what do those two have in common?

TALK ABOUT IT

Tell somebody at home or at school about a cheap thing that turned out expensive.

Does knowing this change what you would buy, or just how you would feel about it?



STUCK? TRY THIS

Work out both whole years first. Compare only at the end, and never compare the prices on their own.

★ CHALLENGE ZONE

A thing has a cheap price and a cheap running cost and is still the worse buy. How is that possible? Week 7 has the answer if you want to look ahead.

WEEK 5 PER USE

Cost Per Use

The whole cost, divided by the number of times you actually used it.

IN CLASS THIS WEEK
Divide with decimals (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$60.00 divided by 200 uses is _____

WORDS TO KEEP

cost per use The whole cost divided by the number of times you used it.



The number that settles an argument

$60.00 shoes worn 200 times cost **30 cents** a wearing. $25.00 shoes worn 20 times cost **$1.25** a wearing.

The expensive shoes cost about a quarter as much each time. Not cheaper to buy, cheaper to use, and using them was the point of having them.

This is the number to reach for when somebody says a thing is too expensive, and it is also the number that will tell you honestly about something you wanted very badly and have used twice. It cuts both ways, which is why it is worth knowing.

Work out the cost per use

	Whole cost	Times used	Cost per use
a	$60.00	200	$0.30
b	$25.00	20	
c	$90.00	45	
d	$14.00	7	
e	$120.00	500	

Put the five in order by whole cost. Now by cost per use. The most expensive thing on this page is the cheapest to use. Which is it?

▶ ADD TO YOUR COST BOOK

Add a page headed Cost Per Use, with three things, yours or made up, honestly counted, and the cheapest one circled.

💬 TALK ABOUT IT

Pick something you use a lot, guess its price, and work out its cost per use.

Is there anything where you would rather not do this? Why?



STUCK? TRY THIS

Divide the whole cost by the number of uses. The answer is money, so it goes to the cent.

★ CHALLENGE ZONE

Two things have the same cost per use and one cost ten times as much. What is true about how often each gets used?

WEEK 6 PER USE

The Thing You Used Twice

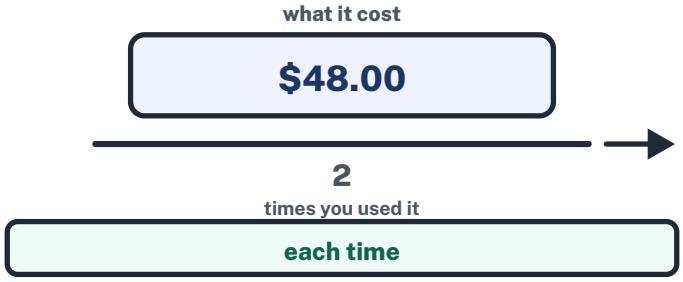
The honest version of the same arithmetic, done on something that did not work out.

IN CLASS THIS WEEK
Divide with decimals (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$48.00 divided by 2 uses is _____

WORDS TO KEEP

cost per use The whole cost divided by the number of times you used it.



Twenty-four dollars a time

Something that cost $48.00 and got used twice cost $24.00 each time. That is not a small number and it does not feel like one either.

This happens to plenty of people. It is not a moral failure and this page is not a scolding. It is a measurement, and the reason to take it is that it is the only honest input to the next decision.

Here is the useful part. Before you buy something, guess how many times you will use it, then halve your guess. Halving is a rule of thumb, not a law: a guess made while you want something is the hopeful one, and this table is where you find out how hopeful yours was.

The uncomfortable table

	What it cost	Guessed	Really used	Per use, really	Per use, if the guess was right
a	$48.00	20	2	$24.00	$2.40
b	$30.00	50	5		
c	$16.00	10	8		
d	$75.00	100	12		
e	$9.00	4	1		

In which row does the guess matter least?

💬 TALK ABOUT IT

Find one thing you use much less than you expected to. Just find it.

Should you get rid of a thing you barely use, or does that make it worse?



STUCK? TRY THIS

Divide by the real number, not the hoped-for one. Then do it again with the guess and compare.

★ CHALLENGE ZONE

You are about to buy something for $40 and you guess 30 uses. Halve the guess. What is the cost per use now, and does it change your answer?

WEEK 7 PER USE

How Long Will It Last?

Replacing it is part of what it costs to have one, and it always was.

IN CLASS THIS WEEK
Divide with decimals (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$84.00 over 3 years is _____ a year

WORDS TO KEEP

how long it lasts The number of uses or years before it has to be replaced. A guess, written down.



Three cheap ones is not cheaper than one good one

A $30.00 thing that lasts a year costs $90.00 over three years. A $72.00 thing that lasts three years costs $72.00 over three years.

Same three years, eighteen dollars apart, and the cheap one is the expensive one again. This is the fourth running cost from week 2, the one nobody names, and it is usually the largest.

How long a thing lasts is a guess. Write the guess down anyway. A written guess can be wrong in a way you can learn from; an unwritten one just quietly becomes whatever you wanted it to be.

Cost per year

	Price	Lasts	Cost per year	Over 6 years
a	$30.00	1 year	$30.00	$180.00
b	$72.00	3 years		
c	$84.00	2 years		
d	$150.00	6 years		
e	$45.00	18 months		

Over six years, which is cheapest? Is it the one with the cheapest price, or the one with the longest life, or neither?

▶ ADD TO YOUR COST BOOK

Add a page headed How Long It Lasts, with three things, yours or made up, and your written guess for each.

💬 TALK ABOUT IT

Name something made to last a long time. What makes it last?

Can you tell how long a thing will last before you buy it? What would you look at?



STUCK? TRY THIS

Divide the price by the number of years to get the cost per year. Then multiply by six so every row covers the same time.

★ CHALLENGE ZONE

A $30 one lasts a year and a $180 one lasts six. They cost the same over six years. Which would you buy, and what does your answer depend on?

WEEK 8 COMPARING

Two Options, One Period

A comparison over two different stretches of time is not a comparison at all.

IN CLASS THIS WEEK
Generate and compare two patterns (5.OA.3)

MONEY WARM-UP · 2 MINUTES
$40 + 6 x $5 against $90 + 6 x $1. Which is less? _____

WORDS TO KEEP

the same period Two options can only be compared over the same stretch of time. Different stretches are not a comparison.



Pick the stretch first

Over six months, A costs $70.00 and B costs $96.00. Over two years, A costs $160.00 and B costs $114.00.

Both of those are true and they point opposite ways. Neither is a trick. The answer to which is cheaper depends entirely on how long you are going to have it, and that is a question about you rather than about the two things.

So decide the stretch of time **before** you do any arithmetic. Choosing it afterwards, once you can see which answer you like, is how people talk themselves into things and it does not feel dishonest while it is happening.

The same options over five different stretches

	How long	Option A: $40 + $5 a month	Option B: $90 + $1 a month	Cheaper
a	6 months	$70.00	$96.00	A
b	1 year			
c	2 years			
d	3 years			
e	5 years			

A is cheaper in some rows and B in others. Between which two rows does the answer change?

💬 **TALK ABOUT IT**

Ask somebody how long they would expect a pair of shoes to last, and why.

Is it cheating to pick the time period that makes your answer come out right?



STUCK? TRY THIS

Work out one option all the way down the column, then the other. Comparing row by row invites mistakes.

★ **CHALLENGE ZONE**

Write a rule for choosing the stretch of time that does not depend on which answer you are hoping for.

WEEK 9 COMPARING

Where They Cross

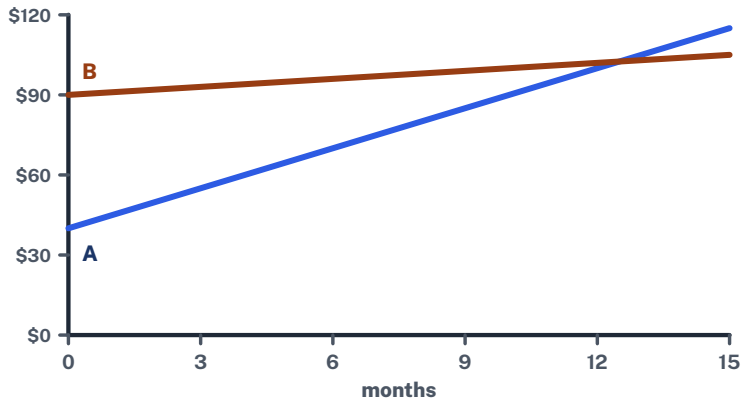
The month the cheaper option stops being the cheaper one, found rather than guessed.

IN CLASS THIS WEEK
Patterns and relationships (5.OA.3)

MONEY WARM-UP · 2 MINUTES
$40 + $5m and $90 + $1m. At what m are they equal? _____

WORDS TO KEEP

where they cross The point where the cheaper option stops being the cheaper one.



Two lines, one crossing

A starts lower and climbs faster. B starts higher and barely climbs. Somewhere they meet, and after that A is the expensive one forever.

You can find it by building the table month by month until the numbers swap, which always works and is worth doing once. A is $50 cheaper at the start and closes $4 of that gap every month, so it takes **12 and a half months**, and at 13 months B has won.

The crossing is the only number in the comparison that does not depend on your opinion. Once you know it, the decision becomes a single honest question: will I still have this in thirteen months?

Find the crossing

	Option A	Option B	Gap at the start	Closed each month	They cross at
a	$40 + $5	$90 + $1	$50	$4	12.5 months
b	$20 + $6	$56 + $2			
c	$30 + $4	$66 + $1			
d	$50 + $3	$80 + $2			
e	$15 + $9	$99 + $1			

Three of rows b to e cross at a whole number of months. One does not. Which, and what would you write for it?

▶ ADD TO YOUR COST BOOK

Add a page headed Where They Cross, with two real options, both lines drawn, and the crossing month marked.

💬 TALK ABOUT IT

Explain the crossing point to somebody at home or at school using one of these rows.

If you are not sure how long you will keep something, which side of the crossing is safer to be wrong on?



STUCK? TRY THIS

Take the gap between the two prices. Divide it by the difference between the two monthly amounts. That is how many months to close it.

★ CHALLENGE ZONE

Both options cost the same every month. Where do they cross? Say what that means about the decision.

WEEK 10 COMPARING

The Number That Is Not Money

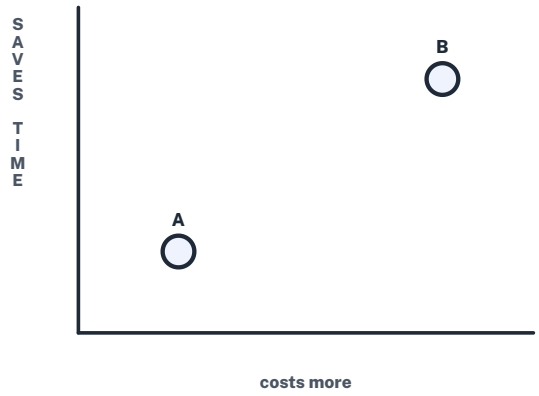
Some reasons have no dollar amount. They still go in the decision.

IN CLASS THIS WEEK
Convert measurement units (5.MD.1)

MONEY WARM-UP · 2 MINUTES
A costs $70 and takes 20 minutes. B costs $95. Cheaper? _____

WORDS TO KEEP

not money A reason that matters and has no dollar amount. It still goes in the decision.



Do not pretend it has a price

A costs $70.00 and takes twenty minutes of your time every week. B costs $95.00 and takes none.

There is a way of answering this that puts a price on your time, decides an hour is worth a certain number of dollars, and turns the whole thing into one number. Adults do it. It is a real method and it is not the one this book teaches, because the price it puts on your time is invented and then the invented number quietly decides the answer.

Do this instead. Write the money. Beside it, write the thing that has no price, in words. Then decide, knowing you decided rather than having the arithmetic decide for you.

Money, and the other thing

	Option A	Option B	Cheaper	What the cheaper one costs you that is not money
a	$70, 20 min a week	$95, no time	A	about 17 hours a year
b	$40, breaks often	$65, reliable		
c	$12, lasts a year	$30, lasts two		
d	$25, borrowed	$50, yours		
e	$80, heavy	$110, light		

In which row do you think the thing that is not money matters most? Say why that one. There is no single right row.

TALK ABOUT IT

When might somebody pay more on purpose? Give two reasons.

Is your time worth money? Does the answer change on a Saturday?



STUCK? TRY THIS

Work out the money first and get it out of the way. Then write the other reason in a sentence, not as a number.

★ CHALLENGE ZONE

Somebody says your time is worth $10 an hour and uses it to settle row a. What is right about that and what is wrong with it?

WEEK 11 COMPARING

Cheap, Good, or Soon

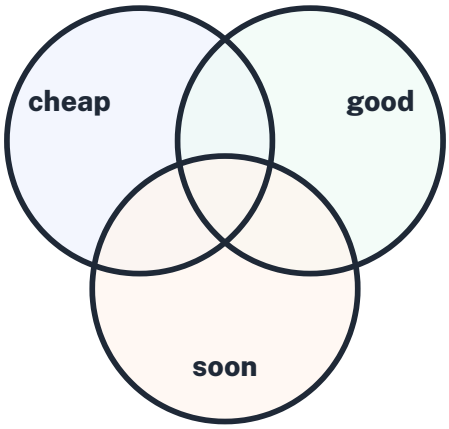
You can usually have two. The useful skill is saying out loud which one you are giving up.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$18 now, $12 in three weeks. What does waiting save? _____

WORDS TO KEEP

not money A reason that matters and has no dollar amount. It still goes in the decision.



most choices land where two circles overlap

Name the one you dropped

Cheap, good, and soon. Most real choices let you have two of them, and the third one is what you are paying with.

Waiting three weeks to save six dollars means giving up **soon**. Buying the flimsy one today means giving up **good**. Buying the good one today means giving up **cheap**. None of those is wrong.

The mistake is not picking badly, it is not noticing you picked. Somebody who says the good one today was too expensive has usually decided that soon mattered most, without ever saying so, and will be annoyed about the money for weeks.

Which one did you give up?

	The choice	Cheap?	Good?	Soon?	Which one you gave up
a	wait 3 weeks and save $6	yes	yes	no	soon
b	buy the flimsy one today				
c	buy the good one today				
d	borrow a friend's for now				
e	make one yourself				

Row d gets all three and is still not always the right answer. What is it costing that is not on this list?

💬 **TALK ABOUT IT**

Tell somebody at home or at school about a choice where you gave up soon. Was it worth it? Which of the three do you give up most often? Is that a habit or a decision?



STUCK? TRY THIS

For each row, mark the three columns yes or no first. The last column is whichever one you wrote no in.

★ **CHALLENGE ZONE**

Find a real choice where you can have all three. What is unusual about it?

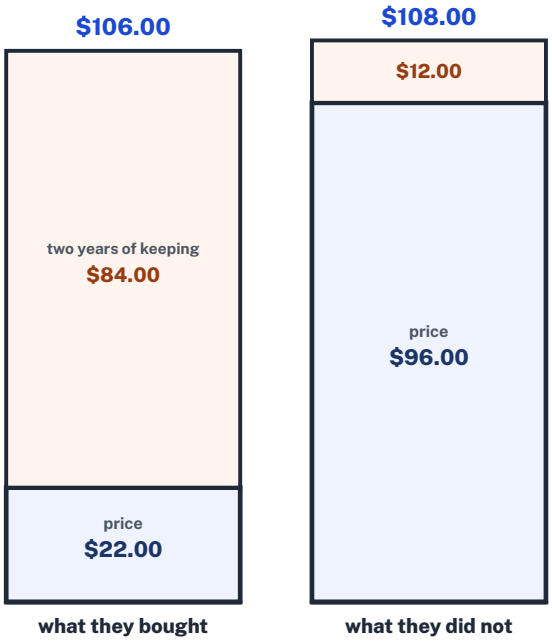
WEEK 12 REVIEW

The Cost Detective

Everything from weeks 1 to 11, on one decision somebody else made in a hurry.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$22 + 24 x $3.50 = _____



Four things they did not work out

Somebody chose the $22.00 one over the $96.00 one because it was seventy-four dollars cheaper. It costs $3.50 a month to keep; the other costs 50 cents. They kept it for two years and used it about forty times.

Work out what each would have cost over the two years they actually had it. Then work out the cost per use of the one they bought. Then say what the crossing month was, and whether they passed it.

Answer them in the table on page 2. A detective says what happened, not just which number is bigger.

The evidence

	The question	Your answer
a	What did the one they bought cost over two years?	
b	What would the other one have cost over the same two years?	
c	At forty uses, what did the one they bought cost per use?	
d	In which month did the two options cross?	
e	Did they keep it past the crossing month?	

Now write the one sentence you would have said to them in the store. It has to contain a number.

💬 TALK ABOUT IT

Try your sentence on somebody at home or at school. Does it land?

Would knowing all this have changed their mind, or just made them feel worse?



STUCK? TRY THIS

Do part a and part b before anything else. Everything on this page is easier once both whole costs are written down.

★ CHALLENGE ZONE

They chose the cheaper one over two years, but only just. Change one number on this page so that the same choice turns out to be the wrong one. Which number did you pick, and why that one?

WEEK 13 TOGETHER

Buying It Together

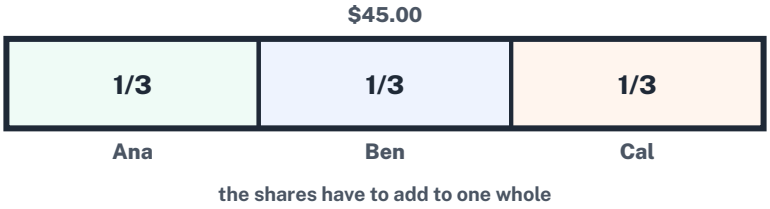
One cost, more than one person, and the arithmetic is the easy part.

IN CLASS THIS WEEK
Divide with decimals (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$45.00 split evenly between 3 people is _____

WORDS TO KEEP

split One cost divided between the people paying it.



the shares have to add to one whole

Even is a choice, not a default

$45.00 between three people is $15.00 each. That is the whole calculation and it takes four seconds.

Everything hard about this week happens before and after. Before: does everybody agree the thing is worth $45.00, or has one person decided and the others are going along with it? After: what happens when one of them cannot pay this week.

Splitting evenly is fair when everybody wants it equally and will use it equally. That is often true and it is not automatic, which is what weeks 14 to 16 are about.

Split it evenly

	The cost	People	Each pays	Anything left over
a	$45.00	3	$15.00	nothing
b	$30.00	4		
c	$50.00	3		
d	$28.00	8		
e	$100.00	6		

Two rows do not divide evenly into cents. Round each share down to the cent. How many cents are left over, and who pays them?

▶ ADD TO YOUR COST BOOK

Add a page headed Buying It Together, with one shared cost, real or made up, the people, and what each paid.

💬 TALK ABOUT IT

Name something a group might buy together. Who should pay what?

Who should decide what a shared thing is worth: the person paying most, or everybody equally?



STUCK? TRY THIS

Divide the cost by the number of people. If it does not come out to whole cents, the leftover is real and somebody has to carry it.

★ CHALLENGE ZONE

Four people split $30.00 and one of them can only pay $5. Write two different fair ways to finish the split, and say what each one assumes.

WEEK 14 TOGETHER

Not Everybody Pays the Same

An uneven split, written as fractions that still have to reach one whole.

IN CLASS THIS WEEK
Add fractions with unlike denominators (5.NF.1)

MONEY WARM-UP · 2 MINUTES
1/2 + 1/3 + 1/6 = _____

WORDS TO KEEP

an uneven share A split where the parts are not the same size, written as fractions that still add to one whole.



Unlike denominators, one whole

A half, a third and a sixth. Over six they are 3/6, 2/6 and 1/6, which add to 6/6. One whole, so the split is complete.

On $36.00 that is $18.00, $12.00 and $6.00. Notice that you can check the money the other way: the three amounts add to $36.00, and if they did not, one of the fractions was wrong.

An uneven split needs a reason, and the reason is the whole point. Ana pays half because she wanted it most, or uses it most, or has the most money. Those are three completely different agreements and week 22 is about writing down which one you made.

Do the shares reach one whole?

	The shares	Over a common bottom	Add to	One whole?
a	1/2, 1/3, 1/6	3/6, 2/6, 1/6	6/6	yes
b	1/2, 1/4, 1/4			
c	2/5, 2/5, 1/10			
d	1/3, 1/3, 1/4			
e	3/8, 3/8, 1/4			

Two rows do not reach one whole. How short is each, and what would happen in real life if three people paid those shares?

TALK ABOUT IT

Show somebody at home or at school how 1/2, 1/3 and 1/6 make one whole.

Is an uneven split unfair? What would make it fair or unfair?



STUCK? TRY THIS

Find a bottom number all three fractions fit into. Rewrite them over it, then add the tops.

★ CHALLENGE ZONE

Three people split a cost as 1/2, 1/3 and something. What is the third share? Now do it for 1/2, 1/5 and something.

WEEK 15 TOGETHER

What Each Share Comes To

Turning the fractions into money, which is where a disagreement gets settled.

IN CLASS THIS WEEK
Multiply a fraction by a whole number (5.NF.4, 5.NF.6)

MONEY WARM-UP · 2 MINUTES
1/3 of $36.00 is _____

WORDS TO KEEP

an uneven share A split where the parts are not the same size, written as fractions that still add to one whole.



Money does not have opinions

Half of $36.00 is $18.00. A third is $12.00. A sixth is $6.00. They add to $36.00, so the split works.

Two people can argue about whether a third is a fair share for a long time. They cannot argue about whether a third of $36.00 is $12.00, and getting from the first argument to the second one is most of what this week does.

Always add the amounts up at the end. If they do not come to the cost, something is wrong with the fractions, and finding that out now is much better than finding it out at the register with three people watching.

What does each person pay?

	The cost	Ana	Ben	Cal	Do the three add to the cost?
a	$36.00	$18.00	$12.00	$6.00	yes
b	$60.00				
c	$24.00				
d	$45.00				
e	$50.00				

Ana always pays 1/2, Ben 1/3 and Cal 1/6. In one row somebody's share is not a whole number of cents. Which row, and what would you do?

▶ ADD TO YOUR COST BOOK

Add a page headed Our Shares, with the fractions, the amounts, and the check that they add to the cost.

💬 TALK ABOUT IT

Pick a made-up amount, split it 1/2, 1/3 and 1/6, and show somebody at home or at school that the three add back up.

In row e, Ben's share is $16.66 and two thirds and Cal's is $8.33 and a third. Rounded down, one cent is left over. Who pays it?



STUCK? TRY THIS

Divide by the bottom number, then multiply by the top. Add all three at the end and compare with the cost.

★ CHALLENGE ZONE

Find a cost under $100 where 1/2, 1/3 and 1/6 all come out to whole dollars. What do all such costs have in common?

WEEK 16 TOGETHER

Share by Use

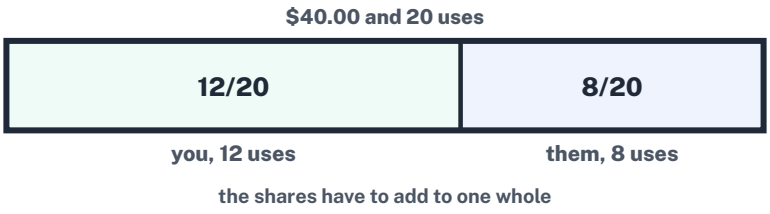
Splitting by how much each person uses it, which is a different kind of fair.

IN CLASS THIS WEEK
Multiply a fraction by a whole number (5.NF.6)

MONEY WARM-UP · 2 MINUTES
You used it 12 of 20 times. What fraction? _____

WORDS TO KEEP

share by use — Splitting by how much each person uses it rather than by how many people there are.



Count the uses, then split

Two people share a $40.00 thing. One uses it 12 times, the other 8. That is 12/20 and 8/20, so $24.00 and $16.00.

Splitting by use is fairer than splitting by head count when the use is genuinely uneven, and it is only possible if somebody counted. Nobody counts unless it was agreed at the start, which is why this is a week about agreements as much as about fractions.

It also has a cost of its own. Counting every use of a shared thing between friends is a small ongoing unpleasantness, and sometimes an even split that is slightly wrong is worth more than an exact split that needs a tally on the wall.

Split by use

	The cost	You used	They used	Your share	Your money
a	$40.00	12	8	12/20	$24.00
b	$30.00	5	5		
c	$60.00	9	3		
d	$25.00	1	4		
e	$48.00	10	14		

In one row splitting by use gives the same answer as splitting evenly. Which, and what does that tell you about when the two methods differ?

TALK ABOUT IT

Ask somebody at home or at school whether they would want a shared thing split by use. Would you rather pay slightly too much or count every time you used something?



STUCK? TRY THIS

Put your uses over the total uses. That fraction of the cost is your share.

★ CHALLENGE ZONE

You agreed to split by use and then used it far more than you expected. Are you worse off than if you had agreed to split evenly? Show it with numbers.

WEEK 17 TOGETHER

Whose Is It?

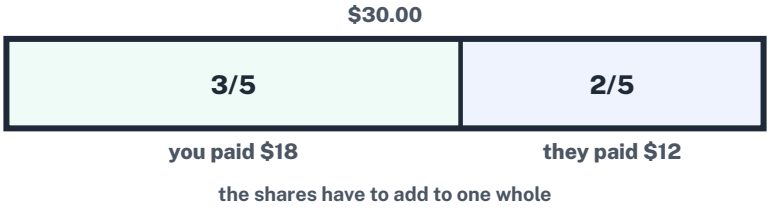
People paid different amounts. The thing is still one thing.

IN CLASS THIS WEEK
A fraction as division (5.NF.3)

MONEY WARM-UP · 2 MINUTES
You paid $18 of $30. What fraction of it is yours? _____

WORDS TO KEEP

what you own of it What you paid over the whole cost, as a fraction. It is your part of whatever happens to the thing later.



Owning three fifths of a thing

You paid $18.00 of $30.00, which is 3/5. They paid 2/5. So you own three fifths of it, and three fifths of a thing is not something you can put in your bag.

This is the part people skip and then argue about six months later. Who keeps it at night? What happens if one of you moves away? If it gets sold for $10.00, who gets what? Those all have answers and the answers are much easier to agree on now than then.

Fractions can tell you what each person's share is worth. They cannot tell you whose shelf it lives on. That is an agreement, and week 22 is where you write one.

Who owns what

	Cost	You paid	Your fraction	If it sold for half, you get
a	$30.00	$18.00	3/5	$9.00
b	$40.00	$10.00		
c	$24.00	$12.00		
d	$50.00	$45.00		
e	$36.00	$4.00		

In row d you paid nearly all of it. Should the other person get any say in what happens to it? Argue it both ways.

💬 TALK ABOUT IT

Ask somebody at home or at school who owns a thing two people paid for.

Is owning most of something the same as it being yours?



STUCK? TRY THIS

Put what you paid over the whole cost and simplify. That fraction is your share of anything that happens to it later.

★ CHALLENGE ZONE

Two people pay 3/5 and 2/5. It breaks and is worth nothing. Who lost more? Now answer it again in dollars.

WEEK 18 OWING

You Owe, or You Are Owed

The same fact from two sides, and both sides should be written in the same place.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
You owe $12.50 and are owed $4.00. Net? _____

WORDS TO KEEP

owe	Money that is somebody else's and is currently with you.
owed	Money that is yours and is currently with somebody else.

Who	I owe them	They owe me	Left
Ana	$12.50		
Ben		$4.00	
Cal	$3.00	$3.00	

Write it down the same day

Money you owe is somebody else's money that happens to be with you. Money you are owed is your money that happens to be with somebody else.

Both go in the same ledger, in their own columns, on the day it happens. Not from memory on Sunday. Memory is generous about what you owe and sharp about what you are owed, and it is not doing that on purpose.

Look at Cal. Three dollars each way, so nothing is owed at all, and neither of you has to do anything. That row is the whole argument for keeping the ledger: without it, two people each remember being owed three dollars.

Fill in the ledger

	Who	I owe them	They owe me	So the position is
a	Ana	$12.50	$0.00	I owe $12.50
b	Ben	$0.00	$4.00	
c	Cal	$3.00	$3.00	
d	Dee	$6.75	$2.25	
e	Eli	$1.40	$9.60	

Add the two money columns. Across all five people, are you a borrower or a lender, and by how much?

▶ ADD TO YOUR COST BOOK

Add a page headed Owed and Owing, with both columns, and the date beside every line.

💬 TALK ABOUT IT

Make up one line for each column, or use real ones if you have them.

Is it rude to write down that a friend owes you money? What is the alternative?



STUCK? TRY THIS

Take the smaller from the bigger and say which way around it went. A row where they are equal comes to nothing, and nothing is an answer.

★ CHALLENGE ZONE

Three people each owe the next one $5.00 in a circle. How much money needs to move? Now try it with four people.

WEEK 19 OWING

Paying It Back in Pieces

A schedule you both agreed on, and a box to cross off each time.

IN CLASS THIS WEEK
Divide with decimals (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$21.00 paid back over 6 weeks is _____ a week

WORDS TO KEEP

in pieces Paying back a little at a time, on a schedule you both agreed on.



A schedule, not an intention

$21.00 over six weeks is $3.50 a week. Six boxes, and you cross one off every time you pay.

Saying you will pay somebody back when you can is not a plan and everybody involved knows it. An amount and a number of weeks is a plan, and it has the useful property that both people can see how it is going without either of them raising it.

Some amounts do not divide evenly. $20.00 over six weeks is $3.33 and a third, and a third of a cent does not exist. Pay $3.33 for five weeks and $3.35 at the end, so the total comes out exactly. Write it down, and the last week is not an argument.

Work out the schedule

	Owed	Weeks	Each week	The last week
a	$21.00	6	$3.50	$3.50
b	$20.00	6		
c	$45.00	5		
d	$14.00	4		
e	$30.00	7		

Two of these do not divide evenly into cents. For each, write the amount you would pay in the last week so the total comes out exactly.

▶ ADD TO YOUR COST BOOK

Add a page headed Paying It Back, with the amount, the weekly payment, the number of weeks, and boxes to cross off.

💬 TALK ABOUT IT

Write a schedule for something owed, real or made up, even if it is small.

Is it better to pay back a lot slowly or a little quickly?



STUCK? TRY THIS

Divide the amount by the weeks and round DOWN to the cent. Then the last week picks up whatever is left, and the total is exact.

★ CHALLENGE ZONE

You owe $50.00 and can pay $8.00 a week. How many weeks, and what is the last payment? Now the same for $9.00 a week.

WEEK 20 OWING

The Friend Who Forgot

What to do, and why writing it down was the kind thing rather than the suspicious one.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
Owed $8.00, paid back $3.00 twice. Still owed? _____

WORDS TO KEEP

owe	Money that is somebody else's and is currently with you.
owed	Money that is yours and is currently with somebody else.

What happened	Amount	Still owed
you lent it	$8.00	$8.00
they paid you back, week 1	$3.00	$5.00
they paid you back, week 2	$3.00	$2.00

Almost nobody is lying

They remember paying you back. You remember them not. One of you is wrong and it is genuinely not obvious which.

People do not usually forget on purpose. Two payments and a half-remembered promise about a third is exactly the shape of thing a person loses track of honestly, and you would too.

Which is why the ledger is the friendly move rather than the distrustful one. Written down, this is arithmetic and takes ten seconds. Not written down, it is one person's memory against another's, and that is how eight dollars costs somebody a friend.

What is actually left?

	Lent	Paid back	Still owed	What you would say
a	$8.00	$3.00, $3.00	$2.00	
b	$15.00	$5.00		
c	$6.50	$6.50		
d	$20.00	$4.00, $4.00, $4.00		
e	$9.00	nothing yet		

One row is settled and the person may not know it. What is the single most useful thing you could say to them?

💬 **TALK ABOUT IT**

Tell somebody at home or at school about row c, and what you would say to that person. How would you bring up money a friend owes you? Say the actual words.



STUCK? TRY THIS

Add up everything paid back and take it from what was lent. Do that before you decide what to say.

★ **CHALLENGE ZONE**

Write the sentence you would send a friend who owes you $2.00 and thinks they owe nothing. Now write it again for $50.00. What changed?

WEEK 21 OWING

Lending, and Whether To

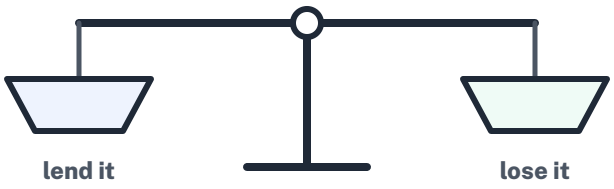
Decide before you hand it over, because afterwards you will decide differently.

IN CLASS THIS WEEK
A fraction as division (5.NF.3)

MONEY WARM-UP · 2 MINUTES
You lend $10 and get back $6. What did it cost you? _____

WORDS TO KEEP

lend	Hand over money that is meant to come back. Decide before whether you would be all right if it did not.



Would you be all right if lending it meant losing it?

The honest question

Would I be all right if this money never came back?

If the answer is yes, lend it and stop worrying, because you have already priced the bad outcome. If the answer is no, do not lend it, and you can say so without needing a better reason than that.

Notice what is not in that question. It does not ask whether your friend is trustworthy, because you will answer that one wrongly for people you like. It asks about you and about the amount, and both of those you can actually assess.

A loan between friends that does not come back can cost a friendship as well as the money, and that is the real price of getting this wrong.

Would you be all right?

	They ask for	You have	Fraction of what you have	All right if it never came back?	Lend it?
a	$2.00	$20.00	1/10	yes	yes
b	$18.00	$20.00			
c	$5.00	$60.00			
d	$40.00	$45.00			
e	$1.00	$1.00			

Row e is a dollar and it is all the money you have. Row c is five dollars out of sixty. Which is the harder decision, and why is it not the bigger number?

💬 TALK ABOUT IT

Ask somebody at home or at school for their rule about lending money to friends.

Is it different lending to family? Should it be?



STUCK? TRY THIS

Cover up who is asking. Look only at the amount and at what you have, and answer the "would you be all right" column first.

★ CHALLENGE ZONE

Somebody offers to pay you back more than they borrowed, as a thank you. Should you take it? Say what you would do and why.

WEEK 22 TOGETHER

An Agreement, in Writing

What you both said, written down while you still agree about it.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
Two people, $50.00, split 3/5 and 2/5. Who pays what? _____

WORDS TO KEEP

an agreement What you both said, written down while you still agree.



Five questions, before the money moves

Who pays what. Where does it live. Who can use it and when. What happens if it breaks. What happens if one of you wants out.

All five are easy to answer today and hard to answer the day you need them, because on that day one of you wants a particular answer. That is the whole reason to write it down now, and it is not about trust.

It does not need to be a document. Five lines in your Cost Book, read out loud to the other person, both of you saying yes. The reading out loud is the part that catches the thing you each assumed differently.

Write the five lines

	The question	What you both agreed to
a	Who pays what?	
b	Where does it live?	
c	Who can use it, and when?	
d	What happens if it breaks?	
e	What happens if one of you wants out?	

Now read your five lines out loud to a partner playing the other person. Write down anything they thought was different.

▶ ADD TO YOUR COST BOOK

Add a page headed Our Agreement, with all five lines and both names (made-up names are fine), dated.

💬 TALK ABOUT IT

Read your agreement to somebody you choose. Ask what they would add.

Which of the five questions is the most awkward to ask? Why that one?



STUCK? TRY THIS

Answer question d before question c. Once you know who pays when it breaks, who gets to use it becomes much easier to agree.

★ CHALLENGE ZONE

Write question f, one this list does not cover. What does it protect against?

WEEK 23 TOGETHER

When It Breaks

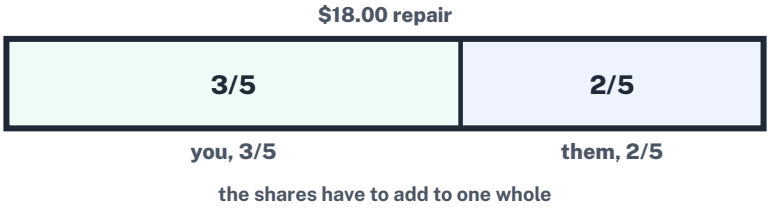
The agreement either answers this or it does not, and now you find out which.

IN CLASS THIS WEEK
Multiply a fraction by a whole number (5.NF.6)

MONEY WARM-UP · 2 MINUTES
Repair is $18.00, split 3/5 and 2/5. Your share? _____

WORDS TO KEEP

who pays The question an agreement answers before anybody needs the answer.



Three answers, all of them defensible

Split the repair the way you split the purchase. Or the person who broke it pays. Or you split it evenly however you bought it.

Grown-ups argue about this in courts. None of the three is obviously right and all three are used by real people, so the one that matters is the one you agreed to in week 22.

If your agreement did not cover it, that is genuinely useful information and it is what week 22 was for. Add the line now, while nobody is upset. That is the second-best time and it is a lot better than the third.

Who pays for the repair?

	Repair	Bought 3/5 and 2/5	Who broke it	Split by shares	Split evenly
a	$18.00	yes	you	$10.80 / $7.20	$9.00 each
b	$25.00	yes	them		
c	$40.00	yes	nobody, it wore out		
d	$12.00	yes	you		
e	$30.00	yes	a third person		

In row c nobody broke it. Which two of the three answers are left, and does that tell you anything about the other rows?

TALK ABOUT IT

Ask somebody at home or at school what they think should happen when a shared thing breaks.

Does it matter whether it was broken carelessly or by accident?



STUCK? TRY THIS

Work out both splits for every row before you decide anything. The decision is easier when both numbers are already in front of you.

★ CHALLENGE ZONE

Write a rule for repairs that would be fair in all five rows. Is there one?

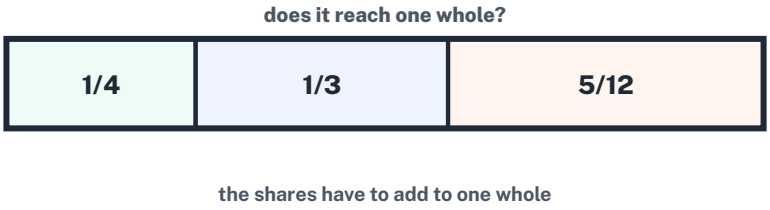
WEEK 24 REVIEW

The Sharing Page

Everything from weeks 13 to 23, on one shared thing, real or made up.

IN CLASS THIS WEEK
Word problems with unlike denominators (5.NF.2)

MONEY WARM-UP · 2 MINUTES
1/4 + 1/3 + 5/12 = _____



One page that would settle any argument

Pick something you share, or something you might. Fill in the whole picture on one page.

The cost and what each person paid. The shares as fractions, checked to reach one whole. What each share comes to in money, checked to add back to the cost. Whether you are splitting by head count or by use, and why. And anything currently owed, both columns.

If you cannot fill in a box, that is the useful part of this week. An empty box is a question nobody has asked yet, and every one of them gets harder to ask later.

The sharing page

	What it needs	Yours
a	The cost, and what each person paid	
b	The shares as fractions, adding to one whole	
c	What each share comes to, adding back to the cost	
d	By head count or by use, and why	
e	Anything owed right now, both directions	

Two of your checks should agree with each other. Which two, and what would it mean if one passed and the other failed?

▶ ADD TO YOUR COST BOOK

Add your finished sharing page to the Cost Book, with today's date.

💬 TALK ABOUT IT

Show your sharing page to somebody you choose. What would they change?

Which box was hardest to fill in honestly?



STUCK? TRY THIS

Do the fraction check and the money check separately. They are the same fact twice and either one can catch a mistake the other misses.

★ CHALLENGE ZONE

Design a sharing page for three people where one of them joins halfway through. What does that change about the fractions?

WEEK 25 DECIDING

The Decision With Two Numbers

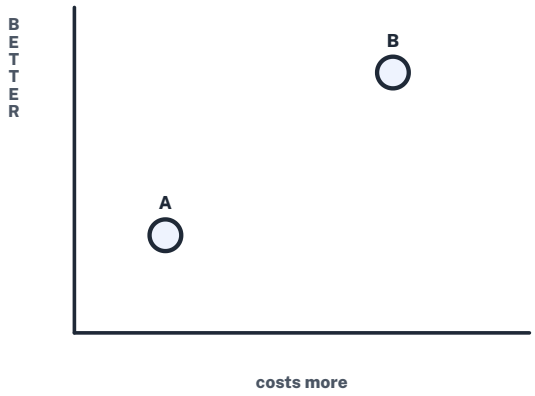
Money is one of the things being compared. It is not the only one and it does not win by default.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$56.00 over 8 weeks is _____ a week

WORDS TO KEEP

two numbers A decision where money is one of the things being compared and not the only one.



Write both, then choose

Put the money in one column and the other thing in the other. Do not add them. Do not weight them. Just get both onto the page.

What usually happens instead is that whichever number is easiest to work out becomes the decision, and money is always the easiest to work out. A thing that is twenty dollars cheaper and much worse loses to arithmetic that was never asked to consider worse.

Once both are written, say out loud which one you are choosing and what you are giving up to have it. If that sentence is hard to say, you are not finished deciding.

Two columns

	The choice	The money	The other thing	Which you would take
a	walk 20 min or pay $2 bus	$2.00	20 minutes	
b	$56 now or $7 a week for 8 weeks			
c	the good one or two cheap ones			
d	buy it or borrow a friend's			
e	fix it for $18 or replace it for $40			

In row b the two amounts come to the same money. So what is the decision actually about?

TALK ABOUT IT

Ask somebody at home or at school which of these they would pick. Ask why.

Is there a decision where money should not count at all?



STUCK? TRY THIS

Fill in the money column for every row first. Then go back and write the other thing in words rather than numbers.

★ CHALLENGE ZONE

Find a decision you made this week that had two numbers in it. What was the second one, and did you notice it at the time?

WEEK 26 DECIDING

And Then a Third

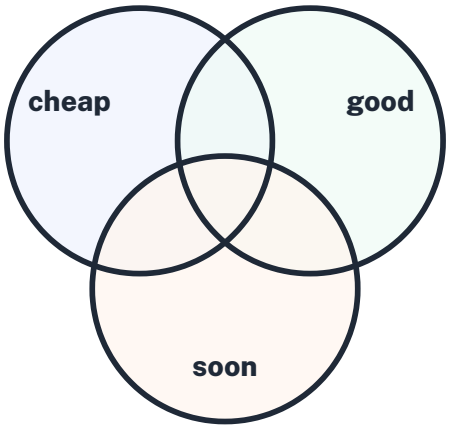
Three things to weigh, and the reason people freeze.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$90 over 3 years is _____ a year

WORDS TO KEEP

rank Put things in order of what matters most to you, instead of giving each one a score.



most choices land where two circles overlap

Rank them, do not score them

Money, how good it is, and how soon you get it. Three things, and no way to add them up.

There is a tempting method where you give each one a score out of ten and total them. It feels rigorous and it is not: you choose the scores, so you choose the answer, and then the arithmetic launders the choice into something that looks objective.

Do this instead. Put the three in order of what matters most to you for **this** decision. Then take the option that wins on your first one, unless it is unacceptable on another, and say which. It is quick, and it leaves a record of your reasoning that you can disagree with later.

Rank, then choose

	The decision	1st	2nd	3rd	What you would take
a	a coat you will wear for years				
b	a snack right now				
c	a bike you will use for years				
d	a present for somebody else				
e	something for a school project due Friday				

Two of these rows are needed within days and two will be used for years. Which are which, and which of the three would you put first for each pair?

💬 TALK ABOUT IT

Rank the three for a decision you might make soon. Ask somebody if they agree.

Does your ranking change depending on how much money you have?



STUCK? TRY THIS

Rank before you look at any options. Ranking afterwards is just describing the choice you already made.

★ CHALLENGE ZONE

Somebody scores each option out of ten on all three and adds them up. Show how two people using that method on the same options get different answers.

WEEK 27 DECIDING

What Would Change Your Mind?

Name the number that would make you decide the other way. That is most of the thinking.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
You would buy it at $30. It costs $38. The gap? _____

WORDS TO KEEP

what would change it The number that would make you decide the other way. Naming it is most of the thinking.



The most useful question in this book

You decided not to buy it. At what price would you have said yes?

If you can answer that, you did not just have a feeling, you had a reason with a number in it. If you cannot, the decision was a mood, and moods are fine but they are not repeatable and you cannot check them later.

It works in both directions and the other direction is the uncomfortable one. You are about to buy something: at what price would you have walked away? If the answer is that there isn't one, you are not deciding, you are just paying.

Name the number

	The decision	What you decided	What would change it
a	a $38 thing you wanted	no	$30 or less
b	a $6 snack		
c	splitting a $40 cost with a friend		
d	lending $15		
e	keeping a thing you have not used in a year		

For row e the number is not a price. It could be a number of uses or a stretch of time. Which would you use, and what would it have to be for you to change your mind?

▶ ADD TO YOUR COST BOOK

Add a page headed What Would Change It, with three real decisions and the number for each.

💬 TALK ABOUT IT

Ask somebody at home or at school what would change their mind about something. Do not argue.

Is it a weakness to have a number that would change your mind, or a strength?



STUCK? TRY THIS

Write the decision you actually made first. Then ask what would have to be different, and make it a number rather than a feeling.

★ CHALLENGE ZONE

Somebody says nothing would change their mind. What does that tell you about the decision? Is it ever the right answer?

WEEK 28 DECIDING

Deciding for Later You

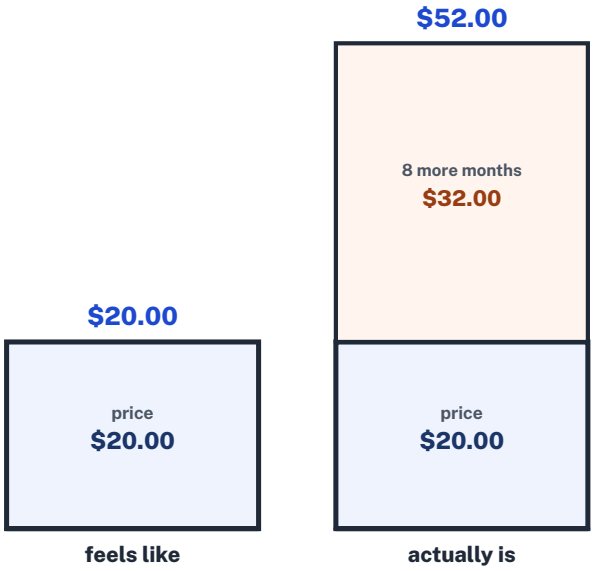
The person who lives with this decision is not in the room, and they are you.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$4.00 a month for 8 months is _____

WORDS TO KEEP

later you The person who has to live with this decision. They are not in the room.



Today gets the thing, later pays for it

$20.00 now and $4.00 a month for eight months. Today you feel the twenty. The other thirty-two arrives one month at a time, at somebody who is not thinking about this decision at all.

That person is you, eight months from now. They did not get the excitement of buying it and they do get the four dollars a month, and there is no way to send them a message about it except by writing it down now.

So write it down now. In the Cost Book, with the date the last payment lands. Not as a punishment, and not to talk yourself out of anything: just so that when the last month arrives, the four dollars is something you chose rather than something that is happening to you.

What does later you get?

	Today	Each month	For how long	What later you pays altogether
a	$20.00	$4.00	8 months	$32.00
b	$60.00	$1.50	2 years	
c	$0.00	$9.00	6 months	
d	$140.00	$0.00	forever	
e	$15.00	$2.25	18 months	

Row c costs nothing today and more than row a altogether. Which one would most people say yes to faster, and why is that the wrong instinct?

▶ ADD TO YOUR COST BOOK

Add a page headed For Later Me, with a cost that is still arriving, from the page or made up, and the date it stops.

💬 TALK ABOUT IT

Make up a cost that is still arriving from an old decision. Tell somebody about it.

Do you owe later you anything? What would they ask you for?



STUCK? TRY THIS

Multiply the monthly amount by the number of months. That total is the part today does not feel.

★ CHALLENGE ZONE

Write the note you would leave for yourself eight months from now about one of these. What does it need to say to be useful rather than annoying?

WEEK 29 PER USE

Every Month, Forever

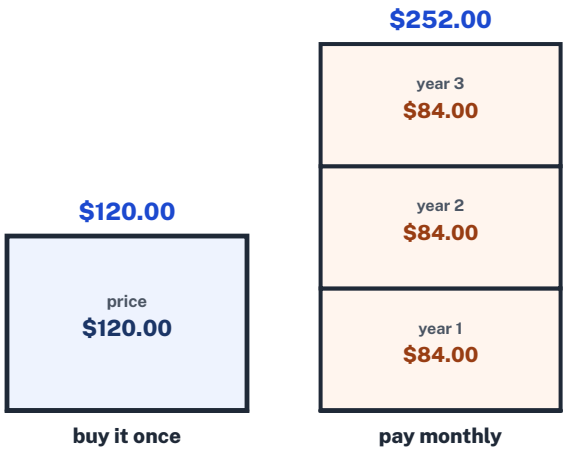
You pay, and you keep paying, and at the end you do not own it.

IN CLASS THIS WEEK
Multiply and divide multi-digit numbers (5.NBT.5, 5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$7.00 a month for 3 years is _____

WORDS TO KEEP

every month, forever A cost with no end date. You never finish paying and you never own it.



Two hundred and fifty-two dollars, and you own nothing

$7.00 a month is $84.00 a year and $252.00 over three years. The same thing to buy costs $120.00 once.

Paying monthly is not a trick. It is genuinely better when you need the thing for a short time, when you cannot put $120.00 together at once, or when it gets replaced with a newer one while you have it. All three are real and the first two are why the arrangement exists.

What makes it worth watching is that it has no end. A price is paid and finished; a monthly cost keeps going until somebody stops it, and it is easy never to schedule the stopping. Write down the month you will look at it again, or you will not look at it again.

Buy it or pay monthly

	Buy once	Or per month	1 year	3 years	When paying monthly wins
a	$120.00	$7.00	$84.00	$252.00	under 18 months
b	$60.00	$4.00			
c	$200.00	$5.00			
d	$45.00	$9.00			
e	$300.00	$6.00			

In one row you would have to keep paying for more than four years before buying it would have been cheaper. Which, and would you take that deal?

TALK ABOUT IT

Name three things people often pay for every month. Which would be hardest to stop?

Why would a store rather charge you $7 a month than $120 once?



STUCK? TRY THIS

Divide the buying price by the monthly amount. That is how many months until the monthly arrangement has cost more.

★ CHALLENGE ZONE

A monthly arrangement costs less than buying for the first two years and you expect to need the thing for three. What else would you need to know before deciding?

WEEK 30 PER USE

Own It or Borrow It

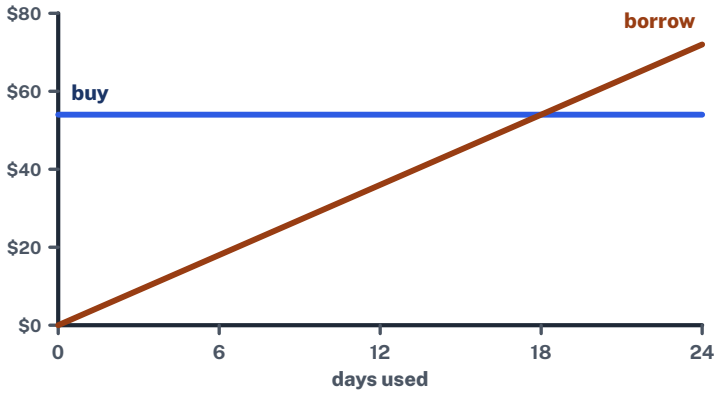
Borrowing has a price too, and for a short enough job it is the cheaper one.

IN CLASS THIS WEEK
Divide with decimals (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$3.00 a day to borrow, or $54.00 to buy. Break even? _____

WORDS TO KEEP

own it or borrow it Two ways to have a thing, and the arithmetic that says which is cheaper for how long you need it.



Eighteen days

$54.00 to buy, or $3.00 a day to borrow. After eighteen days of use the borrowing has cost as much as owning, and after that it keeps going.

So the question is not which is cheaper. It is how many days you are going to use it, and that is the number that is easiest to guess hopefully. Week 6 showed you how far your own guesses can be from what really happened.

Borrowing also has costs with no dollar amount, which is week 10 arriving again. It has to be fetched and returned, it is not there when you want it at nine at night, and if you break it you are having a conversation about somebody else's property.

How many days until owning wins?

	Buy it for	Borrow for, per day	Days to break even	You need it for
a	$54.00	$3.00	18	5 days
b	$40.00	$8.00		3 days
c	$90.00	$2.50		50 days
d	$12.00	$5.00		2 days
e	$150.00	$6.00		20 days

Using the days in the last column, which rows should be bought and which borrowed? One of them is close enough that the reasons from week 10 would decide it. Which?

💬 **TALK ABOUT IT**

Name something that gets used only a few days a year. Should it be owned?

Is there anything you would rather borrow even if owning were cheaper?



STUCK? TRY THIS

Divide the buying price by the daily price to get the break-even days. Then compare that with how long you actually need it.

★ **CHALLENGE ZONE**

A tool costs $80 to buy and $10 a day to borrow, and you need it for eight days this year and probably eight days next year. What do you do?

WEEK 31 COMPARING

The Real Comparison

Two things you might actually buy, costed all the way through.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
$35 + 12 x $2.50 = _____



Everything at once, on your own decision

Pick two options for something you might buy, real or made up. Then use every tool in this book on them.

The price. The running cost, over a stretch of time you decide before you start. The whole cost over that time. The cost per use at your honest guess of how often, halved. And the reason with no dollar amount.

You may find they come out close, which is a real result and not a failure. Two options that are within a few dollars over three years are genuinely a coin toss on money, and that frees you to decide on the thing that is not money.

The full comparison

Write the period first: _____

		Option one	Option two
a	Price		
b	Running cost over the period		
c	Whole cost over the period		
d	Cost per use, at half your guess		
e	The reason that is not money		

Use that same period in every row. Then say which option wins on money, and whether that settles it.

TALK ABOUT IT

Show your comparison to somebody at home or at school and ask which they would take.

Did the arithmetic change your mind, or confirm what you already wanted?



STUCK? TRY THIS

Choose the stretch of time first and write it down. Every row after that has to use the same one.

★ CHALLENGE ZONE

Do the whole comparison again with a period twice as long. Does the winner change? If it does, which period is the honest one?

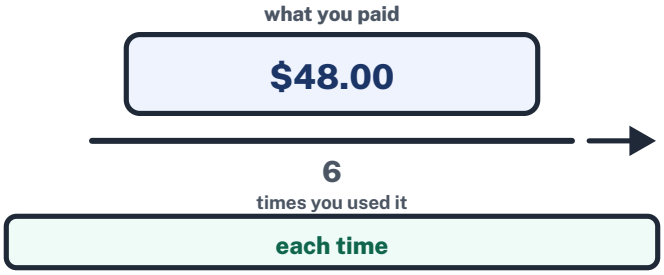
WEEK 32 DECIDING

A Decision You Already Made

Go back and cost it honestly, which is the only way this year turns into a habit.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
Paid $48, used it 6 times. Per use? _____



Not whether it was good. What it cost.

Pick something you have had a while, or make one up. If you do not know its price, guess. Work out what it has cost and how often it was used.

Two rules make this useful rather than miserable. Count real uses, not the ones you meant to have. And include what it has cost to keep since, which is the number the original decision definitely ignored.

You are not grading yourself. Some of these will come out well and it is worth knowing which, because the point of doing this is to find out what kind of buying decision you are actually good at.

Cost it honestly

		What you would write
a	What did it cost to buy?	
b	What has it cost to keep since?	
c	How many times have you really used it?	
d	So what has it cost per use?	
e	What did you expect the answer to be?	

Row e is the one that teaches you something. If your expectation was a long way off, in which direction was it wrong?

▶ ADD TO YOUR COST BOOK

Add a page headed What It Really Cost, with one old decision costed all the way through.

💬 TALK ABOUT IT

Tell somebody at home or at school your cost per use. You do not have to say the price.

Would you buy it again? Is that the same question as whether it was worth it?



STUCK? TRY THIS

Do row c before row d, and do not adjust it once you have seen what row d comes to.

★ CHALLENGE ZONE

Do this for two things, one that came out well and one that did not. What is different about the two decisions?

WEEK 33 DECIDING

Was It Worth It?

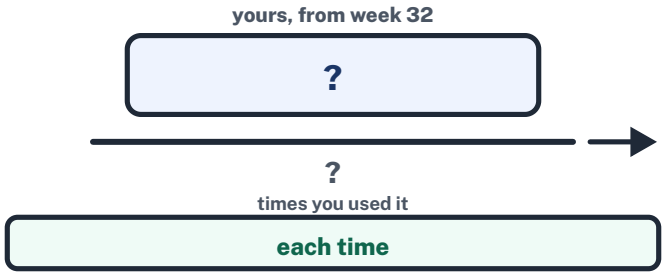
A question only you can answer, using a number you worked out rather than a feeling.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
One thing cost $0.30 a use, another $24.00. Which was worth more? _____

WORDS TO KEEP

worth it Something only you can decide, using a number you worked out.



The number does not decide, it informs

Thirty cents a use and twenty-four dollars a use. Those are facts. Whether either was worth it is not a fact.

A thing you used twice can still have been worth it, if those two times mattered enough. A thing you used two hundred times can have been a waste, if you never enjoyed any of them. Cost per use tells you what you paid for each use. It cannot tell you what each use was worth to you, and no arithmetic can.

What it does do is stop you being fooled. Nobody who has worked out twenty-four dollars a use still believes the thing was cheap, and nobody who has worked out thirty cents still believes the good ones were an extravagance. It clears away the wrong argument so you can have the right one.

Worth it, or not

	The thing	Cost per use	Worth it?	Why
a	used it 200 times	$0.30		
b	used it twice, for something that mattered	$24.00		
c	used it once, for fun	$9.00		
d	use it every day and dislike it	$0.05		
e	have never used it	no answer		

Row e has no cost per use at all, because you cannot divide by nothing. Say what that means, and what you would do about the thing.

TALK ABOUT IT

What makes something the best thing a person ever bought? Must it be cheap?

Can something be worth it and still have been a bad decision?



STUCK? TRY THIS

Fill in the third column before the fourth. The reason is the part worth writing.

★ CHALLENGE ZONE

Two people work out the same cost per use for the same thing and disagree about whether it was worth it. Who is wrong?

WEEK 34 DECIDING

The One You Would Do Again

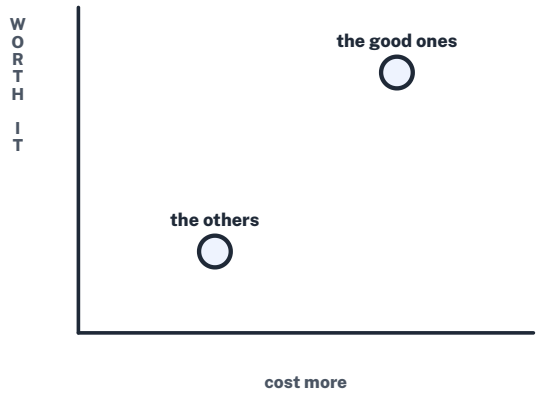
Looking for the pattern in your own decisions, which is the only reason to have kept the book.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
Three things cost $0.20, $1.50 and $18.00 a use. Cheapest per use? _____

WORDS TO KEEP

worth it Something only you can decide, using a number you worked out.



What kind of buyer are you?

Go through your Cost Book and sort your decisions into the ones you would make again and the ones you would not.

Then look for what the good ones have in common. It may be something specific and slightly surprising. It might be that everything you waited two weeks for turned out well. It might be that everything bought with somebody else went badly. It might be that the expensive ones are all in the good pile.

Whatever it is, it is worth more than any rule in this book, because it is about you and it came out of your own numbers. Write it down as a sentence you could actually use in a store.

Find your pattern

		Yours
a	Two decisions you would make again	
b	Two you would not	
c	What the good ones have in common	
d	What the others have in common	
e	The sentence you would say to yourself in a store	

Row e should be short enough to remember and specific enough to act on. If it is just "think about it," it is not finished.

💬 TALK ABOUT IT

Say your sentence out loud to somebody at home or at school. Ask if it sounds like you.

Is a rule about yourself more useful than a rule about money?



STUCK? TRY THIS

Do rows a and b from the book rather than from memory. The pattern is easier to see in four real examples than in everything you have ever bought.

★ CHALLENGE ZONE

Somebody else reads your sentence and it does not work for them. Why would a true rule about buying not transfer between two people?

WEEK 35 REVIEW

Your Cost Book, Finished

Every page of it written by you, over a whole school year.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
Twelve of the pages at 3 decisions each is _____ decisions

one box per page of your Cost Book



What is in it

Go through the Cost Book from the front. It should be in order and every page should have numbers on it, your own or made up.

A thing and what it has cost since. Two things costed over their first year. Three things and their cost per use. Your written guesses about how long things last. Two options and the month they cross. A thing bought together and what each paid. The shares, checked against the cost. Something you owe or are owed, both columns. A payback in pieces. An agreement with five lines and two names. Your finished sharing page. Three decisions and the number that would change each. A cost still arriving from an old decision. And an old decision, costed honestly.

Nobody else could have written it. That is the point, and it is why it is worth keeping rather than handing in.

Check the book

	Question	Your answer
a	How many pages are in your Cost Book?	
b	Which page was hardest to fill in honestly?	
c	Which number in it surprised you most?	
d	Which page would you show somebody first?	
e	Which page will still be true in a year?	

If a page is missing, fill it in now from the workbook page it came from. A book with a gap is still a book.

▶ ADD TO YOUR COST BOOK

This is the last page. Number every page in the book, front to back, and write the total on this one.

💬 TALK ABOUT IT

Show one page you choose to somebody at home or at school.

Which page would you keep if you could only keep one?



STUCK? TRY THIS

Work from the front. Every page has a heading that came from a week, so any gap has a workbook page waiting to fill it.

★ CHALLENGE ZONE

If you kept this book for another year, what would you add that is not in it?

WEEK 36 REVIEW

The Price Is Not the Cost

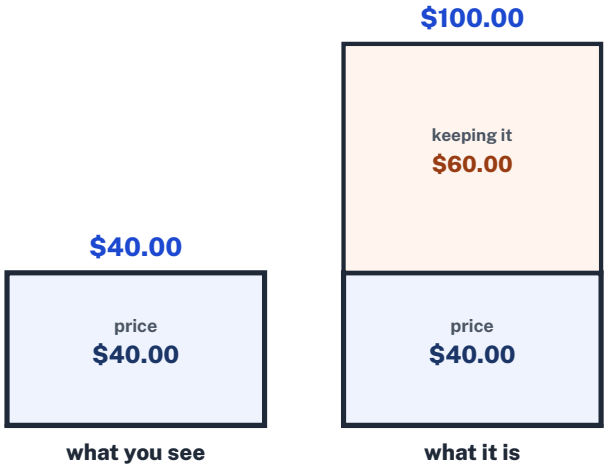
Six words, and what they are worth once you have spent a year on them.

IN CLASS THIS WEEK
Operations with decimals to hundredths (5.NBT.7)

MONEY WARM-UP · 2 MINUTES
A $40 thing that cost $60 to keep. The whole cost? _____

WORDS TO KEEP

the price is not the cost The whole year in six words.



Where it goes from here

The price is the number they show you. The cost is the number you work out.

Every choice costs you the thing you did not pick. Decide it before you are standing in front of it. This year added that the number on the tag is the beginning of the arithmetic rather than the end.

None of it decides for you, and that was deliberate. It makes sure that when you decide, you are deciding about the real numbers rather than the visible ones.

The last questions

	Question	Your answer
a	What is the one thing you would tell a younger student?	
b	Which idea from this year have you actually used?	
c	Which one sounded useful and you have never used?	
d	What do you now work out that you used to guess?	
e	Will you keep doing this? Say honestly.	

Row e is allowed to be no. If it is, say what would have to be different, which is a more useful answer than a polite one.

TALK ABOUT IT

Tell somebody at home or at school the six words and what they mean.

What is one thing you now do differently with money?



STUCK? TRY THIS

There is no arithmetic on this page. Answer in sentences and take your time over row c.

★ CHALLENGE ZONE

Write the week this book is missing. What would it be about, and where in the year would it go?

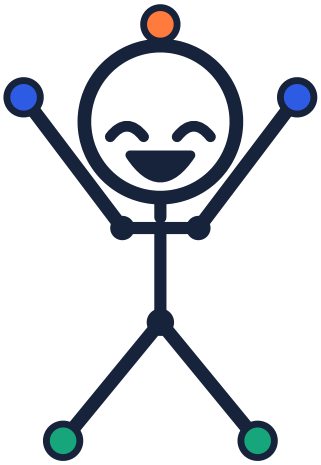
Young Innovators
FOR CHANGE
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Grade 5 · The Keeping Year

Certificate of Completion

This is to certify that

practiced costing things properly for thirty-six weeks: working out what a thing costs to keep and not only to buy, dividing a whole cost by the times it is used, finding the month where the cheaper option stops being cheaper, splitting a cost in fractions that add up, writing an agreement down before it is needed, and naming the number that would change their mind.



Teacher

Date

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