Handout 06.13: Scaling Worksheet and Costing Sheet

Name: _____ Date: _____ Station: _____ Option: _____

Lesson 6.13, two days. Day 1 is pages 1 to 3. Day 2 is pages 4 to 6. Page 3 is the pre-filled version. Page 5 is the short circular excerpt. Page 7 is the teacher key.

All prices are real Long Island supermarket prices marked **[update from this week's circular]**.

Page 1. The three-step rule and your base recipe

The three-step rule

1. **Divide** the number of portions you need by the number the recipe makes. That is your **scale factor**.
2. **Multiply** every ingredient by the scale factor.
3. **Round up** to the number of packages the store actually sells. Always up, never down.

The worked example (do this one with the teacher):

A recipe makes 4 servings and needs 8 ounces of dry spaghetti. We need 28 portions.

- Step 1: 28 ÷ 4 = **7**. The scale factor is 7.
- Step 2: 8 oz × 7 = **56 oz**.
- Step 3: 56 oz ÷ 16 oz per pound = 3.5 lb. The store sells 1 lb boxes. 3.5 rounds up to **4 boxes**.

Why always up: running out at minute 30 is the one mistake you cannot fix. Buying one extra box costs $1.29. Not feeding six people costs the whole project.

The base recipes (all make 4 servings). Find yours.

Option A: Spaghetti with Marinara and Parmesan (4 servings)

- 8 oz dry spaghetti
- 1 1/2 cups marinara sauce
- 1/4 cup shredded parmesan
- Water to fill the pot 3/4 full

Option B: Pizza Tortillas (4 servings)

- 4 flour tortillas, fajita size
- 1/2 cup pizza sauce
- 3/4 cup shredded mozzarella
- 20 pepperoni slices (5 each)

Option C: Bean and Cheese Burritos (4 servings)

- 4 flour tortillas, fajita size
- 3/4 cup refried beans
- 1/2 cup shredded Mexican cheese blend
- 1/4 cup salsa

Option D: Garlic Bread and Vegetable Tray (4 servings)

- 4 pieces of garlic bread (one 14 oz loaf makes about 12 pieces)
- 2 tablespoons softened butter
- 1/2 teaspoon garlic powder

- 1/4 lb baby carrots, washed and peeled

Option E: No-Bake Cookie Dessert Cups (4 servings)

- 8 chocolate sandwich cookies (2 each)
- 3/4 cup whipped topping
- 4 plastic cups, 9 oz

Your scale factor

Portions we need: **28** ÷ Recipe makes: _____ = Scale factor: _____

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Page 2. The scaling table and the conversion strip

The scaling table (Day 1, Step 2)

Every ingredient gets a row. The Scale Lead reads each row aloud before it is written.

Ingredient	Amount for 4	× scale factor	Scaled amount	Unit the store sells in	Packages to buy (round UP)
		× _____			
		× _____			
		× _____			
		× _____			
		× _____			
		× _____			
		× _____			

The conversion strip (Day 1, Step 3). Fill this in with the teacher and the real packages.

What you need to know	The number
1 cup = _____ fluid ounces	8
1 pound = _____ ounces by weight	16
1 stick of butter = _____ tablespoons = _____ cup	8 tbsp = 1/2 cup
1 tablespoon = _____ teaspoons	3
Shredded cheese: _____ ounces by weight is about 1 cup, so an 8 oz bag is about _____ cups	4 oz = 1 cup, so 8 oz ≈ 2 cups
A 16 oz can of refried beans holds about _____ cups	1 3/4
A 14.3 oz pack of sandwich cookies holds about _____ cookies	36
A 14 oz loaf of Italian bread makes about _____ serving pieces	12
One aerosol can of whipped topping gives about _____ cups	2
An 8 oz pack of sliced pepperoni holds	150

about _____ slices	

[Sal: the last six numbers are estimates. Open one of each package, count or measure it once, and write the real number on this strip. Then the key's answers are exact for your room.]

The two practice conversions

1. A recipe wants **3 cups** of broth. The store sells a **32 fluid ounce** box. Is one box enough? Show the math.

3 cups × 8 fl oz = _____ fl oz. The box holds _____ fl oz. Enough? _____ Left over: _____ cups.

2. A recipe wants **2 1/2 cups** of shredded cheese. The store sells **8 ounce** bags. How many bags?

2 1/2 cups × 4 oz per cup = _____ oz. _____ oz ÷ 8 oz per bag = _____ bags. Round up: _____ bags.

The trap

Circle the right answer: **8 ounces on a bag of shredded cheese is** (a weight / a volume).

Write the sentence: "Eight ounces of shredded cheese is about _____ cups, not one cup, because _____."

The yield check (Day 1, Step 4)

We need **30** portions: 28 students, the teacher, and one spare.

Our plan makes: _____ portions. Show how you know: _____

Circle one: **CLEARS 30** / **ADD _____ more of _____**

If we have spare portions, they will go to: _____

Page 3. The pre-filled scaling table (grade 6 support, or anyone who needs it)

The scale factor is already entered. Your job is columns 4, 5, and 6.

Option A: Spaghetti with Marinara

Ingredient	Amount for 4	× 7	Scaled amount	Store sells	Packages to buy
Dry spaghetti	8 oz	× 7	_____ oz = _____ lb	1 lb box	_____
Marinara sauce	1 1/2 cups	× 7	_____ cups = _____ fl oz	24 oz jar	_____
Shredded parmesan	1/4 cup	× 7	_____ cups	6 oz bag (≈ 2 cups)	_____

Option B: Pizza Tortillas

Ingredient	Amount for 4	× 7	Scaled amount	Store sells	Packages to buy
Flour tortillas	4	× 7	_____	20 count pack	_____
Pizza sauce	1/2 cup	× 7	_____ cups = _____ fl oz	14 oz jar	_____
Shredded mozzarella	3/4 cup	× 7	_____ cups	8 oz bag (≈ 2 cups)	_____
Pepperoni slices	20	× 7	_____ slices	8 oz pack (≈ 150)	_____

Option C: Bean and Cheese Burritos

Ingredient	Amount for 4	× 7	Scaled amount	Store sells	Packages to buy
Flour tortillas	4	× 7	_____	20 count pack	_____
Refried beans	3/4 cup	× 7	_____ cups	16 oz can (≈ 1 3/4 cups)	_____
Shredded cheese blend	1/2 cup	× 7	_____ cups	8 oz bag (≈ 2 cups)	_____
Salsa	1/4 cup	× 7	_____ cups = _____ fl oz	15.5 oz jar	_____

Option D: Garlic Bread and Vegetable Tray

Ingredient	Amount for 4	× 7	Scaled amount	Store sells	Packages to buy
Garlic bread pieces	4	× 7	_____ pieces	14 oz loaf (≈ 12 pieces)	_____
Softened butter	2 tbsp	× 7	_____ tbsp = _____ sticks	1 lb, 4 sticks	_____
Garlic powder	1/2 tsp	× 7	_____ tsp	3.12 oz jar	_____
Baby carrots	1/4 lb	× 7	_____ lb	1 lb bag	_____

Option E: No-Bake Cookie Dessert Cups

Ingredient	Amount for 4	× 7	Scaled amount	Store sells	Packages to buy
Sandwich cookies	8	× 7	_____ cookies	14.3 oz pack (≈ 36)	_____
Whipped topping	3/4 cup	× 7	_____ cups	aerosol can (≈ 2 cups)	_____
Plastic cups	4	× 7	_____ cups	50 count pack	_____

Page 4. The Costing Sheet (Day 2)

Station budget: **$20.00**. Write the running total after **every** line, not at the end.

#	Item	Brand	Size	Price	Price per ounce (or per count)	Packages	Line cost	Running total
1				$	$		$	$
2				$	$		$	$
3				$	$		$	$
4				$	$		$	$
5				$	$		$	$
6				$	$		$	$
7				$	$		$	$
8	Room pantry (foil, spray, salt, spoons, plates)	room		$0.00			$0.00	$

Station total: $_____ Under the $20.00 budget by: $_____ OVER by: $_____

Cost per person (total ÷ 28): $_____

The two questions to ask on every line

1. What does the **whole package** cost? That is what you pay.
2. What does **one ounce** cost? That is how you choose.

Worked example: store-brand shredded mozzarella, 8 oz, $1.99. $1.99 ÷ 8 = **$0.249 per ounce**. Name brand, 8 oz, $2.99. $2.99 ÷ 8 = **$0.374 per ounce**. The store brand is cheaper by 12.5 cents an ounce.

The Unit 1 rule, still true: you pay for the whole package, not the spoonful you use.

Page 5. Circular excerpt (Day 2). Use this if a full circular is too much, or if the store's circular is missing an item.

Prices verified week of March 20 to 26, 2026. [update from this week's circular]

Item	Brand	Size	Price
Spaghetti	store brand	1 lb	$1.29
Spaghetti	name brand	1 lb	$2.19
Penne or ziti	store brand	1 lb	$1.29
Marinara sauce	store brand	24 oz	$2.79
Marinara sauce	name brand	24 oz	$3.99
Marinara sauce	store brand	45 oz	$4.99
Pizza sauce	store brand	14 oz	$1.69
Alfredo sauce	store brand	16 oz	$3.49
Shredded mozzarella	store brand	8 oz	$1.99
Shredded mozzarella	name brand	12 oz	$3.49
Shredded Mexican cheese blend	store brand	8 oz	$1.99
Shredded parmesan	store brand	6 oz	$1.99
Ricotta cheese	name brand	32 oz	$4.99
Cheese sticks	store brand	12 count	$3.99
Flour tortillas, fajita size	name brand	20 count	$3.49
Flour tortillas, burrito size	name brand	16 count	$6.59
Italian bread	store bakery	14 oz loaf	$2.99
Salted butter	store brand	1 lb, 4 sticks	$3.99
Salted butter	name brand	1 lb, 4 sticks	$5.99
Garlic powder	store brand	3.12 oz	$1.99
Refried beans	name brand	16 oz can	$1.99
Black beans	store brand	15 oz can	$1.19
Instant rice	store brand	28 oz	$4.79
Salsa	store brand	15.5 oz	$2.49
Sour cream	name brand	16 oz	$2.49
Pepperoni, pre-sliced	name brand	8 oz	$4.99

Bite-size cooked meatballs, frozen	name brand	40 oz, 80 count	$14.99
Half rotisserie chicken, cooked	deli	each	$3.99
Deli-sliced turkey or ham	deli	1 lb	$5.99
Baby carrots, washed and peeled	store brand	1 lb bag	$1.99
Grape tomatoes		1 pint	$2.99
Shredded lettuce, bagged	store brand	8 oz	$2.49
Pre-diced tomatoes, refrigerated		8 oz cup	$2.49
Chocolate sandwich cookies	store brand	14.3 oz	$2.99
Chocolate sandwich cookies	name brand	19.1 oz	$6.59
Whipped topping, aerosol	store brand	can	$2.99
Whipped topping, aerosol	name brand	can	$4.49
Brownie mix	name brand	18.4 oz	$2.99
Rolled oats	store brand	42 oz	$4.29
Raisins	store brand	15 oz	$3.49
Tortilla chips	store brand	13 oz	$2.99
Crackers	store brand	box	$2.99
Shelf-stable milk	store brand	1 quart	$2.99
Large eggs	store brand	dozen	$3.49
Plastic cups, 9 oz	store brand	50 count	$3.99
Plastic cups with lids	store brand	28 count	$3.99
Gallon zip-lock bags	store brand	box	$3.99
Aluminum foil	store brand	roll	$3.99

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Page 6. The Swap Log and the Peer Check

The swap log (Day 2, Step 3)

Three legal swaps: **store brand for name brand**; **a bigger package when the price per ounce drops and you will use it**; **cut a line that is not on the plate**.

A swap only counts if it saves at least **$0.25** and does not break the allergy list or your station card.

#	What we swapped out	What we swapped in	Old unit price	New unit price	Saved	What we gave up
1			$	$	$	
2			$	$	$	
3			$	$	$	

Total saved: $_____ New station total: $_____

Allergy recheck after the swaps. Did any swap bring in a new allergen? Circle: YES / NO If YES, what and what we will do: _____

Sentence frames for the swap log

English	Turkish	Portuguese	Spanish
We will buy ___ instead of ___ and save $___.	___ yerine ___ alacağız ve ___ dolar tasarruf edeceğiz.	Vamos comprar ___ em vez de ___ e economizar $___.	Vamos a comprar ___ en lugar de ___ y ahorrar $___.
The store brand costs ___ per ounce. The name brand costs ___ per ounce.	Market markası onsu ***. Ünlü marka onsu*** .	A marca do mercado custa ___ por onça. A marca famosa custa ___ por onça.	La marca del supermercado cuesta ___ por onza. La marca conocida cuesta ___ por onza.
We gave up ___ to stay under budget.	Bütçeyi aşmamak için ___ vazgeçtik.	Abrimos mão de ___ para ficar no orçamento.	Renunciamos a ___ para no pasarnos del presupuesto.

[check with a native speaker]

The peer check (Day 2, Step 4). Trade sheets with the station next door.

We are checking Station _____'s sheet. Checked by: _____

Check	Initial

Every line has a size and a unit	
The running total adds up (we redid it)	
The total is at or under $20.00	
The yield check clears 30	
Nothing on the list is on the class allergy list, or the substitution is written	

One thing we would fix: _____

Teacher signature (required before Lesson 6.15): _____ Date: _____

Teacher key

Page 1: the scale factor

28 ÷ 4 = **7** for every option. A student who writes 4 ÷ 28 has the ratio upside down; the question is "how many times bigger," so the target goes on top.

Page 2: the practice conversions

1. 3 cups × 8 = **24 fl oz**. The box holds **32 fl oz**. **Yes, enough.** Left over: **1 cup** (32 − 24 = 8 fl oz = 1 cup).
2. 2 1/2 cups × 4 oz per cup = **10 oz**. 10 ÷ 8 = **1.25 bags**. Round up: **2 bags**.

Page 2: the trap

8 ounces on a bag of shredded cheese is **a weight**. "Eight ounces of shredded cheese is about **2** cups, not one cup, because shredded cheese is light and fluffy, so a cup of it weighs only about 4 ounces."

Page 3: the pre-filled tables, completed

Option A | Ingredient | Scaled | Packages | |—|—|—| | Dry spaghetti | 56 oz = 3 1/2 lb | **4 boxes** | | Marinara sauce | 10 1/2 cups = 84 fl oz | 84 ÷ 24 = 3.5, so **4 jars** | | Shredded parmesan | 1 3/4 cups | 1 3/4 ÷ 2 = 0.875, so **1 bag** |

Option B | Ingredient | Scaled | Packages | |—|—|—| | Flour tortillas | 28 | 28 ÷ 20 = 1.4, so **2 packs** | | Pizza sauce | 3 1/2 cups = 28 fl oz | 28 ÷ 14 = 2.0, so **2 jars**, which is exactly enough with no margin. Say this out loud: an exact answer is legal but has no room for a spill. | | Shredded mozzarella | 5 1/4 cups | 5.25 ÷ 2 = 2.625, so **3 bags** | | Pepperoni slices | 140 | 140 ÷ 150 = 0.93, so **1 pack**, which is tight. A team that buys 2 is not wrong, but it costs $4.99 and puts them further over budget. |

Option C | Ingredient | Scaled | Packages | |—|—|—| | Flour tortillas | 28 | **2 packs** | | Refried beans | 5 1/4 cups | 5.25 ÷ 1.75 = 3.0, so **3 cans** exactly | | Shredded cheese blend | 3 1/2 cups | 3.5 ÷ 2 = 1.75, so **2 bags** | | Salsa | 1 3/4 cups = 14 fl oz | 14 ÷ 15.5 = 0.90, so **1 jar** |

Option D | Ingredient | Scaled | Packages | |—|—|—| | Garlic bread pieces | 28 pieces | 28 ÷ 12 = 2.33, so **3 loaves** | | Softened butter | 14 tbsp = 1 3/4 sticks | **2 sticks**, which is **1 package** of 4 | | Garlic powder | 3 1/2 tsp | **1 jar** (a 3.12 oz jar holds far more than 3 1/2 tsp) | | Baby carrots | 1 3/4 lb | **2 bags** |

Option E | Ingredient | Scaled | Packages | |—|—|—| | Sandwich cookies | 56 cookies | 56 ÷ 36 = 1.56, so **2 packs** | | Whipped topping | 5 1/4 cups | 5.25 ÷ 2 = 2.625, so **3 cans** | | Plastic cups | 28 | **1 pack** of 50 |

Page 2: the yield check answers

Option	Portions the plan makes	Clears 30?

A	4 lb dry pasta at 2 oz dry per portion = **32 portions**	Yes, 2 spare
B	40 tortillas bought, but sauce covers 28 and cheese covers about 42, so the limit is the **pepperoni at 150 slices ÷ 5 = 30 portions**	Yes, exactly 30, zero spare. Flag this: no margin
C	40 tortillas bought; beans cover 28 at 3/16 cup each; cheese covers 28; salsa covers 28. Limit is the beans at **28 portions**	No. Add 1 can of beans for **37 portions**
D	3 loaves × 12 pieces = **36 pieces**	Yes, 6 spare
E	2 packs × 36 = 72 cookies ÷ 2 each = 36; topping covers 28; cups cover 50. Limit is the **topping at 28 portions**	No. Add 1 can for **42 portions**

This is the most important table in the key. **Options C and E fail the yield check as the option cards are written, and Option B passes with zero margin.** That is on purpose. A station that adds the extra can of beans ($1.99, new total $21.41, over budget) now has a real problem to solve in Day 2 Step 3, and the answer is the salsa line or the tortilla line. Do not tell them; let the yield check find it.

Page 4: the costing sheet

The station totals, if a team buys exactly what the option card says: A $18.31; B $21.32 with pepperoni, $16.33 without; C $19.42 (but fails the yield check; the fix costs money); D $18.93; E $18.94 (fails the yield check; the fix costs $2.99).

Unit prices to the tenth of a cent for the most-used items, from the page 5 excerpt: spaghetti store brand $0.081/oz; marinara 24 oz store brand $0.116/oz; marinara 45 oz store brand $0.111/oz; marinara 24 oz name brand $0.166/oz; shredded mozzarella 8 oz store brand $0.249/oz; shredded mozzarella 12 oz name brand $0.291/oz; butter store brand $0.249/oz; butter name brand $0.374/oz; cookies 14.3 oz store brand $0.209/oz; cookies 19.1 oz name brand $0.345/oz; whipped topping store brand $2.99/can vs name brand $4.49/can.

Page 6: the swaps that actually exist in this excerpt

Swap out	Swap in	Saves per package	On a real order
Name-brand spaghetti $2.19	Store brand $1.29	$0.90	$3.60 on 4 boxes

Name-brand marinara $3.99	Store brand $2.79	$1.20	$4.80 on 4 jars
Name-brand butter $5.99	Store brand $3.99	$2.00	$2.00
Name-brand cookies 19.1 oz $6.59	Store brand 14.3 oz $2.99	$3.60	$7.20 on 2 packs
Name-brand whipped topping $4.49	Store brand $2.99	$1.50	$4.50 on 3 cans
Two 24 oz marinara jars $5.58	One 45 oz jar $4.99	$0.59 for 3 oz less	Legal only if the yield check still clears

Sal's own King Kullen order saved **$30.38 on a $150 order** with four swaps of exactly this kind: name-brand cookies to store brand ($14.40), name-brand whipped topping to store brand ($6.00), butter from two packs to one ($5.99), and cups from two packs to one ($3.99). Put those four real numbers on the Day 2 slide.

Page 6: the peer check

Sign the sheet only when all five boxes are initialed **and** you have redone the running total yourself on at least the last three lines. The signature is what lets a team move on to Lesson 6.14.