

Name _____ Date _____ Time taken _____

What this sheet trains

Divided attention - holding a second rule in mind while your main attention is busy elsewhere. This is the skill behind listening to a teacher while taking notes, or checking your working while solving the next step.

Strategy: anchor and sweep. Give the main task your focus and let the second task run as a quick, automatic check - do not swap your full attention back and forth.

1 Read and tally

Main task: read the passage once. Second task: the counting rule below.

Counting rule

Every time you read the word kilogram, make one tally mark in the box at the foot of the page. Do not go back and re-read. One pass only.

For more than a century the kilogram was a lump of platinum and iridium in a vault near Paris. Every other mass in the world was defined by comparison with that cylinder, through a chain of copies held in national laboratories, and the original was the only object that could not be wrong by definition. This was awkward, because careful weighing against its own copies suggested that the Paris kilogram was drifting, losing or gaining a few tens of micrograms over the course of decades, and nobody could say with any confidence which of the objects had actually changed, since each kilogram was only ever measured against another.

In 2019 the definition was replaced. The new kilogram is fixed by the Planck constant, a number from quantum physics given an exact agreed value, and realised in an instrument called a Kibble balance, which weighs a mass against an electromagnetic force it can measure in terms of that constant. The practical effect is that any properly equipped laboratory can now produce a kilogram from first principles instead of borrowing authority from a cylinder in France, and no future accident in a Paris basement can alter what a kilogram means anywhere else in the world.

It is tempting to read this as physics finally escaping the physical world, but that is the wrong lesson. The redefinition was only possible because two independent methods, one weighing a kilogram and one counting the atoms in a silicon sphere, agreed to within a few parts in a hundred million; the constant was fixed at the value their agreement supported. Nothing was made more certain by decree. The achievement was deciding, after thirty years of measurement, that the uncertainty had become small enough to bury inside a definition and stop arguing about.

Tally here - one mark per kilogram

Make the marks as you read, then write your total before turning the page.

Total

1 Questions - cover the passage first

Answer from memory. Do not look back at the passage.

My tally total

From page 1

Q1. How was mass defined before 2019, and what was the problem with that arrangement?

Q2. How does the new definition let a laboratory realise the unit without a reference object?

Q3. Why did two independent methods have to agree before the change could be made?

Q4. Why does the writer reject the idea that physics has escaped the physical world here?

2 Grid sweep with a running count

Main task: cross out targets. Second task: keep a count in your head.

Rules - read both before you start, then start the timer

Main: cross out every number that is a multiple of 9.

Second: count - silently, no marks - how many numbers end in 2. Write the total in the box only when you have finished the whole grid.

13	32	32	84	85	78	42	81	84	67	24	83	26	62	28	66
70	11	85	49	77	57	81	40	80	29	92	44	18	43	50	43
50	15	51	88	32	29	87	48	47	83	90	69	23	25	88	63
27	67	10	86	39	24	73	93	61	95	11	35	76	56	18	55
82	53	21	39	63	58	42	53	39	88	20	33	34	63	52	36
23	65	47	20	21	77	51	50	50	55	65	99	88	32	93	83
85	46	15	99	14	11	24	84	32	18	45	28	61	82	25	29
87	85	53	98	39	91	33	12	16	61	11	99	64	83	10	89

Stop the timer when the grid is finished, not when you write the total.

Numbers ending in 2

Write it once the grid is done

3 Copy and total

Main task: copy each row of digits. Second task: keep a running total.

Rules

Main: copy each four-digit group into the box beside it, in order.

Second: add the second digit of every row to a running total as you go.

Write the running total in the box at the end of each row - from memory, not by going back and adding up at the end.

	Copy here	Running total
6 7 4 6		
7 5 4 9		
2 3 9 3		
1 8 8 3		
8 2 8 6		
3 5 3 5		
7 5 7 6		
3 9 4 6		
5 7 5 9		
8 3 2 1		
9 8 5 8		
9 4 4 4		

4 Bridging - answer in a sentence each

Where this shows up outside the sheet.

Q1. Which of the two tasks slipped away first, and what do you think that says about your limits today?

Q2. What tells you that you have stopped absorbing a page even though your eyes are still moving?

Q3. How would you train for a task that needs accuracy and speed at the same time?

Answer key

Task 1 · tally
kilogram

7

Task 2 · crossed out
multiples of 9

15

Task 2 · counted
ending in 2

13

Task 3 · final total
second digits

66

Task 1 - suggested answers

Q1. By comparison with a metal cylinder near Paris, which appeared to be drifting against its own copies.

Q2. It fixes the Planck constant and measures mass against an electromagnetic force expressed through that constant.

Q3. The agreed value had to be supported by evidence; without agreement there would be no defensible number to fix.

Q4. Because the new definition rests on decades of physical measurement, not on a decree that removed uncertainty.

Notes for the parent or teacher

- Mark the two tasks separately. A student who scores well on the main task and loses the count has not failed - that is the normal pattern, and it is the thing worth discussing.
- Do not prompt or remind during a task. The reminder is the skill.
- An untimed run is a valid run. Record the time only if the student wants to beat it next week.
- Repeat the sheet after a week rather than straight away. Spacing is what makes the gain stick.
- This is attention practice, not an assessment. It does not diagnose anything, and no sheet of this kind should be read as a measure of ability.