LESSON MAKER PRO

Scale Sense

Choose units and round measurements.

GRADE 4 · 4.MG.1.b.ii

4.MG.1.b.ii "Estimate and measure: weight/mass of an object to the nearest U.S. Customary unit (ounce, pound) and nearest metric unit (gram, kilogram); and"

NAME _____ DATE _____

CHOOSE AND ROUND

Use ounces or grams for light objects. Use pounds or kilograms for heavier objects. To round a scale reading, look at the decimal part. A decimal part less than 0.5 rounds down, and 0.5 or more rounds up. Before Apply 3, your teacher supplies a paperback book and a digital scale that reads in grams and decimal ounces (or two scales). Estimate before seeing readings. Use an empty platform, check zero, place the book, and wait for a stable reading; an adult may help operate the unit control.

WORKED EXAMPLE

A scale shows 7.3 ounces for a toy car. What is its weight to the nearest ounce?

1. The whole-number part is 7.
2. The decimal part, 0.3, is less than 0.5.
3. Round down to 7 ounces.

Answer: 7 ounces

PRACTICE 6 problems

1 A marble has a mass of 4.6 g. Round to the nearest gram.

ANSWER _____

2 A bicycle helmet weighs 3.2 lb. Round to the nearest pound.

ANSWER _____

3 A lump of art clay has a mass of 428.7 g. Round to the nearest gram.

ANSWER _____

4 A bag of dog food has a mass of 5.8 kg. Round to the nearest kilogram.

ANSWER _____

5 Which U.S. Customary unit is best for measuring the weight of a paperback book: ounces or pounds?

ANSWER _____

6 Which metric unit is best for measuring the mass of a watermelon: grams or kilograms?

ANSWER _____

APPLY IT Show your work

1 Nia is mailing a bundle of comic books. The bundle weighs 1 pound 11 ounces. What is its weight to the nearest pound?

WORK SPACE

ANSWER _____

2 The robotics club measures a battery for its small robot. The battery has a mass of 684.2 g. What is its mass to the nearest gram?

WORK SPACE

ANSWER _____

3 Actually estimate and weigh the supplied paperback book. Before placing it on the scale, record estimates in whole ounces and whole grams. Check the empty scale reads zero. Weigh the book in ounces, then in grams; read and record both actual readings with units. Round each reading to its nearest whole unit. Compare each rounded measurement with your estimate.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A camping backpack has a mass of 2 kilograms 650 grams. Jordan says it rounds to 2 kilograms because 650 is less than 1,000. Is Jordan correct? Explain your reasoning.

WORK SPACE AND ANSWER

Scale Sense

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A marble has a mass of 4.6 g. Round to the nearest gram.	**5 grams**
2	A bicycle helmet weighs 3.2 lb. Round to the nearest pound.	**3 pounds**
3	A lump of art clay has a mass of 428.7 g. Round to the nearest gram.	**429 grams**
4	A bag of dog food has a mass of 5.8 kg. Round to the nearest kilogram.	**6 kilograms**
5	Which U.S. Customary unit is best for measuring the weight of a paperback book: ounces or pounds?	**ounces**
6	Which metric unit is best for measuring the mass of a watermelon: grams or kilograms?	**kilograms**

PART 2 · APPLY IT

1. **2 pounds** There are 16 ounces in 1 pound, so the halfway point is 8 ounces. Since 11 ounces is more than 8 ounces, round up to 2 pounds.
2. **684 grams** The decimal part is 0.2. Since 0.2 is less than 0.5, round down to 684 grams.
3. **Actual estimates and readings vary. Record an estimate, observed scale reading, and correctly rounded value in each system, plus a comparison.** Teacher supplies the book and suitable scale(s), observes zeroing and both actual readings, and checks rounding against the displayed values. Example only: an estimated 12 oz and 340 g, with observed 11.6 oz and 329 g, give 12 oz and 329 g; the ounce estimate matches the rounded measurement and the gram estimate is 11 g higher. Do not copy these illustrative readings.

CHALLENGE

No. The halfway point between 2 kilograms and 3 kilograms is 2 kilograms 500 grams. Since 2 kilograms 650 grams is past the halfway point, it rounds to 3 kilograms.

Accept standard unit abbreviations: oz, lb, g, and kg. For the challenge, accept an explanation that identifies 2 kilograms 500 grams as the halfway point and gives 3 kilograms. Apply 3 requires actual learner estimation before weighing, two observed readings with units, nearest-ounce/nearest-gram results and comparisons. Check against the supplied instrument, not fixed sample numbers. Support safe scale operation; a supplied-value rounding answer alone does not complete this activity.