Learn About

Using Estimation: Rounding Numbers

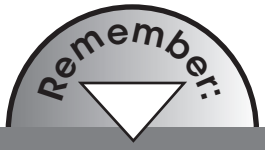
An **estimate** is a number that is close to the actual number you are looking for. Numbers can be rounded to the nearest ten, hundred, thousand, ten thousand, and so forth. If the digit one place to the right of the place being rounded to is 5 or greater, round up. If the digit one place to the right of the place being rounded to is 4 or less, round down.

For example, the number 9,406,875 rounded to the nearest hundred thousand is 9,400,000 because the ten thousands place contains the digit 0, which is less than 4. Therefore, 9,406,875 rounds down to 9,400,000.

You can also round decimals and measurements of time. Decimals and measurements of time can be rounded to different places. For example, the number 21.83, when rounded to the nearest whole number, rounds up to 22 because the digit 8 in the tenths place is 5 or greater. Measurements of time can be rounded to the nearest hour or the nearest minute. The midpoint for rounding measurements of time is 30 (30 seconds or 30 minutes). For example, 12:15:55 rounds to 12:16 (nearest minute) or 12 (nearest hour).

Jasmyn wrote a report on parrots. She expressed the time it took to complete the report as 4:35. Round this time to the nearest hour.

The number of minutes is 35, which is greater than the midpoint of 30. The rounded time is **5 hours.**



Numbers can be rounded to the nearest ten, hundred, thousand, ten thousand, and so forth. If the digit one place to the right of the place being rounded to is 5 or greater, round up. If the digit one place to the right of the place being rounded to is 4 or less, round down.

Look at the answer choices for each question. Read why each answer choice is correct or not correct.

1. The average wingspan of a Canada Goose is 1.5 metres. Round the wingspan to the nearest metre.

Ⓐ 1 metre

This answer is not correct. The digit to the right of the ones place is 5 or greater. Therefore, 1.5 rounds up to 2, not down to 1.

Ⓑ 1.5 metres

This answer is not correct. The problem asks you to round to the nearest metre. The answer should be a whole number.

● 2 metres

This answer is correct. The digit to the right of the ones place is 5 or greater. Therefore, 1.5 rounds up to 2.

Ⓓ 2.5 metres

This answer is not correct. The problem asks you to round to the nearest metre. The answer should be a whole number.

2. One flock of geese travelled about 2200 kilometres in 24 hours. Round the number of hours to the nearest ten. Estimate the flock's average speed.

Ⓐ about 120 kilometres per hour

This answer is not correct because 24 rounds to 20. 2200 ÷ 20 = 110, not 120.

● about 110 kilometres per hour

This answer is correct because 24 rounds to 20. 2200 ÷ 20 = 110.

Ⓒ about 100 kilometres per hour

This answer is not correct because 24 rounds to 20. 2200 ÷ 20 = 110, not 100.

Ⓓ about 90 kilometres per hour

This answer is not correct because 24 rounds to 20. 2200 ÷ 20 = 110, not 90.

Lesson 2

Read the passage.
Then do Numbers 1–5.

Working Out at the Gym

The local gym offers many activities. Some members run on the treadmills. Others lift weights. Some members do floor exercises and shoot baskets. There is a swimming pool where people swim laps. The personal trainers keep a record of members' progress on their individual exercise programs. They often use estimation to get a general idea of members' progression.

1. Mrs Costello has set a goal of doing 500 sit-ups per week. This week's sit-up count appears in the table. By rounding each day's number of sit-ups to the nearest ten, estimate the total number of sit-ups she has done this week.

Day of the Week	Number of Sit-Ups
Sunday	68
Monday	83
Tuesday	77
Wednesday	126
Thursday	91

Ⓐ about 420 sit-ups
Ⓑ about 430 sit-ups
Ⓒ about 440 sit-ups
Ⓓ about 450 sit-ups

2. Mr Abbott has been running on the treadmill. For the past six days, he has run the following number of kilometres: 8.2, 10.5, 9.8, 6.3, 7.5 and 8.6. By rounding to the nearest kilometre, estimate the total number of kilometres he has run.

Ⓐ about 51 kilometres
Ⓑ about 52 kilometres
Ⓒ about 53 kilometres
Ⓓ about 55 kilometres

Lesson 14

Read the passage.
Then do Numbers 1–5.

Marathon Madness

The school held a "Marathon Day" to raise money for its sports program. Each student chose his or her own type of marathon event. Some students chose to dribble a basketball or a soccer ball, use a hula-hoop or fly a kite. Others chose to break-dance, perform cartwheels or skip. Students got sponsors to pledge money. Some sponsors pledged a set amount. Others pledged money based on the time the student spent performing. On "Marathon Day", 45 students participated and raised a total of $1725. The money will be used to buy new sports equipment.

1. Carl decided to dribble a basketball. He began at 9:58:35 and dribbled until 10:09:13. Rounding to the nearest minute, about how many minutes did Carl dribble the ball?

Ⓐ about 9 minutes
Ⓑ about 10 minutes
Ⓒ about 11 minutes
Ⓓ about 12 minutes

2. Margarita stood on her head for 3 minutes and 48 seconds. She had eight friends each pledge $2.25 per minute. Rounding to the nearest minute and dollar, about how much money did she earn for the program?

Ⓐ about $8
Ⓑ about $48
Ⓒ about $64
Ⓓ about $96

Self-Assessment 2
Lessons 6–10

Answer these questions after you have completed Lessons 6–10. Before you begin, re-read what you wrote in Self-Assessment 1.

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Name _____ Date _____

1. Rate your work in Lessons 6–10. Circle your answer.

   successful somewhat successful needs improvement

2. Did any of the questions give you trouble? _____
   If so, what kind of trouble did you have?

   _____

   _____

   Is this the same kind of trouble you had in Lessons 1–5? _____

3. Did you find the questions easier or more difficult than those in Lessons 1–5?

   _____

   Why do you think this is so?

   _____

   _____

4. Did you meet the goal you set for yourself for Lessons 6–10? _____
   Why or why not?

   _____

   _____

5. What is your goal for Lessons 11–15?

   _____

   _____

Cut along the dotted line.