

Two-Way Tables

Complete the two-way tables based on the information given and answer the corresponding questions. Round your answers to the nearest whole number or whole percent. Show mathematical work if needed to support your answer.

8th Graders Favorite Movie Genres

	Comedy	Action	Sci-Fi	Total
Boys	18	15	14	47
Girls	8	6	19	33
Total	26	21	33	80

True or False

- Eight girls preferred comedy movies. **True**
- Fifteen boys preferred action movies. **True**
- Thirty-three percent of the students surveyed were girls. **False** $33/80 = 41\%$
- Fifty-nine percent of the students surveyed were boys. **True**
- Girls are as likely to prefer Sci-Fi as boys are to prefer Comedy.



Girls: $\frac{19}{33} = 58\%$ Boys: $\frac{18}{47} = 38\%$ **False**

Favorite Classic Rock Bands among Millennials

	Beatles	Rolling Stones	Doors	Total
Boys	2	23	9	34
Girls	15	2	9	26
Total	17	25	18	60

Short Answer

- How many more girls than boys prefer The Beatles?
 $15 - 2 = 13$
- What percent of the boys preferred The Beatles?
 $\frac{2}{34} = 6\%$
- Which band did the boys prefer most?
Rolling Stones
- Are girls as likely as boys to prefer The Doors?

Girls: $\frac{9}{26} = 35\%$ Boys: $\frac{9}{34} = 26\%$

Girls are MORE likely to like The Doors.



Mathville High School

	Algebra 1	Geometry	Algebra II	Total
9 th Grade	20	75	20	115
10 th Grade	100	39	28	167
Total	120	114	48	282

10. How many students are taking Geometry? 114
11. Which math class has the least number of students? Algebra II
12. Are there more students 9th grade or 10th grade students taking math classes?
10th grade students 167 > 115
13. What percent of students taking Algebra 1 were in the 9th grade?
 $\frac{20}{120} = 17\%$

Sophomores Foreign Language

	Latin	Spanish	Chinese	Total
Boys	22	78	20	120
Girls	38	58	22	118
Total	60	136	42	238

14. How many students are taking Latin? 60
15. Which language class has the least number of students? Chinese
16. Are there more boys or girls taking foreign language classes? Boys
17. What percentage of sophomores are taking Spanish? $\frac{136}{238} = 57\%$

Favorite Exotic Fruit

	Star Fruit	Plantains	Guava	Total
8 th Grade	11	6	15	32
9 th Grade	22	18	28	68
Total	33	24	43	100

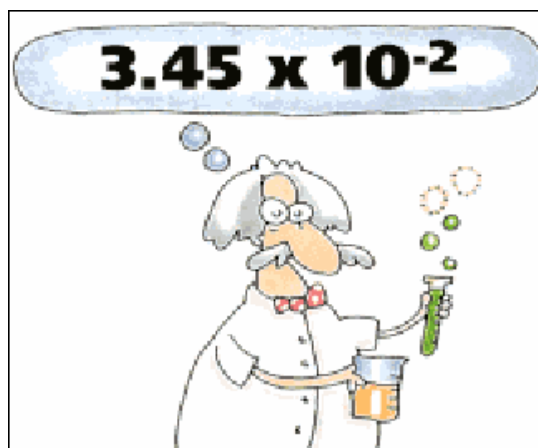
18. What percent of 8th graders choose guava? $\frac{15}{32} = 47\%$
19. What percent of students choose plantains? $\frac{24}{100} = 24\%$
20. Are 9th graders are more likely to choose Star Fruit than 8th graders? No.
9th: $\frac{22}{68} = 32\%$ 8th: $\frac{11}{32} = 34\%$



 <http://www.youtube.com/watch?v=AWof6knvQwE>

Converting Scientific Notation

Kimberley Thomas



SCIENTIFIC NOTATION

A number is written in **scientific notation** if it is of the form

$$c \times 10^n$$

where $1 \leq c < 10$ and n is an integer.*

* an integer is a positive or negative whole number including zero

$\{\dots -3, -2, -1, 0, 1, 2, 3 \dots\}$

Sort the given values.

Written in proper
scientific notation

$$1.9 \times 10^{-22}$$
$$2.1203 \times 10^{-16}$$
$$3.214 \times 10^1$$
$$5 \times 10^{-9}$$
$$2.35 \times 10^5$$
$$6.09 \times 10^7$$

$$12 \times 10^0$$



$$10.3 \times 10^9$$
$$45.9 \times 10^{-6}$$

Not written in proper
scientific notation

Scientific notation is used to write really big numbers.

standard notation \longrightarrow scientific notation

123,000,000,000.

1.23×10^{11}

45,000,000.

4.5×10^7

67,800,000,000,000.

6.78×10^{13}

9,000.

9.0×10^3

Scientific notation is used to write really big numbers.

scientific notation



standard notation

The exponent tells you how many decimal places you need to move.

$$7.82 \times 10^3 = 7820$$

7.820

$$3.04 \times 10^8 = 304,000,000$$

3.04000000

$$5 \times 10^4 = 50,000$$

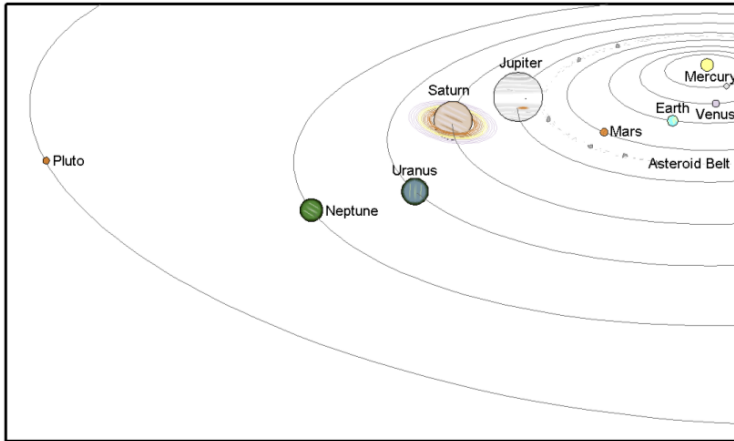
5.0000

$$6.2103 \times 10^{10} = 62,103,000,000$$

6.2103000000

An example of a really big number.
Please write it in scientific notation.

As the planets orbit the sun, the closest Pluto gets to Earth is approximately 2,700,000,000 miles.



$$2.7 \times 10^9$$

Scientific notation is used to write really small numbers.

standard notation \longrightarrow *scientific notation*

0.000000034

3.4×10^{-8}

0.0000000005609

5.609×10^{-10}

0.0000000000064

6.4×10^{-11}

0.007

7×10^{-3}

Scientific notation is used to write really small numbers.

scientific notation



standard notation

$$4.8 \times 10^{-6} = 0.0000048$$

0000048

$$1.2 \times 10^{-12} = 0.0000000000012$$

0000000000012

$$0.9 \times 10^{-2} = 0.09$$

0.9

$$7.1034 \times 10^{-5} = 0.000071034$$

000071034

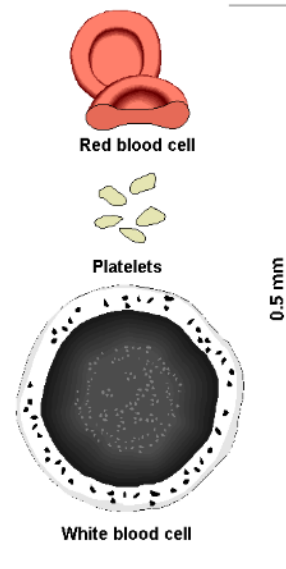
.000071034

} same

The exponent tells you how many decimal places you need to move.

An example of a really small number.
Please write it in scientific notation.

The thickness of a red blood cell is approximately
0.0003125 of an inch.



How do you know that a number written in scientific notation will be really big or really small ?

BIG

positive
exponent

small

negative
exponent

Extra Practice

same

Rewrite in decimal form. *Standard form*

1. 3.79×10^5

379000

2. 2.5×10^{-2}

.025

3. 8.44×10^1

84.4

4. 6.5393×10^4

65393

5. 3.589×10^{-3}

.003589

6. 9.1187×10^0

9.1187

7. 1.0056×10^{-5}

0.000010056

8. 7.2658746×10^8

726587460.

Extra Practice

Rewrite in scientific notation.

7,960,000,000

0.007485

45.668

998.653

0.0000056388

63,000,000

0.0602

22,078,600

0.000070005 * New #

64.3

Homework

Finish classwork