



Standard Time and Daylight Saving Time

When it is daylight in your part of the world, it is nighttime on the opposite side of the globe. As the earth spins, time keeps moving on wherever you are. At any place east or west of where you live, the sun is at its highest point in the sky at a different time. If every town in the world set their clocks by the sun, you would be constantly resetting your watch as you traveled from one point to another.

Standard time zones help solve this problem. Within a time zone, everyone uses the same time, or standard time.

Daylight saving time means adjusting standard time to one hour later than normal for the summer months. During that time the sun appears to set one hour later in the evening than it would on standard time. It is like switching an hour of daylight from early morning when most people are still sleeping to the evening when many would like to enjoy the summer weather outdoors. Starting in March 2007, daylight savings time in the United States begins on the second Sunday in March and ends on the first Sunday in November. Individuals, towns, states, or even whole time zones may choose not to use daylight saving time, but rather use standard time the whole year through.



It may help to remember this saying: "Spring forward, Fall backward".

Underline the correct answer.

- "Daylight saving time begins tomorrow," said Mom one Saturday evening in spring. If it is 9:00 now, Polly should set her alarm clock to **8:00 p.m.**, **10:00 p.m.**
- Polly got **1 extra hour of sleep**, **1 less hour of sleep** if she set her alarm to ring at the usual time.
- In the fall when daylight saving time ends, Polly will need to set her watch **forward**, **backward**.
- She will get **1 more hour of sleep**, **1 less hour of sleep** if she sets her alarm back one hour.

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Teaching the Lesson

Standard Time and Daylight Saving Time

Daylight saving time theoretically switches an hour of early morning daylight to evening when people are more active.

Drill the "spring forward; fall backward" concept. Help the class understand how we "gain" an hour in the fall but "lose" it in the spring. For the struggling student, you may need to actually show the process on the clock.

☆ **Optional Activity on page 14.**

Lesson 3

 *We Remember*

5. Mr. Wade planned to be at work every morning by 7 a.m. One morning he got up at 5:30 a.m. He took 25 minutes to get dressed and have his morning devotions, 20 minutes to eat breakfast, and 20 minutes to feed and milk his goats before leaving for work. It took him 35 minutes to drive to work.

25	5:30
20	+1:40
20	6:70 = 7:10
+ 35	
100	= 1 hour 40 minutes

a. Did Mr. Wade get to work on time? no

b. How many minutes early or late was he?

7:10
-7:00
<u>:10</u>

10 minutes late

6. It took Mr. Wade 30 minutes to drive to one of his carpenter jobs. If his average speed was 50 miles per hour, how far away was his job?

Think of an hour as 60 minutes, and set up a proportion to solve.

30	50 miles	=	$\frac{n}{30 \text{ minutes}}$
<u>25 miles</u>	$\frac{50 \text{ miles}}{60 \text{ minutes}}$		

30	60	25
x 50	1500	
1,500	120	
	300	
	<u>300</u>	

Match the terms and definitions.

- | | |
|---------------------------|--|
| 7. <u>d</u> circumference | a. one endpoint on the center and the other endpoint on the circle |
| 8. <u>a</u> radius | b. both endpoints on the circle, contains the center point |
| 9. <u>c</u> center | c. same distance from any point on the circle |
| 10. <u>e</u> chord | d. total distance around the circle |
| 11. <u>b</u> diameter | e. both endpoints on the circle, but not necessarily containing the center |

Use the distributive property to simplify these expressions.

- | | |
|--------------------|----------------|
| 12. a. $11(x + 8)$ | b. $8(a + 10)$ |
| $11x + 88$ | $8a + 80$ |

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Teacher Notes:

Lesson 3

— \div \times Skill Builders —

$$\begin{array}{r} 364 \\ \times 73 \\ \hline 1092 \\ 25480 \\ \hline 683,572 \end{array}$$

Write the remainder with R.

$$\begin{array}{r} 347R27 \\ 699 \overline{)242,580} \\ \underline{2097} \\ 3288 \\ \underline{2796} \\ 4920 \\ \underline{4893} \\ 27 \end{array}$$

Round to the nearest thousandth.

$$\begin{array}{r} 36.8421 \approx 36.842 \\ 3.8 \overline{)140.00000} \\ \underline{114} \\ 260 \\ \underline{228} \\ 320 \\ \underline{304} \\ 160 \\ \underline{152} \\ 80 \\ \underline{76} \\ 40 \\ \underline{38} \\ 2 \end{array}$$

Convert these fractions to decimals rounded to the nearest hundredth. Then write as a percent.

14. $2\frac{1}{3} = \underline{2.33} \approx \underline{233\%}$ $\begin{array}{r} .333 \approx .33 \\ 3 \overline{)1.000} \\ \underline{9} \\ 10 \\ \underline{9} \\ 10 \\ \underline{9} \end{array}$

15. $\frac{3}{5} = \underline{0.60} = \underline{60\%}$ $\begin{array}{r} .6 \\ 5 \overline{)3.0} \\ \underline{30} \end{array}$



Substitute 6 for n . Simplify the expressions. The first one is done for you.

16. a. $\frac{n}{2}$	b. $\frac{n}{3}$	c. $12n$	d. $5n$
$6 \div 2$	$6 \div 3$	12×6	5×6
3	2	72	30

Number of steps in solutions may vary.

— ?... Mental Math —

17. $2^4 \times 3 \times \frac{1}{2} - 3 + 6 + 9 = \underline{3}$

Teacher Notes:

Lesson 3

Mastery Drill

18. a. 1 cubic centimeter = 1 milliliter b. 1 decade = 10 years
 19. a. 1 century = 100 years b. 1 millennium = 1,000 years
 20. The three angles of a triangle measure a total of 180°.
 21. The four angles of a quadrilateral measure a total of 360°.
 22. A scalene triangle has 0 congruent sides.
 23. An isosceles triangle has 2 congruent sides.
 24. An equilateral triangle has 3 congruent sides.

Change each percent to a fraction or mixed number showing hundredths. Then reduce to simplest form.

25. a. $216\% = 2 \frac{16}{100} = 2 \frac{4}{25}$ b. $80\% = \frac{80}{100} = \frac{4}{5}$

Rewrite each decimal as a fraction or mixed number with a denominator of 10, 100, or 1,000. Reduce to simplest form.

26. a. $2.6 = 2 \frac{6}{10} = 2 \frac{3}{5}$ b. $4.125 = 4 \frac{125}{1,000} = 4 \frac{1}{8}$

Write the time.

Do not consider Newfoundland time as a time zone for these questions unless you live there.


27. When it is 11:55 a.m. here, it is 9:55 a.m. two time zones to the west.
 28. When it is 10:15 a.m. here, it is 12:15 p.m. two time zones to the east.

Write spring or fall.

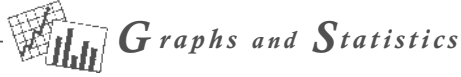
29. Daylight saving time begins in the spring and ends in the fall.
 30. When we switch between standard and daylight saving time, we move our clocks ahead in the spring and move them back in the fall.
 ☆ 31. When we switch between standard and daylight saving time, we gain an hour in the fall and lose an hour in the spring.

☆ **Optional Activity.**

Teacher Notes:



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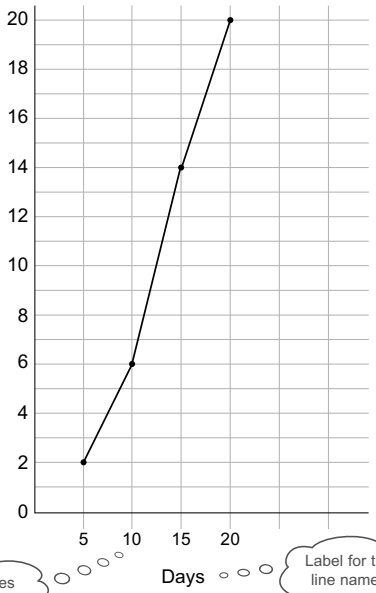
Graphs and Statistics

Drawing Line Graphs

Line graphs indicate continuously changing data. Numbers on line graphs are often approximate figures.

When drawing line graphs, label each part clearly.

Growth of a Tomato Plant From Seed



Remember:
Use rulers to draw lines.

Checklist for Drawing Line Graphs

- Complete the number scale.
- Label the number scale.
- Fill in the line names or numbers
- Label the line names.
- Plot the points to show your information.
- Use your ruler to connect the points.
- Write a title for your graph.

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Teaching the Lesson

Graphs and Statistics: Drawing Line Graphs

Note: Students will not be required to remember the information in the colored rectangle on page 19 of the LightUnit. This is optional information that shows how the pattern of solids and their names continues.

If students follow the check list for drawing line graphs, they should be able to work on their own. Circulate around the room to watch for anyone who may be having trouble.

△ **Teacher Aide Check on page 16.**

Lesson 4

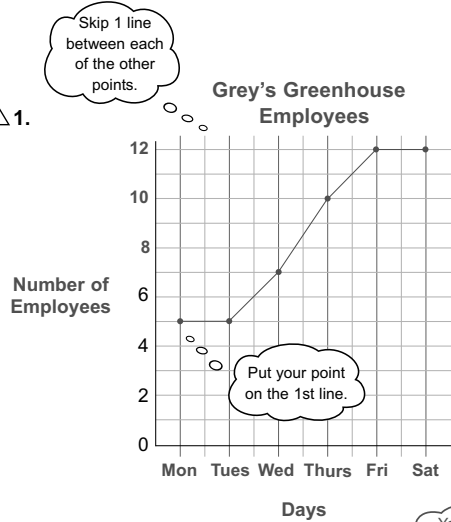
Draw a line graph with the information from the table about the employees at Grey's Greenhouse. Use the checklist to guide you through the steps.

Grey's Greenhouse employs some full-time and some part-time workers. Their sales peak on the weekend, so they have more employees working those days.

△ Teacher Aide

Check: Check the students' line graphs for completeness and accuracy.

△ 1.



Greenhouse Employees	
Day	Number of Employees
Monday	5
Tuesday	5
Wednesday	7
Thursday	10
Friday	12
Saturday	12

Checklist for Drawing Line Graphs

- Complete the number scale.
- Label the number scale.
- Fill in the line names.
- Label the line names.
- Plot the points to show the information.
- Use your ruler to connect the points.
- Write a title for your graph.

We Remember

Underline the correct choice. Remember the saying, "Spring forward; fall backward."

2. Daylight saving time begins in March, November.
3. To switch to daylight saving time, change your clock to one hour **earlier**, **later**.
4. When we begin daylight saving time, we **gain an hour**, lose an hour.

Teacher Notes:

Lesson 4

+ **×** Skill Builders

5. a. $16 \times \frac{1}{24} \times 1\frac{1}{2} = \underline{1}$

$$\begin{array}{c} \cancel{16}^1 \times \frac{1}{\cancel{24}^1} \times 1\frac{1}{\cancel{2}^1} = 1 \\ \cancel{1}^1 \times \frac{1}{\cancel{24}^1} \times \frac{1}{\cancel{2}^1} = 1 \\ \cancel{1}^1 \times \frac{1}{\cancel{24}^1} \times \frac{1}{\cancel{2}^1} = 1 \end{array}$$

b.
$$\begin{array}{r} 0.623 \\ \times 0.8 \\ \hline 0.4984 \end{array}$$

Annex zeros to complete.

$$\begin{array}{r} .855 \\ 2.8 \overline{) 2.3940} \\ \underline{224} \\ 154 \\ \underline{140} \\ 140 \\ \underline{140} \\ 0 \end{array}$$

Copy and solve. Annex zeros as needed.

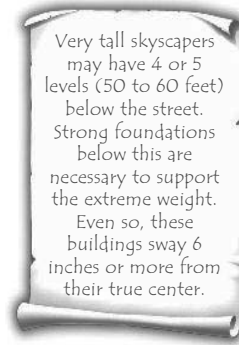
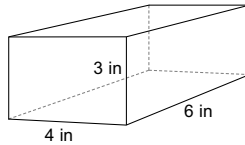
6. $32.8 - 16.42 = \underline{16.38}$

$$\begin{array}{r} 32.80 \\ -16.42 \\ \hline 16.38 \end{array}$$

Use the formula to find the volume.

7. $\underline{72 \text{ in}^3}$

$$\begin{array}{r} V = l \times w \times h \\ V = 6 \times 4 \times 3 \\ V = 72 \end{array}$$



8. The Wade family homeschools. Their school day lasts from 9 a.m. to 2 p.m. Mom allows them a 20-minute break in the morning and a half hour off for lunch. How long is the school day minus the two breaks?

$$\begin{array}{r} 9:00 \text{ a.m.} - 2:00 \text{ p.m.} = 5 \text{ hr} \\ \begin{array}{r} 20 \\ + 30 \\ \hline 50 \end{array} \quad \begin{array}{r} 4 \text{ } 60 \\ \cancel{5} : 00 \\ - 0 : 50 \\ \hline 4 : 10 \end{array} \end{array}$$

$\underline{4 \text{ hr } 10 \text{ min}}$

Solutions may vary.

9. Bethel Mennonite Church borrowed hymnbooks from neighboring churches to use at their fellowship meetings. They borrowed 42 hymnbooks from Riverside Church, 51 from Shiloh Church, 28 from Wayside Church, and 23 from Bethesda Church. What was the average number of hymnbooks borrowed from each congregation?

$$\begin{array}{r} 42 \\ 51 \\ 28 \\ + 23 \\ \hline 144 \end{array} \quad \begin{array}{r} 36 \\ 4 \overline{) 144} \\ \underline{12} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

$\underline{36 \text{ hymnbooks}}$

Teacher Notes:

Lesson 4

Solve and check.

10. a. $8 + 2n = 44$

$$\begin{array}{r} -8 \\ \hline 2n = 36 \\ \hline n = 18 \end{array}$$

b. $8 + 2 \cdot 18 = 44$
 $8 + 36 = 44$
 $44 = 44$

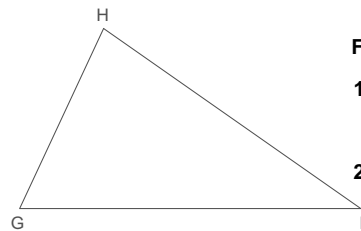
c. $27 = 6x - 9$

$$\begin{array}{r} +9 \\ \hline 36 = 6x \\ \hline 6 = x \end{array}$$

d. $27 = 6 \cdot 6 - 9$
 $27 = 36 - 9$
 $27 = 27$

Mastery Drill

11. a. 1 yard³ = 27 feet³ b. 1 year = 52 weeks
 12. a. 1 square foot = 144 square inches b. 1 square yard = 9 square feet
 13. The short version of the percent proportion is $\frac{\text{is}}{\text{of}} = \frac{\%}{100}$.
 14. The formula for the volume of a rectangular prism is $V = lwh$.
 15. An acute angle measures between 0° and 90°.
 16. An obtuse angle measures between 90° and 180°.
 17. The formula for the area of a circle is $A = \pi r^2$.
 18. a. $\sqrt{4} = \underline{2}$ b. $\sqrt{25} = \underline{5}$ c. $\sqrt{100} = \underline{10}$ d. $\sqrt{49} = \underline{7}$



Follow directions. Write the answers.

19. Measure the three angles of $\triangle GHI$.
 a. $\angle G$ 65° b. $\angle H$ 80° c. $\angle I$ 35°
 20. Find the sum of the measures of the three angles. 180°
 21. Find the perimeter of the triangle. Measure each side to the nearest centimeter. 17 cm

Solve. Use proportions if you need to. Round quotients to the nearest whole number.

22. 105 is what percent of 70? 150% $\frac{105}{70} = \frac{n}{100}$ $105 \times 100 \div 70 = 1500$ $1500 \div 10 = 150$

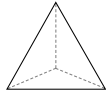
23. What is 5% of 40? 2 $\frac{n}{40} = \frac{5}{100}$ $40 \times 5 \div 100 = 2$

24. 42 is 150% of what number? 28 $\frac{42}{n} = \frac{150}{100}$ $42 \times 100 \div 150 = 28$

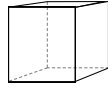
Teacher Notes:

Lesson 4

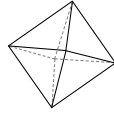
Fill in the number of faces, edges, and vertices for each.



tetrahedron



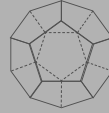
cube



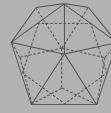
octahedron

25. Faces	a. 4	b. 6	c. 8
26. Edges	a. 6	b. 12	c. 12
27. Vertices	a. 4	b. 8	c. 6

There are 5 solids whose faces are all congruent regular polygons. These 5 special solids are called the Platonic solids. The faces of the tetrahedron, octahedron, and the icosahedron are all equilateral triangles. The faces of the cube are all squares. The faces of the dodecahedron are all regular pentagons.



dodecahedron



icosahedron

Combine integers.

28. $44 + (-22) = \underline{22}$

29. $-88 + 88 = \underline{0}$

30. $-13 + (-28) = \underline{-41}$

Find the total cost.

31. \$15.00 with 7% sales tax = \$ 16.05

31. \$15.00

32. \$8.50

32. \$8.50 plus 5% sales tax = \$ 8.93

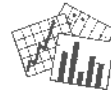
$$\begin{array}{r} \times 1.07 \\ 15000 \\ \hline 150000 \\ \$16.0500 = \$16.05 \end{array}$$

$$\begin{array}{r} \times 1.05 \\ 4250 \\ \hline 85000 \\ \$8.9250 \approx \$8.93 \end{array}$$

\$16.0500 = \$16.05

\$8.9250 ≈ \$8.93

Answer the questions about the graph on page 15.



33. How tall was the tomato plant on Day 20? 20 cm

34. On which day was the plant 6 cm tall? Day 10

35. Between which days on the graph did the plant grow fastest? Day 10 to Day 15

36. How tall was the plant on Day 15? 14 cm

Teacher Notes:

Lesson 5 pp. 20

Lesson Preparation

- Quiz 1 for each student
- Scissors, inch ruler, and paper for each student

Quiz 1 pp. 67, 68

Teacher Check:

When student is ready for the quiz, initial circle and administer quiz.

→ Assign Quiz 1.

→ Fascinating Discoveries: From a Knot to a Pentagon



Quiz 1

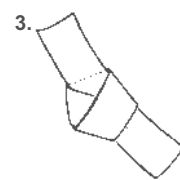
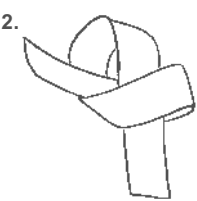
- Tell your teacher when you are ready to take Quiz 1.



From a Knot to a Pentagon

Follow the directions to construct a pentagon from a paper knot.

1. Cut a strip of paper 11" × 1".
2. Carefully tie it in a single knot.
3. Gently tighten and flatten it.
4. Trim the edges.



Teaching the Lesson

From a Knot to a Pentagon

This optional activity is a fun little exercise showing how to construct a pentagon.

Teacher Check on page 20.