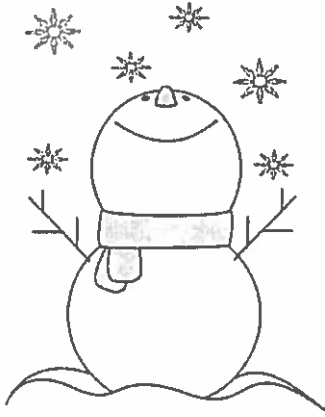


Name: _____ Date: _____ 4th Grade - MRS. BESONEN'S CLASS



SNOW DAY CHOICE BOARD

DIRECTIONS

1. CHOOSE AT LEAST ONE ACTIVITY FROM EACH COLUMN TO COMPLETE DURING TODAY'S SNOW DAY.
2. HAVE AN ADULT INITIAL EACH BOX THAT YOU HAVE COMPLETED.
3. TURN ALL COMPLETED WORK INTO TEACHER WHEN YOU RETURN TO SCHOOL.
4. ONLY STUDENTS RECEIVING SPEECH SHOULD DO SPEECH/LANGUAGE SQUARE AT BOTTOM OF SHEET.

MATH	READING	PHY ED/ MUSIC/ART	SPELLING	WRITING	FAMILY
<p>Spend 20 minutes Multiplication / Division Practice (worksheet)</p> <p>Initials: _____</p>	<p>Read to self for 20 minutes</p> <p>Title: Pages:</p> <p>Initials: _____</p>	<p>Exercise for 20 minutes</p> <p>Initials: _____</p>	<p>Write spelling words in cursive</p> <p>Initials: _____</p>	<p>Write 1-2 paragraphs about what you did on your snow day</p> <p>Initials: _____</p>	<p>Clean your bedroom</p> <p>Initials: _____</p>
<p>Do a math worksheet</p> <p>Initials: _____</p>	<p>Read to a family member or friend for 20 minutes</p> <p>Initials: _____</p>	<p>Sing songs or write your own song</p> <p>Initials: _____</p>	<p>Write each spelling word in a complete sentence</p> <p>Initials: _____</p>	<p>Write a summary of a book you read</p> <p>Initials: _____</p>	<p>Help with dishes</p> <p>Initials: _____</p>
<p>Spend 20 minutes on Prodigy or /Sumdog</p> <p>Initials: _____</p>	<p>Do a reading worksheet (Wonderopolis worksheet)</p> <p>Initials: _____</p>	<p>Create a picture of your choice using what you have at home to create with (hint...can use outside view)</p> <p>Initials: _____</p>	<p>Write your spelling words in ABC order.</p> <p>Initials: _____</p>	<p>Write a letter to a classmate</p> <p>Initials: _____</p>	<p>Play a family game (board game, hide & seek, cards)</p> <p>Initials: _____</p>

Questions about today's assignment? Please contact your child's teacher:

Teacher's Name: Mrs. Besonen

Teacher's E-mail: abesonen@lqpv.org

ClassDojo

SPEECH/LANGUAGE:

Read a story. Listen for your sound. Repeat the word or sentence, based on level you are working at. Retell the story using slow and easy speech. Discuss the story with your parents.

Initials: _____



Welcome to your ELA Wonderopolis lesson!

Each snow day lesson for 4th grade will be from wonderopolis.org. Each snow day you will read/ listen (if you have internet access) to a "Wonder of the Day." Next, on a whole sheet of notebook paper, write down 5 of the Wonder Words. For each Wonder Word, you must write the given definition and use this word in an original sentence.

Example: My word is ***prioritize***. The given definition is *give a priority to*, and my sentence is:

I need to prioritize my homework before playing video games.

Please include the title of the "Wonder of the Day," your first/last name, and the date of the snow day at the top of your paper.

Please turn in the following school day at the beginning of class.

Wonder of the Day #1947

How Does a Traffic Light Work?

6 Comments



TECHNOLOGY – Transportation

Have You Ever Wondered...

- How does a traffic light work?
- Do all traffic signals work in the same way?
- How can traffic signals sense when vehicles are present?

We were sitting at the Wonderopolis bus stop the other day when we overheard two dogs discussing the traffic at the nearby intersection:

Dog 1: So what you're telling me, Charlie, is that these humans drive these cars around and just stop for no reason simply because there's a red light hanging up in the air?

Dog 2: I know it sounds crazy, Rex, but I've watched the cars here for quite a while and that indeed appears to be what happens. Sit here and watch with me a while.

Dog 1: Would you look at that, Charlie? You're right. That car was driving along and, even though there aren't any other cars around, it just stopped when that light up there turned from green to yellow and then red.

Dog 2: It's a mystery, Rex. Why would they do that? It's almost like they don't have anywhere important to be. It's like they've got all the time in the world and are never in a hurry.

Dog 1: People are so weird. I'll never understand them. Oh well, I need to get back home to chase cats and bark at leaves.

Dog 2: Look! That car is coming this way. Let's chase it!

Rex and Charlie took off in a flurry of fur and barking. We're not sure if they ever caught the car or, if they did, what they would've done with it. Nevertheless, their brief conversation did make us WONDER about the traffic lights that hang above intersections. Exactly how do those work?

While traffic signals may be a mystery to dogs, human drivers are happy that they're there to regulate the flow of traffic on busy streets. Without traffic lights and stop signs, navigating your way around a big city could be quite dangerous.

As you probably already know, most traffic lights feature three colored lights. The green light signals that it's safe to proceed through the intersection. A yellow light (also known as a caution light) alerts drivers to the fact the light is about to change to red.

When drivers encounter a yellow light, they know it's necessary to slow down and come to a stop at the intersection. The red light, of course, indicates that drivers must stop and wait for a green light before traveling through the intersection.

Although most traffic lights have a similar appearance, they can often function in very different ways. The most common traffic lights work on simple timers. Depending upon traffic levels at a particular intersection, the traffic light will cycle through green, yellow, and red at regular intervals to ensure a consistent flow of traffic in all directions through the intersection. Timer-based systems are excellent for busy areas that have a consistent, heavy volume of traffic.

In areas where traffic can be sporadic and unpredictable, timer-based systems don't work as well. For example, in a rural area, a timer-based system might have drivers stopped unnecessarily when no traffic is present. In these situations, sensor-based traffic signals maximize traffic efficiency by only functioning when traffic is present.

Rather than timers, "smart" or "intelligent" sensor-based traffic signals rely upon a system of sensors to detect when vehicles are present. The types of sensors used can vary by location and technology. Some systems use lasers, rubber hoses filled with air, or video cameras to detect the presence of cars.

Another popular type of sensor is known as an inductive loop system. These systems rely upon a coil of wire embedded in the road's surface. The wire detects changes in magnetic fields when vehicles (large metal objects!) are stopped above them.

So how do sensor-based systems maximize traffic efficiency? In a rural area, for example, the main direction of travel can remain on green to allow the majority of vehicles to pass through quickly. When a vehicle on a side road arrives at the intersection, a sensor will detect it and cycle the lights to allow traffic on the side road to pass through. In this way, traffic can flow uninterrupted on the main road unless and until traffic on a side road appears.

Some traffic signals in large cities are even advanced enough to allow certain types of vehicles to control them when necessary to allow quick passage through intersections for certain types of vehicles. These systems, known as traffic preemption systems, allow emergency vehicles, such as ambulances, fire trucks, and police cars, to change traffic signals as they approach, so that they can get to where they need to go much faster.

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Wonder Contributors

We'd like to thank:

Lizzie and Amy for contributing questions about today's Wonder topic!

Keep WONDERing with us!

Wonder Words (18)

CRAZY, HURRY, WEIRD, CHASE,
FLURRY, FLOW, REASON, MYSTERY,
REGULATE, FEATURE, PROCEED,
CAUTION, UNDERSTAND,
NEVERTHELESS, NAVIGATING,
DANGEROUS, ENCOUNTER,
CONSISTENT

Wonder What's Next?

We believe tomorrow's Wonder of the Day is going to crack you up!

Try It Out

Are you ready to go? As soon as the light turns green, be sure to explore the following activities with a friend or family member:

Ask an adult friend or family member to take you on a field trip to a local area with multiple traffic lights. Park your vehicle and spend some time at each intersection with a traffic signal, observing how it works. Can you determine whether it's working on a timer or a sensor? If a sensor, how is the sensor triggered? How can you tell? Have fun observing traffic signals in the wild!

Inductive loops sensors work based upon changes in magnetic fields caused by the metal in cars. Do you think these sensors will become obsolete as more and more cars are made out of plastic and composite materials? Why or why not? Based upon other types of sensors you've seen developed and put into practice in recent years, what types of sensors do you think will be best to use for traffic signals in the future? Why?

Do you have a vivid imagination? Pretend that you're a traffic engineer in the year 2099. Not only are regular vehicles, such as cars, trucks, and motorcycles, still in use, but there are also autonomous (self-driving) vehicles, as well as flying cars. What type of traffic signal system would you develop to control traffic involving all these different types of transportation? Give it some thought and then write a short story or draw a picture that explains the type of traffic signal system you'd use in the future!

Wonder Sources

<http://auto.howstuffworks.com/car-driving-safety/safety-regulatory-devices/question234.htm>

<http://www.tech-faq.com/how-do-traffic-lights-work.html>

<http://minnesota.cbslocal.com/2015/05/28/good-question-how-do-our-traffic-lights-work/>

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Complete.

- | | |
|---|--|
| <p>1. The weather had started cooling off, so Anna knew that autumn was on the way. She decided to make a chart showing the temperature at 8:00 a.m. each day for a week. The temperatures she recorded were sixty-five degrees, seventy-one degrees, fifty-six degrees, sixty degrees, fifty-nine degrees, sixty-nine degrees, and sixty-six degrees. What was the average temperature for the week? Round your answer to the nearest tenth of a degree.</p> | <p>2. Elizabeth works at the toy store. She takes toys out of boxes and puts them on the shelves. Yesterday she put two hundred two Mickey Mouse figurines on the shelves. If it took her twenty-three seconds to take a figuring out of the box and put it on the shelf, how long did it take her to put all one hundred twenty-five Mickey Mouse figurines on the shelves?</p> |
|---|--|

Find each ordered pair. Write the letter for the point named by the ordered pair.

<p>3.</p> <p>(0, 0) _____</p> <p>(3, 6) _____</p> <p>(5, 4) _____</p> <p>(5, 6) _____</p> <p>(2, 2) _____</p>	<p>4.</p> <p>(3, 3) _____</p> <p>(6, 3) _____</p> <p>(5, 3) _____</p> <p>(4, 6) _____</p> <p>(0, 1) _____</p>
---	---

Divide.

5. $35 \div 5 = \underline{\quad}$	6. $9 \div 3 = \underline{\quad}$	7. $20 \div 2 = \underline{\quad}$	8. $16 \div 8 = \underline{\quad}$
9. $56 \div 7 = \underline{\quad}$	10. $36 \div 4 = \underline{\quad}$	11. $45 \div 9 = \underline{\quad}$	12. $40 \div 10 = \underline{\quad}$
13. $36 \div 6 = \underline{\quad}$	14. $6 \div 2 = \underline{\quad}$	15. $12 \div 3 = \underline{\quad}$	16. $10 \div 5 = \underline{\quad}$
17. $70 \div 10 = \underline{\quad}$	18. $80 \div 8 = \underline{\quad}$	19. $48 \div 6 = \underline{\quad}$	20. $100 \div 10 = \underline{\quad}$

Name _____

Divide.

21. $5 \overline{)13}$	22. $3 \overline{)36}$	23. $5 \overline{)59}$
24. $2 \overline{)31}$	25. $5 \overline{)90}$	26. $3 \overline{)57}$

Round to the nearest dollar.

27. \$88.24 _____	28. \$700.10 _____	29. \$158.79 _____
30. \$58.49 _____	31. \$5.57 _____	32. \$6.42 _____
33. \$5.85 _____	34. \$28.68 _____	35. \$203.91 _____

Write each number in two other ways.

36. 3,464	37. 440
38. 20	39. $80 + 8$

Complete.

40. Circle all of the numbers that are multiples of 6. 65 33 82 22 30 54 75 3 4 12 19 48
41. Circle all of the numbers that are multiples of 4. 40 93 1 88 36 16 55 2 28 69 43 95

Name _____



Date _____

Write the 2 hundreds each number is between.

1. 714	2. 114	3. 767	4. 396
5. 65,381	6. 993,833	7. 72,164,926	8. 4,453,070
9. 8,775,984	10. 83,568	11. 86,299,409	12. 839,173

Fill in the missing digits.

<p>13.</p> $ \begin{array}{r} 1 \square 6 r \square \\ 7 \overline{) \square 4 5} \\ \underline{7} \\ 0 4 \\ \underline{0} \\ \square 5 \\ \underline{4 2} \\ \square \end{array} $	<p>14.</p> $ \begin{array}{r} \square 0 8 \\ 1 \overline{) 5 \square \square} \\ \underline{5} \\ 0 0 \\ \underline{0} \\ 0 \square \\ \underline{8} \\ 0 \end{array} $
--	--

Complete.

<p>15. The pedestal of the Statue of Liberty is eighty-nine feet tall. The pedestal is on a foundation that is sixty-five feet tall. The Statue is one hundred fifty-one feet one inch from its feet to the top of the torch. How high is the memorial in all (from the bottom of the foundation to the top of the torch)?</p>	<p>16. Columbus' ships covered approximately 144 miles a day. How many miles would they have traveled in eight days?</p>
--	--

Name _____

Fill in the missing numbers.

17. $\square - \square + \square \times (\square - \square) = 189$
 Use the numbers: 4, 53, 9, 12, and 5

18. $\square \div \square + \square = 22$
 Use the numbers: 4, 2, and 80

Fill in the missing digits.

19.

$$\begin{array}{r}
 \square\square\square \\
 6 \overline{) \square 0 1 0} \\
 \underline{18} \\
 21 \\
 \underline{1\square} \\
 30 \\
 \underline{\square 0} \\
 0
 \end{array}$$

20.

$$\begin{array}{r}
 1 \square 7 2 r \square \\
 4 \overline{) 6 \square \square 1} \\
 \underline{4} \\
 22 \\
 \underline{20} \\
 29 \\
 \underline{2\square} \\
 11 \\
 \underline{8} \\
 3
 \end{array}$$

Complete.



a. What is the average amount spent on all 6 sneakers? Round your answer to the nearest cent.

b. How much did Michael and Matthew spend altogether on their sneakers?

c. What is the median of the data?

Fill in the missing numbers.

22. $___ \times 7 = 70$

23. $___ \times 7 = 42$

24. $2 \times 7 = ___$

25. $___ \times 7 = 49$

26. $9 \times \underline{\quad} = 63$

$63 \div 9 = \underline{\quad}$

27. $3 \times \underline{\quad} = 21$

$21 \div 3 = \underline{\quad}$

28. $4 \times 7 = \underline{\quad}$

$\underline{\quad} \div 4 = 7$

29. $8 \times \underline{\quad} = 56$

$56 \div 8 = \underline{\quad}$

