

# 7th Grade

# **Distance Learning Activities**

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SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Nati National National National Stress A April 7: V	onal Health Observar Autism Awareness Month Minority Health Month Distracted Driving Awareness wareness Month Vorld Health Day	<b>ICES</b> Month	1 Yoga is a great way to relieve stress. Try Savasana, considered to be the hardest yoga pose! Fully relax & clear your mind.	<b>2 Star Jumps</b> Jump up with your arms and legs spread out like a star. Do 10 then rest and repeat.	3 Crane Pose Here's a challenge! Put your hands on the ground, lean forward & balance your knees on your elbows.	<b>4 4 Walls</b> Face each wall in a room and do a different exercise for 30 seconds -side shuffle -grapevine to left then right -wide stance punches -vertical jumps
<b>5 Mindful Snack</b> When eating a snack today, really pay attention to the taste, feel, sound, smell and look of the snack you're eating. What do you notice?	<b>6 Balance</b> Stand on your right leg and lift your left knee at a 90 degree angle. Touch your toe without falling repeat 10 times then switch sides.	<b>7 World Health</b> <b>Day</b> Did you know regular, moderate-intensity physical activity can help prevent diabetes? Go for a walk with an adult & discuss other ways to prevent diabetes.	8 10 Jump Lunges Complete a right leg lunge, while in the down position jump up landing in a lunge position on the left leg.	<b>9 Tabata</b> Jump squats 20 seconds of work 10 seconds of rest 8 rounds	<b>10 Before Bed</b> <b>Breathing</b> While lying in bed, place your hands on your stomach and pay attention to the up and down of your belly as you breathe.	<b>11Dribble</b> <b>Challenge</b> Dribble a ball 100 times with each hand. Can you successfully dribble 100 times with each hand while moving?
12 Fish Pose	13 Card Fitness	14 Wild Arms	15 Mindful	16 Jump rope to	17 How Fast Can	18 Slide, Slide,
Hold fish pose for 60 seconds. Take a break and hold for another 60 seconds	Take a deck of cards, flip the top card. Complete exercises based on the suit & number on the card. Face cards are worth 15. Spades- jumping jacks, Clubs- squats, Hearts- mountain climbers, Diamonds- Your choice	As fast as you can complete: 10 Arm Circles front & back 10 Forward punches 10 Raise the Roof's Repeat 3x	Senses What do you notice around you? Find: 5 things you see 4 things you feel 3 things you hear 2 things smell 1 thing you taste	music! Can you jump to an entire song without stopping?	You Go? Pick a distance and see how fast you can run the distance.	<b>Sprint</b> Slide to your left for 10 steps, slide to right for 10 steps then face forward and sprint for 10 seconds.
<b>19 Garland Pose</b> Practice your balance with this pose!	<b>20 Tabata</b> Tuck Jumps 20 seconds of work 10 seconds of rest 8 rounds	21 Commercial Break Can you hold a plank for an entire TV commercial break?	22 Nighttime Note Empty your mind before you go to bed by writing a note about what you're thinking and leave it for tomorrow.	23 Chair Pose Hold for 30 seconds, relax then repeat.	24 Positive Talk Be sure to talk to yourself today like you would talk to someone you love.	<b>25 Jump, Jump</b> Jump side-to-side over an object or line for 1 minute straight. Go again but jump front to back. Repeat each jump twice.
<b>26</b> Put your favorite song on and make up a dance or fitness routine!	27 Paper Plate Planks In plank position with paper plates under your feet. Complete 30s each: -mountain climbers -in and out feet -knees to chest	<b>28 Step Jumps</b> Find a step or a bench and jump up and down 50 times. Be careful. Take a break if you need to.	29 A Gratitude Attitude Write down something you're thankful for and why.	<b>30</b> Try Savasana again. Use this to relax and wind down all year!	SHAPE America recomm accumulate at least 60 m hours of physical activi physical activity should to stretches that help redu injury. Happy Yoga photos from <u>www.forte</u>	ends school-age children inutes and up to several ty per day. Each bout of be followed by cool-down ice soreness and avoid y exercising!

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Class:

# <u>Five reasons why being kind makes you feel</u> <u>good — according to science</u>

By Jo Cutler, Robin Banerjee 2018

Have you ever experienced that warm, fuzzy feeling after doing something kind for someone else? In this informational text, Jo Cutler and Robin Banerjee discuss five reasons why being kind to others makes you feel good. As you read, take notes on why people are kind to others and how it affects them.

[1] Everybody can appreciate acts of kindness. But when it comes to explaining why we do them, people often take one of two extreme positions. Some think kindness is something completely selfless that we do out of love and care, while others believe it is just a tool that we cunningly<sup>1</sup> use to become more popular and reap the benefits.

> But research shows that being kind to others can actually make us genuinely happy in a number of different ways. We know that deciding to be generous or cooperating with others activates an area of the brain called the striatum. Interestingly, this area responds to things we find rewarding, such as nice food and even addictive drugs. The feel-good emotion from helping has



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been termed "warm glow" and the activity we see in the striatum is the likely biological basis of that feeling.

Of course, you don't have to scan brains to see that kindness has this kind of benefit. Research in psychology shows a link between kindness and well-being throughout life, starting at a very young age. In fact, even just reflecting on having been kind in the past may be enough to improve teenagers' mood. Research has also shown that spending extra money on other people may be more powerful in increasing happiness than spending it on yourself.

But why and how does kindness make us so happy? There are a number of different mechanisms involved, and how powerful they are in making us feel good may depend on our personalities.



# 1. Contagious smiling

[5] Being kind is likely to make someone smile and if you see that smile for yourself, it might be catchy. A key theory about how we understand other people in neuroscience suggests that seeing someone else show an emotion automatically activates the same areas of the brain as if we experienced that emotion for ourselves.

You may have been in a situation where you find yourself laughing just because someone else is — why not set off that chain of good feelings with a nice surprise for someone?

# 2. Righting a wrong

The same mechanism also makes us empathize<sup>2</sup> with others when they are feeling negative, which could make us feel down. This is particularly true for close friends and family, as our representations of them in the brain physically overlap with our representations of ourselves. Doing a kind act to make someone who is sad feel better can also make us feel good — partly because we feel the same relief they do and partly because we are putting something right. Although this effect is especially powerful for people we are close to, it can even apply to humanitarian problems such as poverty or climate change. Getting engaged with charities that tackle these issues provide a way to have a positive impact, which in turn improves mood.

# 3. Making connections

Being kind opens up many different possibilities to start or develop a social connection with someone. Kind acts such as a buying someone a thoughtful present or even just a coffee strengthens friendships, and that in itself is linked to improved mood.

Similarly, charities offer the opportunity to connect with someone on the other side of the world through donating to improve their life. Volunteering also opens up new circles of people to connect with, both other volunteers and those you are helping.

# 4. A kind identity

[10] Most people would like to think of themselves as a kind person, so acts of kindness help us to demonstrate that positive identity and make us feel proud of ourselves. In one recent study, even children in their first year of secondary school recognized how being kind can make you feel "better as a person ... more complete," leading to feelings of happiness. This effect is even more powerful when the kind act links with other aspects of our personality, perhaps creating a more purposeful feeling. For example, an animal-lover could rescue a bird, an art-lover could donate to a gallery or a retired teacher could volunteer at an after-school group. Research suggests that the more someone identifies with the organization they volunteer for, the more satisfied they are.



# 5. Kindness comes back around

Work on the psychology of kindness shows that one out of several possible motivations is reciprocity, the returning of a favor. This can happen directly or indirectly. Someone might remember that you helped them out last time and therefore be more likely to help you in the future. It could also be that one person being kind makes others in the group more kind, which lifts everyone's spirits. Imagine that you bake cakes for the office and it catches on so someone does it each month. That is a lot more days that you're getting cakes than providing them.

The story doesn't end there. Being kind may boost your mood, but research has also shown that being in a good mood can make you more kind. This makes it a wonderful two-way relationship which just keeps giving.

"Five reasons why being kind makes you feel good — according to science" by Jo Cutler, Robin Banerjee, University of Sussex, February 26, 2018. Copyright © The Conversation 2018, CC-BY-ND.



# **Text-Dependent Questions**

#### Directions: For the following questions, choose the best answer or respond in complete sentences.

- 1. PART A: Which statement best expresses the central idea of the text?
  - A. Most people are kind towards others without realizing they are actually being selfish, as they expect something in return.
  - B. People are only ever truly kind when they do something good for someone else without receiving anything in return.
  - C. The brain recognizes acts of kindness as rewarding because positive social interacts are an important part of human survival.
  - D. Showing kindness towards others can improve your mood through positive social interactions and reinforcing the notion that you're a good person.
- 2. PART B: Which detail from the text best supports the answer to Part A?
  - A. "We know that deciding to be generous or cooperating with others activates an area of the brain called the striatum. Interestingly, this area responds to things we find rewarding,"(Paragraph 2)
  - B. "Doing a kind act to make someone who is sad feel better can also make us feel good partly because we feel the same relief they do and partly because we are putting something right." (Paragraph 7)
  - C. "For example, an animal-lover could rescue a bird, an art-lover could donate to a gallery or a retired teacher could volunteer at an after-school group." (Paragraph 10)
  - D. "Work on the psychology of kindness shows that one out of several possible motivations is reciprocity, the returning of a favor." (Paragraph 11)
- 3. How does paragraph 1 contribute to the authors' explanation of kindness in the text?
  - A. It shows how people have conflicting opinions about why people are kind.
  - B. It introduces the idea that being kind to others makes us feel good.
  - C. It emphasizes the idea that people are kind more often than we realize.
  - D. It highlights the darker motivations for why people are kind.
- 4. What is the authors' main purpose of the text?
  - A. to encourage readers to be kinder to one another
  - B. to emphasize the disadvantages of only being concerned with yourself
  - C. to explore the different explanations for why being kind make us happy
  - D. to suggest that humans are kind for largely selfish reasons



5. What is the relationship between how others feel and how we feel? Use details from the text in your response.

5



# **Discussion Questions**

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. In the text, the authors discuss the relationship between acts of kindness and happiness. What can you do to be a little kinder to people every day, and as a result, be happier?

2. Describe the last kind thing that you did for someone. How did it make you feel? What motivated you to do it? Do you think it matters what motivates us to be kind? Why or why not?



Name:

Class:

### The Moustache By Robert Cormier

1975

Robert Cormier (1925-2000) was an American author, columnist, and reporter, known for his deeply sad stories. In this short story, a boy visits his grandmother at her nursing home. As you read, take notes on how the author uses figurative language to describe the characters and their experiences.

[1] At the last minute Annie couldn't go. She was invaded by one of those twenty-four-hour flu bugs that sent her to bed with a fever, moaning about the fact that she'd also have to break her date with Handsome Harry Arnold that night. We call him Handsome Harry because he's actually handsome, but he's also a nice guy, cool, and he doesn't treat me like Annie's kid brother, which I am, but like a regular person. Anyway, I had to go to Lawnrest alone that afternoon. But first of all I had to stand inspection. My mother lined me up against the wall. She stood there like a one-man firing squad, which is kind of funny because she's not like a man at all, she's very feminine, and we



<u>"328/365. Series Anatomy: The Moustache."</u> by Anant Nath Sharma is licensed under CC BY-NC-ND 2.0

have this great relationship — I mean, I feel as if she really likes me. I realize that sounds strange, but I know guys whose mothers love them and cook special stuff for them and worry about them and all but there's something missing in their relationship.

Anyway. She frowned and started the routine.

"That hair," she said. Then admitted: "Well, at least you combed it."

I sighed. I have discovered that it's better to sigh than argue.

[5] "And that moustache." She shook her head. "I still say a seventeen-year-old has no business wearing a moustache."

"It's an experiment," I said. "I just wanted to see if I could grow one." To tell the truth, I had proved my point about being able to grow a decent moustache, but I also had learned to like it.

"It's costing you money, Mike," she said. "I know, I know."



The money was a reference to the movies. The Downtown Cinema has a special Friday night offer — half price admission for high school couples, seventeen or younger. But the woman in the box office took one look at my moustache and charged me full price. Even when I showed her my driver's license. She charged full admission for Cindy's ticket, too, which left me practically broke and unable to take Cindy out for a hamburger with the crowd afterward. That didn't help matters, because Cindy has been getting impatient recently about things like the fact that I don't own my own car and have to concentrate on my studies if I want to win that college scholarship, for instance. Cindy wasn't exactly crazy about the moustache, either.

Now it was my mother's turn to sigh.

[10] "Look," I said, to cheer her up. "I'm thinking about shaving it off." Even though I wasn't. Another discovery: You can build a way of life on postponement.

"Your grandmother probably won't even recognize you," she said. And I saw the shadow fall across her face.

Let me tell you what the visit to Lawnrest was all about. My grandmother is seventy-three years old. She is a resident — which is supposed to be a better word than patient — at the Lawnrest Nursing Home. She used to make the greatest turkey dressing in the world and was a nut about baseball and could even quote batting averages, for crying out loud. She always rooted for the losers. She was in love with the Mets<sup>1</sup> until they started to win. Now she has arteriosclerosis, which the dictionary says is "a chronic disease characterized by abnormal thickening and hardening of the arterial walls." Which really means that she can't live at home anymore or even with us, and her memory has betrayed her as well as her body. She used to wander off and sometimes didn't recognize people. My mother visits her all the time, driving the thirty miles to Lawnrest almost every day. Because Annie was at home for semester break from college, we had decided to make a special Saturday visit. Now Annie was in bed, groaning theatrically — she's a drama major — but I told my mother I'd go anyway. I hadn't seen my grandmother since she'd been admitted to Lawnrest. Besides, the place is located on the Southwest Turnpike, which meant I could barrel along in my father's new Le Mans. My ambition was to see the speedometer hit seventy-five. Ordinarily, I used the old station wagon, which can barely stagger up to fifty.

Frankly, I wasn't too crazy about visiting a nursing home. They reminded me of hospitals and hospitals turn me off. I mean, the smell of ether<sup>2</sup> makes me nauseous, and I feel faint at the sight of blood. And as I approached Lawnrest — which is a terrible cemetery kind of name, to begin with — I was sorry I hadn't avoided the trip. Then I felt guilty about it. I'm loaded with guilt complexes. Like driving like a madman after promising my father to be careful. Like sitting in the parking lot, looking at the nursing home with dread and thinking how I'd rather be with Cindy. Then I thought of all the Christmas and birthday gifts my grandmother had given me and I got out of the car, guilty, as usual.

Inside, I was surprised by the lack of hospital smell, although there was another odor or maybe the absence of an odor. The air was antiseptic, sterile.<sup>3</sup> As if there was no atmosphere at all, or I'd caught a cold suddenly and couldn't taste or smell.

<sup>1.</sup> the New York Mets

<sup>2.</sup> a chemical used as a pain killer

<sup>3.</sup> Sterile (adjective): extremely clean; free of germs, bacteria, or infection



[15] A nurse at the reception desk gave me directions — my grandmother was in East Three. I made my way down the tiled corridor and was glad to see that the walls were painted with cheerful colors like yellow and pink. A wheelchair suddenly shot around a corner, self-propelled<sup>4</sup> by an old man, white-haired and toothless, who cackled merrily as he barely missed me. I jumped aside — here I was, almost getting wiped out by a two-mile-an-hour wheelchair after doing seventy- five on the pike. As I walked through the corridor seeking East Three, I couldn't help glancing into the rooms, and it was like some kind of wax museum — all these figures in various stances and attitudes, sitting in beds or chairs, standing at windows, as if they were frozen forever in these postures. To tell the truth, I began to hurry because I was getting depressed. Finally, I saw a beautiful girl approaching, dressed in white, a nurse or an attendant, and I was so happy to see someone young, someone walking and acting normally, that I gave her a wide smile and a big hello and I must have looked kind of like a nut. Anyway, she looked right through me as if I were a window, which is about par for the course<sup>5</sup> whenever I meet beautiful girls.

I finally found the room and saw my grandmother in bed. My grandmother looks like Ethel Barrymore. I never knew who Ethel Barrymore was until I saw a terrific movie, *None But The Lonely Heart*, on TV, starring Ethel Barrymore and Cary Grant. Both my grandmother and Ethel Barrymore have these great craggy<sup>6</sup> faces like the side of a mountain and wonderful voices like syrup being poured. Slowly. She was propped up in bed, pillows puffed behind her. Her hair had been combed out and fell upon her shoulders. For some reason, this flowing hair gave her an almost girlish appearance, despite its whiteness.

She saw me and smiled. Her eyes lit up and her eyebrows arched and she reached out her hands to me in greeting. "Mike, Mike," she said. And I breathed a sigh of relief. This was one of her good days. My mother warned me that she might not know who I was at first.

I took her hands in mine. They were fragile. I could actually feel her bones, and it seemed as if they would break if I pressed too hard. Her skin was smooth, almost slippery, as if the years had worn away all the roughness, the way the wind wears away the surfaces of stones.

"Mike, Mike, I didn't think you'd come," she said, so happy, and she was still Ethel Barrymore, that voice like a caress. "I've been waiting all this time." Before I could reply, she looked away, out the window. "See the birds? I've been watching them at the feeder. I love to see them come. Even the blue jays. The blue jays are like hawks — they take the food that the small birds should have. But the small birds, the chickadees, watch the blue jays and at least learn where the feeder is."

[20] She lapsed into silence, and I looked out the window. There was no feeder. No birds. There was only the parking lot and the sun glinting on car windshields.

She turned to me again, eyes bright. Radiant, really. Or was it a medicine brightness? "Ah, Mike. You look so grand, so grand. Is that a new coat?"

"Not really," I said. I'd been wearing my uncle Jerry's old army-fatigue<sup>7</sup> jacket for months, practically living in it, my mother said. But she insisted that I wear my raincoat for the visit. It was about a year old but looked new because I didn't wear it much. Nobody was wearing raincoats lately.

<sup>4.</sup> **Propel** (verb): to push or drive something forward

<sup>5.</sup> what is normal or expected

<sup>6.</sup> rough and uneven

<sup>7. &</sup>quot;Fatigue" is another word for army clothes.



"You always loved clothes, didn't you, Mike?" she said.

I was beginning to feel uneasy, because she regarded me with such intensity. Those bright eyes. I wondered — are old people in places like this so lonesome, so abandoned that they go wild when someone visits? Or was she so happy because she was suddenly lucid<sup>8</sup> and everything was sharp and clear? My mother had described those moments when my grandmother suddenly emerged from the fog that so often obscured<sup>9</sup> her mind. I didn't know the answers, but it felt kind of spooky, getting such an emotional welcome from her.

[25] "I remember the time you bought the new coat — the Chesterfield," she said, looking away again, as if watching the birds that weren't there. "That lovely coat with the velvet collar. Black, it was. Stylish. Remember that, Mike? It was hard times, but you could never resist the glitter."

I was about to protest — I had never heard of a Chesterfield, for crying out loud. But I stopped. Be patient with her, my mother had said. Humor her.<sup>10</sup> Be gentle.

We were interrupted by an attendant, who pushed a wheeled cart into the room. "Time for juices, dear," the woman said. She was the standard, forty- or fifty-year-old woman: glasses, nothing hair, plump cheeks. Her manner was cheerful but a businesslike kind of cheerfulness. I'd hate to be called "dear" by someone getting paid to do it. "Orange or grape or cranberry, dear? Cranberry is good for the bones, you know."

My grandmother ignored the interruption. She didn't even bother to answer, having turned away at the woman's arrival, as if angry about her appearance.

The woman looked at me and winked. A conspiratorial<sup>11</sup> kind of wink. It was kind of horrible. I didn't think people winked like that anymore. In fact, I hadn't seen a wink in years.

[30] "She doesn't care much for juices," the woman said, talking to me as if my grandmother weren't even there. "But she loves her coffee. With lots of cream and two lumps of sugar. But this is juice time, not coffee time." Addressing my grandmother again, she said, "Orange or grape or cranberry, dear?"

"Tell her I want no juices, Mike," my grandmother commanded regally, her eyes still watching invisible birds.

The woman smiled, patience like a label on her face. "That's all right, dear. I'll just leave some cranberry for you. Drink it at your leisure. It's good for the bones."

She wheeled herself out of the room. My grandmother was still absorbed in the view.

Somewhere a toilet flushed. A wheelchair passed the doorway — probably that same old driver fleeing a hit-run accident. A television set exploded with sound, somewhere, soap-opera voices filling the air. You can always tell soap-opera voices.

<sup>8.</sup> Lucid (adjective): able to think and be understood clearly

<sup>9.</sup> **Obscure** (*verb*): to cover or conceal

<sup>10.</sup> to go along with someone to keep them happy

<sup>11.</sup> suggesting that a person shares secret knowledge with another



[35] I turned back to find my grandmother staring at me. Her hands cupped her face, her index fingers curled around her cheeks like parenthesis marks.

"But you know, Mike, looking back, I think you were right," she said, continuing our conversation as if there had been no interruption. "You always said 'It's the things of the spirit that count, Meg.' The spirit! And so you bought the baby-grand piano — a baby grand in the middle of the Depression.<sup>12</sup> A knock came on the door and it was the deliveryman. It took five of them to get it into the house." She leaned back, closing her eyes. "How I loved that piano, Mike. I was never that fine a player, but you loved to sit there in the parlor,<sup>13</sup> on Sunday evenings, Ellie on your lap, listening to me play and sing." She hummed a bit, a fragment of melody I didn't recognize. Then she drifted into silence. Maybe she'd fallen asleep. My mother's name is Ellen, but everyone always calls her Ellie. "Take my hand, Mike," my grandmother said suddenly. Then I remembered — my grandfather's name was Michael. I had been named for him.

"Ah, Mike," she said, pressing my hands with all her feeble strength. "I thought I'd lost you forever. And here you are, back with me again..."

Her expression scared me. I don't mean scared as if I were in danger but scared because of what could happen to her when she realized the mistake she had made. My mother always said I favored her side of the family. Thinking back to the pictures in the old family albums, I recalled my grandfather as tall and thin. Like me. But the resemblance ended there. He was thirty-five when he died, almost forty years ago. And he wore a moustache. I brought my hand to my face. I also wore a moustache now, of course.

"I sit here these days, Mike," she said, her voice a lullaby, her hand still holding mine, "and I drift and dream. The days are fuzzy sometimes, merging together. Sometimes it's like I'm not here at all but somewhere else altogether. And I always think of you. Those years we had. Not enough years, Mike, not enough..."

[40] Her voice was so sad, so mournful that I made sounds of sympathy, not words exactly but the kind of soothings that mothers murmur to their children when they awaken from bad dreams.

"And I think of that terrible night, Mike, that terrible night. Have you ever really forgiven me for that night?"

"Listen..." I began. I wanted to say: "Nana, this is Mike your grandson, not Mike your husband."

"Sh... sh..." she whispered, placing a finger as long and cold as a candle against my lips. "Don't say anything. I've waited so long for this moment. To be here. With you. I wondered what I would say if suddenly you walked in that door like other people have done. I've thought and thought about it. And I finally made up my mind — I'd ask you to forgive me. I was too proud to ask before." Her fingers tried to mask her face. "But I'm not proud anymore, Mike." That great voice quivered and then grew strong again. "I hate you to see me this way — you always said I was beautiful. I didn't believe it. The Charity Ball when we led the grand march and you said I was the most beautiful girl there..."



"Nana," I said. I couldn't keep up the pretense<sup>14</sup> any longer, adding one more burden to my load of guilt, leading her on this way, playing a pathetic game of make-believe with an old woman clinging to memories. She didn't seem to hear me.

[45] "But that other night, Mike. The terrible one. The terrible accusations I made. Even Ellie woke up and began to cry. I went to her and rocked her in my arms and you came into the room and said I was wrong. You were whispering, an awful whisper, not wanting to upset little Ellie but wanting to make me see the truth. And I didn't answer you, Mike. I was too proud. I've even forgotten the name of the girl. I sit here, wondering now — was it Laura or Evelyn? I can't remember. Later, I learned that you were telling the truth all the time, Mike. That I'd been wrong..." Her eyes were brighter than ever as she looked at me now, but tear-bright, the tears gathering. "It was never the same after that night, was it, Mike? The glitter was gone. From you. From us. And then the accident... and I never had the chance to ask you to forgive me..."

My grandmother. My poor, poor grandmother. Old people aren't supposed to have those kinds of memories. You see their pictures in the family albums and that's what they are: pictures. They're not supposed to come to life. You drive out in your father's Le Mans doing seventy-five on the pike and all you're doing is visiting an old lady in a nursing home. A duty call. And then you find out that she's a person. She's somebody. She's my grandmother, all right, but she's also herself. Like my own mother and father. They exist outside of their relationship to me. I was scared again. I wanted to get out of there.

"Mike, Mike," my grandmother said. "Say it, Mike."

I felt as if my cheeks would crack if I uttered a word.

"Say you forgive me, Mike. I've waited all these years..."

[50] I was surprised at how strong her fingers were.

"Say, 'I forgive you, Meg."

I said it. My voice sounded funny, as if I were talking in a huge tunnel. "I forgive you, Meg."

Her eyes studied me. Her hands pressed mine. For the first time in my life, I saw love at work. Not movie love. Not Cindy's sparkling eyes when I tell her that we're going to the beach on a Sunday afternoon. But love like something alive and tender, asking nothing in return. She raised her face, and I knew what she wanted me to do. I bent and brushed my lips against her cheek. Her flesh was like a leaf in autumn, crisp and dry.

She closed her eyes and I stood up. The sun wasn't glinting on the cars any longer. Somebody had turned on another television set, and the voices were the show-off voices of the panel shows. At the same time you could still hear the soap-opera dialogue on the other television set.



<sup>[55]</sup> I waited awhile. She seemed to be sleeping, her breathing serene<sup>15</sup> and regular. I buttoned my raincoat. Suddenly she opened her eyes again and looked at me. Her eyes were still bright, but they merely stared at me. Without recognition or curiosity. Empty eyes. I smiled at her, but she didn't smile back. She made a kind of moaning sound and turned away on the bed, pulling the blankets around her.

I counted to twenty-five and then to fifty and did it all over again. I cleared my throat and coughed tentatively.<sup>16</sup> She didn't move; she didn't respond. I wanted to say, "Nana, it's me." But I didn't. I thought of saying, "Meg, it's me." But I couldn't.

Finally I left. Just like that. I didn't say goodbye or anything. I stalked through the corridors, looking neither to the right nor the left, not caring whether that wild old man with the wheelchair ran me down or not.

On the Southwest Turnpike I did seventy-five — no, eighty — most of the way. I turned the radio up as loud as it could go. Rock music — anything to fill the air. When I got home, my mother was vacuuming the living-room rug. She shut off the cleaner, and the silence was deafening. "Well, how was your grandmother?" she asked.

I told her she was fine. I told her a lot of things. How great Nana looked and how she seemed happy and had called me Mike. I wanted to ask her — hey, Mom, you and Dad really love each other, don't you? I mean — there's nothing to forgive between you, is there? But I didn't.

[60] Instead I went upstairs and took out the electric razor Annie had given me for Christmas and shaved off my moustache.

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<sup>16.</sup> **Tentative** (*adjective*): without confidence or certainty



# **Text-Dependent Questions**

#### Directions: For the following questions, choose the best answer or respond in complete sentences.

- 1. PART A: Which statement best expresses the theme of the short story?
  - A. While it can be tempting for kids to want to grow up quickly, it can also present problems they don't feel ready to take on.
  - B. People often treat the elderly as if they are children and incapable of making decisions of their own.
  - C. Aging can be a scary and confusing time for older people, which is why it's important to be supportive of them.
  - D. It's important to resolve a conflict with a loved one in the moment, because anger can easily get out of control.
- 2. PART B: Which detail from the text best supports the answer to Part A?
  - A. "And I breathed a sigh of relief. This was one of her good days. My mother warned me that she might not know who I was at first." (Paragraph 17)
  - B. "Her manner was cheerful but a businesslike kind of cheerfulness. I'd hate to be called 'dear by someone getting paid to do it." (Paragraph 27)
  - C. "I couldn't keep up the pretense any longer, adding one more burden to my load of guilt, leading her on this way, playing a pathetic game of make-believe with an old woman clinging to memories." (Paragraph 44)
  - D. ""It was never the same after that night, was it, Mike? The glitter was gone. From you. From us." (Paragraph 45)
- 3. PART A: How does visiting his grandmother at the nursing home affect Mike?
  - A. He realizes that his grandmother is not as happy as she would have her family believe.
  - B. He comes to fully understand how lonely his grandmother is without her husband and confined to the nursing home.
  - C. He sees how difficult it is for people to age and lose the people they care the most about.
  - D. He realizes that his grandmother had a complicated life and memories outside of what he knows of her.
- 4. PART B: Which quote from the text best supports the answer to Part A?
  - A. "so mournful that I made sounds of sympathy, not words exactly but the kind of soothings that mothers murmur to their children when they awaken from bad dreams." (Paragraph 40)
  - B. "Listen...' I began. I wanted to say: 'Nana, this is Mike your grandson, not Mike your husband." (Paragraph 42)
  - C. "The glitter was gone. From you. From us. And then the accident... and I never had the chance to ask you to forgive me..." (Paragraph 45)
  - D. "And then you find out that she's a person. She's somebody. She's my grandmother, all right, but she's also herself." (Paragraph 46)



- 5. How do paragraphs 6-8 develop the narrator's point of view at the beginning of the story?
  - A. They show that the narrator really likes his girlfriend.
  - B. They stress how he dislikes being mistaken for being over 17 years old.
  - C. They reveal how he enjoys appearing older than he really is.
  - D. They show how he really enjoys spending time with his friends.
- 6. What does "faces like the side of a mountain and wonderful voices like syrup being poured" mean in the passage (Paragraph 16)?



# **Discussion Questions**

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. In the context of the text, what makes a family? How is Mike's family impacted by his grandmother's sickness and memory loss? Have you ever had an older family member fall ill? How were you and your family affected?

2. In your experience, how do we find redemption? What did it take for Mike's grandmother to feel forgiven by her late husband? How do you think Mike's grandmother felt up until that moment that Mike forgave her?

3. In what ways did the mustache help Mike appear more mature? What problems did he encounter by suddenly appearing like an adult? Do you wish you could grow up faster? Why or why not?



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# **EUREKA MATH<sup>™</sup>TIPS FOR PARENTS**

#### **KEY CONCEPT OVERVIEW**

At the beginning of Topic A, students learn about **percents** greater than 100% and less than 1%. Students apply this knowledge to solve a variety of percent problems throughout the topic. As students' confidence with percents grows, they start to use their knowledge to solve problems involving percent of increase and percent of decrease. Throughout the topic, students use models—including the **double number line diagram**, **tape diagram**, and **10** × **10 grid**—to help them visualize their work with percents.

You can expect to see homework that asks your child to do the following:

- Use  $10 \times 10$  grids to create models representing different percents.
- Order values presented as fractions, decimals, and percents.
- Convert between fractions, decimals, and percents.
- Write and solve equations for real-world problems involving percents.
- Calculate percent increases and percent decreases.
- Use visual models to determine 100% of a given quantity.

#### SAMPLE PROBLEMS (From Lessons 4-5) \_\_\_\_

Lu's math score on her achievement test in Grade 7 was 650. Her math teacher said that her score went up by 25% from her score in Grade 6. What was Lu's score in Grade 6? The 42 students who play wind instruments represent 75% of the students in the band. How many students are in the band?



#### There are 56 students in the band.

Additional sample problems with detailed answer steps are found in the Eureka Math Homework Helpers books. Learn more at GreatMinds.org.

# Lesson 1: Percent

#### Classwork

#### **Opening Exercise 1: Matching**

Match the percents with the correct sentence clues.

25%	I am half of a half. 5 cubic inches of water filled in a 20 cubic inch bottle.
50%	I am less than $\frac{1}{100}$ . 25 out of 5,000 contestants won a prize.
30%	I am the chance of birthing a boy or a girl. Flip a coin, and it will land on heads or tails.
1%	I am less than a half but more than one-fourth. 15 out of 50 play drums in a band.
10%	I am equal to 1. 35 question out of 35 questions were answered correctly.
100%	I am more than 1. Instead of the \$1,200 expected to be raised, \$3,600 was collected for the school's fundraiser.
300%	I am a tenth of a tenth. One penny is this part of one dollar.
$\frac{1}{2}\%$	I am less than a fourth but more than a hundredth. \$11 out of \$110 earned is saved in the bank.







#### **Opening Exercise 2**

Color in the grids to represent the following fractions:



#### Example 1

Use the definition of the word *percent* to write each percent as a fraction and then as a decimal.

Percent	Fraction	Decimal
37.5%		
100%		
110%		
1%		
$\frac{1}{2}\%$		

#### Example 2

Fill in the chart by converting between fractions, decimals, and percents. Show your work in the space below.

Fraction	Decimal	Percent
		350%
	0.025	
$\frac{1}{8}$		

#### **Exercise: Class Card Activity**

Read your card to yourself (each student has a different card), and work out the problem. When the exercise begins, listen carefully to the questions being read. When you have the card with the equivalent value, respond by reading your card aloud.

Examples:

0.22 should be read "twenty-two hundredths."

 $\frac{\frac{1}{5}}{1000}$  should be read "one-fifth thousandths" or "one-fifth over one thousand."

 $\frac{7}{300}$  should be read "seven three-hundredths" or "seven over three hundred."

 $\frac{200}{100}$  should be read "two hundred hundredths" or "two hundred over one hundred."





# Lesson 2: Part of a Whole as a Percent

#### Classwork

#### **Opening Exercise**

a. What is the whole unit in each scenario?

Scenario	Whole Unit
15 is what percent of 90?	
What number is 10% of 56?	
90% of a number is 180.	
A bag of candy contains $300$ pieces and $25\%$ of the pieces in the bag are red.	
Seventy percent (70%) of the students earned a B on the test.	
The 20 girls in the class represented 55% of the students in the class.	

b. Read each problem, and complete the table to record what you know.

Problem	Part	Percent	Whole
40% of the students on the field trip love the museum. If there are 20 students on the field trip, how many love the museum?			
40% of the students on the field trip love the museum. If 20 students love the museum, how many are on the field trip?			
20 students on the field trip love the museum. If there are 40 students on the field trip, what percent love the museum?			





#### **Example 1:** Visual Approaches to Finding a Part, Given a Percent of the Whole

In Ty's math class, 20% of students earned an A on a test. If there were 30 students in the class, how many got an A?

#### Exercise 1

In Ty's art class, 12% of the Flag Day art projects received a perfect score. There were 25 art projects turned in by Ty's class. How many of the art projects earned a perfect score? (Identify the whole.)

#### Example 2: A Numeric Approach to Finding a Part, Given a Percent of the Whole

In Ty's English class, 70% of the students completed an essay by the due date. There are 30 students in Ty's English class. How many completed the essay by the due date?

#### Example 3: An Algebraic Approach to Finding a Part, Given a Percent of the Whole

A bag of candy contains 300 pieces of which 28% are red. How many pieces are red? Which quantity represents the whole?

Which of the terms in the percent equation is unknown? Define a letter (variable) to represent the unknown quantity.

Write an expression using the percent and the whole to represent the number of pieces of red candy.

Write and solve an equation to find the unknown quantity.



#### Exercise 2

A bag of candy contains 300 pieces of which 28% are red. How many pieces are not red?

- a. Write an equation to represent the number of pieces that are not red, *n*.
- b. Use your equation to find the number of pieces of candy that are not red.
- c. Jah-Lil told his math teacher that he could use the answer from Example 3 and mental math to find the number of pieces of candy that are not red. Explain what Jah-Lil meant by that.

#### Example 4: Comparing Part of a Whole to the Whole with the Percent Formula

Zoey inflated 24 balloons for decorations at the middle school dance. If Zoey inflated 15% of the total number of balloons inflated for the dance, how many balloons are there total? Solve the problem using the percent formula, and verify your answer using a visual model.

#### Example 5: Finding the Percent Given a Part of the Whole and the Whole

Haley is making admission tickets to the middle school dance. So far she has made 112 tickets, and her plan is to make 320 tickets. What percent of the admission tickets has Haley produced so far? Solve the problem using the percent formula, and verify your answer using a visual model.



# **Lesson 3: Comparing Quantities with Percent**

#### Classwork

#### **Opening Exercise**

If each  $10 \times 10$  unit square represents one whole, then what percent is represented by the shaded region?

							1				
					1					· · · · ·	

In the model above, 25% represents a quantity of 10 students. How many students does the shaded region represent?

#### Example

a. The members of a club are making friendship bracelets to sell to raise money. Anna and Emily made 54 bracelets over the weekend. They need to produce 300 bracelets by the end of the week. What percent of the bracelets were they able to produce over the weekend?

b. Anna produced 32 bracelets of the 54 bracelets produced by Emily and Anna over the weekend. Write the number of bracelets that Emily produced as a percent of those that Anna produced.







c. Write the number of bracelets that Anna produced as a percent of those that Emily produced.

#### Exercises

- 1. There are 750 students in the seventh-grade class and 625 students in the eighth-grade class at Kent Middle School.
  - a. What percent is the seventh-grade class of the eighth-grade class at Kent Middle School?
  - b. The principal will have to increase the number of eighth-grade teachers next year if the seventh-grade enrollment exceeds 110% of the current eighth-grade enrollment. Will she need to increase the number of teachers? Explain your reasoning.
- 2. At Kent Middle School, there are 104 students in the band and 80 students in the choir. What percent of the number of students in the choir is the number of students in the band?

3. At Kent Middle School, breakfast costs \$1.25 and lunch costs \$3.75. What percent of the cost of lunch is the cost of breakfast?

4. Describe a real-world situation that could be modeled using the equation 398.4 = 0.83(x). Describe how the elements of the equation correspond with the real-world quantities in your problem. Then, solve your problem.



# Lesson 4: Percent Increase and Decrease

#### Classwork

#### **Opening Exercise**

Cassandra likes jewelry. She has five rings in her jewelry box.

a. In the box below, sketch Cassandra's five rings.

b. Draw a double number line diagram relating the number of rings as a percent of the whole set of rings.

c. What percent is represented by the whole collection of rings? What percent of the collection does each ring represent?

#### **Example 1: Finding a Percent Increase**

Cassandra's aunt said she will buy Cassandra another ring for her birthday. If Cassandra gets the ring for her birthday, what will be the percent increase in her ring collection?





Lesson 4: Percent Increase and Decrease

#### Exercise 1

a. Jon increased his trading card collection by 5 cards. He originally had 15 cards. What is the percent increase? Use the equation Quantity = Percent × Whole to arrive at your answer, and then justify your answer using a numeric or visual model.

b. Suppose instead of increasing the collection by 5 cards, Jon increased his 15-card collection by just 1 card. Will the percent increase be the same as when Cassandra's ring collection increased by 1 ring (in Example 1)? Why or why not? Explain.

c. Based on your answer to part (b), how is displaying change as a percent useful?

#### Discussion

A sales representative is taking 10% off of your bill as an apology for any inconveniences.



#### **Example 2: Percent Decrease**

Ken said that he is going to reduce the number of calories that he eats during the day. Ken's trainer asked him to start off small and reduce the number of calories by no more than 7%. Ken estimated and consumed 2,200 calories per day instead of his normal 2,500 calories per day until his next visit with the trainer. Did Ken reduce his calorie intake by no more than 7%? Justify your answer.

#### Exercise 2

Skylar is answering the following math problem:

The value of an investment decreased by 10%. The original amount of the investment was \$75.00. What is the current value of the investment?

a. Skylar said 10% of \$75.00 is \$7.50, and since the investment decreased by that amount, you have to subtract \$7.50 from \$75.00 to arrive at the final answer of \$67.50. Create one algebraic equation that can be used to arrive at the final answer of \$67.50. Solve the equation to prove it results in an answer of \$67.50. Be prepared to explain your thought process to the class.



b. Skylar wanted to show the proportional relationship between the dollar value of the original investment, x, and its value after a 10% decrease, y. He creates the table of values shown. Does it model the relationship?
 Explain. Then, provide a correct equation for the relationship Skylar wants to model.

x	у
75	7.5
100	10
200	20
300	30
400	40

#### **Example 3: Finding a Percent Increase or Decrease**

Justin earned 8 badges in Scouts as of the Scout Master's last report. Justin wants to complete 2 more badges so that he will have a total of 10 badges earned before the Scout Master's next report.

a. If Justin completes the additional 2 badges, what will be the percent increase in badges?

b. Express the 10 badges as a percent of the 8 badges.



c. Does 100% plus your answer in part (a) equal your answer in part (b)? Why or why not?

Example 4: Finding the Original Amount Given a Percent Increase or Decrease

The population of cats in a rural neighborhood has declined in the past year by roughly 30%. Residents hypothesize that this is due to wild coyotes preying on the cats. The current cat population in the neighborhood is estimated to be 12. Approximately how many cats were there originally?



#### **Example 5: Finding the Original Amount Given a Percent Increase or Decrease**

Lu's math score on her achievement test in seventh grade was a 650. Her math teacher told her that her test level went up by 25% from her sixth grade test score level. What was Lu's test score level in sixth grade?

#### Closing

Phrase	Whole Unit (100%)
"Mary has 20% more money than John."	
"Anne has 15% less money than John."	
"What percent more (money) does Anne have than Bill?"	
"What percent less (money) does Bill have than Anne?"	





# Lesson 5: Finding One Hundred Percent Given Another Percent

#### Classwork

#### **Opening Exercise**

What are the whole number factors of 100? What are the multiples of those factors? How many multiples are there of each factor (up to 100)?

Factors of 100	Multiples of the Factors of 100	Number of Multiples
100	100	1
50	50, 100	2
1	1, 2, 3, 4, 5, 6,, 98, 99, 100	100

#### Example 1: Using a Modified Double Number Line with Percents

The 42 students who play wind instruments represent 75% of the students who are in band. How many students are in band?



#### Exercises 1–3

1. Bob's Tire Outlet sold a record number of tires last month. One salesman sold 165 tires, which was 60% of the tires sold in the month. What was the record number of tires sold?

2. Nick currently has 7,200 points in his fantasy baseball league, which is 20% more points than Adam. How many points does Adam have?

3. Kurt has driven 276 miles of his road trip but has 70% of the trip left to go. How many more miles does Kurt have to drive to get to his destination?



#### **Example 2: Mental Math Using Factors of 100**

Answer each part below using only mental math, and describe your method.

a. If 39 is 1% of a number, what is that number? How did you find your answer?

b. If 39 is 10% of a number, what is that number? How did you find your answer?

c. If 39 is 5% of a number, what is that number? How did you find your answer?

d. If 39 is 15% of a number, what is that number? How did you find your answer?

e. If 39 is 25% of a number, what is that number? How did you find your answer?



#### Exercises 4–5

4. Derrick had a 0.250 batting average at the end of his last baseball season, which means that he got a hit 25% of the times he was up to bat. If Derrick had 47 hits last season, how many times did he bat?

5. Nelson used 35% of his savings account for his class trip in May. If he used \$140 from his savings account while on his class trip, how much money was in his savings account before the trip?

## 7th Grade Science Module 1: Weather

Distance Learning for April 13- May 1

Name:\_\_\_\_\_\_ Period:\_\_\_\_\_ Teacher:\_\_\_\_\_

**Instructions for Parents and Students:** Students should spend about 30 minutes per day learning material in this packet and additional time reviewing material, working on projects, and explaining content to others at home to make sure students meet their learning objectives.

If you have questions: email your teacher or email Dr. Jennifer Miller (milleje3@tulsaschools.org) for help. You may also call your teacher or 918.925.1118 if you need help and do not have internet access.

**Goal:** Use evidence and data to show how the motions and complex interactions of air masses result in changes in weather conditions

#### **Big Question:** How are weather conditions created?

#### **Standard:**

MS-ESS2-5: Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.

#### Learning Outcomes:

By the end of this module, you should be able to:

- WEEK 1: APRIL 13-17
  - Explain how water moves in the atmosphere due to wind, landforms, ocean temperatures and currents to form local weather patterns
  - Explain how air masses flow from regions of high pressure to low pressure, causing weather
  - Describe the characteristics of weather including
    - Temperature
    - □ Pressure
    - Humidity
    - Precipitation
    - U Wind
  - Describe how changes in local weather at a fixed location can change when different air masses collide.
  - □ Explain that due to the complexity of weather patterns, weather can only be predicted with certain levels
  - of accuracy

WEEK 2: APRIL 20-24 & Week 3: APRIL 27-MAY 1

- Demonstrate understanding of how the motions and complex interactions of air masses result in changes in weather conditions through examining a weather phenomenon.
- PROJECT! Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions and determine correlations between the characteristics of weather.

### Much of the content in this unit was provided by National Geographic.

#### **WEEK 1: APRIL 13-17**

**Instructions:** Read through each section. Highlight important information and circle any terms you don't know yet. Answer the questions in the boxes that follow each section.

One of the first things you probably do every morning is look out the window to see what the weather is like. Looking outside and listening to the day's forecast helps you decide what clothes you will wear and maybe even what you will do throughout the day. If you don't have school and the weather looks sunny, you might visit the zoo or go on a picnic. A rainy day might make you think about visiting a museum or staying home to read.

#### Be an Observer:

What is the weather like today? First go outside or open a window and write down as many notes about the weather as you can.

Now, find a television program, radio station, or mobile app that gives a weather report. Write down what you see/hear/read about the weather. You may not know some words and that's ok!

The weather affects us in many ways. Day-to-day changes in weather can influence how we feel and the way we look at the world. Severe weather, such as tornadoes, hurricanes, and blizzards, can disrupt many people's lives because of the destruction they cause.



http://www.ehow.com/how\_3391678\_face-fear-thunderstorms.html

### What is Weather?

Weather describes the condition of the atmosphere over a short period of time e.g. from day to day or week to week, while climate describes average conditions over a longer period of time. Step outside and you experience many facets (characteristics) of weather. Humidity, air temperature and pressure, wind speed and direction, cloud cover and type, and the amount and form of precipitation are all atmospheric characteristics of the momentary conditions we call weather.

The sun is ultimately responsible for the weather. Its rays are absorbed differently by land and water surfaces (equal amounts of solar radiation heat the ground more quickly than they do water). Differential warming, in turn, causes variations in the temperature and pressure of overlying air masses.

The local weather that impacts our daily lives results from large global patterns in the atmosphere caused by the interactions of solar radiation, Earth's large ocean, diverse landscapes, and motion in space.

### **Characteristics of Weather**

There are five main components, or parts, of weather. They are temperature, atmospheric pressure, wind, humidity, and precipitation. Together, these components describe the weather at any given time. These changing components, along with the knowledge of atmospheric processes, help meteorologists—scientists who study weather—forecast (predict) what the weather will be in the near future.

#### Temperature

Temperature is measured with a thermometer and refers to how hot or cold the atmosphere is. Meteorologists report temperature two ways: in Celsius (C) and Fahrenheit (F). The United States uses the Fahrenheit system; in other parts of the world, Celsius is used. Almost all scientists measure temperature using the Celsius scale, so we will use the Celsius scale. *To convert Celsius to Fahrenheit you can use the formula* ( $^{\circ}C \times 9/5$ ) + 32 =  $^{\circ}F$ 

Let's explore the average temperatures in Tulsa during the month of April.



The daily average high (red line) and low (blue line) temperature, with 25th to 75th and 10th to 90th percentile bands. The thin dotted lines are the corresponding average perceived temperatures. Figure 2

I'zāz, Syria (6,586 miles away); Shahre Jadide Andisheh, Iran (7,048 miles); and Changshu City, China (7,191 miles) are the far-away foreign places with temperatures most similar to Tulsa.

Check for Understanding:

- 1. What two units are used for temperature?
- 2. Which unit is used in the United States? Which unit is used by scientists?
- 3. In figure 1, what is the average high temperature for April 15?
- 4. In figure 1, what is the average low temperature for April 8?
- 5. In figure 1, what is the temperature trend from March to May? Why does this make sense?
- 6. In figure 2, what time of day is the most comfortable temperature throughout April?
- 7. In figure 2, when does cool weather move out of Tulsa?
- 8. Review your answer to question 5. How does figure 2 support your answer?

#### Atmospheric Pressure (Barometric Pressure)

Atmospheric pressure (often called Barometric Pressure) is the weight of the atmosphere above us. Changes in atmospheric pressure signal shifts in the weather. A high-pressure (H) system usually brings cool temperatures and clear skies. A low-pressure (L) system can bring warmer weather, storms, and rain.

Figure 3

A. High Pressure System

B. Low Pressure System

Meteorologists express atmospheric pressure in a unit of measurement called an atmosphere (atm). Atmospheres are measured in millibars or inches of mercury. Average atmospheric pressure at sea level is about one atmosphere.

Atmospheric pressure changes with altitude. The atmospheric pressure is much lower at high altitudes. The air pressure on top of Mount Kilimanjaro, Tanzania—which is 5,895 meters (19,344 feet) tall—is 40 percent of the air pressure at sea level. The weather is much colder. The weather at the base of Mount Kilimanjaro is tropical, but the top of the mountain has ice and snow.

Let's look at the forcast for Tulsa on April 2, 2020.

Figure 4

Check for Understanding:

- 9. What type of weather would you expect if a high pressure system was moving through Tulsa?
- 10. What type of weather would you expect if a low pressure system was moving through Tulsa?
- 11. Looking at the forecast for April 2, what type of pressure system might be moving into Tulsa?
- 12. What is the pressure in Tulsa on April 2?
- 13. What is the current temperature in Tulsa according to this forecast?
- 14. Why might the "feels like" temperature be lower than the actual temperature?
- 15. What happens to pressure and temperature as altitude increases?
- 16. What would a person living at the base of Mt. Kilimanjaro need to get/do to survive at the top of Mt. Kilimanjaro? Why?

#### Wind

Wind is the movement of air. Wind forms because of differences in temperature and atmospheric pressure between nearby regions. Winds tend to blow from areas of high pressure (H), where it's colder, to areas of low pressure (L), where it's warmer.

Figure 5

In the upper atmosphere, strong, fast winds called jet streams occur at altitudes of 8 to 15 kilometers (5 to 9 miles) above the Earth. They usually blow from about 129 to 225 kilometers per hour (80 to 140 miles per hour), but they can reach more than 443 kilometers per hour (275 miles per hour). These upper-atmosphere winds help push weather systems around the globe.





#### Wind can

also be influenced by human activity. Chicago, Illinois, is nicknamed the "Windy City." After the Great Chicago Fire of 1871 destroyed the city, city planners rebuilt it using a grid system. This created wind tunnels. Winds are forced into narrow channels, picking up speed and strength. The Windy City is a result of natural and manmade winds.

Figure 7 1940s Chicago

Let's explore the average wind conditions in Tulsa during the month of April! Figure 8







- 22. In figure 9, which direction is *most* of the wind coming from during April? What percentage?
- 23. Review the temperature trends for Tulsa in figure 1. What might be the relationship between April temperature trends and April wind directions in figure 9?

#### Humidity

Humidity refers to the amount of water vapor in the air. Water vapor is a gas in the atmosphere that helps make clouds, rain, or snow. Humidity is usually expressed as relative humidity, or the percentage of the maximum amount of water air can hold at a given temperature. Cool air holds less water than warm air.

Let's explore the Humidity Comfort Levels in April for the city of Tulsa!

Figure 10

Check for Understanding:

24. Define humidity:

25. What forms as humidity increases?

26. In figure 10, what is the trend for humidity in Tulsa from March to May?

27. In figure 10, what comfort levels of humidity are present in April?

28. Examine figure 1, figure 9, and figure 10. What relationships might temperature, wind, and humidity have with each other? Justify your answer with data from the figures.

#### Precipitation

At a relative humidity of 100 percent, air is said to be saturated, meaning the air cannot hold any more water vapor. Excess water vapor will fall as precipitation (rain, hail, or snow). Clouds and precipitation occur when air cools below its saturation point. This usually happens when warm, humid air cools as it rises.

The most humid places on Earth are islands near the Equator. Singapore, for instance, is humid year-round. The warm air is continually saturated with water from the Indian Ocean.

Let's explore the Probability of Precipitation in April for the city of Tulsa! Figure 11

Check for Understanding:
29. What is precipitation?
30. What does it mean when the air is "saturated?"
31 When door precipitation occur? What type of Proceure System is accoriated with this
process?
32. In figure 11, what is the trend for precipitation during the month of April?
33. In figure 11, what is the probability of precipitation on April 15?
34. Review figure 10 and figure 11. What is one possible relationship between humidity and precipitation? Justify your answer with data from the figures.

# What Causes Weather Changes?

Cloud patterns indicate the presence of weather systems, which produce most of the weather we are familiar with: rain, heat waves, cold snaps, humidity, and cloudiness. Weather systems are simply the movement of warm and cold air across the globe. These movements are known as low-pressure systems and high-pressure systems.

#### But how does air move across the globe?

#### **Global Winds**

Earth's orbit around the sun and its rotation on a tilted axis causes some parts of Earth to receive more solar radiation than others. This uneven heating produces global circulation patterns.

For example, the abundance of energy reaching the equator produces hot humid air that rises high into the atmosphere. A low pressure area forms at the surface and a region of clouds forms. The air eventually stops rising and spreads north and south towards the Earth's poles. About 2000 miles from the equator, the air falls back to Earth's surface blowing towards the pole and back to the equator. Six of these large convection currents cover the Earth from pole to pole.

#### Air masses

These global wind patterns drive large bodies of air called air masses. Air masses are thousands of feet thick and extend across large areas of the Earth. The location over which an air mass forms will determine its characteristics. For example, air over the tropical ocean becomes exceptionally hot and humid. Air over a high latitude continent may

become cold and dry. You have probably noticed the temperature rapidly dropping on a nice warm day as a cold air mass pushed a warm one out the way. As an air mass warms, it becomes lighter and rises higher into the atmosphere. As an air mass cools, it becomes heavier and sinks. Pressure differences between masses of air generate winds, which tend to blow from high-pressure areas to areas of low pressure. Fast-moving, upper atmosphere winds known as jet streams help move weather systems around the world.



#### Fronts

The motion of air mass motion is usually based upon the air flow in the upper atmosphere. The location where two air masses collide is called a front. With a cold front, a colder air mass is replacing a warmer air mass. A warm front is the opposite effect in that warm air replaces cold air. There is also a stationary front, which, as the name implies, means the boundary between two air masses does not move.

The motion of air masses also affects where a good portion of precipitation occurs. The air of cold air masses is more dense than warmer air masses. Therefore, as these cold air masses move, the dense air undercuts the warmer air masses forcing the warm air up and over the colder air causing it to rise into the atmosphere.



Fronts can be indirectly observed using current weather maps, which can be used to track them as they move across the Earth. Cold fronts, generally shown in blue, occur where a cold air mass is replacing a warm air mass. Warm fronts, shown in red, occur where warm air replaces cold air.



Check for Understanding:
35. Summarize each of the following in your own words/images: a. Global Winds-
b. Air Masses-
c. Cold Front-
d. Warm Front-
36. What are the differences between a cold front and a warm front?



### How Do We Predict Weather?

Meteorology is the science of forecasting weather. Weather forecasting has been important to civilizations for thousands of years. Agriculture relies on accurate weather forecasting: when to plant, when to irrigate, when to harvest. Ancient cultures—from the Aztecs of Mesoamerica to the Egyptians in Africa and Indians in Asia—became expert astronomers and predictors of seasonal weather patterns.

Since the late 1930s, one of the main tools for observing general conditions of the atmosphere has been the radiosonde balloon, which sends information needed for forecasting back to Earth. Twice each day, radiosondes are released into the atmosphere from about a thousand locations around the world. The U.S. National Weather Service sends up radiosondes from more than 90 weather stations across the country.

A weather station is simply a facility with tools and technology used to forecast the weather. Different types of thermometers, barometers, and anemometers, which measure wind speed, are found at weather stations. Weather stations may also have computer equipment that allows meteorologists to create detailed maps of weather patterns, and technology that allows them to launch weather balloons.

The Aircraft Meteorological Data Relay (AMDAR) also assists in gathering weather data directly from the atmosphere. AMDAR uses commercial aircraft to transmit information about the atmosphere as the planes fly through it.

Weather balloons and AMDAR instruments gather information about temperature, pressure, humidity, and wind from very high levels in the atmosphere. Meteorologists input the data to computers and use it to map atmospheric winds and jet streams. They often combine this with data about temperature, humidity, and wind recorded at ground level. These complex weather maps using geographic information system (GIS) technology can calculate how weather systems are moving and predict how they might change.

This type of forecasting is called synoptic forecasting. Synoptic forecasting is getting a general idea of the weather over a large area. It relies on the fact that in certain atmospheric conditions, particular weather conditions are usually produced. If meteorologists knew more about how the atmosphere functions, they would be able to make more accurate forecasts from day to day or even from week to week. Making such forecasts, however, would require knowing the temperature, atmospheric pressure, wind speed and direction, humidity, precipitation, and cloudiness at every point on the Earth.

It is impossible for meteorologists to know all this, but they do have some tools that help them accurately forecast weather for a day or two in advance. But because the atmosphere is constantly changing, detailed forecasts for more than a week or two will never be possible. Weather is just too unpredictable.

Check for Understanding:

1. What is the science of predicting weather called? What is the scientist who predicts weather called?

2.	What humans first predicted weather? What were the first ways humans predicted weather patterns?
3.	Describe some of the tools we have now to predict weather?
4.	Why, even with all of the tools and technology we have today is predicting the weather still largely impossible?
5.	What would we need to know to improve our predictions?

### WEEK 2: APRIL 20-24

## **Collecting Data:**

**Each day for the next 10 days**, you will collect data on Tulsa weather. You will fill out the chart each day and then graph your data. You can find this data by watching local TV news, listening to weather on radio stations, or using a weather app on your phone or tablet.

### Weather Characteristics in Tulsa from April 20-April 29

	Day 1 Monday April 20	Day 2 Tuesday April 21	Day 3 Wednesday April 22	Day 4 Thursday April 23	Day 5 Friday April 24
High Temperature					
Low Temperature					
Pressure					
Wind speed/ direction					
Humidity					
Precipitation					
Outside Observations					
	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29
High Temperature	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29
High Temperature Low Temperature	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29
High Temperature Low Temperature Pressure	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29
High Temperature Low Temperature Pressure Wind speed/ direction	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29
High Temperature Low Temperature Pressure Wind speed/ direction Humidity	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29
High Temperature Low Temperature Pressure Wind speed/ direction Humidity Precipitation	Day 6 Saturday April 25	Day 7 Sunday April 26	Day 8 Monday April 27	Day 9 Tuesday April 28	Day 10 Wednesday April 29

While you are collecting your data, you will also be exploring a weather phenomenon that affects all Oklahomans: **TORNADDES!** 

**TASK:** Read through all of the information on tornadoes below. **You will then create a graphic or poster to help people in your neighborhood understand more about tornadoes.** Make sure your graphic/ poster answers the following questions:

- 1. What is a tornado?
- 2. How does a tornado form? (must show how weather works in forming tornadoes)
- 3. Why is a tornado dangerous?
- 4. Why is it hard to predict tornadoes?

After you create your graphic/poster, present it to someone in your house to help them understand weather and tornadoes.

Tornadoes are the most violent storms on Earth; violently rotating columns of air exceed 100 mph and can reach up to 300 mph. An average of 1,000 tornadoes spin up beneath thunderstorms each year, and these typically kill about 60 people in the United States.

Tornadoes can occur at any time of the year, but springtime brings the most favorable tornado conditions because tornadoes are formed in the clouds of thunderstorms. The main conditions required for thunderstorms to form are moisture in the air at the lower to mid levels of the atmosphere. Unstable hot air will rise from near the ground. When all the conditions are present, humid air will rise and cool and condense into clouds, forming thunderstorms. This air rising into a thunderstorm is called an updraft which is where the tornado itself is formed.

The strongest tornadoes are often near the edge of the updraft, not far from where air is descending in a downdraft caused by the thunderstorms with falling rain or hail. This is why a burst of heavy rain or hail often precedes (comes before) the tornado itself. Tornadoes are common in an area stretching from Texas to Iowa, the area known as "Tornado Alley" also covers Colorado, Nebraska, Illinois, Indiana, Missouri and Oklahoma.

Tornadoes have occurred in all 50 U.S. states and are actually more common in

Florida than they are in Oklahoma, although the tornadoes in Florida are generally weaker than those in Tornado Alley. Weak tornadoes generally last 10 minutes or less, and only cover a short distance. Tornadoes to hit Oklahoma are some of the most violent on record. In 1999 a tornado with winds of nearly 320mph struck and ravaged Oklahoma City and its southern suburbs.

Tornadoes are ranked by the damage they cause using the Fujita Scale. F0 and F1 tornadoes on the scale are considered "weak" and cause minimal to moderate damage with winds from 40-112 miles per hour (mph). F2 and F3 tornadoes are considered strong, with winds of 113-206 mph that can cause major damage. Violent tornadoes are those classified F4 and F5 with winds exceeding 206 mph these tornadoes can leave catastrophic remains in their wake.

### How do tornadoes form?

Harold Brooks, a research meteorologist with the National Oceanic and Atmospheric Administration's (NOAA) National Severe Storms Laboratory (NSSL) in Norman, Oklahoma says the most intense tornadoes emerge from what are called supercell thunderstorms. For such a storm to form, you first "need the ingredients for a regular thunderstorm," says Brooks. Those ingredients include warm moisture near the surface and relatively cold, dry air above. "The warm air will be buoyant, and like a hot-air balloon it will rise."

A supercell requires more: winds that increase in strength and change direction with height. "Then the updraft tends to rotate, and that makes a supercell," explains Brooks.

The supercell churns high in the air and, in about 30 percent of cases, it leads to the formation of a tornado below it. This happens when air descending from the supercell causes rotation near the ground.

Even then, "we still don't know why some thunderstorms create tornadoes while others don't," tornado-chaser Tim Samaras said in early 2013. Samaras was a scientist and National Geographic

explorer who was killed by a twister on May 31, 2013, in El Reno, Oklahoma. Brooks says scientists believe that strong changes in winds in the first kilometer of the atmosphere and high relative humidity are important for the formation of tornadoes. There also needs to be a downdraft in just the right part of the storm.

Indeed, tornado formation requires what Brooks calls a "Goldilocks" situation, in which air must be cold but not too cold. It should be a few degrees more frigid than surrounding air.

But there's more scientific mystery surrounding how tornadoes end. "We don't understand how tornadoes die," Brooks says. "Eventually the air gets too cold and it chokes off the inflow of new air into the storm, but we don't know the details."

### Why is Predicting Tornadoes so Challenging?

Tornadoes are much harder to forecast than hurricanes, which are larger storms that last a lot longer. According to NOAA, the average amount of time between a tornado warning and the arrival of a storm is about 13 minutes. (A tornado warning means a twister has been sighted, while a tornado watch means one is possible.)

The National Severe Weather Laboratory's Warn-on-Forecast research project is aiming to improve forecasting, but the work is slow-going.

The project uses powerful software to crunch data on temperatures, moisture, and other atmospheric variables. Sometimes the system "makes really good forecasts, and other times it doesn't," says Brooks.

As computers get faster and data improves, forecasts may get more accurate. In the meantime, better understanding of the atmosphere will also help other fields, such as planning for wind farms or the placement of solar panels.

Predicting the path of a tornado across the landscape can also be challenging. Brooks says tornadoes tend to follow the general movement of the thunderstorm they are associated with, but the route can be erratic.

This unpredictability paired with strong winds and a fast-moving speed makes tornadoes one of the most dangerous natural disasters on Earth.

End of information. Time to create your poster or graphic!

### WEEK 3: APRIL 27-MAY 1

# PROJECT! EXAMINING TULSA WEATHER PATTERNS IN APRIL (DUE MAY 1)

Using all of the data you collected over the last 10 days, you will create graphs for each data set. Then you will examine your data to find correlations between the five characteristics of weather to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.

Complete the graphs using your data. Be sure to give each graph a title and label/title the axes. You may use a line graph or a bar graph to represent your data. (graph paper on next page)

# 1. High Temperature

# 2. Low Temperature



### 3. Pressure

### 4. Wind Speed

1						<b>_</b>					
-							-				

### 5. Humidity

### 6.Precipitation





### Data Analysis:

Examine all your graphs and your outside observations. What relationships or trends do you see between temperature, pressure, wind, humidity, and precipitation? List as many as you can see in you data, graphs, and observations. (possible example: when it rains the low temperature is lower than the day before)

# **Explaining Trends:**

Using your weather data, graphs, analysis, and information you learned in week 1, examine each of the relationships or trends you identified. Explain each of the weather relationships or trends by using the information from week 1 to explain why your relationships/trends make sense using scientific language related to weather.

#### Reflection:

Review the learning objectives at the beginning of this lesson. What level of understanding do you feel you have of the standard?

Standard MS-ESS 2-5	Level of Understanding (Mastery-proficient- progressing-rudimentary)	Reason for Level Chosen, be specific about the things you know well and what you struggle with.
Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.		

END OF MODULE 1! Good work!

### 7th Grade, Social Studies, At Home Activities and Resources

**Directions**: Students can spend time twice a week on a Social Studies activity. Activities 1-4 are multi-day activities; numbers 5-13 can be done in one day.

Activity 1	Historical Narrative	Create a Historical Narrative: Students can: 1) research a topic 2) examine the who, what, when, where and why about the event 3) Create a storyboard of the ideas using sensory details 4) Write a rough draft and 5) Edit and revise the story. Click here for detailed directions and a sample. https://drive.google.com/file/d/12YAEip4J1KYAbRLySkrBmCs laRNJ_7_J/view
Activity 2	Editorial	Write an Editorial: This is a writing style in which students share their opinion on an important topic. To complete this activity students should 1) research a topic, 2) identify their opinion and reasons to support their ideas 3) write a paper that explains your opinion and provides evidence. A packet with student directions and a sample editorial can be found here. <u>https://drive.google.com/file/d/1VJbs00M_6iEh6aM775_0gOL</u> <u>yHK_uH3-C/view</u>
Activity 3	Oral History	Write an Oral History: An oral history is the act of recording an interpretation of past events. In this writing assignment students should 1) choose a topic 2) select individuals to interview 3) write questions 4) conduct the interview and 5) write a summary and analysis of the interview. <u>Here</u> is a packet with student directions and a sample. <u>https://drive.google.com/file/d/1APzqtUQ1bBtlf59W_8PmpgaQglXI49Bd/view</u>
Activity 4	Letter of Concern	Letter of Concern to a Government Official- Research a major issue and write a letter explaining how you would like the government leader to react. The letter should include important facts that support your ideas. Directions and a writing sample can be found <u>here</u> . <u>https://drive.google.com/file/d/1yWdo8nRIbFcIBxsDoarkfi3mo</u> <u>XLYo9za/view</u>
Activity 5	ICivics	<u>ICivics</u> has several games that middle and high school students can play. <u>https://www.icivics.org/games</u>

Activity 6	Kids PBS News Hour	Kids PBS Daily News Hour Students will identify the who-what-where-when-why and how of national and international news stories. When students click on a news story they will see a description, with a link at the bottom that says support materials. This will take them to questions and activities they can complete following each video. https://www.pbs.org/newshour/tag/kids
Activity 7	Crash Course	<u>Crash Course</u> has several informational videos. Students can watch a video and make a <u>Bubble Map graphic</u> organizer. To do so, students put the event in the center and in the surrounding bubbles place important details about the event. <u>https://www.youtube.com/results?search_query=us+history+c</u> <u>rash+course</u> <u>https://www.education.com/worksheet/article/bubble-map/</u>
Activity 8	The Memory Palace Review	Listen to an episode of the podcast <u>The Memory Palace</u> and compose a review. In the review, summarize what the episode was about and what was interesting. To stretch this activity, research some other historical components that were happening at the same time as the event in the podcast, such as the Chinese Exclusion Act. Compare how immigrants from other parts of the world were treated when coming to the US, consider the difference between Angel Island and Ellis Island. Is the treatment of immigrants much different now than it was at the time discussed in the podcast? Give examples or evidence to back up your ideas. The Memory Place: https://thememorypalace.us
Activity 9	This Day In History	Follow this <u>link</u> and research some of the important events that happened today in a different year! Summarize the event and also compare and contrast today's world with what you learned. <u>http://www.thepeoplehistory.com/this-day-in-history.html</u>
Activity 10	Home Map & Scavenger Hunt	First, make a map of your home. Next, divide it up into a grid and use cardinal directions to label each section of the grid. Then leave clues on pieces of paper in different parts of the grid that lead the student to the next clue. The hunt should end in a specific object or a piece of candy. For example, the first piece of paper would say, "look under the chair that's in the SE square of the home." Then under the chair would be another piece of paper that says, "look inside the shoe that's in the NW part of the home." And so on, until all clues are found.

Activity 11	Hero Research	Who is your hero? How did they become your hero? Research this person and figure out how they became who they are. Summarize your investigation.
Activity 12	Comparing Memories and Stories	Think about a specific memory you have with your family. Summarize the specific memory. Now, interview each family member about the same memory. Detail the account of each person and compile all the information you can. In the end, examine the final body of work. Compare and contrast the different accounts about the same event. Why are there differences? What made similarities possible? What does this tell us about larger historical events? How will this impact how you analyze other parts of history or current events?
Activity 13	Journaling	<ul> <li>Journaling can provide you with opportunities for private reflection and help them process their thoughts, feelings, and uncertainties during these difficult times. Respond to a journal prompt on the coronavirus outbreak.</li> <li>1. How can we help each other during this crisis?</li> <li>2. What does it mean to stay away from each other physically but still work together?</li> </ul>
Activity 14	What a Time!	<ul> <li>Did you know that you are living through a historic time? In future decades, like the 2030s, researchers will research the COVID-19 pandemic They will look to primary sources, first-hand accounts or other data sources to learn how people were affected by this pandemic. To support them: <ol> <li>Write down what news you are hearing every day, noting the changes that are taking place, for one week.</li> </ol> </li> <li>Provide your perspective and personal experiences to the news you are hearing.</li> <li>Interview at least three (3) people that are older than you about their experience. Identify the similarities and differences in how they have reacted.</li> </ul>