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Metadata Definitions

| Item Label: Unique letter/number code used to identify the item. | Max Points: Maximum score points possible for this item. |
| Item Grade (if listed): Grade level in 3-8 or EOC | Item Content (if listed): Subject being tested. (e.g., ELA, Algebra I, etc.). |
| Item Type: For example, “Choice” for multiple choice questions, “Match” for matching tables, “Composite” for two-part items. | Key: Correct answer. 1=A, 2=B, etc. This may be blank for constructed response items, in which students write or type their responses. |
| DOK (if listed): Depth of Knowledge (cognitive complexity) is measured on a four-point scale. 1=recall; 2=skill/concept; 3=strategic thinking; 4=extended thinking. | Rubric (if listed): A written explanation, sometimes with examples, detailing the characteristics of answers with certain score point values. |
| Standard 1 Code (if listed): Primary content standard assessed. | Standard 1 (if listed): Text of the content standard assessed. |
| Passage Type 1 (if listed): Informational, literary, editing, etc.). | Passage Title 1 (if listed): Title of the passage(s) associated with this item. |
Read the passages and write a response to the writing prompt.

**Passage 1**

**Animals and Their Trainers: A Good Team**

by Sara F. Shacter

1. Ever wish you could speak to a sparrow, chat with a cheetah, or babble to a baboon? Then think about becoming an animal trainer. Brett Smith is a trainer at Chicago’s Lincoln Park Zoo. He says training animals is almost like talking to them.

2. In a zoo or aquarium, an animal and its trainer are a team. Trainers learn to read their animals’ behavior to figure out what each animal wants and needs. Animals learn to cooperate with their teachers. This teamwork makes it possible for each animal to live comfortably and get the best care.

3. For everyone’s safety, trainers need to teach animals how to behave during a checkup. Do visits to the doctor’s office make you squirm? Imagine trying to examine a squirming, trumpeting elephant! Elephants learn how to place their feet so veterinarians can check them. Dolphins learn how to place their tails so veterinarians can take blood samples.

4. At some aquariums, dolphins are taught how to protect themselves from humans’ mistakes. Sometimes people drop things into the dolphins’ tank. In the water, a plastic bag looks a lot like a squid. But a dolphin could die if it eats the bag. So these dolphins are trained to bring stray objects to the trainers.

5. Because trainers and their animals spend so much time together, their bond of trust is strong. This bond helps trainers do
important research. For example, a trainer might be able to get up close when a mother is feeding her new baby. That’s something most wild animals wouldn’t allow.

**Fun and Rewards**

6 How do trainers teach animals? Ken Ramirez is the head trainer at Chicago’s John G. Shedd Aquarium. He says that animals and people learn best the same way: through fun and rewards.

7 Mr. Ramirez doesn’t punish. He wants the animals to have a good time. When the animal does what it’s supposed to do, it gets a reward. Often the reward is food, but it can be something else. Belugas (white whales), for example, love having their tongues tickled.

8 Trainers believe that it’s also important to give animals the chance to play. New sights, sounds, and experiences keep animals’ minds and bodies healthy. At the Shedd aquarium, dolphins enjoy watching their reflections in mirrors. One dolphin looks at herself for hours. At the Lincoln Park Zoo, lions play with piñatas. The lions rush up, smack their prey, and jump away. Once they’re sure the piñatas won’t fight back, the lions rip them open. They find the food or bone inside and make shredded paper their new toy.

9 Training animals takes time and patience, but the rewards are huge. Ken Ramirez says a trainer is an animal’s “parent, doctor, playmate, and best friend.” Animals may not speak our language, but they have much to tell us.

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**piñatas**: decorated containers that are filled with candy and prizes usually at a party. Party guests hit the container to make the candy and prizes fall to the floor.


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**Passage 2**

**Excerpt from How to Talk to Your Dog**

by Jean Craighead George

**What is this dog talk?**
It is sound: whimpers, growls, sniffs, barks, and howls. It is visual:\textsuperscript{2} tail wags, ear twists, eye movements, and other body language. It is chemical: odors and taste. It is physical contact: the touch of a friend or the whisk of an enemy.

Speak to your dog in his own language. He will reward you by being an even more devoted friend.

Dog talk should begin as early as possible.

Seven or eight weeks is the best age to take a pup home. He will replace his love for his mother with love for you. Do as she did: Feed him, pick him up, hug him, pet him, and whimper into his fur. That’s mother-dog talk.

Say his name often. You will know when he recognizes it. He will turn and look at you, and his eyes will brighten.

Praise him. Tell him what a good dog he is. Dogs love flattery.\textsuperscript{3} Flattery will put him in a good mood, and it will be easier to teach him to sit, stay, heel, and come. Reward his achievements with treats and praise. Treats and saying, “Good dog,” are gold stars for puppies. Eventually, praise will be enough.

No matter how old your dog is, you can speak to him in his own language at any time in his life. “Hello” is a good way to begin. Dogs greet each other by sniffing noses.

To say hello to your dog, sniff toward his nose. That’s dog talk. He will answer by pulling his ears back and close to his head. What he is saying is “Hello, leader.”

There is also the joyous hello. When you return home, your dog greets you bounding, tail wagging, body swishing, and with his head lowered in deference\textsuperscript{4} to you. He might lick you to seal the welcome. You don’t have to lick back. That would please him, but he will love you even if you don’t. A hug or head pat is your “joyous hello” to your dog.

“Good night” in dog talk is physical.

Rub your dog’s head, ears, and neck. Lower your lids and sigh into his fur. You are the mother dog licking her pup off to sleep.

“Good-bye” is a whisk of the tail, then turning and walking off. Since you don’t have a tail, swish your hand downward and show your back. If your dog does not choose to hear this unwelcome
message and races after you, tell him, “I am boss,” in dog talk, then repeat the dog “good-bye.”

**How do you say, “I am boss”?**

22 The most effective way is to put your mouth on his muzzle. That means in dog talk that you are the leader. His ears will go back and against his head, and his tail will lower. This is his way of saying, “Yes, you are my leader.”

23 If you don’t want to use your mouth, take his muzzle in your hand and gently shake it as you say, “Good dog.” Telling your dog he is good is his reward for living. Finally, give the dog good-bye and walk off. He should let you go.

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2 **visual**: a movement that can be seen

3 **flattery**: praise

4 **deference**: respect

5 **muzzle**: the projecting part of the face, including the nose and mouth, of an animal such as a dog or horse

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**Writing Prompt**

People have many ways to communicate with the animals they care for. Write an essay that explains some of the ways communication can help to train animals. Be sure to use facts and details from both passages to support your explanation. Follow the conventions of standard written English.

Manage your time carefully so that you can

- Plan your essay and do some prewriting in the space provided
- Write your essay on the lined pages in your answer document

Your written response should be in the form of an essay.
Write your response to the writing prompt on the lined pages in your answer document. (*alt-text for online: ... space provided below.*)
Read the passages and write a response to the writing prompt.

Passage 1

Midori Makes Music

by Leigh Anderson

1. Pling! The E-string on Midori’s violin breaks. Fourteen-year-old Midori is in the midst of playing Leonard Bernstein’s “Serenade for Harp, Percussion, and Strings.” She isn’t at a school recital or talent show. Midori is playing at the Tanglewood Music Festival in Massachusetts. Thousands of people are watching. Bernstein himself is conducting the orchestra. What can she do? Quickly, Midori borrows a violin from another musician. It’s larger than her own, but there aren’t any other teenaged violinists on the huge stage to borrow from. She starts playing again. Pling! The E-string on the borrowed violin breaks, too! Midori borrows another violin and finishes the Serenade. As her music fades away into the summer night, the audience leaps to its feet, clapping and cheering. Soon the front page of The New York Times trumpets, “Girl, 14, Conquers Tanglewood with 3 Violins!” Midori doesn’t think it’s such a big deal. “My strings broke,” she says, “and I didn’t want to stop the music.”

2. Midori Goto was born on October 25, 1971, in Osaka, Japan. Her mother, Setsu, a violinist, took her baby daughter to her rehearsals. At age 2, Midori began humming difficult musical pieces. For her fourth birthday, Midori was given a tiny violin and Setsu began to teach her. She practiced every day. Midori soon amazed everyone who heard her.

3. When Midori was 10, the Juilliard School of Music in New York invited her to become a student in their program. Midori and her
mother moved to New York City. It was hard to leave Japan, but New York gave Midori new opportunities. It was an exciting time. Music lovers were eager to hear a young girl in pigtails playing as well as a talented adult. In 1982, Midori played with the New York Philharmonic Orchestra at a New Year’s Eve concert. She was 11 years old.

For years, Midori juggled school, violin lessons, practice, and performances. She left Juilliard at 15, but she never stopped learning. When she was older, she went to college and earned a master’s degree. Today, Midori continues to perform all over the world.

She once said, “I love playing. It isn’t like there’s me and then there’s the violin. The violin is me. I love it so much that I want to share it with other people.”

She especially loves bringing music into schools and performing in towns that other violinists don’t visit. For Midori, her work is her joy. Midori was a child prodigy, but that’s not what makes her special. What makes her special is that when she makes music, she shares both her joy and herself.

1prodigy: a person, especially a child or young person, having extraordinary talent or ability


Passage 2

The Boy Doctor of India

by Donna Henes

The most famous doctor in India is a teenager!

Akrit Jaswal was always advanced for his age. When he was a baby he skipped the crawling stage and started walking. He began to talk when he was just 10 months, and he was reading at 2. By the time he was 4, he was reciting Shakespeare. Some people believe he’s smarter than Albert Einstein.
At a very young age, Akrit started thinking about medicine. In fact, it was all he thought about. By the age of 6, Akrit had memorized entire medical books. The staff of the local hospital was so impressed that they let him watch operations.

When he was 7, Akrit successfully performed an operation on an 8-year-old girl. Her fingers had been badly burned and had grown together. After the surgery, people all over India said Akrit was a medical genius. Word of the young prodigy spread. Villagers flocked to his home seeking advice and medical care. Soon Akrit began to treat the people who gathered on his doorstep. He consulted his textbooks, discussed the cases with older doctors, and prescribed medicine for more than a thousand people.

Akrit started college when he was 11. He was the youngest student ever to attend an Indian university. Today he is studying botany, chemistry, and zoology at Punjab University in Chandigarh, India. One day he hopes to study at Harvard University in Massachusetts.

Today, medicine remains Akrit’s greatest interest. By studying for one hour each day, he has learned all about anatomy, surgery, anesthesia, physiology, and cancer. He says that concentration is essential for success, no matter what you are interested in.

Akrit says he has millions of medical ideas, but he’s currently focused on discovering a cure for cancer. “I’ve developed a concept called ‘oral gene therapy’ on the basis of my research and my theories,” he says. “I’m quite dedicated towards working on this mechanism.”

In his spare time (this boy actually has spare time!) Akrit enjoys playing and watching Cricket, a bat-and-ball team sport that is popular in India.

mechanism: a process by which something is done or comes into being

Writing Prompt
If you could study a new skill with one of them, would you study with Akrit or Midori? Write an essay in which you give your opinion and explain your reasons.

Your essay must be based on ideas and information that can be found in both passages. Support your ideas with evidence from the passage set. Follow the conventions of standard written English.

Manage your time carefully so that you can

- Plan your essay and do some prewriting in the space provided
- Write your essay on the lined pages of your answer document

Your written response should be in the form of a multi-paragraph essay.

Write your response to the writing prompt in the space provided in your answer document.
Read the passages and write a response to the writing prompt.

**Passage 1**

Excerpt from “Ten Reasons Why You Don’t Exercise (and Why You Should Overcome Them)”

by Kathiann M. Kowalski

1. Your clothes would get sweaty.
2. Your hair would get messy.
3. It’s cold out.
4. It’s too hot.
5. You’re tired.
6. You’d rather sleep.
7. You don’t like to exercise alone.
8. You don’t like to have people see you exercise.
9. Your muscles will get sore.
10. You don’t have time.
11. In short, you don’t feel like exercising. “I think everyone gets those days,” says 14-year-old Charlie Wilson in Ohio. However,
science says we’ll all be healthier if we get moving. Indeed, the U.S. government’s 2008 Physical Activity Guidelines recommend an hour or more of activity daily for children and teens.

**Big Benefits**

**12** “Basically, there’s no system that it doesn’t have a positive effect on, at least when done in moderation,” says Antronette Yancey at the University of California at Los Angeles. She served on the Guidelines’ expert committee. More importantly, Yancey says, physical activity “can produce immediate benefits.”

**13** For starters, regular physical activity improves your overall fitness. Your bones and muscles grow stronger. You can do more before tiring. And exercise can bolster the immune system, so you’re less likely to get sick.

**14** Physical activity also improves your mood. “Mentally, I feel better after I do it,” says 17-year-old Danielle Lehmann on Long Island.

**15** “It gives you time to blow out steam,” adds 16-year-old Matthew Kowalski, also on Long Island. He really welcomes physical activity after a long day of sitting and concentrating at school.

**16** Interestingly, researchers at East Carolina University found that students stayed on task better when classes included regular exercise breaks throughout the day. Other studies suggest that regular physical activity improves decision-making and planning abilities. That includes “being able to accomplish what you’re trying to accomplish, being creative, [and] not making bad judgments,” explains Yancey.

**Overcoming Inertia**

**17** Part of Isaac Newton’s first law of physics says that a body at rest tends to stay at rest. Unfortunately, that holds for our exercise habits too.

**18** “The important thing is finding something that’s fun to do,” stresses Fulton. Charlie likes soccer and fencing. Danielle runs and does yoga. Matthew plays hockey and lacrosse and runs track.

**19** Being with friends helps. “Running around circles for track isn’t all that fun,” admits Matthew. “But when it’s you and five guys, and as you’re running, each guy has a joke, it makes it that much better.”
20 Of course, everyone is busy, so Fulton also advises, “Build activity into your life.” Charlie often walks to and from school or to friends’ houses.

21 Yancey wants teens to go further and push schools to add “instant recess” breaks throughout the day. “It needs to be an ordinary part of the day,” Yancey says. Just as many restaurants and offices are now no smoking places, she says, schools and offices should become places of no prolonged sitting.

22 And on days when you might make excuses, remember how good a physical activity can make you feel. “I realize that when I get to hockey, it will be better there than me just sitting at home doing homework,” says Matthew. “As soon as I step on that ice, I’ll be glad I’m there.”

23 So, get moving — have fun, get (or stay) healthy!


**Passage 2**

**Born to Run**

by Bradford H. Robie

24 There’s nothing like racing across the playground or sprinting along the beach with the wind at your back. That sudden burst of speed can make you feel like a cheetah chasing its prey or a horse galloping on an open plain. It’s as if you were born to run.

25 Running also strengthens bones and muscles, controls weight, and keeps your heart healthy.

26 Most of all, it can be a lot of fun!

... ..................................
If you’re inspired to become a runner, make sure that you have a good pair of running shoes. These special sneakers are designed to cushion the impact of running. Many stores specialize in this type of shoe.

Be sure to run in a safe place with an adult partner. City parks are good. So are country roads. Many towns have athletic fields with grassy areas and running tracks. Any of these spots could work.

One advantage to running on a track is that it’s easy to know how far you’ve run. A lap on the track at most high schools is 400 meters long. That’s almost a quarter of a mile, so four laps equal about one mile.

If you decide to run on a road or sidewalk or in a park, make sure a parent helps you plan a route. Always run facing oncoming traffic, and never run at night unless you’re in a very well-lit area.

Soft surfaces like dirt trails and grass are easiest on your feet and joints. Most sidewalks and road surfaces are quite hard, so you’ll want to limit the amount of running you do on them.

The first question new runners ask is, “How far?” A better way to gauge your workout is, “How long?” Running for a specific number of minutes reduces the pressure to run a certain distance each time. A good way to start is to alternate running and walking for 30 minutes.

Pace Yourself for Success

Here’s a good plan for starters. Run three times each week, taking at least one day off between workouts. The first week, run one minute, then walk for six minutes. Run a minute, then walk six. Keep running a minute and walking six until you’ve been at it for about 30 minutes total.

Each week, increase the length of the running portions (two minutes the second week, three minutes the third), and reduce the walking time. Before long, you’ll be running for the entire 30 minutes.

It’s important to increase the running gradually. This will allow your body to adapt to the work, and it will help you avoid aches and pains. Beginning runners who go too far too soon often get discouraged.

Warm up for each workout by walking briskly for five minutes. This will slowly raise your heart rate, directing more blood and
oxygen to your muscles. Swing your arms and walk faster than you normally would, but not so fast that you start to jog. Then you can ease into your run.

37 You should be able to talk comfortably while running, without gasping for breath. If you find yourself huffing and puffing, slow down (or walk) until you feel comfortable.

38 After your run, cool down with another five-minute walk and some light stretching. Stretching keeps your muscles from tightening up. It also reduces soreness and can help prevent injuries.

39 Running is a great activity to do with a friend. In middle school, you might have the opportunity to join a running club or team.

40 Now you know the basics of running. So lace up your running shoes and join the millions of people who are proud to call themselves runners.

41 Chances are, you were born to run, too!


**Writing Prompt**

Principals are considering making a rule that requires “mini” recesses throughout the day that include the opportunity to run on a track. Would this be a good idea? Write an essay in which you give your opinion. Use facts and details from both texts to support your opinion. Follow the conventions of standard written English.

Manage your time carefully so that you can

- Plan your essay and do some prewriting in the space provided
- Write your essay on the lined pages of your answer document

Your written response should be in the form of a multi-paragraph essay.

*Write your response to the writing prompt in the space provided in your answer document.*
Read the passage and write a response to the writing prompt.

**Excerpt from “The Conceited Python”**

by Ruskin Bond

1. During his retirement in northern India, Grandfather could not resist buying unusual pets. Once he paid a snake charmer in the bazaar five rupees\(^1\) for a young, four-foot-long python. Then, to the delight of a curious group of boys and girls, he slung the python over his shoulder and walked home.

2. The first to see them arrive was Toto the monkey, who was swinging from a branch of the jackfruit tree. One look at the python and he fled into the house, squealing with fright. The noise brought Grandmother onto the veranda where she nearly fainted at the sight of the python curled around Grandfather’s throat. Grandmother was tolerant of most birds and animals, but she drew the line at reptiles. Even a sweet-tempered chameleon made her blood run cold. Grandfather should have known that there was little chance of being allowed to keep a python.

3. “It will strangle you to death,” she cried. “Get rid of it at once!”

4. “Nonsense,” said Grandfather. “He’s only a young fellow. He’ll soon get used to us.”

5. “He might, indeed,” said Grandmother, “but I have no intention of getting used to *him*. And your cousin Mabel is coming to stay with us tomorrow. She’ll leave the minute she knows there’s a snake in the house.”

6. “Perhaps we should show it to her first thing,” said Grandfather. He did not look forward to the visits of Aunt Mabel.
"You’ll do no such thing," said Grandmother.

“Well, I can’t let it loose in the garden. It might find its way into the poultry house, and then where would we be?”

“Oh, how tiresome you are!” grumbled Grandmother. “Lock the thing in the bathroom, go find the man you bought it from, and tell him to come here and collect it.”

And so, in my awestruck presence, Grandfather took the python into the bathroom and placed it in the tub. After closing the door on it, he gave me a doleful look. “Perhaps Grandmother is right this time,” he said. “After all, we don’t want the snake to get hold of Toto. It’s sure to be very hungry.”

Grandfather hurried off to the bazaar while Grandmother paced up and down the veranda. When he returned, looking shame-faced, we knew he hadn’t been able to find the snake charmer.

“Well then, kindly take it away yourself,” said Grandmother. “Leave it in the jungle across the riverbed.”

“All right,” said Grandfather. He marched into the bathroom, followed, in single file, by me, Grandmother, the cook, and the gardener.

Grandfather opened the door and stepped into the room. I peeped around his legs, while the others stayed well behind. We couldn’t see the python anywhere.

“He’s gone,” announced Grandfather.

“He couldn’t have gone far,” said Grandmother. “Look under the tub.”

We looked under the tub, but the python wasn’t there. “We left the window open,” Grandfather said, blushing at his own forgetfulness. “He must have gotten out that way.”

A careful search was made of the house, the kitchen, the garden, the stable, and the poultry shed, but the python could not be found anywhere.

“He must have gone over the garden wall,” said Grandfather. “He’ll be well away by now.”

“I certainly hope so,” said Grandmother.
Aunt Mabel arrived next day for a three-week visit. For a couple of days Grandfather and I were a little worried that the python would make a sudden reappearance, but on the third day, when he didn’t show up, we felt sure he had gone for good.

And then, toward evening, we were startled by a scream from the garden. Seconds later, Aunt Mabel came flying up the veranda steps. “In the guava tree!” she gasped. “I was reaching for a guava when I saw it staring at me. The look in its eyes! As though it would eat me alive — ”

“Calm down, dear,” urged Grandmother, sprinkling eau de Cologne over my aunt. “Tell us, what did you see?”

“A snake!” sobbed Aunt Mabel. “A great boa constrictor. It must have been twenty feet long! In the guava tree. Its eyes were terrible. And it looked at me in such an odd way. . . .”

My grandparents exchanged knowing looks, and Grandfather hurried out into the garden. But when he got to the guava tree, the python was gone.

“Aunt Mabel must have frightened it away,” I said.

“Hush,” said Grandfather. “You mustn’t speak of your aunt in that way.” But his eyes were alive with laughter.

After this incident, the python began to make frequent brief appearances, usually in the most unexpected places.

One morning I found him curled up on the dressing table, gazing at his reflection in the mirror. I went for Grandfather, but by the time we returned, the python had moved on. He was seen in the garden and ascending the iron ladder to the roof. Then we found him on the dressing table a second time, admiring himself in the mirror.

“All the attention he’s getting has probably made him conceited,” said Grandfather.

1rupees: the basic unit of money in India

Writing Prompt

By the end of the passage, the python has become a frequent, unexpected visitor. Write a continuation of the passage that describes what happens next and how the characters resolve the problem. Be sure to use what you have learned about the setting, characters, and plot of the passage.

Manage your time carefully so that you can

- Plan your response and do some prewriting in the space provided
- Write your response on the lined pages of your answer document

Your written response should be in the form of a multi-paragraph narrative story.

Write your response to the writing prompt in the space provided in your answer document.
Read the passages and write a response to the writing task.

**Passage 1**

**The Way the Mop Flops**

by Ann Harth

1. “Hey, Andrew,” said Tanya, dropping her books onto her desk with a thud.

2. “Hey,” I said.

3. Kids wandered into the classroom and shuffled to their seats, talking in Monday-morning murmurs.

4. Mr. Taylor’s shiny boots clicked across the floor. “Good morning, class!” he bellowed. “I need someone to read, please.”

5. The idea of reading in front of the class made my toes curl inside my sneakers. I stared at my desk. *Please don’t pick me.*

6. “Andrew Addison.”

7. My stomach squeezed into knots. I looked up.

8. “Stand up, please.” Mr. Taylor thrust a paper at me. I stood, begging my legs to steady me and my knees to stop quaking. A drop of sweat slid down my face.

9. My voice came out in a croak as I started reading. “A public-speaking competition for both fifth-grade classes will be held in the auditorium next Monday. Each student will give a two-minute speech.”
Panic rose within me. For the rest of the day, I could barely concentrate.

On the bus home, I sat next to Tanya. “What will I give a speech about?” I moaned.

Tanya shrugged. “What’s something you’d be able to talk about for two minutes?”

“Nothing!” I said. “All I’ll be able to think about is my shaky knees, my wobbly legs, and my squeaky voice!”


Tanya smiled. “Not bad.”

For the entire week, the dreaded day loomed. I practiced my speech and panicked. I wished for rampaging elephants and road-closing blizzards. I even considered flying to South America.

The day came. The school was still standing. It hadn’t snowed, and I hadn’t gone on vacation.

“Your new shirt looks wonderful on you, Andrew,” Mom said as she handed me my backpack. “Now, don’t be nervous.”

Fifty fifth-graders shuffled into the auditorium. I stumbled to my seat in the front row.

“You’re sweating,” Tanya whispered, handing me a tissue.

Kayla Abbymore, from the other class, stepped onto the stage. She smiled and chattered about her trip to the skating rink. She didn’t shake or wobble or sweat. She skipped from the podium. Everyone clapped politely as she disappeared through a side door.

“Andrew Addison.” My name boomed through the auditorium.

Tanya elbowed me. “Go on!”

I stood up. I begged my legs to steady me and my knees to stop quaking. They didn’t listen. I clutched my index cards and trudged to the podium. Two teachers and 49 fifth-graders stared. My cards quivered.

“Hello,” I squeaked.
Someone snickered.


I glanced at my notes. They were a blur in my sweaty hands. No help there. My first line. What was my first line? I closed my eyes.

YES! That was it. “I hate public speaking,” I said.

Someone laughed.

I held up a hand and watched it quiver. “My hands shake.”

Another laugh.

“My face sweats.” I wiped my slick brow.

A few more laughs. That was good, right? I stepped from behind the podium and showed the audience my quaking knees. “My legs wobble.”

Everyone laughed. I glanced at Tanya. Her face was split into a grin.

My speech flooded back to me. My knees settled and my hands relaxed.

“Many people feel like disappearing when they have to give a speech.” I paused for a second. “But I bet I’m the only one who almost bought a ticket to Brazil.” I was on a roll. My two minutes flew.

Laughter and clapping floated around me as I finished my speech. They liked me. I strutted away from the podium and waved to my fans. I opened a door, stepped through, and closed it behind me.

It was dark.

Where was the exit? I smelled floor cleaner. I reached into the blackness and my fingers brushed stiff bristles, buckets, a mop, and a pile of rags. I had entertained my audience with a brilliant speech, then walked straight into the custodian’s closet.

I pushed my ear against the door. It was quiet out there. Maybe no one had noticed. I could creep out and duck into the exit next
door. I held my breath and pushed. Light now flooded the closet. Mops and brooms surrounded me.

They’d noticed. Forty-nine fifth-graders and two teachers stared. I stepped from the closet and spotted Tanya in the audience. She still wore a grin. She raised her hands and clapped. Others joined in, and soon the entire audience was clapping and cheering. I waved, bowed, and swept out of there.

Oh, well. That’s the way the mop flops.


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**Passage 2**

**The Choice**

by Holly Beech

“Julie Jones scores two points for the Panthers!”

The announcer’s voice is nearly drowned out by the cheers of the audience. Julie flashes a smile at her fans as she jogs down the basketball court.

Once again, jealousy rises up inside me. Every game, I sit on the bench, wishing with all my heart that I could be the star of the team. But every game is the same — I sit on the bench and wish that I could be Julie Jones.

The buzzer sounds. Although my team has won another game, I feel no joy. I don’t care so much about winning anymore; I just want to play.

And what makes it worse are the low comments that Julie spits at me. I see her walking toward me, and I prepare myself for another rude remark.

“Good job, Katie,” she says sarcastically. “You’re getting good at warming up the bench.”

Furious words almost slip from my mouth, but I hold my anger inside and simply say, “Good game, Julie.” For a second, she looks confused, but then she pushes her way past me and strolls off.
Tonight is the most important game of the season — the championship. My stomach is filled with butterflies. Two girls on my team are injured, preventing them from playing. *Maybe tonight,* I think, *I will get to play.*

It’s a close game. With two minutes left, the score is 50-50. When one of my teammates twists her ankle, Coach yells, “Katie, you’re in!” She notices the shock on my face. “Go on! You can do it!”

I jump off the bench, my palms sweaty, and run onto the court.

The other team scores, making it 50-52. With only ten seconds left, I know we must score.

The ball is passed to me. In this second, I must decide between shooting the ball with two girls guarding me, or passing it to Julie, who is wide open. If I shoot, I might score the winning points and get the praise I’ve been craving all season. But Julie has a better shot than I do — and a better chance of scoring.

I make my decision.

The ball swishes through the net. The Panthers jump up and down as the crowd roars.

“Julie Jones scores the winning three-pointer!” booms the announcer.

My teammates lift Julie onto their shoulders. Screams of delight flood our side of the gym. But for some reason, I am no longer jealous. I’m satisfied that I was able to help the team.

Coach walks up to me and says, “Nice pass, Katie. You did the right thing. I’m glad to have an unselfish player like you on my team. You’re going to play again next season, right?”

I smile and reply, “You bet!”

Writing Prompt

Write an argumentative essay in which you argue which character, Andrew or Katie, had the bigger obstacle to overcome. Support your claim with evidence from both passages.

Manage your time carefully so that you can

- Plan your essay
- Write your essay

Be sure to

- Include a claim
- Use evidence from both passages
- Avoid over-relying on one passage

Your written response should be in the form of a multi-paragraph essay.

Write your response to the writing prompt in the space provided in your answer document.
Read the passages and write a response to the writing prompt.

**Passage 1**

**Excerpt from “A Success in Space”**

by Cameron Keady

1. On November 12, 2014, a small probe helped scientists take a big step forward in space exploration. The probe, called the Philae lander, is the first spacecraft to set down on a comet. It will take photos and dig up samples from the comet’s surface.

2. The Philae [FIL-ay] lander is about the size of a washing machine. It dropped from the Rosetta spacecraft and landed on the comet Churyumov-Gerasimenko, also known as 67p. This mission could give researchers valuable information about the origins of our solar system and how it evolved.

**A Long Journey**

3. Rosetta traveled for 10 years, and across 4 billion miles, to reach its destination. The craft was launched in 2004 by the European Space Agency to observe comets. In 2011, Rosetta was powered down to conserve energy. Early this year, scientists brought it back to life to study 67p.

4. Philae separated from Rosetta about 14 miles above the comet. At first, the lander failed to fire anchoring harpoons\(^1\) into the surface. It bounced three times before coming to a stop, said Stephan Ulamec, the lander project manager.

5. The Philae lander will travel the surface of 67p and conduct a variety of scientific experiments. It could reveal secrets about the
makeup of comets and the formation of our solar system. . . . Researchers consider comets the remains of the ancient solar system. Their contents are preserved in a deep freeze because they spend much of their time far away from the sun. “What we believe is that we will study the most primitive\(^2\) material in the solar system,” says scientist Gerhard Schwehm. He served as Rosetta’s mission manager at the ESA from 2011 until his retirement earlier this year.

In the Dark

6 Scientists have not yet been able to determine exactly where Philae landed. Based on the first images the lander has sent back, they believe it is partially in a shadow of a cliff. That could be a problem, because it would prevent the lander from using its solar panels to collect energy from the sun. Currently, the scientists are updating their plans to get Philae out of the darkness.

7 Despite any initial concerns, the team is in good spirits — and so is Philae. On the night of its arrival, the lander tweeted a photo to its mother ship @ESA_Rosetta. “The view is absolutely breathtaking ESA_Rosetta! Unlike anything I’ve ever seen #CometLanding,” the tweet read.

8 Though it took a decade to get to 67p, Philae’s stay on the comet will be a short one. As soon as it landed, a 64-hour countdown began. When it ends, Philae’s on-board battery will run down. But Rosetta will continue to travel with 67p, sending information about the comet back to Earth for as long as it can.

\(^1\)anchoring harpoons: barbed, spear-like missiles shot into the surface of the comet to hold the spacecraft

\(^2\)primitive: being the first or earliest of the kind or in existence


Passage 2

Excerpt from “America’s New Spacecraft”

by Cameron Keady
Liftoff! After NASA called off three countdowns on Thursday, December 4, 2014, the Orion spacecraft successfully launched into space early this morning. The craft orbited Earth twice and traveled a distance of 3,600 miles before it landed in the Pacific Ocean around 11:30 A.M. on Friday, December 5. “The flight is designed to test many of the most vital elements for human spaceflight,” said NASA in a statement. “[It] will provide critical data needed to improve Orion’s design and reduce risks to future mission crews.”

**Takeoff and Touchdown**

The original launch was set for December 4. To successfully take off, a spacecraft requires a rocket. Orion traveled to space aboard the Delta IV rocket. Several valves are used to fill and drain Delta IV with propellant prior to liftoff. Due to valve issues that could not be fixed before the launch time was scheduled, Orion’s takeoff was put on hold. The NASA team also worried strong winds would hinder the craft’s ability to take off. But winds stayed below the limit of 24 miles per hour, and the Orion capsule lifted off from Cape Canaveral Air Force Station, in Florida, at 7:05 A.M.

The capsule reached a peak altitude more than 14 times farther from Earth than the International Space Station. No spacecraft designed for astronauts has gone so far since the Apollo 17 mission 42 years ago. NASA is now “one step closer” to putting humans aboard Orion, said NASA Administrator Charles Bolden Jr. He called it “Day One of the Mars era.”

Orion landed in the ocean about 270 miles west of Mexico’s Baja peninsula at approximately 11:30 this morning. The U.S. Navy was there to recover the spacecraft, where it will be brought to land. Mission Control commentator Rob Navias called the voyage “the most perfect flight you could ever imagine,” calling the spacecraft’s landing in the Pacific Ocean “a bulls-eye.”

**A Mission for the Future**

Orion’s voyage is an experimental mission, with no astronauts onboard. The goal of the mission is to someday take astronauts to Mars. The experimental flight was intended to test the capabilities of the spacecraft to ensure it is suitable for a future manned mission to the Red Planet.

The Orion spacecraft will not carry astronauts until 2021 at the earliest. But NASA hopes that some day the capsule will be able to take people back to the moon or to Mars.

Orion wasn’t entirely unmanned, however. Some familiar objects rode aboard the spacecraft. As part of a public outreach
effort with Sesame Street, NASA made room for Ernie’s Rubber Duckie, Oscar the Grouch’s pet worm Slimey, and one of Cookie Monster’s cookies aboard Orion.

16 “T” is for “Touchdown,” and that’s good enough for NASA.

Excerpt from “America’s New Spacecraft” by Cameron Keady, from Time for Kids. December 5, 2014.

**Writing Prompt**

Write an essay that explains the purpose of each mission and then argues which mission was more successful. Develop your essay by providing textual evidence from both passages.

Manage your time carefully so that you can

- Plan your essay
- Write your essay

Be sure to

- Include a claim
- Use evidence from both passages
- Avoid over-relying on one passage

Your written response should be in the form of a multi-paragraph essay.

**Write your response to the writing prompt in the space provided in your answer document.**
Read the passages and write a response to the writing task.

Passage 1

Excerpt from “Looking at Mushrooms”

by Cheryl Bardoe

1 Equipped with a magnifying glass, pocketknife, and fishing tackle box, mushroom scientist Greg Mueller is going on a treasure hunt. “I never know what I might find,” he says, striking out along a woodland path at the Chicago Botanic Garden in Illinois. “And what I find today may be different four days from now.”

2 After decades as a mycologist (a scientist who studies fungi), Mueller knows that mushrooms are here-today-gone-tomorrow treasures. He jokes about becoming a geologist someday, “because rocks never move.” But he isn’t really discouraged — he knows that forests are full of fungi. In fact, the world is full of fungi.

A World of Fungi

3 Fungi take many forms. They include the yeast that makes holes in bread as it rises, the fuzzy mold that warns us not to eat an old jar of spaghetti sauce, smelly mildew, and the mushrooms that pop up overnight from the forest floor.

4 For many years, scientists thought fungi were plants because they didn’t move and many sprouted from soil. Unlike plants, however, fungi cannot make their own food. The cells of fungi are also unlike plants. Their cell walls are made from chitin, the same stuff that forms the hard outer shells of insects and crabs. A comparison of their genetic material reveals that fungi are more closely related to animals than to plants!
Scientists now recognize fungi as their own kingdom of organisms — neither plants nor animals. They believe that fungi are far more diverse than plants, or any group of animals except insects. And they estimate that up to 1.5 million species of fungi may exist. With only about 100,000 known so far, that leaves room for lots of future discoveries.

**Searching for the Invisible**

While keeping a hopeful eye on the forest floor, Mueller explains that fungi are often present even when we don’t see them. Fungi grow in hair-like threads called hyphae. These strands spread through soil, rotting wood, or wherever a fungus seeks water and food. A single strand is too small to see with the naked eye, but Mueller points out white spots on a fallen tree where many have massed together, creating a visible web called a mycelium.

Soon, we spot our first clump of mushrooms hiding beneath the leaves. Mueller carves off the dainty, brownish-orange specimens to store in his collecting box. Like apples on a tree, mushrooms are fruiting bodies of the mycelium. They release spores — cells that float away to create new fungi.

Fruiting fungus bodies wait patiently underground for just the right combination of moisture and temperature to make their debut. “When conditions are right,” Mueller says, “mushrooms swell with water like a water balloon. That gives them the pressure to burst out of the ground.” Mushrooms can expand quickly, sometimes with enough force to push up through asphalt and cement. Then they release their spores and may disappear again within a few days.

A single mushroom can release millions, even trillions, of microscopically tiny spores, which are carried off by the wind or by animals. So why isn’t the earth overrun with fungi? Unlike the seeds of flowering plants, spores aren’t packed with their own food. To grow, they have to land in just the right place, on something they are able to break down for food.

**How Fungi Function**

All fungi play one of three roles: some are decomposers, some form partnerships with living plants, and some are parasites. Most fungi we happen to see on our walk, such as tiny yellow fairy cups and the meaty chicken-of-the-woods, are breaking down dead plant matter, recycling its nutrients back into the soil. As fungal hyphae spread through a fallen tree to gather food, they destroy the stiff cell walls of the wood, making the nutrients inside available. Mueller breaks a chunk of decaying wood from a tree, and it almost crumbles to sawdust in his fingers. That’s a sign that fungi have
Mushrooms, molds, lichens, yeasts, and mildews: there are at least 1.5 million different kinds of fungi on Earth. What can we do with all that fungus among us?

Eat Them

Mushrooms are the fruit of underground fungi, and like other fruits, many are good to eat. In fact, Americans gobble up about 4 pounds (1.5 kilograms) of mushrooms per person every year. Mushrooms are a nutritious food, high in protein and vitamins. Forest animals like mushrooms too — they are a favorite of chipmunks, squirrels, mice, voles, bears, insects, and salamanders.

Some fungi are used to make food better. Yeast is a single-celled fungus that gives off bubbles of carbon dioxide gas as it digests sugar. Yeast at work in dough gives us light and fluffy bread, and it puts the fizz in beer.

Archaeologists in Egypt have found 4,000-year-old pots with telltale traces of yeast in them. In Asia, yeasts are used to ferment soybeans to make soy sauce and miso. Tasty fungi are also used to flavor cheeses like brie, blue, and Roquefort.

Cure Sickness

One of the most useful medicines in the world comes from a mold, another type of fungus. Discovered on a neglected petri dish in 1928, penicillin was the first antibiotic, a drug that kills bacteria and knocks out tough infections. Why would a mold be good at killing bacteria? In the wild, fungi often compete with bacteria for food — to discourage competition, many fungi make bacteria-killing chemicals. In fact, long before scientists discovered penicillin,
doctors in ancient Egypt used moldy bread to fight infection in wounds.

16 Molds and other fungi are used to make vitamins, painkillers, and many other helpful medicines — even some that fight cancer.

**Make Stuff**

17 Long ago, cloth makers in the Mediterranean discovered that lichen could dye fabric in vibrant purples and reds. Many Native Americans also use lichen for dye.

18 As they grow, fungi break down food outside their bodies using special digestive chemicals called enzymes. Enzymes that digest fats are harvested from molds and used to make detergents and laundry soaps. Fungi enzymes are also used to fade jeans for a stylish “distressed” look. Even the citric acid that gives juice, soda, and sauces their lemony tang is cooked up using enzymes from a common black mold, *Aspergillus niger*.

19 The dense root webs of fungi, called mycelia, are excellent for holding things together.

20 One company is growing mycelia around corn husks and straw to make Ecocradle, an Earth-friendly replacement for Styrofoam. Like Styrofoam, Ecocradle is lightweight; unlike Styrofoam, it’s also strong, biodegradable, recyclable, and can be easily grown in any shape you need. It can be used for packing materials and even house insulation, and Ford Motor Company is investigating ways to use Ecocradle in its cars and trucks.

**Clean Up Pollution**

21 Fungi are decomposers. In nature, they break down the large molecules in dead trees, plants, and animals, leaving the soil full of recycled nutrients. That may not seem very remarkable — until you realize there’s a fungus that can break down nearly anything.

22 One of the most amazing ways to use fungi’s decomposing abilities is to help clean up pollution. Some fungi, including the common oyster mushroom, have digestive powers that can break apart nasty chemicals like pesticides, oil, and tar in soil and water into simple, safe compounds like carbon dioxide, water, and nitrogen. Some scientists, such as mushroom researcher Paul Stamets, think that planting fungi may be the perfect way to clean up polluted sites quickly and cheaply. Some fungi can even digest radioactive toxic waste!
Fungi are among the most ancient organisms on the planet, but we’re only just beginning to discover their many remarkable talents.


**Writing Prompt**

Both authors describe the remarkable characteristics of fungi. Write an argumentative essay arguing which author is more successful at portraying these characteristics. Develop your essay by providing textual evidence from both passages.

Manage your time carefully so that you can

- Plan your essay
- Write your essay

Be sure to

- Include a claim
- Use evidence from both passages
- Avoid over relying on one passage

Your written response should be in the form of a multi-paragraph essay.

*Write your response to the writing prompt in the space provided in your answer document.*
Read the passages and write a response to the writing prompt.

Passage 1

Excerpt from “To Really Learn, Fail — Then Fail Again!”

by Susan Moran

That ‘error’ in trial-and-error learning can be the ticket to learning well — and having more fun.

1 Thomas Edison just couldn’t get it right.

2 After more than five months and 9,000 experiments, the famous inventor couldn’t get a new type of battery to work. Too bad, a co-worker said. What a shame that effort had produced no results.

3 But Edison saw it differently. “Results? Why, man, I have gotten a lot of results! I know several thousand things that won’t work!”

4 Edison eventually did get his new kind of battery to work. In the end, it took even more time — and thousands more experiments.

5 Today, more than a century later, a bit of that same spirit of curiosity and determination lives on in Emily Hogan’s classroom. She teaches eighth-grade physical science at Westlake Middle School in Broomfield, Colo.

6 On a spring morning, Hogan had given each of her students a tool kit containing a plastic foam dinner plate, a balloon, a small plastic stirrer straw, a sharp pencil and masking tape.
7 She instructed her young inventors to use the parts in any way they wanted to make racing cars from the foam plates. They also were charged with figuring out how to propel those cars great distances across the floor. The kit’s balloon would be a key component of these “rocket” racers.

8 Kids in many classrooms across the United States are learning science in much the same way. Instead of explaining things to kids from the front of a classroom, teachers are beginning to instead “guide from the side.” They are nudging kids to become Edisons — tinkerers who learn by doing.

9 A big take-home lesson from such projects is that there may be no one single right answer to a problem. There may instead be many. Along the path to discovering this, kids were being encouraged to propose theories — and then test them.

10 Along the way, many students will fail. Often, they’ll fail many times. Perhaps not several thousand times (like Edison). But along the way they may just find out that by analyzing why something went horribly wrong, they’ve learned a lot. And they can take ownership of that learning, knowing that they earned it from hard-won experience.

11 What’s more, the lessons we learn this way are those we are most likely to remember.

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**Fail, fail again . . . fail better**

12 Everyone learns from mistakes. Yet, as obvious as the idea seems, scientists have done little research to measure how making mistakes affects what we learn and how long those lessons stay with us. Some recent research has, however, focused on a related topic. It’s about something known as learning through *inquiry*. From kindergarten through college, this technique is becoming popular. It basically means to learn by doing.

13 Joe Levine is a big supporter of this learning style. A biologist and science teacher, he is an author of one of the most widely used high school biology textbooks.

14 Students learn best by coming up with their own research questions and then testing them, he’s found. What’s more, he adds, students who practice this method in middle school and high school are more likely to continue to study science in college.
Students take the lead

Ellen Granger heads the Office of Science Technology at Florida State University in Tallahassee. She has found that putting students at the center of learning helps science students achieve more. Her 2012 study worked with fourth- and fifth-graders. However, she says, her results should apply to students at any age.

Whether they’re kindergartners or college students, “It doesn’t matter,” Granger says. “We’re finding the same things. . . . When you must do the sense-making, you learn better.” Sense-making? This is a term Granger uses to refer to students who try to personally make sense of a concept or process.

Success requires that you think creatively, not just take things at face value, she says. But you don’t have to go it alone. The approach calls for teachers to offer some guidance. Here, teachers aren’t supposed to tell you how something works. Instead, they should indirectly point the way by offering some careful, thought-provoking questions.

Creativity is full of mistakes

Making mistakes can spark learning and creativity at any age and in any field. First, it takes conquering a significant fear. “Our fear of mistakes has hugely impeded our creativity,” says Margaret Heffernan. She is the author of the 2011 book Willful Blindness: Why We Ignore the Obvious at Our Peril.

“Our very competitive upbringing constrains our ability to do wildly creative work,” she says. “That’s why I’m very interested in people making mistakes and celebrating them.”

Heffernan urges students to value the process of thinking, and not just getting the “right” answer. “Messiness, making mistakes: There’s fantastically rich ground here for creativity and exploration,” she says.

Passage 2
Excerpt from “New Math: Fail + Try Again = Real Learning”
by Susan Moran

Teachers increasingly urge students to risk failing as a route to ultimate success.

Learning from mistakes is hardly a new teaching or life philosophy. A century ago, after five months and more than 9,000 experiments, famed inventor Thomas Edison still wasn’t able to make a new type of storage battery work, according to a 1910 authorized biography. When a colleague pointed out all that effort had failed to yield any results, Edison retorted: “Results! Why, man, I have gotten a lot of results! I know several thousand things that won’t work.”

That adage is as enduring in the humanities as it is in science. Irish playwright and novelist Samuel Becket, who died in 1989, said: “Ever tried. Ever failed. No matter. Try again. Fail again. Fail better.”

To grow, accept failure

Although it seems axiomatic that we learn and grow through trial and error, few studies have looked specifically at how making mistakes affects a student’s ability to learn. Even so, a teaching approach that embraces this style of learning has been gaining traction in K–12 and university curricula. It’s called inquiry-based learning, which basically means that students uncover knowledge by themselves. It is also sometimes called problem- or discovery-based learning.

At the forefront of the movement to spread inquiry-based learning is Mary Walker, a clinical professor in the natural sciences at the University of Texas at Austin. She also is associate director of the UTeach program there.

“If you’re engaged in a hard problem, you’re developing an attitude that failure is okay,” says Walker. “Accepting failure helps you learn,” she notes. Moreover, you’re learning by working together.

Don’t assume failing is the same as falling
More data have emerged about student-centered instruction. As Walker suggests, the technique often goes hand-in-hand with inquiry-based learning. Students often teach and mentor one another.

Ellen Granger, who heads the Office of Science Teaching Activities at Florida State University (which has its own UTeach program), published one such study in 2012. It compared how student-centered versus teacher-centered approaches affected fourth- and fifth-grade students’ understanding of space-science concepts. The researchers found that learning outcomes were higher for students who enrolled in science classes that take a student-centered approach. Some of these effects were both significant and persistent. For instance, her team measured a positive influence on scores for tests administered 5.5 months after the original instruction.

Granger’s subjects were fourth and fifth graders. But taken together with other studies on student learning, she says, the results appear to apply to all students — from kindergarten through college. “It doesn’t matter whether we’re talking about K-5, 9-12 or undergraduates,” she says. “We’re finding the same things. . . . When you must do the sense-making, you learn better.”

By sense-making, she means that the students must actively engage in making sense of a concept or process. Teachers should not just explain how something works. Their students must instead attempt to think critically, guided by a teacher’s careful questioning. An added bonus: Students seem to take pride in figuring things out by themselves.

Biologist and science educator Joseph Levine co-authored Biology, a widely used high school textbook. This educator at the Museum Institute for Teaching Science at the Marine Biological Laboratory, in Woods Hole, Mass., also is trying to put inquiry-based learning into practice. His tactic: Enticing teachers to leave their classrooms for some time out in the field. Along with colleague Barbara Bentley, the two take teachers to the tropical forests of Costa Rica for two weeks of professional training. Their goal: Inspire the instructors to teach more hands-on practices.

“Science is always dynamic and changing,” says Levine. It’s much more complicated than any simple cookbook experiment, he maintains. “Students come up with their own questions and test their hypotheses using data. It creates lots of opportunities for making mistakes.”
Writing Prompt

“Results? Why, man, I have gotten a lot of results! I know several thousand things that won’t work!” — Thomas Edison

How does Thomas Edison’s statement and attitude support the idea of student-centered learning? Write an explanatory essay answering this question. Develop your essay using clear and relevant evidence from both passages.

Manage your time carefully so that you can

- Plan your essay and do some prewriting in the space provided
- Write your essay on the lined pages of your answer document

Your written response should be in the form of a multi-paragraph essay.

Write your response to the writing prompt in the space provided in your answer document.
Read the passages and write a response to the writing task.

Passage 1

Embarrassed? Blame Your Brain

by Jennifer Connor-Smith

1. Remember when you could pick your nose in public or run outside in your underpants without a second thought? These days, you flood with embarrassment if your dad sings in front of your friends or you drop a tray in the cafeteria.

2. What changed? Not the rules about nose picking or your father’s singing voice, but your brain.

It’s All in Your Head

3. Sometime during middle school, changes in brain activity transform how we see the world. Spending time with other kids becomes a top priority. Hormones power up the brain’s reward system, making hanging out with friends more fun than ever before. But these changes come with a down side. Fitting in becomes essential. Threat-detection systems focus on what other people think and scan for any hints of disapproval. Hormones push the brain’s shame and self-consciousness systems into overdrive.
Because of these brain changes, teens start reacting more strongly to social problems. Scientists don’t know this just from surviving middle school — they have evidence from laboratory research. During a challenge like giving a speech, teens release more stress hormones and have higher blood pressure than kids or adults. Teens don’t even have to tackle a challenge to feel stressed. Even being watched over a video monitor makes teens sweat more than adults.

**Words Do Hurt Like Sticks and Stones**

Why do we use pain words, like “hurt feelings” and “broken hearted,” to talk about problems with other people? Maybe because our brains react to physical pain and social rejection in the same way. Psychologists explore this connection between physical and social pain by measuring brain activity while people play a computer game called Cyberball.

In Cyberball, research participants play a game of catch online with two other players. At least, that’s what they believe is happening. In reality, the other “players” are fake, just part of the game’s programming. The game starts fair, with the players programmed to share the ball with the research participant. Then, with no warning, the players start throwing the ball only to each other, leaving the research participant out completely.

No big surprise — teens in these Cyberball experiments feel sad and rejected. The surprising part? Rejection activates the same brain systems that physical pain triggers. Brain scans show that rejection fires up the “Ow!” part of our brain that makes pain upsetting. Without this pain-response system, we would recognize physical pain, but it wouldn’t bother us. This physical pain system also responds to many kinds of social pain, like thinking about a breakup or being called boring.

Some people have especially reactive pain-response systems. A stronger “Ow!” brain response in the lab translates to people feeling more rejected, self-conscious, and sad in real life. Differences in pain-system reactivity may help explain why rejection hurts teenagers more than young kids. In Cyberball experiments
Embarrassed? Blame Your Brain” by Jennifer Connor-Smith, from *Odyssey* magazine. Published by Carus Publishing Company. Copyright © 2015 by Cricket Media.

Embarrassment Has an Unfair Advantage

Our thoughts and feelings depend on the balance between many different brain systems. Activity in one system can amplify or cancel out activity in another. Because our brains take more than two decades to develop, some brain systems come online sooner than others. Unfortunately, the systems that trigger embarrassment and fear of rejection fire up years before the systems that tame bad feelings.

Imagine a tug-of-war with fear of rejection, the desire to fit in, and self-consciousness all pulling on the same side. With nothing pulling against them, they easily drag in all sorts of bad feelings. This imbalance means even small problems, like tripping in the hallway, can trigger a wave of embarrassment.

Brain scans reveal that adults unleash a powerful defender to pull the brain back into balance. Adult brains quickly fire up systems to soothe anxiety and generate positive thoughts. These systems help balance out concern about what other people think, so adults feel less hurt and embarrassed by rejection.

Wouldn’t it be better if we could just turn off hurt feelings, embarrassment, and the desire to fit in? Probably not. Before modern society, people needed to belong to a group to survive. Without a group, people couldn’t find enough food or protect themselves. Fear of rejection forced people to behave well enough for the community to keep them around.

Our lives don’t depend on social acceptance anymore, but social pain is still helpful. Fear of rejection pulls on the right side in the tug-of-war against mean or selfish behavior. Shame punishes us for lying or cheating, even if we don’t get caught. Social pain hurts, but it also makes us nicer. Brain scans show that teens with strong pain-response systems give more support to other kids.

Unfortunately, knowing the benefits of social pain won’t save you from a flash of humiliation when your mom reminds you to take a “potty break” in front of your friends. But you can take comfort in reminding yourself that the pain makes you a better person. Maybe even one less likely to embarrass your own kids someday.
Passage 2

Use It or Lose It: A Good Brain Pruning

by Laura K. Zimmermann

15 WARNING! As you read this, parts of your brain are disappearing. On the plus side, other parts of your brain, like the ones you are using to read this, are getting stronger. It’s a competition for survival, and the main players are neurons. Neurons are brain cells that process information by communicating with other neurons. Many have branches like a tree, with shorter “tree-top” branches that receive messages and a long branch, the “tree trunk,” that sends them. Whenever you experience something, neurons start sending messages to each other. Different experiences activate connections between different neurons, creating networks. And it is these networks that are responsible for what we sense, think, feel, and do. Or more precisely, networks whose connections survive are responsible. Other connections disappear.

Brutal but Necessary

16 When we are young we have way more connections between our neurons than we need. These extra connections are there, ready to be used to build networks for the things we experience. And if you experience the same things over and over, like when you practice doing math problems, playing an instrument, or your backhand swing in tennis, the stronger the networks related to these skills become. Over time the connections between the neurons we use more frequently are kept and the others are pruned away, much like the pruning of a tree. It’s a dog-eat-dog world up there in your brain — you use it or you lose it.
17 But brutal though it may be, the pruning process is important too, because pruning allows your brain to become increasingly more specialized so that you are better at the skills and information you use. Look at it this way: Is it more important to be able to distinguish the sounds of every language in the world, or to learn the language your family and friends use? Because as a newborn you actually could perceive all of the world’s language sounds, but that ability was pruned away long ago when you began to specialize in the languages used by the people around you.

Pruning the Teen Brain

18 Researchers used to think the pruning process slowed down after early childhood. They were wrong. Extra connections continue forming in different parts of the brain through the early teen years, with a second major pruning of these connections in later adolescence. So what does this mean for the teen brain? It is likely that, as in childhood, the extra connections set the stage for the pruning process that helps our brain become more efficient at processing the information we take in. But there are still many questions. For example, does having extra connections available help teens pick up new information and skills more easily? Are there times in adolescence when some things are easier to learn than others? There is still much to discover about what a good brain pruning in the teen years can do.

"Use It or Lose It” by Laura K. Zimmermann, from Odyssey magazine. Published by Carus Publishing Company. Copyright © 2015 by Cricket Media.

Writing Prompt

Each text discusses a different relationship between behavior and the brain. Write an essay explaining these relationships and how they are different from each other. Develop your essay by providing clear details and relevant evidence from both passages.

Manage your time carefully so that you can

- Plan your essay and do some prewriting in the space provided
- Write your essay on the lined pages of your answer document

Your written response should be in the form of a multi-paragraph essay.

Write your response to the writing prompt in the space provided in your answer document.
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