

Student Name _____ Grade & Team _____

What Exploratory Class are you in? (Circle One)

Agriculture, Art, Band, Choir, Health, P.E.,

NTI DAY #8

(weather-closed school day)

PACKET EIGHT

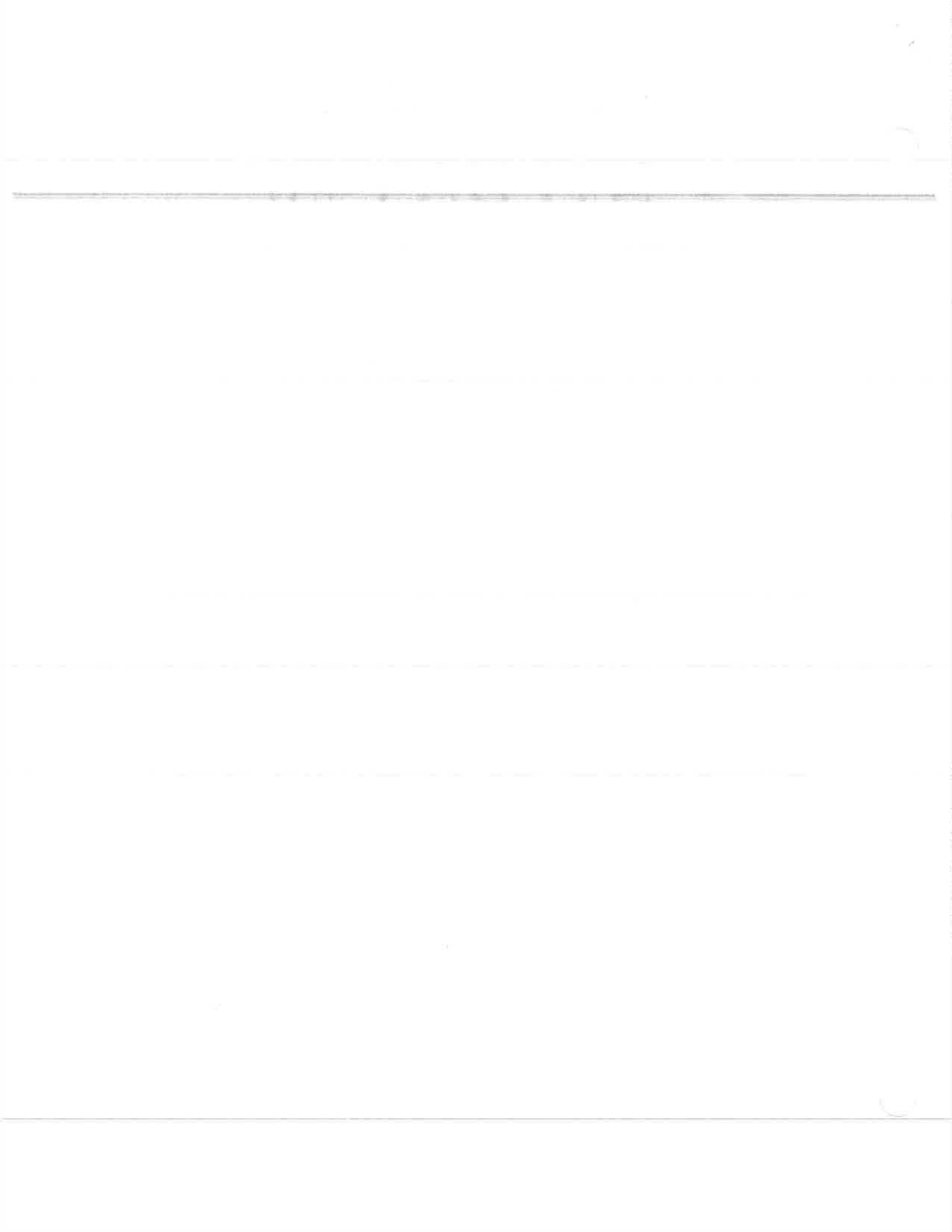
(Agriculture, Art, Music)

Please note: All parts of THIS packet are to be done regardless of what Explore class (or if student is in band) your student has.

General Directions:

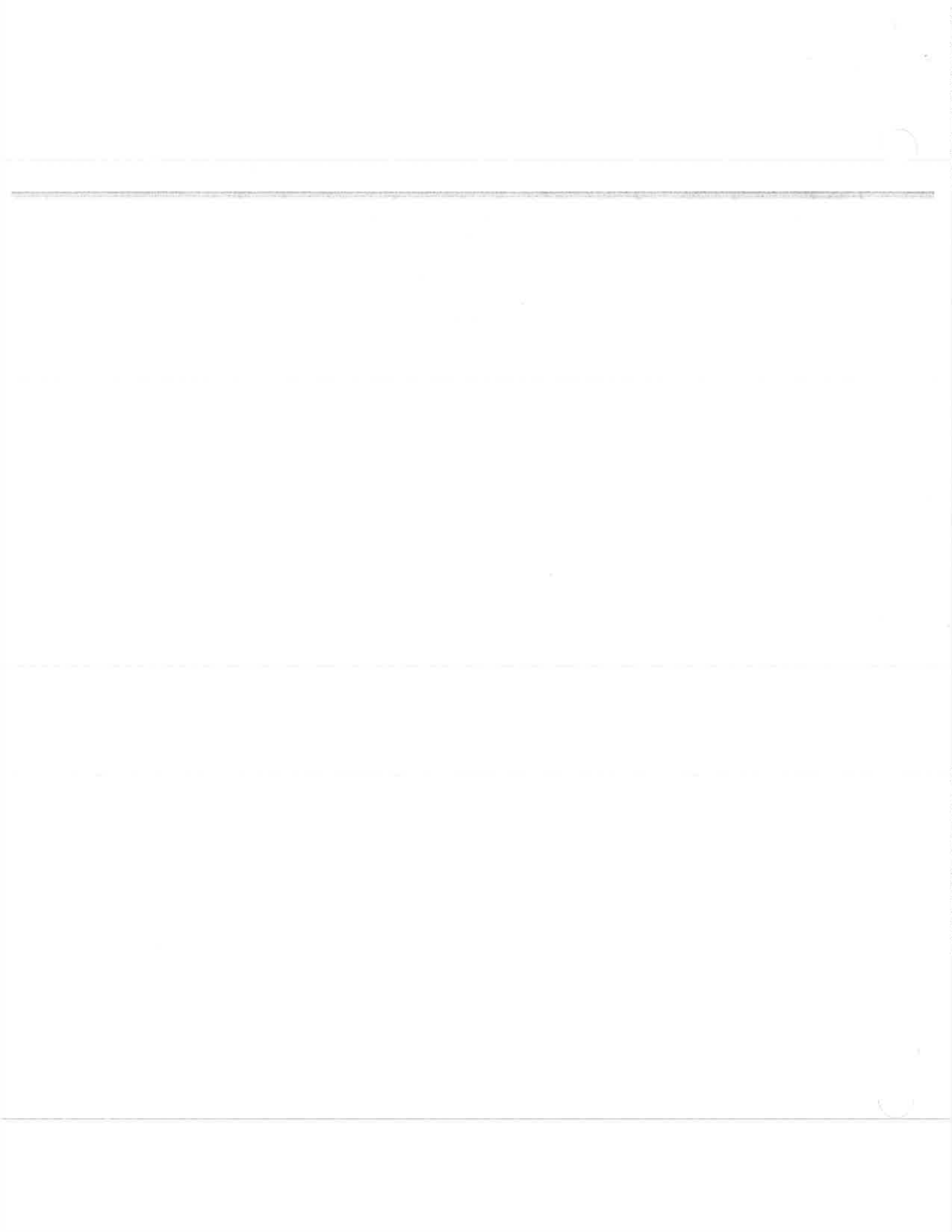
Due to weather, Harrison County Schools are closed. In an effort to utilize this day on the school calendar, your child is assigned and should work on this "packet" of school work today. It will count as a grade for this subject. The work attached is specific to the subject listed above. Please contact your child's teacher of this subject at 234-7123 in the event you/your student have questions on this packet. Staff and teachers reported to HCMS today and are available should you have questions.

While this is DUE no later than the last school day before the 3rd nine-weeks ends, we **strongly encourage** students to turn it in to their teacher as soon as it's complete (soon after the NTI day) to avoid it being lost, eaten by the family pet, burned to keep warm, etc ☺



Directions:

Read the passages for all classes. As you complete each passage, circle the answer that best answers each question.



This article was modified to shorten it. Please use the web link below if you would like to learn more about honey bees and how they are disappearing. The paragraphs are numbered so that you can provide evidence of where you found your answer within the article to the multiple choice questions at the end.

Why are bees vanishing?

Scientists find a combination of threats may explain declining honeybee populations

[HTTPS://WWW.SCIENCENEWSFORSTUDENTS.ORG/ARTICLE/WHY-ARE-BEES-VANISHING-PESTICIDES-DISEASE-OTHER-THREATS](https://www.sciencenewsforstudents.org/article/why-are-bees-vanishing-pesticides-disease-other-threats)

ALISON PEARCE STEVENS

JAN 10, 2014 — 9:39 AM EST

Pesticides, pollution, parasites, infections and other threats continue to threaten colonies of honeybees worldwide. In the United States, up to one-third of commercial honeybee colonies vanish each year. That loss harms farmers, who rely on honeybees to pollinate many important crops.

COURTESY OF CHRISTOPHER CONNOLLY, UNIVERSITY OF DUNDEE



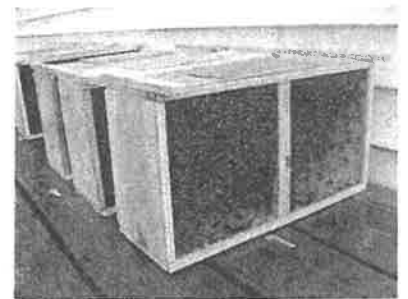
1) The post office is buzzing as package after package of honeybees await delivery to their new homes. The tiny hooked feet of some worker bees cling to the screens on the sides of each wooden case. Other worker bees huddle around a small central cage containing their queen.

2) Sorting and delivering packages of live honeybees isn't the favorite task of postal workers. Still, it is a job they have to handle more and more often. That's because beekeepers in the United States and Europe have been losing bees to a mysterious condition known as colony collapse disorder, or CCD. Each mail-order package contains the seed of a new honeybee colony to replace one that has vanished.

"The bees appear fine in the fall," says Michael Breed, a honeybee researcher at the University of Colorado at Boulder. "Then by mid-spring they're simply gone."

Packages of bees await new homes. The bees stay close to their queen, held in a small cage of her own in the center of the wooden case.

COURTESY OF ERIC SMITH, BEEKEEPERS OF THE SUSQUEHANNA VALLEY



3) Breed has been working with these insects for 35 years. He has always ordered a few new bee colonies each spring. But since CCD began affecting the bees, he has had to order more and more each year. Before 2005, he never had a colony of bees simply disappear. Lately, it seems to happen all of the time. And when his colonies collapse, so do those maintained by neighboring beekeepers. The Northern Colorado Beekeepers Association now trucks in hundreds of packages of bees each spring to replace those that have vanished. Across the United States, up to one-third of the colonies kept by commercial beekeepers collapse each year, according to government surveys.

4) Exactly what's causing CCD remains a mystery. Among the early suspects: parasites that infiltrate the hives, especially the bloodsucking *Varroa* (Vuh ROW uh) mite. Later, some scientists found evidence that assigned the blame to certain pesticides. Other biologists have linked the problem to infections, including some caused by viruses.

5) Scientists now suspect all three — parasites, pesticides and infections — combine to deliver a triple whammy. Pesticides first may weaken the bees. That leaves the insects too weak to survive diseases and pests that otherwise would not kill them. Earth's changing climate worsens things, Breed notes. A changing climate can bring droughts or flooding that affect the availability of flowers on which bees depend. This makes bees more vulnerable than ever.

6) Even these threats may not capture the whole picture. Worker bees do many jobs in the hive: Nurse bees tend larvae. Forager bees gather food. A small number of guard bees protect the hive entrance from honey thieves. And some bees patrol the hive, scouting for sick and dying bees. These "undertaker" bees cart off the dead, dropping their bodies outside the hive. If the insects were just becoming deathly ill, beekeepers should find the evidence near the hive. The bees wouldn't just vanish.

But they have been.

More than just honey

7) Losing honeybees means more than just a world without honey. These insects play a major role in producing all kinds of foods, including berries, apples, almonds, melons, kiwis, cashews and cucumbers. That's because honeybees move pollen between flowers. This fertilizes plants. Without this pollination, many plants won't produce fruit. Bees also pollinate crops used to feed livestock. Fewer bees could therefore mean less of many different foods at the grocery store, including meat and dairy.

8) Pollination is so important that many farmers rent bees. Once crops start blooming, beekeepers truck in commercial hives to let the bees do their work. In agricultural states such as California, vanishing honeybee colonies may pose a serious threat to crop fertilization and the food supply.

9) However, research by Rachael Winfree suggests that disappearing honeybees might not hurt all farmers equally. An ecologist, she works at Rutgers University in New Brunswick, N.J. In her state, farmland is often located near habitats that support other, wild pollinators.

10) Fruit plants visited by a diverse mix of pollinators produce more fruit than those visited by just a few species, Winfree has found. Particularly important are wild bees. These are the natives that beekeepers can't control. Some wild bees will even pollinate flowers that honeybees can't. A bumblebee's vibrating belly, for example, does a better job than honeybees of pollinating cherry tomatoes.

Nor are bees the only pollinators. Some moths, bats and other critters help move pollen as well.



A pair of long-horned bees forage on a sunflower. These native bees are common in Idaho and surrounding states. Little is known about their nesting habits, but they are important pollinators of native plants.

COURTESY OF RICH HATFIELD, XERCES SOCIETY

Other bees not safe from pollution

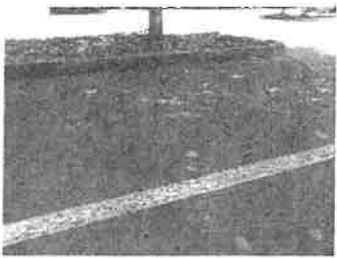
11) The world is home to more than 20,000 species of bees. North America alone boasts about 4,000. Those species of native bees all pollinate plants. However, none of the world's seven honeybee species come from North America. Those now found there originally came from Europe: Settlers brought them in the 1600s to guarantee a source of wax and honey.

12) Of course, native bees face pesticides, diseases and other pressures too. The fate of these wild bees remains largely unknown. Certainly, many native bees encounter widely used pesticides, including neonicotinoids. If bumblebees reflect the risks faced by North America's other native bees, then "many species might be declining," Winfree says.

13) In June, for instance, bumblebees rained out of flowering trees at a parking lot in Wilsonville, Ore. Rich Hatfield investigated. He's a biologist with the Xerces (ZER sees) Society. His group is dedicated to protecting bees and their relatives. What Hatfield found shocked him. "I walked into a parking lot littered with dead bodies," he recalls.

14) The trees had been sprayed with a neonicotinoid pesticide, he learned. Hatfield estimates that more than 50,000 bumblebees died in just this one incident. That's as many bees as live in about 300 colonies, he says.

15) Bumblebees are even more susceptible to neonics than honeybees, Connolly has found. That likely explains why only bumblebees died in the Wilsonville incident. Still, all bee brains have mushroom bodies with cells that can be overwhelmed by the noise induced by neonics.



Treating trees with a neonicotinoid pesticide led to the deaths in June of an estimated 50,000 bumblebees in Wilsonville, Ore.

COURTESY OF RICH HATFIELD, XERCES SOCIETY

These pesticides represent just a small share of the many types sprayed on crops, flowers and other plants.

16) Even chemicals not intended for plant use can harm bees if flowering plants are located nearby. In September, for example, several honeybee colonies died in Minneapolis, Minn., after being exposed to the pesticide fipronil. Experts at the University of Minnesota believe the chemical was applied to the foundation of a building. The chemical appears to have tainted nearby plants that had been blooming.

17) How such chemicals affect bumblebees and other native bees remains unknown, says Connolly. How harmful other chemicals might be to their brains may vary widely, he says.

18) The vast majority of native bees are solitary. That means they don't live in colonies. That makes them harder to study. Yet scientists know that even solitary bees need to navigate. They need to remember where the food is. And females need to find their nests so that they can supply their young with food. Lost or confused native bees may mean fewer and fewer bees over time. That would mean less diversity in the animals available to pollinate crops. And as Winfree's work suggests, that too might diminish our food supply.



Hatfield_greensweatbee.jpg: A green sweat bee dines on nectar. In addition to pollinating wildflowers, these tiny native bees seek out salts by drinking sweat from perspiring people.

COURTESY OF RICH HATFIELD, XERCES SOCIETY

Recommendations

19) While scientists search for pesticides that are safe for wildlife, people *and* bees, the rest of us can support bees at home — even in the middle of a city.

20) All four researchers suggest planting native flowers and leaving untended areas in our yards and gardens. Native bees readily nest in such areas. That helps ensure more pollinators will be around the next year. The experts all recommend avoiding the use of pesticides around our homes. The best way to do this is by using integrated pest management. This approach can be effective and good for the environment. (Click on the explainer box above to learn more.)

21) Pesticides won't go away completely. They ensure that pests won't destroy the crops on which people depend for food. But, "killing bees and other insects is not justified just to have pretty flowers," Connolly argues. Allowing insects to eat our garden plants can provide them with a lifeline. And that lifeline might also extend to us, if it helps protect the pollinators on which our food supply depends.

22) Power Words

colony A group of organisms that live close together or share a home (such as a hive or other nest site).

herbicide A chemical used to kill weeds.

honeybee A stinging, winged insect that collects nectar and pollen, and produces wax and honey. Honeybees live in large groups called colonies. Each colony consists of a queen, who lays all eggs, and her offspring. These consist of male drones, but mostly large cadres of female "worker" bees that attend to the hive and its inhabitants and forage for food.

insecticide A chemical used to kill insects.

mite A small, eight-legged creature related to spiders and ticks. It is not an insect.

mushroom body The part of a bee's brain involved in learning, memory and navigation.

native (in ecology) An organism that evolved in a particular area and continues to live there.

navigate To find one's way between two points.

neonicotinoids A class of insecticides usually applied to target pests such as aphids, whiteflies and some beetles. These insecticides, called neonics for short, can also poison bees.

pesticide A chemical or mix of compounds used to kill insects, rodents or other organisms harmful to cultivated plants, pet or livestock, or that infest homes, offices, farm buildings and other protected structures.

pollinate To transport male reproductive cells — pollen — to female parts of a flower. This allows fertilization, the first step in plant reproduction.

pollinator An animal that transfers pollen from one flower to another, allowing the plant to grow fruit and seeds.

solitary Living alone.

Multiple Choice

Directions: Read the questions below and answer them using the article. Provide evidence of where you found your answers within the article by writing the number paragraph in the blank next to the question.

1. What does the condition CCD stand for? _____
 - A. Complex Command Disorder
 - B. Colony Collapse Disorder
 - C. Circle Colony Disadvantage
 - D. Color Coice Disorder
2. How do Beekeepers replace those colonies or hives that have disappeared?
 - A. They set traps to catch new bees
 - B. They split their old hives
 - C. They order them from other Beekeepers and are delivered by mail
 - D. They send out smoke signals for bees to come set up a hive
3. Which of the following is not a suspected reason for CCD in beehives?
 - A. Bears
 - B. Parasites
 - C. Pesticides
 - D. Infections such as viruses
4. If the bees were becoming ill in the hive, what kind of evidence would the “undertaker” bees leave to support this theory?
 - A. The bees would seal off any entrances
 - B. The bees would attach themselves to the outside of the hive
 - C. They would find the dead bodies outside of the hive on the ground
 - D. The bees would fly in odd patterns

5. We worry about our honey supply when we think of bee loss but overall which of the following foods that are found in the grocery store is affected by pollinators such as bees?
- A. Vegetables and fruits products
 - B. Beef products
 - C. Dairy products
 - D. All of the above products
-
6. Big fruit producers can have a major issue with not having the bees to pollinate their flowers. What do these producers do during the blooming season to compensate for the shortage of natural bees?
- A. They bait for the bees to come to their farms
 - B. They pollinate their food crops by hand
 - C. They set up big fans to blow pollen everywhere
 - D. They can rent bees from beekeepers
7. How many different species of bees are found in North America alone?
- A. 20,000
 - B. 10,000
 - C. 4,000
 - D. 100
8. Where did the seven honeybee species come from if they were not in North America originally?
- A. From Europe as settlers brought them to have wax and honey
 - B. From South America as they migrated and liked the cooler climate
 - C. From Australia when tourists brought them as pets
 - D. From China as a biological attack pest to house flies
9. The vast majority of native bees are solitary. What does solitary mean?
- A. They can find their way back home
 - B. They live alone
 - C. They live together in hives
 - D. They produce their own food
10. Which of the following is not a recommendation for helping save or bees?
- A. Planting native flowers
 - B. Leaving untended areas in yards and gardens
 - C. Using integrated pest management for controlling pests
 - D. Feeding the bees antibiotics

End Note: Honey bees are vital to our very existence. Think of our food supply and how the Agriculture Industry works so hard to provide that for you and your family. Please think of our honey bees as one of the hardest working links in that process. Maybe some of us will consider building a hive of our own to help increase the dwindling population. Do what you can to protect our best pollinators.

In Art Class

by ReadWorks

When Kylie was twelve, she started taking classes at Miss Grace's School for Art. She didn't like it at first: it smelled bad from all the acrylic paint, and Miss Grace was very demanding when it came to homework and being on time. Kylie's mom, if she was ever late dropping her off at Miss Grace's apartment after school, would grumble that *they* were paying *her*, and she needed to calm down. On top of all that, the "novice artists"-the kids who hadn't really done art before-worked mostly with clay, and Kylie quickly learned that she was a terrible sculptor.

It wasn't until her third year working with Miss Grace that Kylie found something she was really good at. Charcoal drawing came easily to Kylie, and she loved watching the lines spread unevenly across the page as she moved the bits of charcoal back and forth over the paper. The black shadowing Kylie could add to faces in order to give them depth and feeling felt real through the threads of rough charcoal that shaded and formed the portraits Kylie completed in Miss Grace's drawing class.

One day, Sophia, the best artist in the school, sat down and set up her easel next to Kylie's usual spot in the room.

Kylie was washing her hands in the sink in the corner and turned to see Sophia sitting primly next to her stuff. Kylie groaned and felt nerves beginning to bubble in her stomach. She'd actually found an art form that she enjoyed-and was good at-and now Sophia was going to outshine her *again*? Kylie fought back tears as she dried her hands and hurried to her seat when Miss Grace entered the room.

"Hello class," she said, taking her place at the front of the makeshift classroom and leaning one hand on the large wooden desk.

"Hello, Miss Grace," everyone in the room said in unison.

"We'll continue to work on the projects we began last week," Miss Grace said, walking around the classroom, weaving between students and their easels, gesturing with one hand imperiously. "Charcoal drawing. A perfectly adequate precursor to more sophisticated and elegant forms of visual art, but one that we must necessarily take some time with as we continue to learn the fine art of shading, shading, shading." The class was silent, watching Miss Grace move around the room as if she were a ballerina, twirling around students in a forward flow of movement.

"Please take your charcoal drawings from the closet," she said, "and continue. Please maintain the same themes you were working on during the previous lesson, and let me know if you have any questions or concerns."

Everyone's chairs scraped as they pushed away from their easels and went to the closet to pick out their charcoal drawings from a large pile on the second shelf. Kylie had already picked up her drawing and was now sitting miserably at her easel, staring at the paper pinned to the wood easel. What masterpiece would Sophia have come up with for today? Sophia returned to her seat and smiled nervously at Kylie. "I like your drawing," she said, pointing to the outlines of a face of a young girl on Kylie's easel.

Kylie blushed and mumbled. "Thanks."

Sophia slowly pinned her drawing to her easel, and Kylie couldn't help it-she gasped. It appeared that Sophia had been plagued by indecision, something with which Kylie could definitely sympathize. Sophia had clearly tried to draw a landscape scene, botched the river, then tried to turn it into a boat sitting upside down in a meadow. It was a mess.

For a brief moment, Kylie felt victorious-she couldn't actually believe her drawing was better than Sophia's. But then she looked at Sophia, who was watching Kylie with an anxious expression on her deeply flushed face.

"I... I couldn't decide what to do," Sophia said defensively.

"Yeah," Kylie said. She turned back to her drawing, gazing at the shading around the eyes appreciatively. Sophia looked at her own failed landscape, and a very awkward silence developed in the space between their seats.

"I've totally been there," Kylie said. She didn't look at Sophia, and she wasn't sure why she'd said it. Why did she need to comfort the most talented girl in the class just because she'd made one terrible drawing? Kylie had a dozen bad drawings stuffed in a box under her bed.

But Sophia smiled gratefully. "That's really nice of you to say," she said, scooting her chair closer to Kylie's. "You're so good, sometimes I feel like my stuff is just so *bad* in comparison."

Kylie laughed and looked to see if Sophia was joking, but she seemed completely serious. Now Kylie was shocked. "What are you talking about?" she said. "I'm not talented... Miss Grace never compliments me. You're the best one in our class!"

Sophia raised her eyebrows a little bit. "I might be a really good copier of all the stuff that Miss Grace wants us to draw, but I have no idea what to do when it comes to making up my own images. You're so wonderful at that!"

Kylie felt her heart pound. She could barely believe what she was hearing. Throughout her three years at Miss Grace's, she had made up her own pictures, going off into the world in her head and drawing whatever she found there. Miss Grace never said anything about it but had always pointed to Sophia's perfect pastel, watercolor, and crayon replicas of the famous works of art she pinned to the front of the classroom during each session. Kylie always seemed to see the masterpieces that Miss Grace loved so much distorted or twisted; the colors off, or the shapes switched around.

"Seriously," Sophia whispered, leaning close to Kylie. "You are so great at making new things out of the old stuff we have to look at."

"I never thought about it that way," Kylie said slowly.

Sophia smiled. "I can't believe we're having this conversation!" she said. "I've loved your work for two years."

"I've loved yours, too," Kylie said.

Sophia laughed. "Well, definitely not this one," she said.

"Aww," Kylie grinned. "Maybe not right now. But if you move this line up in a diagonal, like this," she

said, pointing her finger in a swoop on Sophia's paper, "and build on the highlights of cloud shapes you already have, you can turn the boat into a cluster of rose bushes and the rest of the river into a forest."

Sophia was quiet for a moment, and Kylie was nervous she had offended her. "That's a great idea!" she said finally. "Thank you so much."

Kylie smiled and turned back to her drawing, looking every so often at Sophia's work to see that she was taking her advice, down to the last linear swoop.

Name: _____ Date: _____

1. What kind of classes does Kylie start taking when she is twelve?

- A. music classes
- B. dance classes
- C. art classes
- D. theater classes

2. What is a turning point in this story?

- A. Miss Grace says that charcoal drawing is "a perfectly adequate precursor to more sophisticated and elegant forms of visual art."
- B. Kylie sees that Sophia's drawing is a mess.
- C. Kylie starts taking classes at Miss Grace's School for Art.
- D. Kylie sits miserably at her easel.

3. Read these sentences from the text.

Kylie was washing her hands in the sink in the corner and turned to see Sophia sitting primly next to her stuff. Kylie groaned and felt nerves beginning to bubble in her stomach. She'd actually found an art form that she enjoyed-and was good at-and now Sophia was going to outshine her again? Kylie fought back tears as she dried her hands and hurried to her seat when Miss Grace entered the room.

Based on this information, what can you conclude about Kylie's feelings at this point in the story?

- A. Kylie feels curious and adventurous.
- B. Kylie feels calm and confident.
- C. Kylie feels nervous and upset.
- D. Kylie feels proud and triumphant.

4. Sophia's drawing is described in the story as "a mess." What information in the text best supports this description?

- A. "For a brief moment, Kylie felt victorious-she couldn't actually believe her drawing was better than Sophia's."
- B. "'Seriously,' Sophia whispered, leaning close to Kylie. 'You are so great at making new things out of the old stuff we have to look at.'"
- C. "Sophia was quiet for a moment, and Kylie was nervous she had offended her."
- D. "Sophia had clearly tried to draw a landscape scene, botched the river, then tried to turn it into a boat sitting upside down in a meadow."

5. What is a theme of this story?

- A. You may be more talented than you think you are.
- B. Art is more important than friendship.
- C. Not everyone has what it takes to be an artist.
- D. Friendship is more important than art.

6. Read these sentences from the text.

'I've totally been there,' Kylie said. She didn't look at Sophia, and she wasn't sure why she'd said it. Why did she need to comfort the most talented girl in the class just because she'd made one terrible drawing?

Why might the author have asked the question that starts, "Why did she need to comfort..."?

- A. to encourage readers to think about the theme of the story
- B. to show readers what Kylie is thinking
- C. to show readers what Sophia is thinking
- D. to encourage readers to reread the previous paragraph

7. In the first paragraph we read that the “novice artists” work with clay. As mentioned later in the paragraph, which form of art would one create from clay?

- A. Drawing
- B. Sculpture
- C. Painting
- D. Weaving

8. In her third year working with Miss Grace, Kylie found that she was good with which of the following media?

- A. Pastel
- B. Glass
- C. Charcoal
- D. Graphite

9. In paragraph two it is mentioned that Kylie adds black shadowing to faces to create added depth to her works. As noted in this same paragraph, these images of faces are referred as which of the following.

- A. Landscapes
- B. Still Life
- C. Abstract Art
- D. Portrait

10. From this passage we learn that which of the following does Sophia most admire about Kylie’s art works?

- A. Skill with the media
- B. Imagination and using images from her head
- C. Ability to copy an image seen in the classroom
- D. Applying layers of charcoal over and over

Music and Your Mind

by Debbie Nevins, Kirsten Weir

Music

Listen up! Music has you in its power-physically and mentally.

New Orleans resident Ashton C., 13, likes to rock out. When he's not practicing guitar or drums, he's often listening to Led Zeppelin, AC/DC, or The Beatles. "I listen to the music over and over and just let it get into my system," he says.

Ashton is more right than he may know. Music really does get into our systems. It affects us physically-loud music can harm our ears, while soft music can help put us to sleep. And it affects us mentally-music can improve our moods. It can also help us memorize information. Think of the ABC song you learned as a child. There's a good reason the alphabet was made into a song. Without the melodic cue, you would have had a much harder time remembering it.

Music: It's Only Human

Why does music have such power over us? After all, it isn't essential as food, water, and air are. We might enjoy it, but we don't need music to live. Or do we?

Music has been important to people as long as humankind has been around. Scientists have discovered ancient flutes made of animal bones that date to prehistoric times. Some researchers think early humans might have made music even before they developed language and speech.

And music exists everywhere humans do, says Diana Deutsch, an expert in music and memory. "People have not found a culture where there isn't music."

Likewise, you won't find music where there aren't people. Wait-are you wondering about birds? It's true that birdsong sounds musical to our ears. But to the birds, the calls are simply their way of communicating.

In general, all members of a given species make the same sounds. A robin speaks robin. A blackbird speaks blackbird. A sparrow doesn't create its own tone, melody, or pitch. Those chirps, pretty as they are, aren't music.

Only humans make music-it is literally part of us. Our brains are hardwired for it. Scientists don't know why. Perhaps it has to do with music's ability to communicate emotion. Studies have shown that even infants as young as eight months old can tell "happy" music from "sad" music.

Pump It Up, Slow It Down

Music has the power to affect the body. Listening to fast, upbeat songs can make a person's heart rate and breathing rate speed up. That's why fast music is perfect for a workout-as Sarah S., of Deerfield, Ill., knows. "If I have a basketball game, I'll listen to music that will get me pumped up," the 14-year-old says.

Soothing music does the opposite. It brings down heart and breathing rates. Listening to gentle, slow music before bed helps people get a better night's sleep. Music can even reduce pain and depression.

A Sound Track in Your Mind

As the ABC song shows, music is tied to memory. One study in China found that kids who took lessons on musical instruments did better on certain memory tests than kids who didn't play instruments.

And if the sound of an organ playing reminds you of that time your Uncle Mike took you to a big-league baseball game, you know how powerfully music can trigger memories-sometimes even long-lost ones.

"What seems to happen is that a piece of familiar music serves as a sound track for a mental movie that starts playing in our head," says Petr Janata. He is a scientist who studies music and the brain. "It calls back memories of a particular person or place, and you might all of a sudden see that person's face in your mind's eye."

Scientists are trying to solve the mystery of music's power. They are working to piece together a picture of what happens in the brain when people listen to or play music. So far, they know there's no one music center in our heads-music activates many areas of the brain.

Right now, while your brain is still growing, music plays an important role. Catriona Morrison, a researcher with the University of Leeds in England, found that music leaves its most lasting impression on people around age 14. And the songs you listen to in your teens will probably influence the type of music you listen to for the rest of your life.

Attack of the Earworms



Do songs ever get "stuck in your head"? Those tunes have a name: earworms.

What makes certain jingles so catchy? Nobody knows for

Getty Images

sure, but James Kellaris-also known as "Dr. Earworm"-is trying to find out. Kellaris is a researcher at the University of Cincinnati. He says that almost any song can become an earworm. But simple, repetitive, or surprising songs are the usual culprits.

Kellaris says earworms are more likely to strike if you're stressed or fatigued. So play some calming tunes and get a good night's rest-or you might wake up with a tune such as Subway's "\$5 Footlong" song playing on an endless loop in

your head!

What's Your Earworm?

Kellaris says some songs, such as "Y.M.C.A.," are common earworms. Sarah S. says she gets jingles from TV commercials stuck in her head. Ashton C. says the singer Lady Gaga is responsible for some of his worst earworms. Michael P., 12, of New Jersey gets tunes from *Hannah Montana* commercials lodged in his brain-and he hates that show. Clearly, earworms are all in the ear of the beholder!

Name: _____ Date: _____

1. What is something that only humans make?

- A. sound
- B. music
- C. loud noise
- D. soft noise

2. What is an effect of listening to gentle, slow music before bed?

- A. getting a better night's sleep
- B. falling asleep later than usual
- C. waking up early the next morning
- D. having pleasant, soothing dreams

3. Music has been around as long as humans have.

What evidence in the article supports this statement?

- A. "Scientists have discovered ancient flutes made of animal bones that date to prehistoric times."
- B. "In general, all members of a given species make the same sounds."
- C. "Studies have shown that even infants as young as eight months old can tell 'happy' music from 'sad' music."
- D. "Music has the power to affect the body."

4. What is an example of music affecting people mentally?

- A. Music can make a person's heart rate speed up.
- B. Music can help people memorize information.
- C. Music can harm people's ears.
- D. Music can make a person's breathing rate slow down.

5. What is the main idea of this text?

- A. All members of a given species make the same sounds.
- B. Listening to fast songs can make a person's heart rate speed up.
- C. Music is connected to memory.
- D. Music affects people physically and mentally.

6. Read these sentences from the text.

"Why does music have such power over us? After all, it isn't essential as food, water, and air are. We might enjoy it, but we don't need music to live. Or do we?"

Based on these sentences, what does the word "essential" mean?

- A. strong
- B. unimportant
- C. necessary
- D. enjoyable

7. Choose the answer that best completes the sentence.

There's no one music center in our heads. _____, music activates many areas of the brain.

- A. In particular
- B. On the contrary
- C. Previously
- D. In the end

8. According to the text, what can reduce pain and depression?
- A. Sports
 - B. Laying on a beach
 - C. ~~Eating ice cream~~
 - D. Music
9. The authors state that music can “help us memorize information.” What evidence in the text supports this statement?
- A. Music has been important to people as long as humankind has been around.
 - B. The alphabet was made into a song so people would remember it.
 - C. All members of a given species make the same sound.
 - D. Only humans make music- it is literally part of us.
10. List two reasons that music is important to people?
- A. It reduces pain and depression and helps us memorize things.
 - B. We love to listen and like music.
 - C. We want our favorite artists to win awards.
 - D. Music helps radio and television stations make money. .