Tackling Complexity: Moving Up Levels of Nonfiction
Grade 5: Nonfiction, Unit 2

Readers, today you will read two texts to learn more about scientists at work. Read text 1 and answer question 1. Then read text 2 and answer the remaining question.

1. In the text "Roars, Snorts, and . . . Infrasounds?" what is the relationship between scientists studying infrasounds and scientists saving the elephants? Describe the relationship and your ideas about it. When inferring about relationships within a text, remember to: • write about the major relationships between subtopics or ideas • include your own ideas about interactions between ideas or key concepts • use academic vocabulary. *Inferring within Text/Cohesion*	2. Compare and contrast the two texts. When comparing and contrasting, remember to: • write about how the information in one text was somewhat different (and somewhat the same) as the information in the other text • compare and contrast the texts (or parts of texts) in terms of perspective, craft, and/or structure • think about which author is on which side of the disagreement (when texts contradict each other), and try to figure out why the two authors might each say something different. *Comparing and Contrasting*

Text 1

Roars, Snorts and . . . Infrasounds?

Author's Note: *When I was a child, my parents took me on a safari to see the African forest elephant. Since then, I've loved elephants. Unfortunately, many people do not see elephants like I do. I hope this piece raises awareness about elephants.*

The walk to work isn't easy for Katy Payne and the other scientists.

Every morning, they wade through a swamp, cross a forest, and make their way to a large muddy clearing. It's important for the scientists to arrive early. Within a few hours, the elephants arrive. They gather around to drink the muddy water.

From a high platform, the scientists research the elephants. "We ourselves spend all day there, watching, recording, filming and counting elephants," Payne said. Things can get rough. "The later (and hotter) it gets, the more elephants come, and also the more sweat bees which crawl into our eyes and noses," Payne said.

The scientists spend a lot of time listening. The team uses a special tool called an autonomous recording unit, or ARU, to capture sounds. The ARUs record all the sounds they hear: wind, rain, falling trees, local footsteps and even unwelcome gunshots. They also capture loud elephant calls. These calls are the most common ways elephants talk to each other.

Payne was one of the first scientists to discover that elephants communicate in one other way: through infrasounds. Payne first felt these infrasounds years ago when visiting the elephants at the Washington Park Zoo. She felt the air around her shake. But there was no sound. She was immediately curious.

Payne and her husband studied whale songs for years. Their research about whale songs led to laws to protect whales. She wondered, "Are elephants, like whales, calling to each other with sounds powerful enough for me to feel, but too low for me to hear?" She had to find out. Payne went to Africa to research her questions. Her team put ARUs

under the ground to catch the infrasounds elephants made as they traveled through the earth. It turns out these low sounds can travel up to two and a half miles. They can bend around grass and trees. Elephants use their trunks and ears to send the sounds where they need to go. Scientists say infrasounds are a kind of seismic vibration, almost like a mini-earthquake.

Elephants feel the sounds through special pads in their feet. Unfortunately, the African Forest Elephant is now on the threatened species list. Elephants are losing their land. Today they only live in a few countries. Other people choose to kill elephants for their ivory tusks. Tusks can be sold for a lot of money. Humans are currently the number one threat to forest elephants.

This killing has to stop. Scientists like Payne are doing everything they can to solve these problems. The ARUs are also helping. They capture the sounds made by people who are cutting down trees and people who are hunting or trapping elephants. These recordings have led to more lawbreakers getting caught. Scientists can also play warning infrasounds near villages where lots of people live. These sounds keep elephants away from villages where they might get killed.

Payne is hopeful that all the work her colleagues are doing will make a difference. “May we complete the work, and may it help elephants,” Payne said.

Text 2

Hurricane Hunters: Scientists Flying Right into the Storm

Our first president George Washington kept records of the weather.

Long ago, it was common for presidents to track the weather. Today powerful storms are studied by meteorologists, scientists who study weather full time. Their goal? To save lives!

Buckle Up, and Hold On Tight!

Accurate data is important. The National Hurricane Center sends scientists on planes into hurricanes to gather data. They are called hurricane hunters. They fly straight into a hurricane at 10,000 feet. It's not an enjoyable flight. "A hurricane flight is often more than just a bumpy ride. It can be a slam bang, stomach churning, spine jarring, heaving, yawing, pounding nightmare of a ride with pilots struggling at the controls and meteorologists straining to read their instruments," said meteorologist Al Peterlin. On these important flights, scientists use tools to measure the storm. Their most powerful tool is a dropsonde. At the perfect moment, scientists release the dropsonde into the storm. It has a parachute so it falls slowly. It carries all kinds of important tools. The tools measure temperature, wind speed, and air pressure. The dropsonde sends information back to the National Hurricane Center.

> Did you know that hurricanes have names? Scientists get to name all the hurricanes. They take turns giving the hurricanes male names and female names.

Every Minute Saves Lives

Soon the National Hurricane Center gets the information. It uses the information to create models of where the storm might hit. The National Hurricane Center sends out advisories and alerts to anyone in danger a few

days before the storm.

Hurricanes are serious and deadly. The strongest hurricanes are Category 5 hurricanes. They can destroy cities and towns, and they have winds over 155 miles per hour. More than 2.5 million people have died in disasters in the last 35 years.

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Because of the research meteorologists do, people now get warnings days before hurricanes hit land. If warnings are given earlier, then families have more time to gather together in safe locations. Nursing homes and hospitals can move patients to safer locations. This saves money. It also saves people's lives.

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Scientists still want to get better at predicting storms. They spend all year researching hurricanes. They want to learn all they can. They know that better forecasts will save money and save lives.