

MeTEOR Performance Task

Fifth Grade

English Language Arts
Hunt or Be Hunted

4. What is the main idea of the article? What key ideas help you come to this conclusion?
Fill out the main idea graphic organizer.

Read “Pet snakes from California get loose, eat local animals in Canary Islands” and answer questions 5 – 7.

5. According to the article, what are some of the ways that have been used to control the king snake population?

6. What does “the snake population is going through the roof” mean in the article?

7. What is the main idea of this article? Use the Main Idea graphic organizer.

11. Choose an invasive species and make a poster showcasing the species, its characteristics as well as the devastating effects it is having on the ecosystem. Address what could possibly happen if this species began to run out of food. What could happen (or has happened) when they run out of food? What effects could it have on populated areas? A rubric has been provided to guide you.

12. Irresponsible pet ownership is a common theme from the invasive species in these articles. Create an infographic (individually or as a group) that discourages people from owning exotic pets. You may want to address the care needed, what are the options needed for removal and what effects they would have on a non-native ecosystem. Some research may be needed. A rubric has been provided to guide you.

13. Using all of the information from the articles as well as your research, write an opinion piece about the best way to get rid of invasive species. You will use the Opinion Writing Organizer to help you with your thoughts.

ARTICLES/STUDENT MATERIALS

“What Snakes Can Do”

WEST PALM BEACH, Florida (Achieve3000, February 8, 2013). There is a growing population of huge pythons in the Everglades, an area of wetlands in the southern part of Florida, part of which is set aside as a national park. The pythons appear to be wiping out large numbers of raccoons, opossums, bobcats, and other mammals, a study reported.

The study was published in January 2012. It found that sightings of medium-sized mammals are down dramatically—as much as 99 percent, in some cases. This is happening in areas where pythons and other large, nonnative constrictor snakes are known to exist.

Burmese pythons are fearsome creatures. They can grow to be 26 feet (8 meters) long. They can weigh more than 200 pounds (90 kilograms). They have been known to swallow animals as large as alligators. These pythons are native to Southeast Asia.

Yet thousands of Burmese pythons are believed to be living in the Everglades. It's far from their natural habitat. How did the animals get there? Many of the snakes were pets. When they got too big, they were turned loose by their owners. Others may have escaped from pet shops during Hurricane Andrew in 1992. The snakes thrive in the Everglades. They like the warm, damp climate.

The National Park Service reported that nearly 2,000 Burmese pythons had been caught in and around Everglades National Park since the year 2000. Among the largest was a snake that was 16.4 feet (5 meters) long. It weighed 156 pounds (71 kilograms).

For the study, researchers drove 39,000 miles (62,765 kilometers) along roads in the Everglades from 2003 through 2011. They counted the wildlife spotted along the way. They compared the results with surveys conducted on the same routes in 1996 and 1997.

The researchers found huge declines in animal sightings. There was a 99.3 percent drop in the raccoon population, a 98.9 percent decline for opossums, and an 87.5 percent drop for bobcats. Along roads where python populations are believed to be smaller, declines were lower but still notable.

Rabbits and foxes had been commonly spotted in 1996 and 1997, but they were nowhere to be found in the later counts.

"The magnitude of these declines [highlights] the apparent [large number] of pythons in Everglades National Park," said Michael Dorcas. Dorcas is a lead author of the study.

Scientists cannot say with certainty that the pythons are killing off the mammals. However, the snakes are the prime suspects. The increase in the python population coincides with the mammals' decrease.

Scientists fear the pythons could change the food chain in the Everglades. This could upset the environmental balance there in ways that are difficult to predict.

"The effects of declining mammal populations on the overall Everglades ecosystem, which extends well beyond the national park boundaries, are likely profound," said John Willson. Willson is a research scientist and co-author of the study.

Scientists point with concern to what happened on the island of Guam, in the northern Pacific Ocean. There, the nonnative brown tree snake killed off birds, bats, and lizards that spread seeds for trees and flowers. This led to declines in native trees, fish-eating birds, and certain plants.

Officials are taking steps to control the python population in Florida. The state banned private ownership of the creatures in 2010. In January 2012, U.S. Interior Secretary Ken Salazar announced a federal ban on the import of Burmese pythons and three other snakes. Salazar pointed to the study as proof that such rules are needed.

"[The Everglades] study paints a [sad] picture of the real damage that Burmese pythons are causing to native wildlife," Salazar said.

Dig Deeper

In a biological community, there are competition and cooperation. That is, members of the population compete and cooperate. They share a habitat; they also share the resources in that habitat. Different organisms interact in different ways. How they interact depends on their relationship to one another.

What are some of these interactions? In the Everglades, a Burmese python eats a raccoon. This is one obvious way organisms in an ecosystem interact. One eats, and the other gets eaten. Organisms also compete. The python may have to compete with other animals to get the raccoon. And organisms can cooperate. Ants work together to build a nest, collect food, and defend their colony.

Many interactions between organisms have to do with food. A food chain shows feeding relationships. These relationships are between producers and consumers. But there's another way to look at a food chain. It is through the interactions between predators and prey. In a food chain, an organism can be both predator and prey. A meadowlark feeds on a grasshopper. But the meadowlark is eaten by a prairie falcon.

- Predators can affect how members of their prey populations are distributed. Examples: Herring move together in a school. Wildebeests travel in herds. These animals do this to protect themselves. The sick or older members of the population are the most likely to be eaten by predators.
- Prey populations affect the location and number of predator populations. Example: Some birds are predators. They feed on insects. Sometimes, insects aren't available in an area. This may make birds move to another area.

When nonnative species invade an ecosystem—like the pythons have in the Everglades—they change the interactions of native species. This changes the entire ecosystem. Nonnative species prey on native species and compete with native species for food and other resources. They also kill the young of native species and alter entire food chains and food webs.

Pet snakes from California get loose, eat local animals in Canary Islands



An albino California kingsnake. Nathan Rupert/Flickr

The Canary Islands used to be a stable ecosystem. The islands are just off the coast of northwestern Africa. The animal species living there were balanced. But then, the California kingsnake arrived and grew in numbers. Now, the reptiles are killing off the islands' own birds, mammals and lizards.

The native animals are being killed because they have had no time to develop ways of avoiding the snakes.

The kingsnake population has exploded, say U.S. Geological Survey (USGS) biologists. The reason is there are no local animals that prey on the snakes. The biologists are helping the Canary Islands attempt to control the snakes. But the snakes are very secretive and can change with their surroundings.

"The kingsnakes in question are from a species found in San Diego," said Robert Fisher. He is a biologist with the USGS. Some of the snakes were sold as pets in the Canary Islands. Then they got loose, he said.

"Going Through The Roof"

Now the population of snakes is "going through the roof," he said.

Fisher is among three U.S. experts heading to the Canary Islands in May. They will advise scientists and government officials on the behavior of the snakes. They will also point out the possible weaknesses of the snakes.

People were first worried about the snakes in 2007. Since then, the number of kingsnakes has grown enormously. There are now thousands per square mile in the eastern and northwestern parts of the island of Gran Canaria. The island has become a place of safety for the kingsnakes.

They like the mild weather, moist ocean air and land full of animals that never learned to fear snakes.

Dogs and hawks have been used against the snakes. So far, fewer than 2,000 have been captured. Most of those were discovered slithering over the ground.

Slithering Underground

“The trouble is, these snakes spend much of their lives beneath the ground,” said Robert Reed. He is an expert on invasive species with the USGS. That means there are “many, many thousands more out there you can’t see.”

Brian Hinds is president of a group that studies snakes and other reptiles. He is going to Gran Canaria. Hinds has plans for dealing with what he described as a “monumental task.” Among them: plowing up infested areas with construction machines.

“They need to strike back hard and fast,” said Hinds, who says he has personally captured more than 3,000 California kingsnakes. “They’re not called kingsnakes for nothing.”

The Canary Islands are another example of what can happen when an invasive snake gets into an otherwise balanced ecosystem, or biological community. Brown tree snakes have settled in the Pacific island of Guam. The Florida Everglades have been invaded by Burmese pythons. The wolf snake was introduced to the Indian Ocean island of Mauritius.

Feasting On Local Animals

The California kingsnake is known as *Lampropeltis getula californiae*. The snakes in the Canary Islands are nearly one third larger than wild kingsnakes living in Southern California.

“They’ll be eating any lizard they can fit in their mouths,” Reed said.

Canary Island biologists fear that the snakes may be nibbling three native species to death. They think the gecko, skink and giant lizard could be wiped out by the kingsnakes.

A 2012 study funded by the European Union said it was likely the kingsnake could spread to the other islands. The snake could wipe out local reptiles, the report said. Canary Island officials hope to eventually reduce their numbers by half, if possible.

Reed said the problem with invasive species is likely to get worse. It will happen more often as people have more money and get interested in owning unusual pets, he said

Florida frantically rounds up tegu lizards which are eating everything up



A young, exotic tegu lizard is held by Jake Edwards, a wildlife technician for the Florida Fish and Wildlife Conservation Commission. The non-native lizards are being found in large numbers in south Miami-Dade County, and the FWC is trying to capture as many as it can, as quickly as it can. Emily Michot/Miami Herald/MCT

MIAMI — A tegu can't gobble down a deer or alligator like an 18-foot Burmese python can.

But the four-foot lizard can do a lot more damage to South Florida's wildlife. And now, scientists say, it's too late to wipe the tegu out.

“When we first found out about them in 2008, we thought we had a chance to nip this population in the bud,” said Tony Pernas. He works for the National Parks Service. He also co-chairs the Everglades Cooperative Invasive Species Management Area group.

Now, all they can hope for is to limit the tegus' spread.

Containment Is Urgent, Experts Say

The tegus found in the wild most likely were abandoned by their owners. Although wild reptiles, the lizards have become popular pets. They also may have escaped from breeding centers in south Miami-Dade County.

Wildlife experts are trying to round up as many tegus as possible before October, when the lizards go into hibernation. After that, it will be difficult to find them.

And they're especially worried that the black-and-white tegus will spread to nearby Everglades National Park. A handful of them already have been caught there. The lizards eat just about anything. Their menu includes small animals, birds, insects, plants, and their all-time favorite — eggs. And that means goodbye to the baby American crocodiles that hatch in the refuge and other [endangered animals](#) like the wood rat.

It's hard to keep them from spreading, said Jenny Eckles. She is a wildlife biologist with the Florida Fish and Wildlife Conservation Commission. Tegus thrive in temperatures as low as 35 degrees and enjoy South Florida's steamy heat, she said. Burmese pythons can't handle the cold, and their numbers were reduced during a cold snap in 2010 which made them less of a problem for the local wildlife.

The lizards hibernate from October until about January or February. They then emerge once again to search for food and lay their eggs. Females can lay 35 eggs a year.

Tegus Growing In Number

Eckles and other scientists don't know the exact size of the tegu population. But the numbers definitely are on the rise. Pernas said trappers caught 13 tegus in 2009. This summer, researchers captured more than 140 of them. These were found mainly on public lands, according to Eckles. Citizen trappers have taken more than 300 from private lands.

Tegus are easiest to trap using eggs as bait, according to Jake Edwards. He is a wildlife expert hired by the FWC to capture the lizards. Edwards said they are not easy to catch. He may have 10 seconds to catch one before it runs away.

But neither Edwards nor Jeff Fobb recommends grabbing a tegu by hand. Fobb is a trapper who also heads Miami-Dade Fire Rescue's Venom One unit. The tegu has needle-sharp teeth and claws.

"I'd rather get bit by a 10-foot snake than that guy right there," Fobb said. He pointed to a two-footer he recently caught in someone's garage.

South Florida's growing tegu population has spawned a new industry: trappers who sell them as pets.

Rodney Irwin, of Homestead, began trapping tegus for fun and profit about two years ago. He estimates he's taken between 800 and 1,000 tegus. He sells most of them directly to customers on his website www.tegusonly.com. They sell for about \$100 each.

Their Days As Pets Not Numbered

"This is a chance for me to make a difference," he said. "I can't do anything about the apes in Borneo, but I can do something about the natives in my hometown."

Irwin was asked whether he was concerned that the tegus may end up right back in the Everglades abandoned by their owners. Irwin responded that none of his customers are local. In any case, they could buy a tegu in a pet store. He said he shares his information about the captured lizards with scientists.

So far, there are no plans to stop letting people keep tegus as pets, according to Kristen Sommers. She works for the FWC.

Sommers said the FWC is trying to determine whether the tegus might expand farther. It also wants to understand what would happen if they do. Within the next year, the FWC will have enough information to decide its next steps.

“We need to figure out what’s going on with this,” Sommers said.

PROBLEM SOLUTION- INVASIVE SPECIES

PROBLEM:

SOLUTION:



Main Idea Organizer “**Hunt or Be Hunted**”

Main Idea:

Detail:

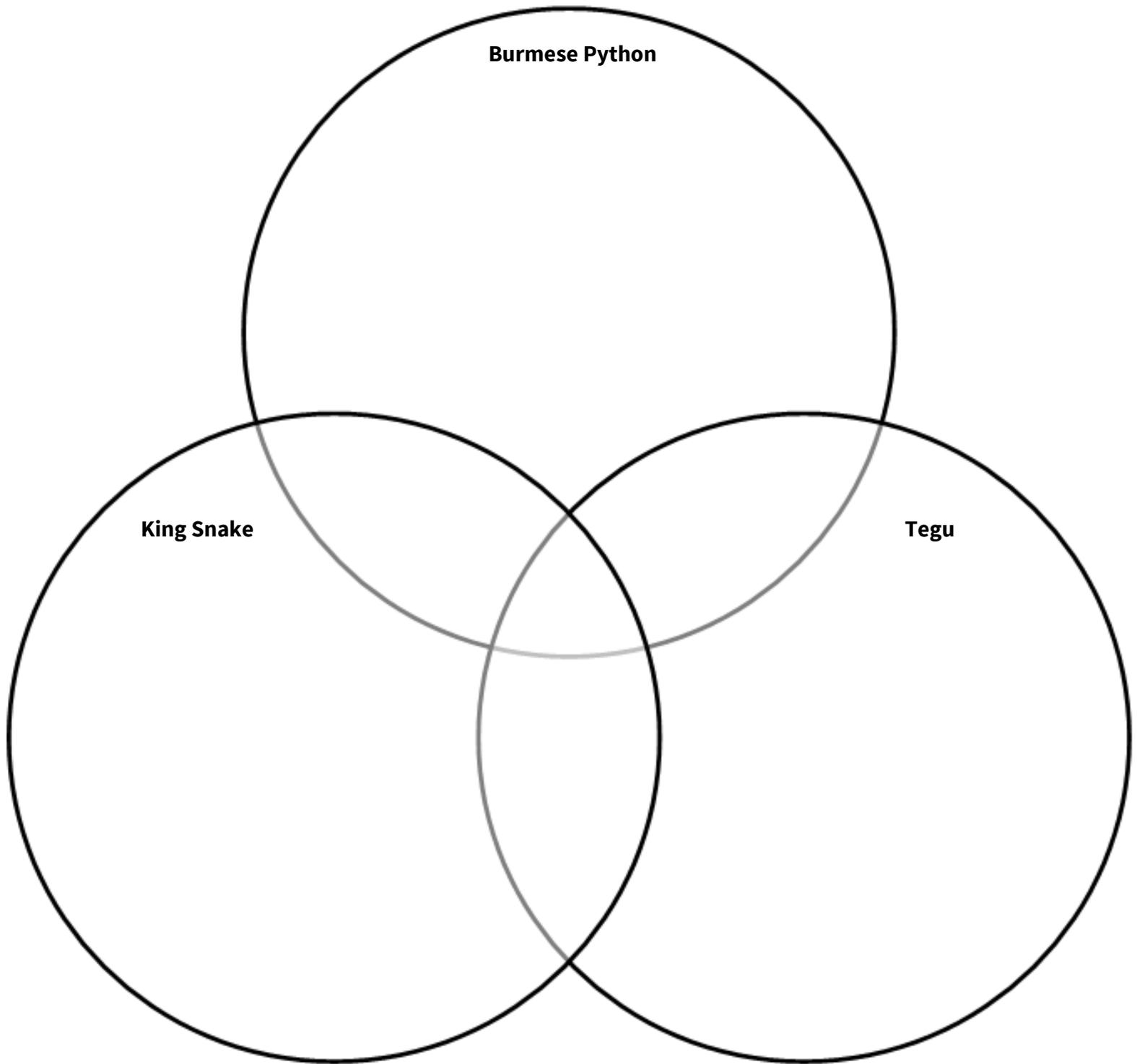
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Detail:

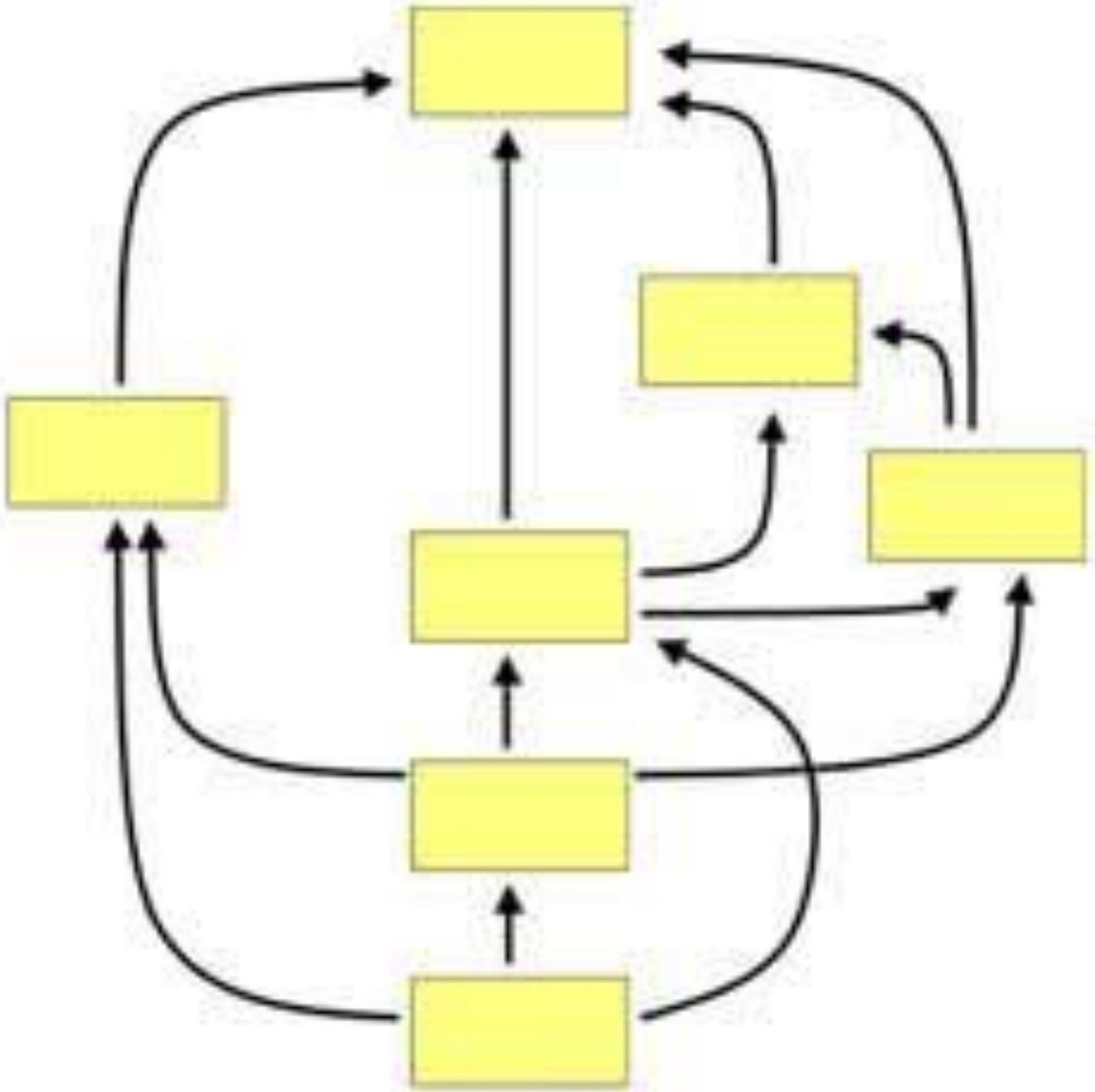
Summary: (In your own words)

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graph TD; A[Main Idea] --> B[Detail]; A --> C[Detail]; A --> D[Detail]; B --- E[Summary]; C --- E; D --- E;
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INVASIVE SPECIES COMPARE AND CONTRAST



SAMPLE FOOD WEB



POSTER RUBRIC

CATEGORY	5	4	3	2	1	Points Earned
Creativity/Originality	The poster shows a very original presentation of the materials which captures the viewer's attention and shows that the student went over and beyond the requirements, which were all met and exceeded. A great deal of time was spent on creativity.	The poster shows a lot of originality; good variety and blending of materials. The poster is very interesting to the viewer. The student spent a lot of time on the work and most of the requirements were met. A lot of time was spent on creativity.	The poster has some originality and variety of materials. Some but not all of the requirements were fulfilled. It shows some creativity and that a moderate amount of time was taken to create the poster. Viewers have some interest.	The poster has little originality or variety of materials. Few of the requirements are met. It shows little creativity and that a minimum amount of time was taken to create the poster. Viewers have little interest.	The poster has no originality. Insufficient use of materials. None of the requirements were met. It shows no creativity and that almost no time was taken to create the poster. Viewers have no interest.	
Quality of Poster Presentation	The poster is effective in relating all of the topics and requirements. Physical appearance of project shows attention to details in terms of lettering, organization, typing proofreading, neatness, picture & art labels, etc.	The poster is interesting and adequately addresses the requirements and topics. Good physical appearance. Minor flaws in details.	The poster is somewhat interesting and vaguely addresses the requirements and topics. Appearance is not very appealing. Moderate errors in details.	The poster is not interesting and barely addresses the requirements and topic. Some vital elements are missing. Physical appearance is not appealing. Major errors in details.	The poster is not interesting and badly done and does not meet the requirements or topic. Vital elements are incomplete or not appropriate. Unappealing with extreme errors in details.	

INFOGRAPHIC RUBRIC

SOME TIPS FOR HELP IN CREATING AN INFOGRAPH

Easel.ly and Piktochart are both pretty easy to use to create infographics and share with others.

Infogr.am is a good site if you want to create charts.

Wordle allows you to create word clouds of frequently used words.

Tagxedo has the ability to create shapes with words.

CATEGORY	4	3	2	1
Graphics - Relevance	All graphics are related to the topic and make it easier to understand.	All graphics are related to the topic and most make it easier to understand.	All graphics relate to the topic.	Graphics do not relate to the topic.
Required Elements	The infographic includes all required elements as well as additional information.	All required elements are included on the infographic.	All but 1 of the required elements are included on the infographic.	Several required elements were missing.
Content - Accuracy	At least 4 accurate facts are displayed on the infographic.	3 accurate facts are displayed on the infographic.	2 accurate facts are displayed on the infographic.	Less than 2 accurate facts are displayed on the infographic.
Attractiveness	The infographic is exceptionally attractive in terms of design, layout, and neatness.	The infographic is attractive in terms of design, layout and neatness.	The infographic is acceptably attractive though it may be a bit messy.	The infographic is distractingly messy or very poorly designed. It is not attractive.
Mechanics	Capitalization and punctuation are correct throughout the infographic.	There is 1 error in capitalization or punctuation.	There are 2 errors in capitalization or punctuation.	There are more than 2 errors in capitalization or punctuation.
Grammar	There are no grammatical mistakes on the infographic.	There is 1 grammatical mistake on the infographic.	There are 2 grammatical mistakes on the infographic.	There are more than 2 grammatical mistakes on the infographic.

Opinion Writing Graphic Organizer

Topic: Invasive Species

Opinion:

Reason 1

Reason 2

Reason 3

Evidence 1

Evidence 2

Evidence 3

Opinion Restated in Different Words

Opinion Writing Rubric

Scoring Elements	Not Yet		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Focus/Opinion	<ul style="list-style-type: none"> Responds to some or no parts of the prompt Demonstrates little to no understanding of topic/text 		<ul style="list-style-type: none"> Responds to most parts of the prompt States an opinion that demonstrates limited understanding of topic/text 		<ul style="list-style-type: none"> Responds to all parts of the prompt States an opinion that demonstrates an understanding of topic/text 		<ul style="list-style-type: none"> Responds skillfully to all parts of the prompt States an opinion that demonstrates an insightful understanding of topic/text
Organization	<ul style="list-style-type: none"> Organizes with no evidence of paragraph structure Uses no linking words 		<ul style="list-style-type: none"> Organizes ideas and information in an incomplete paragraph structure (e.g., missing conclusion) Uses some linking words to connect reasons to opinion but simplistically or ineffectively 		<ul style="list-style-type: none"> Organizes ideas and information using a clear topic sentence, details, explanation, and concluding sentence Uses linking words and phrases to connect reasons to opinion 		<ul style="list-style-type: none"> Organizes ideas and information into logical, coherent paragraphs that are clear to the reader Uses linking words and phrases skillfully to connect reasons to opinion
Support/Evidence	<ul style="list-style-type: none"> Does not support opinion with reasons Provides no or inaccurate explanation of how reasons support opinion 		<ul style="list-style-type: none"> Supports opinion with minimal or irrelevant reasons Provides some explanation of how reasons support opinion 		<ul style="list-style-type: none"> Supports opinion with relevant reasons Provides clear explanation of how reasons support opinion 		<ul style="list-style-type: none"> Supports opinion skillfully with substantial and relevant facts, details, and/or reasons Provides explanations/analysis of how evidence supports opinion

<p>Language</p>	<ul style="list-style-type: none"> • Uses little to no correct sentence structure • Demonstrates limited understanding of grade-level appropriate conventions, and errors interfere with the meaning • Uses no academic or domain specific vocabulary 	<ul style="list-style-type: none"> • Uses some correct but repetitive sentence structures • Demonstrates some grade-level appropriate conventions, but errors may obscure meaning • Uses limited academic and/or domain-specific vocabulary for the audience and purpose 	<ul style="list-style-type: none"> • Uses correct and varied sentence structures • Demonstrates grade-level appropriate conventions; errors are minor and do not obscure meaning • Uses academic and domain specific vocabulary appropriate for the audience and purpose 	<ul style="list-style-type: none"> • Uses purposeful and varied sentence structures • Demonstrates creativity and flexibility when using conventions (grammar, punctuation, capitalization, and spelling) to enhance meaning • Uses precise and sophisticated academic and domain-specific vocabulary appropriate for the audience and purpose
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