

RAFTING with Raptors: Using Informational Text to Connect Science and ELA

Please visit this webpage for all handouts and resources

<http://rpsec.usca.edu/presentations/AMLE2012/>

Definitions

- **Informational Text:**
Informational text is designed to convey factual information about a topic, rather than tell a fictional story. Example:
National Audubon Society (1998). *First field guide: Birds*. New York: Scholastic, Inc.
- **Inference:** What does it mean to infer? /inˈfər/ Verb: Deduce or conclude information from evidence and reasoning rather than from explicit statements

Lesson Title: Ravenous Raptors

Students will have an up-close look at two of this area's most common birds of prey, the Barred Owl and the Red-Tailed Hawk, as we examine their role in the food chain. We will compare and contrast their unique physical characteristics, adaptations, and habitat requirements. The students will also use field guides and dissect owl pellets.

Standards

This lesson supports the following standards:

Grade 7 Science

- 7-4.1 Summarize the characteristics of the levels of organization within ecosystems (including populations, communities, habitats, niches, and biomes).
- 7-4.2 Illustrate energy flow in food chains, food webs, and energy pyramids
- 7-4.3 Explain the interaction among changes in the environment due to natural hazards (including landslides, wildfires, and floods), changes in populations, and limiting factors (including climate and the availability of food and water, space, and shelter).

Grade 7 Common Core Standards- ELA

Reading Standards for Informational Text 6–12

1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Writing Standards 6–12

1. Write arguments to support claims with clear reasons and relevant evidence.
 - b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.

Reading Standards for Literacy in Science and Technical Subjects 6–12

Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Activity: Ravenous Raptors Lesson- Using Informational Text

- A field guide is a reference that we can use two different ways: We can use it to identify an unknown bird, or we can learn more about a bird whose name we already know.
- How are the birds listed in the index?
- Find the Bald Eagle. What can you tell me about this bird?
- Feel 2 talons. Which talon would be best adapted to catch and hold fish?
- Look at each of the graphic features on page 45. What does the color yellow on the range map mean?
- Look at the icons on page 44. The birds in this book are organized by shape.
- In small groups, research one of the following birds and answer the questions below:
 1. Brown Pelican
 2. Sanderling
 3. American Kestrel
 4. Mourning Dove
 5. Black-Capped Chickadee
 6. Great Horned Owl
 7. American Crow
 8. American Robin
 9. Great Blue Heron

Our team's bird is a _____, which is found on page _____.

STEP 1. Use your field guide to find the answers to the following questions.

Question	Information from text
Where does this bird live?	
What does it eat?	
What does this bird look like?	
Interesting fact(s) about this bird	

STEP 2. *The answers to the following questions must be inferred. Cite your evidence!*

Question	How do you know? (What is your evidence?)
Is your bird a carnivore, an herbivore, or an omnivore?	
Is your bird a predator?	
Does your bird migrate?	
Is your bird nocturnal or diurnal?	
Is your bird a raptor?	

STEP 3. *Now compare your answers with that of another team. How are your birds similar? How are they different?*

RAFT Strategy

RAFT encourages creative thinking and motivates students to demonstrate understanding in a nontraditional yet informational written format. This strategy works with all disciplines and is great for differentiation; it can be adjusted for any topic or skill level. The student has a **role** to play and as they think in that role, they have to communicate to a given **audience** using the **format** noted on the **topic** listed. This strategy requires students to process information and use critical thinking, rather than just write answers to questions.

How to use it:

1. Using your essential questions, analyze the important ideas or information you want students to learn. Consider how writing might enhance student' understanding of a topic (e.g., stages of the digestive system). This focus establishes the writing topic.
2. Brainstorm possible roles students could assume in their writing. For example, a student could imagine he was a spark plug and describe what occurs when his engine starts.
3. Next, decide the audience for this communication. Using that audience, determine the writing format. For example, a green plant could be writing to the sun in the format of a thank you note for the sun's role in photosynthesis and plant growth.
4. Students brainstorm, write, share, revise, and polish their RAFTs.

Suggested RAFTs for the content areas include:

- **Social Studies-** Death of a historical figure, description of an event
- **ELA-** Story mapping, literary elements, characters, setting
- **Science-** making observations, supporting inferences with data and evidence
- **Math-** Patterns in data, statistics (mean, median, mode), terms and vocabulary

EXAMPLES:

	Science	Social Studies	Math
Role	Red blood cell	Civil War soldier	Denominator
Audience	Other red blood cells	His family	Numerator
Format	Travelogue	A friendly letter	Telegram
Topic/Task	Describe your journey through the circulatory system	Describe conditions in the Confederate or Union army	Describe how “uncommon” the denominator is in the fraction

Sample completed RAFTs:

WANTED: Human body cells without nuclei. Must be capable of transporting oxygen to body cells. Hemoglobin required. Must have originated in the bone marrow. All types may apply: A, B, AB, and O.

WANTED: Polygon with three sides and three angles. Angles must add up to 180 degrees. One right angle is required.

WANTED: Colonists for the New World. Must be willing to work hard. Persons seeking religious freedom are encouraged to apply. Send letter of application to William Penn.

Ravenous Raptors Lesson- DRAFT a RAFT

Directions: With your partner, choose a ROLE, an AUDIENCE, a FORMAT, and a TOPIC from the lists below. Brainstorm, then draft a RAFT to share with the class.

EXAMPLES:

- As an eagle, write a letter to “Mother Nature” lamenting the quality of the diet provided by the river.
- As a nature lover, write a sonnet to fellow environmentalists professing your awe-inspired feelings at the sight of a Great Horned Owl.
- As the spirit of a deceased Native American Indian, write a chant to future citizens decrying the desecration of the forest.

ROLE (Who you are as the writer)	AUDIENCE	FORMAT
A concerned citizen A tree branch A predator An owl A hawk A mouse Prey An owl pellet Decomposing roadkill	A hiker U.S. Forest Service A predator An owl A hawk A mouse Prey The governor of our state People who litter	Obituary Want Ad Diary or Journal Entry Invitation Recipe Last Will and Testament Confession Eulogy Complaint A How-To Manual Speech Top Ten List Advice Column Ransom Note A Country Western Song

TOPIC	STRONG VERB (Optional- the purpose of the piece)
How a natural disaster changed my life Why I am at the top of the food chain Please leave my forest alone The beauty of a balanced life Why I am important to you We're made for each other We're more alike than different I like to get my nails done I think I'm going to throw up This land is my land, so get out	Persuade Demand Plead Inspire Announce Predict Compare Defend Explain or Describe

Aiken Writing Project Sample Completed Raptor RAFTs

TEAM #1

Role- Discomposing Roadkill

Audience- A Hiker

Format- Last Will and Testament

Topic-Beauty of a Balanced Life

Strong Verb- Inspire

“I, O. Possum, being of flattened body and rotting mind, to hereby bequeath my secrets to a beautifully balanced life to my good friend, the hiker.

O, Hiker, I will always be grateful for your gifts of discarded fish scales and guts which nourished me throughout the nights of my life. A tip to make your life become more balanced:

Why not try some berries or nuts? You know, Nature's other bounty. This would help those herbivore cousins of mine.

Now, I leave you, dear Hiker, with one request: before I become to decomposed for the trip, move me to a more open area so I may continue our tradition of inspired balance by nourishing those birds who prefer the relaxed banquet offered by carrion or dead stuff, such as I find myself today.

P.S. This is not a joke. I am not playing possum. Stop poking me with that stick!!!”

TEAM #2

Role: A tree Branch

Audience: Loggers

Format: Top Ten List

Topic: Leave Forest Trees Alone

Strong Verb: Demand

A tree branch's top ten reasons for loggers to leave forest trees alone:

10. Poets praise me.
9. Scouts study me.
8. Little children love to climb me.
7. I can no longer provide shade for picnic goers and hikers on sweltering days if you remove me.
6. You break us, burn us, and grind us into objects merely for human consumption.
5. You're forcing us from our home, where we have lived for millennia, leaving a silent trail of tears.
4. Animals that are forced to seek food and shelter farther away, in the limbs of my brothers and sisters, collide with human populations.
3. You are reducing the food supply for wild animals.
2. You are depleting the habitats of endangered birds and other species.
1. You are harming the ozone—and all living things on our planet.

Loggers, I demand that you leave my forest alone!

TEAM #3

Role: An Owl Pellet

Audience: A Mouse

Format: An Advice Column

Topic: The Beauty of a Balanced Life

Strong Verb: Plea

Dear Mousekin, Kindred Spirit,

PLEASE don't go out at night. Don't end up like me: victim to a silent, nocturnal killer. You might think you're safe, but at any time you could be caught in the clutches of a great horned owl, Eastern screech owl, or even barred owl. You think you're hiding, but your enemy can see 270 degrees. At dusk you may hear the hoot, cuckoo (pronounced coo coo), or trill of an owl: think of it as a warning to stay inside; it's time for bed. If you get caught in the trance of the silvery moon, you'll almost certainly end up like me: caught in the sharp talons, swallowed whole, and regurgitated 21 hours later. All that will be left are your dessicated bones. That's no way to live a life. Instead, enjoy family and friends. Enjoy the light of day. For us, the beauty of a balanced life is how we live, not the hours we enjoy outdoors.

Note: We discussed having Mousekin write a Dear Abby/Dear Bones advice column letter. Mousekin could be saying something like, "Dear Bones: My mean old mom won't let me out at night. What can I do to get some fresh air and moonlight?" or something similar, to make the response more obviously an advice column, but time ran out.

Ravenous Raptors Lesson

Recommended resources for designing RAFTs:

http://www.writingfix.com/wac/Writing_Across_Curriculum_RAFTS_Science.htm

<http://www.tantasqua.org/superintendent/profdevelopment/etraft.html>

<http://daretodifferentiate.wikispaces.com/R.A.F.T.+Assignments>

RAFT Rubric

	Target	Acceptable	Unacceptable
	10 points	5-9 points	0-4 points
Accuracy	The RAFT provides information that is accurate and is supported by specific details. The RAFT correctly uses terminology related to the topic.	The RAFT provides accurate information but could use more support or specific details about the topic.	The RAFT provides incomplete and/or inaccurate information.
Perspective	The RAFT maintains a clear, consistent point of view; ideas and information are always relevant to the role and audience. The RAFT shows insight into how character(s) feel about the topic.	The RAFT maintains a reasonably consistent point of view and includes ideas relevant to the role. The character's feelings about the topic are evident.	The RAFT does not accurately develop characters, thoughts or reactions.
Focus	The RAFT demonstrates a thoughtful, in-depth understanding of the topic. The RAFT stays on topic and consistently maintains its format. The details and information provided directly support the purpose.	The topic and purpose is evident. The RAFT stays largely on topic and its ideas are mostly supported.	The topic is vague or not evident. The RAFT wanders from topic; its focus cannot be seen or is inconsistent.
Fluency	The RAFT engages and informs the audience. Writing is fluent and interesting. The piece is logical and coherent.	The audience is informed. Writing is clear and direct. The piece is coherent and addresses the topic.	The piece is not logical or coherent. Writing is unclear and has gaps or is confusing.
Mechanics	The RAFT contains few or no spelling, grammatical, or mechanical errors. There are no fragments or run-on sentences.	The RAFT contains some spelling, grammatical, or mechanical errors. It may contain a few fragments, run-ons or other errors but the occasional mistakes do not interfere with clarity of ideas.	The RAFT is marred by numerous spelling, grammatical, and/or mechanical errors which disrupt the reader's understanding.

Score: _____/50

Comments:

Ravenous Raptors: Language Arts Connections

Vocabulary

Raptor- A bird of prey which seizes its prey with force, using its strong, sharp talons

Adaptation- Inherited characteristic that enables an animal to survive

Asymmetrical- not symmetrical; Barred Owls have one ear set higher than the other

Diurnal- Active during the day

Nocturnal- Active during the night

Binocular- Focusing both eyes on a single object

Nictating membrane- A clear protective eyelid

Oviparous- Producing eggs which are hatched outside the body

Pellet- A mass of indigestible material such as bones and fur which is regurgitated

Talon- The strong, sharp, curved claw of a raptor

Compare & Contrast

Use a Double Bubble Map, graphic organizer, or Venn diagram to compare and contrast adaptations of a hawk and an owl.

HAWK	OWL
Diurnal	Nocturnal
Fast flight	Silent flight
Open fields	Woodlands, swamps
Ridges over eyes	Flat face like a satellite dish
Binocular vision	Large eyes
Aerodynamic shape	Offset ears (asymmetrical)
Focus in wind	Can rotate head 270 degrees

BOTH
Hollow bones
Feathers and wings
Camouflage
Use talons to seize with force
Carnivore
Nictating membrane
Cough up pellets

Bird Related Idioms

The early bird catches the worm.

Birds of a feather fly together.

A bird in the hand is worth two in the bush.

We had a bird's eye view of the town below.

I spent the afternoon smoothing ruffled feathers.

You could have knocked me over with a feather!

That party was a hoot!

Gambling is for the birds!

She is such a birdbrain.

That business is a fly-by-night operation.

He likes to fly by the seat of his pants.

She plans to wing it.

The boss will take the new employee under his wing.

That would kill two birds with one stone.

She eats like a bird!

I am as free as a bird.

I smell a rat!