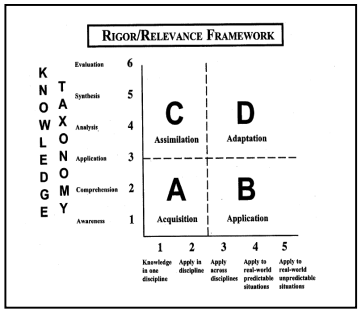

Subject: __Ecology_____ **Rigor and Relevance Quadrant**_____

Topic: **Coughing Up Clues**

Objectives: Distinguish between the way organisms obtain energy, Describe common patterns of relationships among populations (predator/prey), Predict how changes in one population might affect other populations based on relationship in ecosystem

Standards & Benchmarks addressed:
• L.OL.06.51 and 06.52, L.EC.06.23

Action	Pacing	Reading Strategies	Writing Strategies	Technology Integration
Phase 1: Engage				
1. Mr. Winkler coughs up pellet (sucker sticks, bran, raisins…) 2. Display poster of owl – ask "What does this animal need to live?" and "How does this animal eat?" 3. YouTube video of owl 4. Read p. E-38 as whole group		Popcorn Clarify Summarize		YouTube.com on video cart
Phase 2: Explore				
Owl Pellet investigation – in pairs P. E-39 in text. Store Pellets/Bones if not complete			Sketch in journal	
Phase 3: Explain				
1. Use E-41 – E-42 pages to discuss with Accountable Talk. Student write answers to Content/Inquiry 2. Create graph on E-42. Include line for mice population and owl predators 3. Vocabulary			Write answer to content/ inquiry	

Phase 4: Elaborate				
1. Glue/cardboard the bones together 2. Students create a possible food web of the Riverside Owl (poster or PowerPoint) 3. Research the food web on Intro species (Big Head Carp, Lamprey, Zebra Mussels)		2 articles on Intro. species	Poster	Inspiration PowerPoint Lap Top research
Phase 5: Evaluate				
1. Journal Entries – Content/Inquiry and graphing 2. Exit Pass for Day 1 – "What does this animal eat?" and/or questions unanswered 3. Informal during Accountable Talk 4. Present in pairs food web and glues sample of prey			Exit Slip	Laptop for presentation

Materials Needed:

- Owl poster
- Short clip on owls
- Textbooks
- Owl pellets (1 for pair)
- Petri dish (18)
- Pointed sticks
- Glue
- Cardboard
- Laptops
- 2 articles on invasive species

DL Question:

What would happen if the owl's energy source disappeared?
How do owl's affect other organisms within a habitat?
What information is provided by owl pellets?

Learning Activities and Teacher Questions	Expected Student Reactions	Teacher Support	Points of Evaluation
➢ Mr. Winkler cough up pellet ➢ Teacher displays poster of owl and shows clip of owls (5 min) ➢ "What does this animal need to live?" "How does it eat?" (5 min) ➢ Introduce DL question ➢ Students read page E-38 (5 min) ➢ Owl Pellet Activity 1. Student role and purpose stated (5 min) 2. Go through procedure on pg. E-39 (25-30 min) 3. Complete procedure and store in bag if not completed ➢ Pg. E-41 – 42 to discuss with accountable talk and take out bags of stored bones ➢ Hand out graph with number of owls and time to each student	➢ Gain interest and prior knowledge ➢ Write answers in journal ➢ Whole group (random choice) ➢ Each student gather supplies designated ➢ In pairs will follow procedure ➢ Discuss/write and participate in class discussion	➢ Pressing for clarification ➢ Challenge students ➢ Reading strategies – clarification, paraphrasing, AT ➢ Monitor students for accuracy ➢ Facilitate, linking contributions, pressing and	➢ Journal entry ➢ Rewards first group ready with auction money

➢ Word bank – population, predator, prey, food web, energy ➢ Instruct students to glue bones onto skeleton page. Be sure to be accurate, use pg. E-40 as reference ➢ Students create food web of "Riverside Owl" on poster or PowerPoint ➢ Extension: students research and create a food web for introduced species	➢ Use knowledge to formulate a graph with population of prey over time and population of predators over time ➢ Write in their journals, students generate definitions ➢ To assemble skeletons creating full model ➢ Decide on poster or PowerPoint ➢ Create a possible food web for the "Riverside owl" ➢ Create food web	expanding for reasoning ➢ Modeling, challenging students ➢ Marking, recapping, keeping everyone together ➢ Teacher wanders and offers help ➢ Modeling, press for accuracy, challenge, verify/clarify	➢ Graph contained in journals ➢ Check journal word bank for accuracy ➢ Teams present their bones and discuss difficulties *Challenge: Identify number of voles per pellet ➢ Presentation in class