



## Teaching Script: Exploring Ecosystem Connections

### Lesson Overview:

**Grade Level:** Years 3-4 (Ages 8-9)

**Duration:** 60 minutes

**Theme:** Ecosystem Interdependence

### Learning Objectives:

- Create and interpret Connection Circles to show ecosystem relationships
- Identify and explain at least three interdependent relationships in local ecosystems
- Predict how changes in one organism affect others in the ecosystem

✓ Connection Circle templates

✓ Colored markers

✓ Ecosystem picture cards

✓ Sticky notes

✓ Terrarium/vivarium

✓ Visual aids

✓ Arrow reference cards

✓ Student worksheets

### Pre-Lesson Setup (Teacher Preparation)

### Room Organization:

- Arrange desks in pods of 4 students to facilitate group work and discussion
- Position terrarium/vivarium at front of room where all students can observe
- Set up materials stations with pre-sorted resources for each group
- Display visual aids showing local ecosystem connections
- Prepare demonstration Connection Circle on board

### Prepare for Common Misconceptions:

- Students often think ecosystem relationships are only about feeding
- Many students overlook non-living components in ecosystems
- Students may struggle to identify indirect connections
- Some may think all interactions between organisms are competitive

## Detailed Teaching Segments

### Opening Segment (0-5 minutes)

5 minutes

[Position yourself near terrarium, ensure all students can see]

*"Today we're going to be nature detectives! We have a special mission to discover how living things in our environment help each other survive. Let's start by looking at our mini-world here in this terrarium."*

[Allow 60 seconds of silent observation]

*"Write down three things you notice about how the living things might need each other. Think about: - What living things do you see? - How might they be helping each other? - What would happen if we removed one thing?"*

#### Engagement Strategies:

- Use dramatic voice to build excitement about being "detectives"
- Model careful observation techniques
- Provide sentence starters for ELL students
- Use hand signals for student participation

### Concept Introduction (5-10 minutes)

5 minutes

[Move to whiteboard with pre-drawn Connection Circle]

*"Scientists use a special tool called a Connection Circle to show how living things help each other. Watch as I create one using things from our terrarium."*

#### Connection Circle Rules:

- Draw items around the circle's edge
- Use arrows to show relationships
- Arrow points from helper to receiver
- Each arrow needs a label explaining the relationship

**Guided Practice (10-15 minutes)**

5 minutes

[Distribute Connection Circle templates and colored markers]

*"Let's create our first Connection Circle together. We'll use three things from a local pond: a water lily, a frog, and a dragonfly. Place these around your circle like this..."*

**Support Strategies:**

- Visual learners: Provide step-by-step diagram
- Kinesthetic learners: Use hand motions for connections
- ELL students: Provide picture cards with labels
- Advanced: Challenge to add more connections

**Questioning Sequence:**

- "What does the water lily provide for the frog?"
- "How does the frog help control insects?"
- "What happens to the water lily if we remove the frog?"

**Independent Practice (15-25 minutes)**

10 minutes

*"Now you're ready to become Connection Circle experts! With your group, you'll create a Connection Circle using the ecosystem cards I'm giving you. Remember to think about all the different ways organisms might help each other."*

[Distribute ecosystem card sets to groups]

**Challenge Options:**

- Add non-living components (sun, soil, water)
- Show multiple connections for each organism
- Include seasonal changes in relationships
- Create "what if" scenarios for ecosystem changes

**Group Sharing & Discussion (25-35 minutes)**

10 minutes

*"Scientists share their discoveries to learn from each other. Each group will present their Connection Circle, and we'll play 'Connection Detectives' to find relationships they might have missed!"*

### **Group Presentation Structure:**

- Introduce ecosystem components (1 minute)
- Explain primary connections (1 minute)
- Share most interesting discovery (1 minute)
- Take two questions from classmates (1 minute)

### **Discussion Prompts:**

- "What might happen if [organism] disappeared?"
- "Can anyone spot an indirect connection?"
- "How might seasonal changes affect these relationships?"
- "What role do non-living things play in this system?"

### **Formative Assessment (35-45 minutes)**

"Connection Circle Challenge Cards" 10 minutes  
Students receive scenario cards describing ecosystem changes and must:

- Predict three consequences of the change
- Draw new arrows showing impact flow
- Explain reasoning using scientific vocabulary
- Suggest one way to protect the ecosystem

### **Student Success Indicators:**

- Accurately identifies direct relationships
- Recognizes indirect connections
- Uses scientific terminology appropriately
- Supports predictions with evidence
- Demonstrates systems thinking

### **Reflection & Conclusion (45-55 minutes)**

10 minutes

*"Let's think about what we've learned about nature's connections. Complete your Ecosystem Detective Journal using these reflection questions..."*

### **Student Reflection Questions:**

1. What surprised you most about ecosystem connections?
2. How might understanding these connections help us protect nature?
3. What new questions do you have about ecosystems?
4. How could you use Connection Circles to study other systems?

**Quick Check Understanding:** Students complete a 3-2-1 exit ticket:

- 3 new things learned
- 2 interesting connections discovered
- 1 question still wondering about

### **Extension & Homework Options Nature Journal**

Create a Connection Circle for your backyard or local park ecosystem

### **Research Project**

Investigate how climate change affects ecosystem connections

### **Art Integration**

Create a mural showing ecosystem relationships

### **Technology Connection**

Use digital tools to create animated ecosystem models

### **Assessment Tools & Rubrics**

<b>Criteria</b>	<b>Beginning (1)</b>	<b>Developing (2)</b>	<b>Proficient (3)</b>	<b>Advanced (4)</b>
Understanding Connections	Identifies only basic	Recognizes multiple direct relationships	Identifies indirect relationships	Analyzes complex

	direct relationships			system interactions
Scientific Vocabulary	Uses basic terms with support	Uses key terms independently	Applies terms accurately	Integrates advanced terminology
Systems Thinking	Sees isolated connections	Recognizes patterns	Predicts system impacts	Analyzes feedback loops

## **Differentiation Support Matrix**

### **Visual Learners**

- Color-coded connection arrows
- Picture-based organism cards
- Graphic organizers
- Video demonstrations

### **Auditory Learners**

- Verbal explanations
- Group discussions
- Think-pair-share
- Audio recordings

### **Kinesthetic Learners**

- Role-play activities
- Physical modeling
- Interactive games
- Hands-on investigations

## **Supplementary Materials & References**

### **Digital Resources**

- Interactive ecosystem simulation software
- Virtual field trip recordings
- Online Connection Circle creator tool
- Digital assessment templates

### **Print Materials**

- Student workbook pages
- Reference charts
- Take-home activity guides
- Parent information sheets

## **Teacher Background Knowledge**

Key concepts to review before lesson:

- Food web dynamics
- Ecosystem services
- Biodiversity importance

- Environmental impact assessment
- Local ecosystem characteristics

### **Safety & Management Notes**

- Review outdoor activity guidelines
- Check for allergies if using plant materials
- Establish clear boundaries for exploration
- Prepare first aid kit for outdoor work
- Review proper handling of living specimens

## Closing Discussion (50-60 minutes)

10 minutes

*"Scientists, you've made amazing discoveries today! Let's share what we've learned about how living things help each other survive."*

### Key Discussion Points:

- What surprised you most about ecosystem connections?
- Which organism in your Circle had the most connections?
- What might happen if one organism disappeared?
- How can we help protect these important connections?

### Success Criteria:

- Students can identify at least 3 ecosystem connections
- Connection Circles show accurate relationship arrows
- Students can explain how changes affect the ecosystem
- Participation in final discussion demonstrates understanding

### Take-Home Challenge:

Create a Connection Circle for your own backyard or local park. Include at least 5 living things and their relationships. Remember to use arrows and labels!