WHO WINS AND WHO LOSES IN A RAPIDLY CHANGING FOREST?

Research Assistant Notebook

Student Name

Teacher Name

Class Period

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SECTION 1: GATHER

Steps 1-3

Your Task: Use a simulator to experience how research scientists gather specimens and data from the field (study sites).

STEPS

1 **VIDEO REVIEW:** What are the three main types of ecological relationships?

-
-
-

3 **REFLECT:** With your partner reflect on the practice of collecting specimens.

What are three common collecting methods scientists use? • • •	
What types of information do scientists record for the specimens they collect?	Why do you think they record this information? What is the benefit?

SECTION 2: ANALYZE

Steps 4-8

Your Task: Reason about relationships in this ecosystem.

4 **VIDEO REVIEW:** Discuss these questions with your partner and record your answers:

a) What is metadata?

b) Why it is important?

c) How it will help you with the next part of your research?

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SECTION 2: ANALYZE

Steps 4-8

Your Task: Reason about relationships in this ecosystem.

STEPS

7 8

LODGEPOLE PINE TREES

Direct Relationships (Step 7)	Indirect Relationships (Step 8)
OBSERVATIONS: What did you notice about the relationships between organisms in your model?	**OBSERVATIONS:** What did you notice about the relationships between organisms in your model?
How might losing lodgepole pines affect these relationships?	How might losing lodgepole pines affect these relationships?

What surprised you once you finished building your two models?
Did you see any patterns in how organisms will be affected by the loss of lodgepole pines?

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SECTION 3: INTERPRET

Step 9-11

Your Task: Create prediction cards for who wins and who loses as lodgepole pines die off in the Uinta Mountains.

11 Use the website to create and download your cards OR use these cards to complete your prediction cards offline.

Prediction Card #1

Organism Name:

Relationship with lodgepole pine *circle one*

Predator-prey
Competitors
Mutualists

Predict the primary impact if the lodgepole pine declines

draw a line between the matching pair from each column

Impact	Effect
Increase in	habitat space
Decrease in	food/nutrient availability
	water availability
No impact	sunlight

Use evidence to explain your thinking:

Take it further!

Who else might be affected by change?

Prediction Card #2

Organism Name:

Relationship with lodgepole pine *circle one*

Predator-prey
Competitors
Mutualists

Predict the primary impact if the lodgepole pine declines

draw a line between the matching pair from each column

Impact	Effect
Increase in	habitat space
Decrease in	food/nutrient availability
	water availability
No impact	sunlight

Use evidence to explain your thinking:

Take it further!

Who else might be affected by change?

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Prediction Cards for students to fill in and use off-line.

11 If you are not able to download your prediction, use these cards to complete your prediction cards offline.

Prediction Card #3

Organism Name:

Relationship with lodgepole pine
circle one

Predator-prey
Competitors
Mutualists

Predict the primary impact if the lodgepole pine declines
draw a line between the matching pair from each column

Impact	Effect
Increase in	habitat space
Decrease in	food/nutrient availability
	water availability
No impact	sunlight

Use evidence to explain your thinking:

Take it further!

Who else might be affected by change?

Prediction Card #4

Organism Name:

Relationship with lodgepole pine
circle one

Predator-prey
Competitors
Mutualists

Predict the primary impact if the lodgepole pine declines
draw a line between the matching pair from each column

Impact	Effect
Increase in	habitat space
Decrease in	food/nutrient availability
	water availability
No impact	sunlight

Use evidence to explain your thinking:

Take it further!

Who else might be affected by change?

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SECTION 4: COMMUNICATE

Steps 12-14

Your Task: Share and discuss your predictions about who wins and who loses as lodgepole pines disappear from the Uinta Mountains.

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Rapidly Changing Forest

WINNERS	LOSERS
Which organisms will be positively by the loss of lodgepole pines?	Which organisms will be negatively affected by the loss of lodgepole pines?
Why might these organisms be positively by the loss of lodgepole pines?	Why might these organisms be negatively affected by the loss of lodgepole pines?

Conclusion: Who wins and who loses as lodgepole pines disappear from the Uintas?

14 **VIDEO REVIEW**

Discuss with your partner how your predictions compare with Dr. Mitch's predictions.

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