

Evidence Set 1 – Handout 2

STOP & THINK: How can we figure out which model gives the best explanation for why the fish are dying?

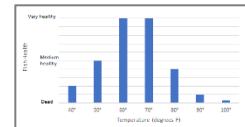
Evidence 1: Fish and Temperature

Questions:

1. What temperature range is ideal for fish?

From: _____ To: _____

Fish Health and Temperature

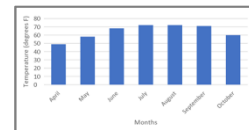


Questions:

1. The temperature is highest in: (circle one)

April August October


**Passion Puddle Average Water Temperatures
(measured 1 foot below surface)**



2. Three students each think something different about this evidence.


Which one of them is right? (circle)

The temperature in the pond gets too hot for the fish only in July and August.




A

The temperature in the pond never gets too hot for the fish.



B

The temperature in the pond gets too hot for the fish from June to September.



C

Name: _____

5A or 5B

Date: _____ SEEDS Y2 L1

Discuss with your partner:

- What have you learned about why the fish died from this evidence?
- What does this evidence show about the models? Draw a circle around the models this evidence supports and cross out the models that the evidence rules out.
- If the evidence is irrelevant to the model don't do anything.

A

B

C

D

Try to come to agreement on your ideas and your reasons!

Evidence 2: Veterinary Report

Veterinary Report

| Patient Information | |
|-----------------------------------|--|
| Date: 07/12/2019 | Species: Atlantic Bluefish, <i>Morone chirocentrus</i> |
| Owner: Dr. J. Smith | Referral: Necropsy |
| Referral Source: Fish Health Unit | Referral Number: 12345 |

| History of Illness | |
|--------------------|---|
| Signalment | Adult male, 10 years old |
| Onset of signs | Observed on 07/10/2019 |
| Duration of signs | 2 days |
| Signs | Loss of appetite, lethargy, and weight loss |
| Diagnosis | Septicemia |
| Prognosis | Good with treatment |



Signature: Dr. J. Smith
Date: 07/12/2019

Discuss with your partner:

- What have you learned about why the fish died from this evidence?
- What does this evidence show about the models? Draw a circle around the models this evidence supports and cross out the models that the evidence rules out.
- If the evidence is irrelevant to the model don't do anything.

A

B

C

D

Try to come to agreement on your ideas and your reasons!

Question:

1. What does "low levels of air in blood" suggest about a possible cause of death?

Name: _____

5A or 5B

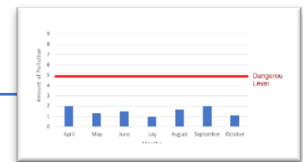
Date: _____ SEEDS Y2 L1

Evidence 3: Water Quality

Questions:

1. Based on this evidence, did the fish die from pollution? Yes or No

Passion Puddle Water Quality Data



Discuss with your partner:

- What have you learned about why the fish died from this evidence?
- What does this evidence show about the models? Draw a circle around the models this evidence supports and cross out the models that the evidence rules out.
- If the evidence is irrelevant to the model don't do anything.

A

B

C

D

Try to come to agreement on your ideas and your reasons!

Evidence 4: Pond Chlorophyll

Questions:

1. Circle all of the conclusions that are correct:
 - a. Conclusion 1: There is the most algae in July
 - b. Conclusion 2: There is the most chlorophyll in July
 - c. Conclusion 3: There is the most chlorophyll in October

Graph to Show the Amount of Chlorophyll in the Pond
(measured 1 foot below surface)



Discuss with your partner:

- What have you learned about why the fish died from this evidence?
- What does this evidence show about the models? Draw a circle around the models this evidence supports and cross out the models that the evidence rules out.
- If the evidence is irrelevant to the model don't do anything.

A

B

C

D

Try to come to agreement on your ideas and your reasons!

Name: _____

5A or 5B

Date: _____ SEEDS Y2 L1

Evidence 5: Dissolved Air

Questions:

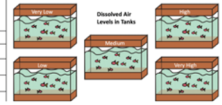
1. How much dissolved air do fish need to be healthy?

2. Are there any months during the year during which the dissolved air levels are too low for fish to survive? Yes No

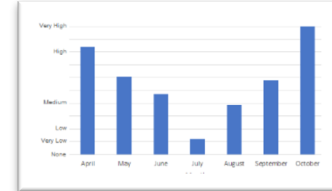
3. If you answered YES, which months? _____

Fish Air Concentration Tolerance under Laboratory Conditions

| Fish Air Concentration Tolerance under Laboratory Conditions | |
|--|------------------------------|
| Amount of dissolved air in the tank water | Swimming speed after 5 hours |
| Tank 1: Very low | No swimming |
| Tank 2: Low | Very slow swimming |
| Tank 3: Medium | Slow swimming |
| Tank 4: High | Normal swimming |
| Tank 5: Very High | Normal swimming |



Passion Puddle Dissolved Air in Water (measured 1 foot below surface)



Discuss with your partner:

- What have you learned about why the fish died from this evidence?
- What does this evidence show about the models? Draw a circle around the models this evidence supports and cross out the models that the evidence rules out.
- If the evidence is irrelevant to the model don't do anything.



Try to come to agreement on your ideas and your reasons!

BEFORE YOU GO: Grab a sticky note and put your name on it.

- Look at the class model.
- On a sticky note, write down two questions you have about our explanation of why the fish died.
- Stick your note on the Question Chart.