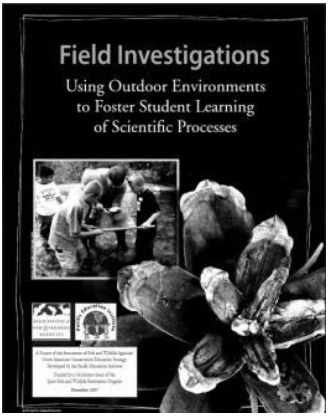
Field Investigation Journal



Name_____

http://www.pacificeducationinstitute.org/workspace/resources/field-investigations.pdf

Draw and Label the Local Ecosystem

Ecosystem Questions

- What are the parts of the local ecosystem?
- What role/function do the plants in the ecosystem play?
- Identify one transfer or transformation of energy in the ecosystem.
- What are some inputs and outputs to the local ecosystem?
- What is the energy source that runs the local system?
- Name 2 subsystems within the local ecosystem.
- What might happen if the _____ died in this local ecosystem?
- Is the local ecosystem an open or closed system? Why?
- Describe interactions between plants and animals in the ecosystem. Between living and non-living components

Comparative Field Investigation Format

Question
What is my question?

Prediction or Hypothesis
What do I think will happen?

Why?

Materials
What are the materials I need?

Procedure
What am I going to do?

What am I comparing?
(manipulated variable)

What data am I collecting?
(responding variable)

What am I keeping the same?
Method for collecting data
(controlled variable)

Data Collection
What am I observing/measuring?

How will I record information?

Analysis
What are the averages: means, medians, or modes of the data?

How can I share data in graphs, tables, or on maps?
What trends do I see in the data?

Conclusion
What is the place, date and time of my investigation?

What is the answer to my question?

What is my supporting data?

Discussion

How is this information important to understand the system?
Other questions I have

Temperature Investigation

Comparative Question:

Which location _____,

_____, or _____has the

highest _____ temperature (°C)?

Prediction/Hypothesis: _____

_____

Data Collection:

Date: _____ Time: _____

Study Site (Location): _____

Study Site Description: _____

_____

Weather: _____

_____

Location vs. _____Temperature °C

Location	Temperature °C				
	Trial 1	Trial 2	Trial 3	Trail 4	Ave
Open Grass					
Under Bushes					
Blacktop					

Analyzing Data

Choose a table, graph, number line, or map from page 31 FI guide to share the data. Identify an advantage and disadvantage of that way of sharing data?

Advantage

Disadvantage

Temperature Investigation: Sample Procedure

- Underline Conditions to be compared (Manipulated Variable)
- Double Underline data to be collected (Responding Variable)
- Circle Method for Collecting Data (Controlled Variable)
- * Observations are repeated (Multiple Trials)

1. Record date time and place
2. Describe weather (cloudy, sunny)
3. Leave the thermometer outside for _____minutes to make sure first readings are accurate.
4. Place the thermometer _____ at the first location (_____), shade from direct sunlight and wait _____minutes.
5. Record temperature in °C without picking up the thermometer.
6. Repeat the temperature measurement in this location _____ more times.
7. Move to the second location (_____) and take _____temperature measurements and record.
8. Move to the third location (_____) and take _____temperature measurements and record.

Temperature Investigation: Conclusion

- Limit conclusion to place, date, and time of investigation
- A conclusive statement clearly answers the investigation question Or answers the prediction
- Supporting data for lowest condition
- Supporting data for the highest condition or trend data
- Explanatory Language

Discussion

- Discuss factors that may have influenced data
- Discuss improvements to the procedure to control some of those factors
- Explain any inconsistent data
- Explain how this information might be important in the real world
- Explain how this information should inform actions or decisions
- Cite further questions for investigation
- What are other abiotic factors we could measure on this site?
- **How does the temperature investigation help me understand the local ecosystem?**
    - What are inputs that affect temperatures in a local ecosystem?
    - How do various types of land surfaces affect the temperature of an area?
    - Describe the energy transfer/transformations from the sun to the thermometer.

Pacific Education Institute's Science Journal

http://www.pacificeducationinstitute.org/

Field Investigation Guide-Free downloadable
http://www.pacificeducationinstitute.org/workspace/resources/field-investigations.pdf

Field Investigations-more resources
www.pltwa.com

Harvard Forest Graphing site
http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/publications/pdfs/Colburn_Schoolyard%20Graphing%20Manual_2009.pdf

http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/data/k12/Colburn%202009%20Graphing%20Exercises.pdf

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