Def: dividing a whole into parts such that there is a meaningful relationship among the parts.

Why important?
1. Vital analytical skill
2. To organize large sets of information
3. To see patterns, relationships, trends
4. To sort information

MPS 6: Analysis: classification

Pretest: Use an "x" to rate your Awareness & Skill
Time 10s Finish by ______

Objectives...
Read over...
Time _____ Finish by ______

Route ahead
to be systematic and organized: range of Tables/charts; figures or codes

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Codes</th>
<th>Tables</th>
<th>Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>See relationships</td>
<td>Circle, # code</td>
<td></td>
<td>Tree, Polya plot, Concept map,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gowin Vee, Fishbone</td>
</tr>
<tr>
<td>Decide</td>
<td>circle, underline tie line</td>
<td>cause-effect, truth tables, reasoning tables, CRE, decision tables, PPA</td>
<td>Venn, Decision trees, Gannt, PERT/CPM, tree</td>
</tr>
<tr>
<td>Cause-effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan actions</td>
<td>CRE, PPA, &quot;To do&quot; list</td>
<td></td>
<td>Gannt chart, CPM/PERT, Pareto plots, Force field diagram</td>
</tr>
<tr>
<td>Focus</td>
<td></td>
<td></td>
<td>Force field, Pareto</td>
</tr>
</tbody>
</table>

Variety, multi purposes for some options
MPS 6: Analysis: classification

Route ahead

Light socket

Discuss

Basics for classification

Relationships options: codes & figures.

Make decisions: options: tables & figures

Plan actions: options: specialized tables & figures

Be complete: options: mainly lists & tables

To focus: options: figures.

Summary

MPS 6: Analysis: classification

Light socket

Activity: as individual, classify the parts of a light socket

TIME ________

Discuss with neighbor

TIME ________

MPS 6: Analysis: classification

Criteria for a good classification
1. Define purpose for classification and create name
2. Label or name all the parts (if not already labeled)
3. For each level of classification must use one criterion and only one. (Called a basis of classification)
4. Be complete at each level
5. Must have at least two subclasses; no single
6. No faulty coordination (mistakes because titles not at same "level" of detail or generality)
7. No faulty subordination (mistakes because part is put in a category to which it does not belong).
8. Consistent level of detail
MPS 6: Analysis: classification

**Purpose:**
Example: light socket
1. minimize cost?
2. materials of construction?
3. inside/outside?
4. moving/non-moving?
5. function/pretty?

**Purpose:** inside/outside

**Name:** parts

---

**Parts**

1. "where"
   - Inside
   - Outside

2. "color"

In this example, we use a tree diagram to keep track of the information.

---

MPS 6: Analysis: classification

**Activity:** p 603 label the parts for
______________ or
______________

**TIME**

---

MPS 6: Analysis: classification

**Name/define**

For objects: *mouse trap*

- "Functional"
- head squasher
- bait pedal
- "Looks like"
- Loop
- Swing
- socket
- attachment base
- housing
- insulating insert
- Cap
- Metal cylinder
- "Paper" cylinder

---

MPS 6: Analysis: classification

**Faulty basis of classification**

Fruits, vegetables, apples

Men, women & children [used a combination of "age" and "sex"]

<table>
<thead>
<tr>
<th>Population</th>
<th>basis</th>
<th>age</th>
<th>[adults]</th>
<th>[teens]</th>
<th>children</th>
</tr>
</thead>
<tbody>
<tr>
<td>sex</td>
<td>men</td>
<td>women</td>
<td>guys</td>
<td>gals</td>
<td>girls</td>
</tr>
</tbody>
</table>

**Option: coding:**

1. Adults
   - 1.1 women
   - 1.2 men

2. Teens
   - 2.1 gals
   - 2.2 guys

3. Children
   - 3.1 girls
   - 3.2 boys
Which one doesn't belong? Recognize errors in classifications

Activity: p. 602 activity 2-1, as individual identify if the classification is correct; correct if incorrect.
TIME ____________

Discuss with neighbor TIME ____________

Write reflections TIME ____________

Example
(with number code)
Purpose: lab report
Basis?
title page
abstract

1. introduction

2. procedure

3. conclusion

4. graph

5. appendix of detailed calculations

6. references

Example
Lab report: purpose: Scientific method (with number code)

1. Introduction

2. Experiment
   2.1 Theory
   2.2 Apparatus
   2.3 Experimental method
   2.4 Experimental results
   2.5 Interpretation of results
   2.6 Discussion of errors
   2.7 Conclusion

3. Bibliography

4. Appendix
MPS 6: Analysis: classification Critique:

Classification

Activity: as individual critique and correct 1A & 1B p 602
TIME ________

Suggested Improvement
1. Results
   1.1 How much affected
   1.2 Part affected
2. Advantages and disadvantages

A. Types
   1. Mixtures
   2. Compositions

B. Methods of application
   1. Stage
   2. Rate
   3. Amount

C. Precautions
   1. Shrubs
   2. Flowers

D. Limitations

MPS 6: Analysis: classification Critique:

Activity: critique each other's outline for your reports
or critique the outline given 608
TIME 10 min

1. Introduction:
   A. Water power and its significance for Canada's development

2. The Crane Canyon Dam and Reservoir
   A. Information about the damsite
      1. Suitability of the damsite
      2. Character of the subsoil for the reservoir
      3. Cost of constructing the dam on this site
      4. Cost of preparing the area for the reservoir
      5. Cost of constructing the power generation facility
      6. Cost of transmitting the power
   B. Information about the water obtainable
      1. Minimum run-off available
      2. Probably water loss from leakage and evaporation
   C. Information about the community
      1. Results from Public Input Meeting #1
      2. Results from Public Input Meeting #2
      3. Summary of the "No Damn Dam Here" Rally

D. References

E. Appendices:
   2. Minutes of Public Input Meeting #1
   3. Minutes of Public Input Meeting #2
   4. Newspaper Clippings about the "Damn" Rally
MPS 6: Analysis: classification  **Suggested improvement** Report to inform about potential dam development

1. Water power and national its significance
   1.1 National need to power and recreation
   1.2 Crane Canyon dam and reservoir
2. Suitability of the dams site
   2.1 subsoil and topology
   2.2 water availability
3. Power generation
   3.1 Amount of power
   3.2 Costs of power
4. Recreational uses of the reservoir
5. Construction cost analysis and financing
   5.1 Costs
   5.2 Financing
6. Impact on the wildlife and on the community
7. Public decision-making process
8. Summary

MPS 6: Analysis: classification  **Reflections: on applying rules for classification:**

Reflections: use of "codes"
C#1 to C#5

**TIME**

---

MPS 6: Analysis: classification  **Research shows** that we solve problems in Short Term
Memory: that has limited storage capacity:
about 7 chunks. Use diagrams, figures, tables and codes to keep us organized.

1. Identify purpose
2. Select basis of classification
3. Consider options: code? Table? Figure?

**Route ahead:**
For the different purposes, introduce some familiarity with at least one option.

MPS 6: Analysis: classification  **Relationships**
Try #F1 Tree diagram

```
Name
_________

Basis    topic    topic

Basis    topic    topic    topic

Easy to do
Just keep basis consistent
```
MPS 6: Analysis: classification Relationships

Try #F2 Fishbone
Comment: a tree diagram on its side
Often used to summarize cause and effect relationships
Example: Issues relate to a student's university experience

MPS 6: Analysis: classification Relationships

Try #F3 Concept map
variation on a tree diagram but with central node
and subcategories radiating like spokes on a
wheel. Specific criteria for concept maps used to
represent knowledge. A scoring, suggested by
Gowin and Novak, is given to guide in the
development of Concept Maps for learning.
Unique features are:
1. All major concepts shown by ellipse arranged
about the central ellipse. The arrangement shows
the hierarchy for the concepts. Rating: for each
different level score 5.

MPS 6: Analysis: classification Relationships

Concept maps
2. All ellipses should be connected by annotated
link lines that give the relationship between the
concepts Rating: for each correctly annotated link
line score 1.

3. Show cross links from one section of the map to
another. Rating score 10 for each valid & important
crosslink; score 2 for each valid & relatively
insignificant cross link.

4. Limitations and assumptions. Score 1 for each
time the limitations are specified

MPS 6: Analysis: classification Relationships

Concept maps
5. Examples: score 1 for each example cited.

6. Cues or pointers are words that relate theory to
practice. Examples, "falls from a great height" is a
cue that potential energy is important. "Frictionless"
is a cue that the energy lost due to friction is to be
neglected. Score 2 for each "cue"

Useful for studying; sorting out notes

Activity: create a concept map for
______________________ or 606

TIME ________

discuss with neighbor TIME ________
Try #F4 Gowin Vee
This is a specialized visual for learning with emphasis on
6. Posing a focus question.
7. Doing an experiment
8. Gathering and interpreting data
9. Relating the results to concepts and theory
1. Draw a Vee about the Posed Focus Question
2. Put the experiment at the peak of the Vee
3. Up the right hand leg connect the experiment to the data collected and conclusions reached
4. Up the left hand leg connect the experiment to concepts and theory

CONCEPTUAL
Theory: Newtonian mechanics
Principles: Velocity increases when objects are accelerated. Acceleration of objects vary with slope of track.
Concept: acceleration
Theory: Uniform Acceleration

FOCUS QUESTIONS
1. How can uniformly accelerated motion be described in terms of distance, velocity, and time?
   (For our purpose this will involve plotting s vs t as functions)
2. How can we express the relationship among distance, velocity, time, acceleration and uniform acceleration motion?

METHODOLOGICAL
Value Claims: Completing the experiment and analysis of the experimental results will lead us to understand uniformly accelerated motion more fully and more meaningfully.

Knowledge Claims:
2. The tangent of the curve y = x at a particular time is equal to the y at the same time.
3. The area under the curve y = x at a particular t is equal to the value for y at the same t.
4. Acceleration = the slope of y = x
   = change in the slope of y = x for a change in x
   g = change in the slope of y = x for a change in x

Transformations: Graphs of data
Records for d to s
1. Plot a vs. t. y = x with d fixed, find the tangent of the linear curve and the area under the curve at a particular value of t. Let the term be t.
2. Plot a vs. t. y = x with d fixed, find the slope of each graph, the slope of y = x, for d = 10, 20, 30 millisecond.
3. Plot a vs. t. y = x, find the area from the following equations instead of finding the slope.
   a = -
   s = vs²/2, s = -½at², s = 0 after 47s.
   5. Plot a vs. t if found slope.

Event: Moving a slider on an inclined air track with initial velocity equal to zero. (Digital timer and photocell gates are used for data recording.)
MPS 6: Analysis: classification Decide

Purpose: to reason, keep relate data

Try basis on classification: consistency among data. To keep us organized use T#3 Reasoning tables.

1. Create table: list the option on both top and sides of table;
2. as gather information
   put "x" if it can’t be true
   put ✓ if it is possible
   put "o" if it’s true.

<table>
<thead>
<tr>
<th></th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>G</td>
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<tr>
<td>H</td>
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<td></td>
<td></td>
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<tr>
<td>I</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>✓</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continue p 603 And match up the families

TIME Could also use a tree diagram

MPS 6: Analysis: classification Decide

Purpose: reasoning T#1 Cause effect tables

1. List evidence across the top of table.
2. In the first column, list hypothesis as to what is the fault or cause.
3. For each hypothesis, note whether the hypothesis is consistent with each piece of evidence.
4. Find most-likely hypotheses as those that are consistent with all the evidence.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Temp 10C higher</td>
</tr>
<tr>
<td>Upstream condenser</td>
<td>✓</td>
</tr>
<tr>
<td>malfunctioning</td>
<td></td>
</tr>
<tr>
<td>Pump impeller</td>
<td>x</td>
</tr>
<tr>
<td>backwards</td>
<td></td>
</tr>
<tr>
<td>Temperature Instrument</td>
<td>✓</td>
</tr>
<tr>
<td>Instrument wrong</td>
<td></td>
</tr>
</tbody>
</table>

MPS 6: Analysis: classification Decide

Purpose: reasoning Sequence of equations to solve:

Use #T4 Column and row elimination CRE from a structural matrix

1. Number each equation
2. Create a matrix with the columns representing the variables and the rows the equations.
3. Indicate which variables are in which equation.

\[
A = \frac{\pi}{4} D^2 \quad (1)
\]

\[
< v > = \frac{F}{A} \quad (2)
\]

<table>
<thead>
<tr>
<th>Eqn</th>
<th>A</th>
<th>D</th>
<th>F</th>
<th>&lt;v&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
**MPS 6: Analysis: classification Decide**

**Purpose:** reasoning #T4 CRE This structural matrix

- Helps us visualize connections
  Helps identify the number of variables we must know initially to solve the equations. Need to have a square matrix where the number of variables = number of unknowns. Thus we need to know values for two variables: D and F, A and $<\rangle$; D and $\checkmark$ to solve this set.

- Column and row elimination to determine the sequence of calculations:
  1. Identify the column with only 1 entry
  2. Eliminate both the column and the row.
  3. Note the sequence in which the equations are thus eliminated. This represents the reverse of the sequence for sequential solution.

If you are left with no column with a single entry, then the remaining set of equations must be solved together or by trial and error.

---

**MPS 6: Analysis: classification Decide**

**Purpose:** reasoning #T4 CRE Pumping a fluid that detonates:

\[ F = \exp\left(-\frac{A}{L}\right) \quad (1) \]

\[ <\rangle = \frac{F}{A} \quad (2) \]

<table>
<thead>
<tr>
<th>Eqn</th>
<th>A</th>
<th>L</th>
<th>F</th>
<th>$&lt;\rangle$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Given L and $<\rangle$

<table>
<thead>
<tr>
<th>Eqn</th>
<th>A</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Conclude: solve by trial & error

---

**MPS 6: Analysis: classification Decide**

**Purpose:** reasoning Try #T4 CRE Example

1. \(a = 5\)
2. \(b = 2a^2\)
3. \(c = a + 3b\)
4. \(d = a + 5c\)
5. \(e = b + 3c + d + f\)
6. \(0 = a + c^2 - e\)
7. \(g = f^{10}\)

<table>
<thead>
<tr>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
<th>(e)</th>
<th>(f)</th>
<th>(g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(x)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>(x)</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>(x)</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>(x)</td>
<td>(x)</td>
<td>(x)</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>(x)</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
<td></td>
<td>(x)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(x)</td>
</tr>
</tbody>
</table>

Option-36

Option-37

Option-38
MPS 6: Analysis: classification Decide
Try #F6 Decision trees.
1. Identify options at each branch point, label.
   Add probability at each branch. Sum of probabilities at each point = 1.

Example: Choose mirror or matches to signal for rescue in the Caribbean.
Likely to be seen by a plane or a ship? During day or night? If daytime, sunny or cloudy?

```
Ship
  0.4
   \   /
  Day c Night

Plane
  0.6
   \   /
  Day s Night
```

MPS 6: Analysis: classification Decide & Plan actions
Try #F7 Gantt charts
1. List jobs needed to be done to complete the task
2. For each job, list what has to be done before the job can be started and what jobs can be done concurrently
3. For each job, list the estimated amount of time needed to complete the job.
4. List who is responsible for completing each job.

MPS 6: Analysis: classification Decide
Try #F8 CPM & PERT Critical path method; CPM; Project Evaluation & Review Technique, PERT
1. List jobs needed to be done to complete the task.
2. For each job, list what has to be done before the job can be started and what jobs can be done concurrently.
3. For each job, list the estimated amount of time needed to complete the job. (For PERT list min, likely & max)
4. Draw a diagram showing the connections.
5. Sweep through from the start and calculate the earliest start and earliest finish for each job. When ever there is a merge, then the job at the merge starts with the maximum of prerequisites.
6. Sweep through from the end and calculate the latest finish and latest start for each job. When ever there is a burst, the job at the burst has the latest finish that is the minimum of the subsequent jobs.
7. Calculate the total float for each job as the difference between the earliest and latest start (or finish).
8. The jobs with 0 total float are on the critical path.

MPS 6: Analysis: classification Decide
Try #F10 Pareto plots Search for the 20% that causes the 80%.

Activity For the steel mill data, create a Pareto plot.

TIME ____________
MPS 6: Analysis: classification Plan actions & focus
Try #F11 Force field diagram

1. Identify the current situation of concern
   "I want to watch less TV" & represent this as a vertical line.

2. List factors that cause you to do more or that promote. Show these as horizontal lines with a separate line for each.

3. Horizontal arrows in the opposite direction are shown for factors that cause you to do less or that inhibit or oppose the activity.

4. Continue until you have a rich set of options driving the current situation in either direction.

   Current activity level
   forces giving more ____________________________ Forces giving less ____________________________

MPS 6: Analysis: classification Plan actions & focus
Try #F11 Force field diagram

Activity: as an individual, do a force field analysis of

____________________________________________

TIME _________

Discuss neighbor

I want to reduce my anxiety when I write exams
I want to develop a study plan
I want to find a summer job
I want to watch less TV
I want to ________________________

MPS 6: Analysis: classification Be complete
Try #T7 Checklists
Example: for time management

1. Phone Jake
2. Solve homework
3. Plan weekend
4. ....
MPS 6: Analysis: classification Be complete
Try #T9 Creativity triggers.
Rationale: whenever a brainstorming session stalls, we need to bring in a new perspective to restart the flow of ideas. We call these triggers. Many such checklists have been created. See MPS 7.
Here is SCAMPER
S substitute, who? What? When?
C combine purposes? Appeals?
A adapt copy, use similar idea with twist
M modify; change size, shape, location?
P put to other, substitute who else instead?
E eliminate; minimize
R reverse or rearrange; interchange

MPS 6: Analysis: classification Be complete
Try #T10
Purpose: to define problems; to see things from other perspectives, to be complete
Try as Basis of classification:
5W's & H:
  who, what, where, when, why & how
combine with #T11
IS & IS NOT

Use a table to keep us organized & systematic

| MPS 6: Analysis: classification Be complete
Try #T10 & 11 For situation complete: |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Who</td>
</tr>
<tr>
<td>What</td>
</tr>
<tr>
<td>When</td>
</tr>
<tr>
<td>Where</td>
</tr>
<tr>
<td>Why</td>
</tr>
<tr>
<td>How</td>
</tr>
</tbody>
</table>

Apply: p 603 Use 605 TIME

MPS 6: Analysis: classification Be complete
Try #T12 Use checklist
When anticipating safety, environmental hazards on a process, consider many potentially hazardous events that might occur. To be Complete use checklist
H AZOP
Consider
• none, no or not
• more of
• less of
• more than or As well as
• part of
• reverse
• other than
Activity: RCMP Identikit
You are to analyze the human male face, front view and classify the parts. Assume a white Caucasian. The purpose is to create an identikit that can be used to create a view when an artist is not available. For each part, estimate the number of options you think you would need.

TIME _______ Finish by _______

Feedback:

MPS 6: Analysis: classification Facts vs Opinions
Apply definitions to classify information:
Use whatever technique you want:
We often confuse the value of information with whether it is fact or opinion.
Rule #1: a fact is a fact; this is independent of time, us and our needs
Rule #2: the value of information depends on our needs and our problem.

Three classes of Facts:
Class #1 Fact: definition: something capable of being observed. "Oxygen is a colorless, odorless gas which bursts into flames when ignited."
Class #2 Fact: Conclusions correctly drawn from the observations: Because the gas was colorless, odorless and burst when ignited, I conclude that the gas is oxygen.
We must have sufficient steps in the argument, sufficient class #1 facts and correct logic..

MPS 6: Analysis: classification Smith & Wesson
Tops 230
Bottoms & ears: 31
Eyes: 109
Eye brows: 16
Mouths: 37
Noses: 34
Additions: Glasses 27; hats, 39; Facial tones 12
Beards 24

MPS 6: Analysis: classification Facts vs Opinion
Class #3 Fact: Quotation marks indicating that this is an accurate statement of what someone said or wrote. John said, "It's a cold day today." Class #1 fact might be that the temperature is 20C. Many of us might interpret this to be a warm day. Nevertheless Class #3 fact is that John said "It's a cold day today". Just because someone writes something or says something does not make it a class #1 or #2 fact.

Everything else is opinion.
Example John said that it was a hot day. Is opinion. We really do not know for sure exactly what John said.
Opinionated fact: A factual statement is made but the author also includes opinion. The modifiers can express significance, "incidentally," "only" value (good or bad) a generalization (use of "All.. Everybody knows...", the verb "to be", or emotive phrases "everyone should accept that the temperature is 45C. " Obviously" "It stands to reason.."
MPS 6: Analysis: classification Fact vs opinion.

<table>
<thead>
<tr>
<th>Statement</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
</tr>
</thead>
<tbody>
<tr>
<td>John said &quot;The gauge reads 200 kPa.&quot;</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>John said &quot;The pressure is 200 kPa.&quot;</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>John said that the pressure gauge reads 200 kPa.</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>John was surprised that the gauge reads as high as 200 kPa.</td>
<td>Y</td>
<td>O-F</td>
<td>N</td>
</tr>
<tr>
<td>John said &quot;The pressure gauge reads 200 kPa, the gauge was calibrated yesterday, the pressure tap is clear. If I increase the pressure slightly, the gauge reading increases slightly. I conclude that the pressure is 200 kPa.&quot;</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Activity: as ________________
for task p.604 Identify
Class #1 Facts: raw data
Class #2 Facts: valid conclusions
Class #3 Facts: direct quotations
include such clarification as Class #3 Facts of Opinion; .... of Class #1 Facts etc.
TIME ____________

Discuss neighbor TIME ____________

Activity: based on the scenario, consider the 10 statements, are they True? False? Cannot tell?
p.604 as Individuals ________________
TIME ____________

MPS 6: Analysis: classification Facts vs opinions

General observations about facts:
- Communicating just the facts is boring.
- We usually want to hear opinion.
- We usually want to give opinion.

First aid, so what? :
State the Class #1 facts and then add your opinion.
State the Class #1 facts, then add a qualifier... "The gauge reads 200 kPa, if that is the pressure then...."

Reflections:
TIME ____________

MPS 6: Analysis: classification Be complete
Try #T13 How to read a paper. Apply checklist and definitions of facts, opinions and opinionated facts. Also apply logic and reasoning from MPS 30.
Checklist:
1. Identify the goals: what was the purpose?
2. Identify the conclusions: Sort them into new conclusions: new conclusions previously unknown confirmation of past conclusions: prove what we already know from previous publications? refutation of past conclusions: disprove what others claimed
3. Identify the evidence supplied: use fact vs opinion to identify Class #1 and Class #2 facts.
Do cross checks between tables of data, graphs of data: are they consistent?
Check the Class #3 facts: has the author quoted and interpreted the previous publications correctly?
4. Does the evidence support the conclusions?
Return to pretest: Use a circle to summarize your rating of your Awareness Skill
Time 10 s

The Objectives are:...