

# Characteristics of Life - Summer Assignment One Pager

**What is a One Pager?** A one pager is a way to visually share key ideas and information from what you have learned. When you create a one pager, you are trying to use both visual symbols and important words to clearly and concisely share your most important takeaways with someone else.

**IMPORTANT GUIDELINES:** The one pager must be HANDWRITTEN (and legible) - You can do this on paper with pen /pencils /colors etc. or you can complete this on your computer using your computer pen. Nothing should be typed and images should NOT be taken from the internet. You should still include images, but they must be hand drawn/traced. All of your work (*except your list of references*) should fit on a SINGLE SIDE of paper (8.5"x11")! This is critical, because you're practicing the process of synthesizing essential information and concepts. Make your best attempt to FILL the page with enriching and detailed information, try not to leave bare space. You can chunk your information in segments if you'd like. See the examples on the next page. You can choose to have the orientation as Portrait or Landscape.

**DUE DATE:** This should be done INDIVIDUALLY and submitted, in hard copy, to your teacher *on the date in the instructions sheet*. You **MUST** print your work if you complete it digitally. If you complete the one pager by hand, simply turn in your copy.

You will be researching one organism of your choice and connect the organism to the 8 characteristics of life. Here's what it **MUST INCLUDE (at minimum)**:

- The common & scientific name of the organism
- One or more picture(s) of the organism
- Classification
  - General description of the organism (What is it? What Kingdom is it in?)
  - What is the organism's normal habitat? Include a picture.
- Key characteristics of the organism, exhibiting the characteristics of life:
  - GENETIC CODE
    - How many chromosomes does this organism have?
    - Approximately how many genes does this organism have?
    - Identify one specific gene that this organism has in common with Humans!
  - MADE OF CELL(S)
    - What kind of cell(s) does it have? (eukaryotic/prokaryotic?)
    - Is the organism unicellular or multicellular?
  - EVOLVE
    - Compare the organism to one of its ancestors. What has changed over time?
    - How is this organism well adapted to its environment?
  - GROW/DEVELOP
    - What is the size of the organism? How large does it normally get? (ex: height, weight)
    - How does the organism grow & develop?
  - REPRODUCTION
    - How does it reproduce? Sexually or Asexually?
  - LIFESPAN
    - What is the typical lifespan of this organism?
  - OBTAIN and USE MATERIALS/ENERGY
    - What is its diet or mode of nutrition? Is it a consumer or producer?
      - If it is a producer, how does it produce its own food?
      - If it is a consumer, what does it consume? Does it have any predators? Or is it the predator?
  - RESPONSE TO ENVIRONMENT (STIMULI)
    - Describe an example of how this organism responds to stimuli
  - HOMEOSTASIS
    - Describe an example of how this organism maintains homeostasis
- Provide at least 3 additional interesting/unique/exotic features about your organism
- On a separate page you should include a list of references you used to collect your information. Your references should be in MLA format.

Sample Blank Layouts →

Kathryn Chen

# Scientific method

## Observations

- ★ Gathering information about events or processes cautiously and orderly
- ★ Use of 5 senses to examine the natural world

## hypothesis

- ★ Hypothesis: proposed scientific explanation for a set of observations
  - generated using prior knowledge
  - testable & can be confirmed with experimentation
- ★ Prediction: "if... then" statement forecasting results of supported hypothesis

## experiment

- ★ Designed to test a hypothesis → good experiment can be repeated with same results
- ★ Controlled experiment: includes control and experimental group differing by one variable
  - Control group: not tested, only used for comparison
  - Experimental group: group being tested
  - Constants: factors kept the same for control & experimental groups
  - Independent Variable: manipulated factor
  - Dependent variable: measured/observed factor

Dependent var.

Independent var.

## data analysis

- ★ Qualitative data: descriptive, physical characteristics
- ★ Quantitative data: data involving numbers, measured through counting & measuring
- ★ Organize data in charts & tables
- ★ Create graphs

## conclusion / communicate

- ★ Explain data and results
- ★ Support or reject hypothesis
- ★ Summarize experiment & form new questions
- ★ Share results with other scientists in a scientific article

## retest

- ★ Experiment does not support hypothesis → reject/recreate hypothesis
- ★ Experiment supports hypothesis → Create & test new predictions
- ★ Repeatedly supported hypothesis → theory

[illegible]


**Rubric:**

	4	3	2	1/0	Comments
<b>Required Elements</b>	All required elements are included. Additional elements may also have been added.	Almost every required element is included.	Several key elements are missing.	Very few of the required elements are present or missing entirely.	
<b>Scientific Accuracy</b>	All key characteristics are utilized appropriately and connections demonstrate a high-level of understanding.	Most key characteristics are utilized appropriately and connections show good understanding.	Some key characteristics are inappropriate and /or connections illustrate a below average understanding	Very few key characteristics are utilized appropriately and very few connections are illustrated.	
<b>Mechanics (i.e., spelling, punctuation, and grammar)</b>			May contain a few minor spelling, grammar, or punctuation errors, but they do not impede understanding.	Pervasive spelling, grammar, or punctuation errors. Hard to understand the meaning.	
<b>Important Guidelines</b>	All guidelines were followed to the fullest extent.	Almost every guideline was followed closely.	Several key guidelines were not followed closely.	Very few, if any, guidelines were followed.	
<b>Creativity</b>	One Pager was exceptionally creative and original in design.	One Pager showed creativity in most aspects (some color or creativity in layout).	One Pager showed little creativity (very little color or creativity in illustrations and layout).	One Pager showed no creativity. Information was directly copied from a source(s) with no color or thought.	
<b>References</b>			Appropriate references used and listed	References were used but were not appropriate or not listed.	

Total = \_\_\_\_\_ / 20

**\*\*This assignment will be scaled to 10 points\*\***