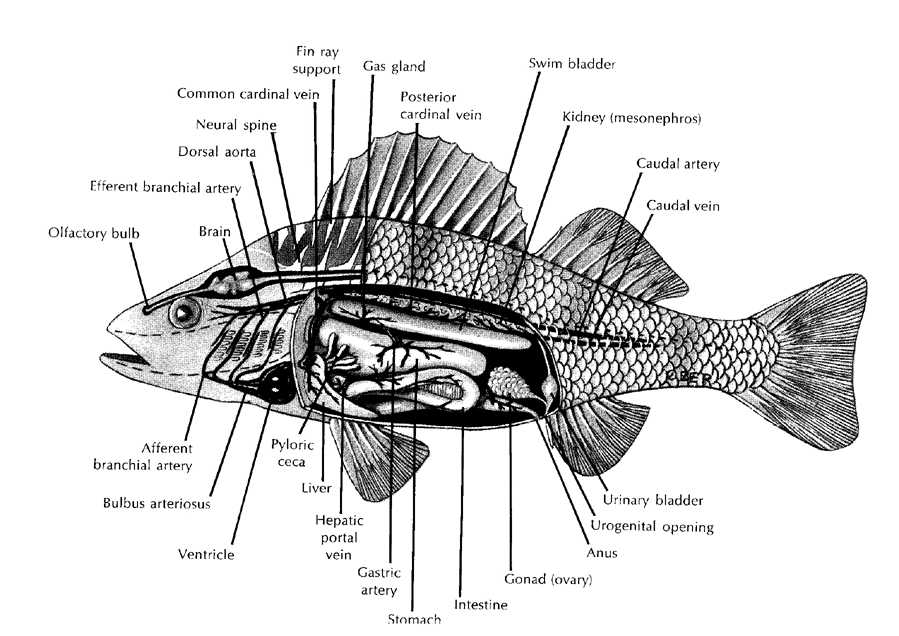
Student Self-Designed Labs



Stage 1; Open-ended inquiry lab

***Cover Sheet***

***Student-designed Fish Dissection Lab***

Team name;

4 Members of team:

Roles of each member: ROLES MEMBER NAME

Background (to be completed prior to day of lab)… **Prior to Lab…**

1. ***Diagrams & Anatomy*** (1-page minimum, printed from the net):
2. ***Ecology & Life cycle*** (1/2-page minimum, your own words):

Pre-lab write-up (to be completed prior to day of lab)…

1. ***Research question, Testable Hypothesis, & Procedures***:
2. ***Data table(s) with space for drawings & measurements***: (typed)

Housecleaning during the dissection lab:

Who is responsible for… **Day of Lab…**

1. Picking up the **dissection supplies**?
2. Pick up and disposal of specimen?
3. Cleaning/returning the dissection supplies?
4. Cleaning the lab table area?

Biology during the dissection lab:

Who is responsible for… **Day of lab…**

1. “Officially” **observing** data & making sure its recorded?
2. **Recording** the data & measurements to answer the hypothesis?
3. The labeled **hand-made drawings**?
4. Team **networking & questioning** with other groups?

Who is responsible for the **Due day after lab…**

1. **Units (metric) & Data Manipulation**?
2. **Analysis** (in proper format; refer to science fair)
3. **Conclusion** (ditto)
4. Overall **lab review** including framework, evidence, logic, error & context?

***Teacher’s initials:(due prior to lab)***

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All present. | Not more than one category missing or out of sequence. | Not more than 2 categories missing or out of sequence. | More than 2 categories missing or out of sequence. | | Clarity | Lab report sections clearly distinct from each other; grammatically correct English; figures/graphs correctly titled & labeled. | Sections clearly labeled but not separated; English generally correct; figures/graphs correctly labeled but not titled. | Sections labeled but not separated; frequent errors in grammar; figures/graphs labeled but contain errors in units, axes or headings. | Sections not labeled nor separated; English poor; figures/graphs not titled nor labeled. | | **REPRODUCIBILITY** | | | | | | Hypothesis | Clear explanation of purpose; educates by providing context. | Gives a correct purpose with some framework | Declares a purpose that is correct. | Purpose is incorrect. | | Design | Clear step-by-step description of experimental procedures; labeled diagrams/drawings of any apparatuses/devices/observations used to carry out the experiment. | Step-by-step description that misses not more than one key detail; diagrams/drawings included but not labeled | Step-by-step description that misses not more than two key details; apparatuses/devices mentioned but not shown. | Description lacks more than two key details; no mention of apparatuses/devices used to carry out the experiment. | | Detail | Includes formulas/calculations used to analyze data & explains their use. Records observations and explains their import. All original data included. | Includes formulas and calculations used to analyze data. Records observations, sometimes their import. Most original data included. | Includes formulas and some calculations used to analyze data. Records some observations. Some original data included. | Does not include formulas nor calculations used to analyze data. No observations noted. Original data not present. | | **ACCURACY** | | | | | | Units | Units are used correctly and consistently throughout the report. | Units generally used correctly in most of report | Units used only in some key parts of report. | Units are rarely used or are generally incorrect. | | Data Manipulation | Calculations clearly laid out. Dimensional analysis/Math correct. Figures display data correctly, all variables labeled. | Calculations contain few errors in dimensional analysis or math. Figures correct, variables unlabeled. | Calculations contain some errors in diminsional analysis or math. Figures correct. No labels or legend. | Dimensional is analysis not used. Math not shown. Figures display data incorrectly. | | **CONCLUSION** | | | | | | Framework | Restates the research question, supports or refutes it and explains the role of the test in making the decision. | Restates the hypothesis and supports or refutes it. | Supports or refutes the hypothesis without restating it. | Does not address the hypothesis. | | Evidence | Uses data powerfully as evidence to support statements. | Uses data to support statements. | Refers to data in the body of the report as support. | Does not use data to support arguments | | Logic | Conclusion is logically forced from data and prior knowledge. | Conclusion is logical but not thoroughly defended. | The conclusion is logical but poorly defended | The conclusion is incorrect. | | Error | Identifies sources of error and explains effect on results. | Identifies sources of error. | Suggests possibility of error but identifies no sources. | Does not address possibility of error. | | Context | The experiment is made meaningful by discussion of its scientific or societal implications; proposals for further investigation are made. | An application or use of the work is provided; a proposal for further investigation is made. | The work is generally ascribed to be useful but no rationale is provided for thinking so. | No relevance is provided for the work. | | |

