

THE SCIENTIFIC LITERACY PAPER; A GRADUATION PORTFOLIO TASK.

***Required to be proficient to graduate.**

OMG, what do I do?

Select one of the six categories and don't look back. Research your category and become an expert (not a poser.) Grow an opinion about the **functioning, future, and fate** of your category; this will be your **thesis**. Then craft a 2000+ word formal research paper that does the following:

- I. Provides a professional synopsis with a scientific title and abstract (150 words, strict)
- II. Introduces your topic and thesis in scientific and ethnographic ways (150 words)
- III. Reflects your expertise within the category by explaining its functioning very thoroughly (750 words)
- IV. Defends your thesis (750 words)
- V. Concludes your masterpiece with suggestions for further study (200 words)

The Six Categories:

1: Genetic Disorders (For lack of opinions, present "how to solve it" in a perfect world)

Achondroplasia	Factor V (Leiden Thrombophilia)	Osteogenesis imperfecta
Alpha-1 Antitrypsin Deficiency	Familial Hypercholesterolemia	Parkinson's disease
Antiphospholipid Syndrome	Familial Mediterranean Fever	Phenylketonuria
Autism	Fragile X Syndrome	Poland Anomaly
Autosomal Dominant Polycystic Kidney Disease	Gaucher Disease	Porphyria
Cancer	Hemochromatosis	Progeria
Cri du chat	Hemophilia	Retinitis Pigmentosa
Crohn's Disease	Holoprosencephaly	Severe Combined Immunodeficiency (SCID)
Cystic fibrosis	Huntington's disease	Sickle cell disease
Dercum Disease	Klinefelter syndrome	Spinal Muscular Atrophy
Down Syndrome	Marfan syndrome	Tay-Sachs
Duane Syndrome	Myotonic Dystrophy	Thalassemia
Duchenne	Neurofibromatosis	Trimethylaminuria
Muscular Dystrophy	Noonan Syndrome	Turner Syndrome

2: Gene therapy (using DNA to treat cancer, blindness, and other human ailments)

3: Genetic evolution (Support or refute recent studies that "re-map" evolution based on DNA)

4: Genetic engineering (look into corn, Monsanto, soy, Fast Food)

5: Genetic warfare (Is it real, is it ethical in the arena of war?)

6: Cloning (How it is beneficial or irresponsible?)

Off-limits:

Religion: Religion can be discussed to add context, but only for sake of reference, never as a source of argument.

FYI: the majority of scientists are believers

Necessities of the paper:

Demonstrate proficient command of the modern conventions of scientific writing

Prove the chosen topic is an issue that concerns our society.

Use background info and current studies from multiple credible sources (show numbers)

Detail the genetic processes involved

Discuss the implications on local and global society

If applicable, defend your opinion using data, NOT emotional appeals (no "how would you feel")

Structure:

Title, author and 150-word abstract (on the cover page)

Scientific introduction with thesis (150 words)

Content: beta & defense (1500 words written. The use of images, tables, and charts may also be necessary)

Scientific conclusion (200+ words that summarizes findings AND concretely suggests further studies)

MLA style bibliography with 8+ credible sources cited

Here are the general guidelines handed down from Envision Schools:

Envision Schools Graduation Portfolio Performance Outcome:

SCIENTIFIC LITERACY (*Science & Technology in Society*) RESEARCH PROJECT

Students will complete a research project on an issue related to the impact of science and technology on society that demonstrates the performance outcomes below. Students may choose the format in which to communicate what was learned (e.g., a multi-media project, a research paper, a presentation), however, one component must be in a written format (i.e., a review of the literature). The following Performance Outcomes meet Standard "M" from the California Science Content Standards for Grades 9-12. *"Investigates a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California."*

ARTICULATING A SCIENCE-RELATED ISSUE (*challenge and explore it*)

- Select an issue to explore that investigates the impact of science and/or technology on society
- Investigate and explain the scientific background of the issue
- Explain how the science/technology issue may affect society and its significance
- Organize the issue and the background information in an interesting and coherent way.

CONDUCTING THE RESEARCH

- Search for relevant information from a variety of primary and secondary sources
- Evaluate the reliability and credibility of the various sources of information consulted
- Analyze, compare and contrast information collected from a variety of sources
- Evaluate the validity and limitations of own conclusions

DEVELOPING AND SUPPORTING A THESIS

- Create a thesis that reflects a specific point of view about the issue
- Support the thesis with evidence from research and analysis
- Consider other viewpoints on the issue and alternative explanations
- Reflect on how the research project influenced one's own thinking about the issue

COMMUNICATION (*Conventions*)

- Follow conventions depending on the mode of communication (e.g., **research paper**, presentation, PSA, poster, documentary)
- Consider the audience in the presentation of the project
- Use a scientific voice in discussing the science related topic/issue
- Properly cite sources of information