Subject area/course: Science/Biology
Grade level/band: 10
Task source: Center for Collaborative Education (Primary Authors: Amy Troiano, Rhonda Fortin, Alex MacPhail, Cari Sbardella)

Should Stem Cell Research Continue?

STUDENT INSTRUCTIONS

A. Task context:

Stem cell research has become extremely controversial over the past decade. Supporters and opponents of stem cell research argue passionately that lives are at stake. How do you balance the costs of stem cell research against the possible benefits? How do you navigate the ethical issues involved?

You will be investigating stem cell research. You will be given articles explaining the current state and future possibilities of stem cell research. You will be required to research articles from credible sources written in support of and against continuing this work. Based on your research, you will decide if you are for or against the continuation of stem cell research. Once you have made your decision, you will use more evidence to support your argument. You will then use one of the formats suggested to educate the general public about stem cells and argue your position on stem cell research, citing strong evidence from your research for your position.

B. Final product:

You will choose one of the following to educate the public about stem cell research:

- Letter to a government official
- Brochure to be distributed during an election
- Public Service Announcement (PSA)
- Other (Students may choose another form of product with teacher permission)

Your final product must include a bibliography and citations. In addition, you will submit a self-assessment, a one page reflection on the quality of your work based on the rubric.

Your final product needs to address these issues:

1. Clearly state the criteria for public health and ethics related to your position.
2. Describe the molecular basis that relates to your position. Be sure to describe the connection of DNA to your position.
3. Explain the connection between ethical issues and the science of stem cells. Be sure to include evidence that considers the use of different types of stem cells.
4. Clearly state your position and describe multiple lines of evidence that supports your position. If possible, address counter-arguments as well.

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ADDITIONAL INFORMATION

C. Knowledge and skills you will need to demonstrate on this task:

1. On this task, you will show that you know these things:

- how the structure of DNA determines the structure of proteins
- that structure of proteins determine their functions, which carry out the essential functions of life through systems of specialized cells
- the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms

2. On this task, you will show that you are able to do these things:

- engage in argument using evidence
- use valid reasoning and relevant and sufficient evidence
- obtain, evaluate, and communicate information
- integrate information into the text maintaining the flow of ideas
- follow a standard format for citations
- cite textual evidence to support analysis of science and technical text

D. M**aterials needed**:

Below is a list of resoucres that you might find useful.

- Textbooks: “Biology: Dynamics of Life” and “The Unity and Diversity of Life”
- Science Reference Center on ebscohost.com: http://stemcells.nih.gov/Pages/Default.aspx
- Code of Ethics for Biotechnology: http://www.asbmb.org/Page.aspx?id=70
- TED Talk: http://www.ted.com/talks/susan_solomon_the_promise_of_research_with_stem_cells?language=en
- Medical News Today: http://www.medicalnewstoday.com/categories/stem_cell
- Academic Search Engine: www.refseek.com, search for “stem cell research future”

E. Time requirements:

You will have approximately 3 weeks to complete this task. There are many opportunities for reflection including teacher and peer feedback.

F. Scoring:

Your work will be scored using the SCALE Should Stem Cell Research Continue? rubric. You should make sure you are familiar with the language that describes the expectations for proficient performance

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