RESEARCHING
TO DEEPEN UNDERSTANDING

DEVELOPING CORE PROFICIENCIES
ENGLISH LANGUAGE ARTS / LITERACY UNIT

GRADES 11-12

RESEARCH TOPIC REPOSITORY

DESIGN

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PURPOSES AND USES OF A RESEARCH TOPIC REPOSITORY

A Research Topic Repository provides a starting point and a set of common source texts in a given topical arena for student inquiry while developing the research proficiencies that are the instructional focus of the Research for Deepening Understanding Units. The Repository suggests issues to consider in narrowing and focusing a class or student research, provides examples of possible areas of investigation that might be pursued, lists broad inquiry questions that can lead to investigative paths, and includes a set of source texts for one possible area.

The common text set models a range of text types, perspectives, and provides both background and extension texts. Background texts should be accessible to the student (relatively straightforward in approach, syntax, and language), require little background knowledge to interpret, and be comprehendible, given the student's reading skill and level. Extension texts should be rich, complex, and challenging (at the upper end of the text complexity band). They should be characteristic of texts in the field being investigated, present sophisticated arguments and/or research studies, and demand that students read closely to unpack vocabulary, syntax, and meaning.

The Repository supports and informs teacher and student decisions that are made during the research process, as described in the Researching for Deeper Understanding unit plan. The first decision is which Repository to use as a context for the unit and student research, or whether to develop a new, parallel Repository. Teachers and students should base this decision on the instructional level, curriculum context, student interests, and common text levels.

The Lexiles of the model common sources contained in this repository range from 1160L to 1610L.

I. INTRODUCTORY TOPIC DESCRIPTION

DESIGN

Consciously or not, everything man-made has been designed. Design has specific purposes and audiences, it seeks to solve the problems people encounter as we navigate the world around us, and while design not only helps the engineering process of creating things and how they work together, its primary focus is how people interface and experience those man-made things in everyday life. Design is a way of thinking about relationships.

The former chairman of the UK Design Council, Sir George Cox, offers the following definition of design: "Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end." We see this definition playing out in practically every facet of our lives. And while we may hardly notice it, design influences the ways in which we communicate, how we interact within our operational frameworks/environments, the extent to which we comprehend, learn, and understand, and even the ways in which we perceive ourselves in the world.

Designers are hard at work developing and contributing to our fashion, the Internet (what we see and what is behind the scenes), our cities and transportation systems, medical devices and drugs, curricula and evaluations, policy, and comfort, among countless others. Importantly, designers strive to optimize efficiency and effectiveness. For example, communications design finds the best ways to explain complex and difficult concepts. Imagine learning how to use Instagram by reading the code behind the app rather than by simply using it. In terms of appearance and functionality, design evolves and revolves around our changing needs and wants. Further, our interactions with the designs around us not only influence the ways we experience the world and others, but also shapes our identities.

Through its ubiquity and applicability, the world of design – perhaps *by design* – offers endless inquiry paths. The variations within even the most specific areas of interest within design offer opportunities for conceptual and practical investigations. For example, with clothing fashion, a student must consider the practical aspects, i.e., fabrics, fit, and cost, while bearing in mind trends and markets, i.e., fair trade and sustainable fabrics.

When beginning any investigation into the field of design, the teacher and students will want to consider what the various kinds of design have in common. Typical elements that make up this list might include intent, goals, audience, usefulness, creativity and outcome, or impact. As the investigation develops and areas of interest emerge, a broader conversation about the skills, resources, and training required for design should prove useful. Further, because the nature of design possesses inherent utility, teachers might also want to discuss what constitutes "good" vs. "bad" design, and what sorts of measurements and evaluations of design are most useful (i.e., user feedback, performance metrics, scalability, etc.).

As you will discover, the common texts for this unit reflect an inquiry path concerning sustainable design. In some ways, this demonstrates the flexibility of the conversation around the topic. Rather than focusing specifically on the practical or conceptual aspects of design, an investigation into sustainability opens up for the researcher a conversation about ethical considerations that may prove to not only improve how we interact with the world, but also how the world responds to us.

II. POSSIBLE AREAS OF INVESTIGATION

1. Intent of design (e.g., appearance, functionality, durability)

2. Design elements (e.g., goals, audience)

3. Practical design (e.g., utility, norms, materials)

4. Design's influence on culture, policy, and society (e.g., genres, rights, community)

5. Experiencing design (e.g., place, ownership, ergonomics, the unseen)

6. Influence of design on identity (e.g., style, dynamics, worldview)

7. The economy of design (e.g., products, trends)

8. Design and art (e.g., dimensions, music/film/painting/sculpting, digital)

9. The ethics of design (e.g., sustainability, access)

10. Occupational (e.g., mechanical, graphic, communications, sound, industrial, commercial)

III. POSSIBLE GUIDING QUESTIONS FOR INQUIRY AND RESEARCH

The following questions can be used to initiate inquiry and guide students in identifying paths for investigation. These thematic questions imply causal or correlative relationships between design and various aspects of life.

1. What are some designs you already know? Describe your favorite design.

2. How does design influence relationships?

3. In what ways has good design improved your life; bad design challenged your life?

4. How do design features evolve?

5. What social and environmental contexts influence design, and how do they play into a designer's decision making?

6. How does design involve moral implications?

7. What reasons exist for design ownership?

8. Why would designers claim they can "save the world?"

9. How do our evolving needs and wants demonstrate a lack of and need for the "perfect design?"

IV. SOURCE LOCATIONS

In conducting research, students should be encouraged to conduct searches for sources in a variety of areas such as the school library, visits to and observations of sites and places related to the topic, search engines like Google and Bing, and on-line databases like EBSCO Host and Gale. In expanding the circle of potential resources for research, and in realigning their strategic searches, students should utilize the expertise of library-media specialists in their school or community, and learn from them how to access additional search vehicles that may be available to them.

Many state and school district library systems provide free public access to research portals that allow teachers and students to access various informational databases. Many of these have been organized so that articles can be searched for by text difficulty level (Lexile measure) as well as topic, allowing both teachers and students to find information at a variety of text complexity levels. Some national content aggregators that provide searches by Lexile level are: EBSCO, Gale, Grolier Online, Net Trekker, News Bank, Pro Quest, and Questia. Contact a library-media specialist for information on how to connect students to and navigate the state's database access.

V. COMMON SOURCE TEXT SET

The common text set for this Repository presents a model text sequence focused on a particular area of investigation; the common text set can be used in various ways by a teacher and students, depending on the degree to which they want to focus inquiry and research on the areas of investigation suggested by the texts in the set. Each common text is linked to a specific reading activity in the unit plan, and each includes a short set of text notes and a set of text-based questions to initiate students' close reading. The model sources in this repository can be used in a variety of ways including:

1. **Provide background and direction for inquiry focused on the area of investigation:** In this case, students will read and analyze the common texts either as main sources or as a research base as they embark on inquiry and investigation directly related to the area(s) of investigation presented in the texts. They will develop the close reading skills required for effective research through text-based discussions and analysis of the common texts, as explained in the unit plan. Students may then extend their individual research into closely related areas and new texts.

2. **Provide skills practice and a starting point for students' research:** In this case, students will work with the text set to learn about and practice the close reading skills required for effective research, but will then conduct research into a related, but new area of investigation identified by the teacher or students, applying those same skills with new texts.

3. **Serve as models for the teacher:** In this case, the teacher may identify other, similar texts in a chosen area of investigation and build a new or expanded common text set, which parallels the model set in terms of breadth, richness, and complexity. Students will develop the close reading skills required for effective research using the teacher's new common text set and will launch either teacher- or student-directed inquiry in a new area of investigation area suggested by the texts in the set.

The general text characteristics and their *sequential use in the unit's activities* are outlined below:

Text #1 - *Stimulus*:

Rich, high interest text that can stimulate student thinking and discussion in the general topic area and lead the class or a student to consider various areas of investigation. Might be a literary text.

Students will use this text as a jumping off point for inquiry in **Part 1, Activity 2.**

Text #2 - *Background information*:

Accessible informational text providing accurate background information on an identified area. Characteristics – rich, quality, credibility, connection to the inquiry. Should be a quality source of rich information on central aspects of topic. Should frame an area in a way that can lead to many paths of exploration, rather than a single perspective or focus.

Students will use this text to build background and practice skills of close reading and initial text analysis (for credibility, accessibility, and relevance) in **Part 1, Activity 3, and Part 2, Activities 2-3.**

Text #3 - *Background information*:

Accessible informational text providing additional and complementary accurate background information related to an identified area of investigation.

Students will use this text to build background and practice skills of close reading and initial text analysis (for credibility, accessibility, and relevance) in **Part 1, Activity 3, and Part 2 Activities 2-3.**

Text #4 - *Perspective on the Topic:*

Short, but potentially more challenging informational text that presents or suggests a particular perspective on an identified area of investigation. Should come from a credible source.

Students will use this text to identify one of multiple ways of viewing the identified area of investigation, to practice close reading skills of analyzing perspective and bias, and to compare with other perspectives in **Part 2, Activities 2-3.**

Text #5 - *Perspective on the Topic:*

Short, but more challenging informational text that presents or suggests a second or contrasting perspective on an identified area of investigation. Might come from a less known source with uncertain credibility.

Students will use this text to identify one of multiple ways of viewing the identified area of investigation, to practice close reading skills of analyzing perspective and bias, and to compare with other perspectives in **Part 2, Activities 2-3.**

Text #6 - *Perspective on* the *Topic:*

Short informational text related to an identified area of investigation that presents or suggests an additional or contrasting perspective. Might come from an unusual source with uncertain credibility.

Students will use this text to identify one of multiple ways of viewing the identified area of investigation, to practice close reading skills of analyzing perspective and bias, and to compare with other perspectives in **Part 2, Activity 2-3.**

Texts #7 - #10 - *Arguments and Perspectives related to the Topic:*

Longer and more complex informational texts related to an identified area of investigation with rich content, a clear perspective, and effective, well-developed argumentation.

Students will use this text to deepen their understanding of the identified area of investigation and the issues, debates, and controversies that surround it, and to practice the close reading skills of analyzing arguments, their reasoning, and their supporting evidence in **Part 3, Activity2.**

NOTE: the teacher or students may supplement this text set with additional examples of academic writing from fields related to the area of investigation.

DESIGN: THE ROLE OF SUSTAINABILITY
IN SHAPING OUR WORLD

Text Complexity Range: 1160L to 1610L

AUTHOR	DATE	LEXILE
Text #1: *What is Design?*		
Lightweight Media (for the UK Design Council)	2010	NA
Text #2: *Debating Sustainability*		
Alice Rawsthorn	January 31, 2010	1360L
Text #3: *Dow looks at sustainability big picture*		
Jessica Holbrook	June 3, 2013	1210L
Text #4: *Embracing the Economic Case for Sustainable Design*		
Ronald C. Weston, AIA, LEED AP	May 20, 2011	1610L
Text #5: *Arguing Against Sustainability*		
John Klein	January 23, 2012	1280L
Text #6: *Don't build your home, grow it (plus a smart-grid follow up)*		
Mitchell Joachim/IBM	NA	NA
Text #7: *Cradle to cradle design*		
William McDonough	February 2005	1250L
Text #8: *"Sorry green design, it's over"*		
Marcus Fairs	February 14, 2013	1160L
Text #9: *Reframing the Argument for Sustainability*		
Peter J. Ellery	2012	1490L
Text #10: *Bloomberg Outlines $20 Billion Storm Protection Plan*		
Kia Gregory and Marc Santora	June 11, 2013	1400L

TEXT #1

What is Design?
By Lightweight Media (for the UK Design Council)

Date: 2010
Complexity Level: NA

TEXT NOTES

Trough a whiteboard video, the UK Design Council presents conceptual and practical applications of design, affording the viewer a comprehensive tour across the design spectrum.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1.   Why is design integral to human experience?

2.   In what ways have our evolving needs and wants influenced the application of design?

TEXT #2

Debating Sustainability
By Alice Rawsthorn

Date: January 31, 2010
Complexity Level: Measures at 1360L

TEXT NOTES

This article describes the debate around sustainable design, while providing examples of products and practices done well and poorly. The processes and models we apply to one form of sustainability do not necessarily work for all products, in all markets, or, in some instances, at all.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1.   Describe some of the disagreements about sustainable design.

2.   In what ways do you see sustainable design having the potential to help or harm the environment?

TEXT #3

Dow looks at sustainability big picture
By Jessica Holbrook

Date: June 3, 2013
Complexity Level: Measures at 1210L
(This source can be found by using the Gale Virtual Reference Library)

TEXT NOTES

Major corporations have a vested interest in designing the most efficient products, packaging, shipping, and return. This article reveals Dow Chemicals' tacit relationship to sustainability.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1.   In what ways can big business contribute to designing the human "life cycle?"

2.   What maximizes product packaging?

TEXT #4

Embracing the Economic Case for Sustainable Design
By Ronald C. Weston, AIA, LEED AP

Date: May 20, 2011
Complexity Level: Measures at 1610L

TEXT NOTES

This blog post proposes the basics of triple bottom line (TBL) design – people (social), planet (environmental), and profit (economics). For many readers, this might be their first entre into LEED systems and credits. While demonstrating the return on investment (ROI) business might experience, the article presses the emerging sustainable design industry to retain their commitment to the third, more traditional "P" – profit.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1.   How does the current science about global warming influence your view of this article?

2.   To what extent should profit drive, shape, or take precedent over the other two "bottom lines?"

TEXT #5

Arguing Against Sustainability
By John Klein

Date: January 23, 2012
Complexity Level: Measures at 1280L

TEXT NOTES

This dialogical post presents a one-sided view of a seemingly informed Twitter interaction addressing infrastructure design for cars and transportation, in general. The author contends that gas burning vehicles have deleterious effects on every aspect of human experience.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1. The video in this post presents a certain perspective on fuel consumption – to what extent do designers have an ethical responsibility to promote sustainable human transportation?

2. Why should designers respond to human transportation needs/wants?

TEXT #6

Don't build your home, grow it (plus a smart-grid follow up)
By Mitchell Joachim/IBM

Date: NA
Complexity Level: NA

Source/Link: TEDTalk
http://www.youtube.com/watch?v=Rw9s0ivfn3w
http://www.ted.com/talks/mitchell_joachim_don_t_build_your_home_grow_it.html

TEXT NOTES

This rich, complex, and accessible TEDTalk by an architect responding to the "Mc" everything presents a novel idea of "veggie/fake-meat houses" that grow through regenerative medicine – essentially growing cells through advanced, victimless tissues made by printers that can produce cell-based, sustainable houses. The follow-up video presents a data-crunching approach that plans for cheap, reliable power through various novel energy-producing technologies.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1. What initial responses do you have to the notion of a world in which our housing is a living organism?

2. If "smart" designs are necessary and likely inevitable, how should societies incentivize citizens who adopt them? What factors might exclude certain individuals and communities from these beneficial designs?

TEXT #7

Cradle to cradle design
By William McDonough

Date: February 2005
Complexity Level: Measures at 1250L

TEXT NOTES

Green-minded architect and designer William McDonough asks what our buildings and products would look like if designers took into account "all children, all species, for all time." He believes green design can prevent environmental disaster and drive economic growth, championing "cradle to cradle" design, which considers a product's full life cycle – from creation with sustainable materials to a recycled afterlife. This is very complex talk. It is recommended to use the video along with the transcript provided on the Ted Talk website.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1. What is our design intention as a species, and how has it changed over time?

2. In what ways is design the first signal of human intention?

TEXT #8

"Sorry green design, it's over"
By Marcus Fairs

Date: February 14, 2013
Complexity Level: Measures at 1160L

TEXT NOTES

Editor-in-chief Marcus Fairs explains why designers have dumped dowdy green design in favor of glamorous robots.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1. What examples does the author provide concerning the unsustainablity of sustainable design?

2. Can you list "green" products that have emerged and "vanished from view," yet remain present?

3. Does the author complete his thought about green design? If not, why not?

TEXT #9

Reframing the Argument for Sustainability
By Peter J. Ellery

Date: 2012
Complexity Level: Measures at 1490L

TEXT NOTES

Why is the case for sustainability not working? Olmsted Scholar, Peter J. Ellery – adjunct graduate faculty of Landscape Architecture at Ball State University – suggests that a reason for the unlikely change in human behavior toward sustainability is because we frame the dialogue pathogenically rather than through a "salutogenic" lens – a reversal of our approach to the issue ("the inherent value [our behaviors] provide, rather than what they help us avoid.").

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1. What argument tactics does the author suggest as more beneficial to the sustainability position?

2. In what ways are arguments from a pathogenic position inferior to "salutogenic" arguments?

TEXT #10

Bloomberg Outlines $20 Billion Storm Protection Plan
By Kia Gregory and Marc Santora

Date: June 11, 2013
Complexity Level: Measures at 1400L

TEXT NOTES

This NY Times article describes New York City Mayor Michael R. Bloomberg's plan for building an extensive network of flood walls. In addition to upgrading the city's power grid, the project's $20b price tag effectively alters the fabric of city life beyond the mayor's tenure. Based on more than 250 official recommendations, the mayor's plan addresses long-term expectations for the city; a view that is not only underfunded, but unlikely without proper stewardship.

Sample Text-Dependent Questions (to drive initial close reading and discussion):

1. In the face of recent, recurrent, and expectant natural and man-made tragedies, in what ways will the political will shape design – and, vice versa?

2. With the number of NY City residents in potential harm's way, why might developers, under this plan, forgo thoughtful design?

☰ VII. ADDITIONAL RESOURCES
☰ RELATED TO DESIGN

What design is and why it matters
Chief Design Officer for the Design Council, Mat Hunter, gives a brief overview of design.
Lexile measure: 1240L

By Design: A Crystal-Crusted Gown Made with a 3-D Printer
Brooke Hodge of Time Magazine, writes about the design and construction of a 3-D printed dress.
Lexile measure: 1610L

100 Big Ideas
List of 100 big ideas in "design, architecture, art, and everything in between" in Interior Design.
Lexile measure: 1210L

A Plan to Bring Sun-Powered Irrigation to Poor Farmers
New York Times, Opinion by Andre Revkin.
Lexile measure: 1500L

Green building methods for hospitals in the UAE
Construction Week Online article on energy efficient design.
(This source can be found by using the Gale Virtual Reference Library.)
Lexile measure: 1360L

The Top Ten Reasons Why Businesses Aren't More Sustainable
Ivey Business Journal article by Pamela Laughland and Tima Bansal.
Lexile measure: 1290L

Deconstructing the Myths of Sustainability
Business of Design Online article by Jess Sand.
Lexile measure: 1130L

Five Myths About Sustainability
Bloomberg Businessweek article by Paul Hoffman.
Lexile measure: 1260L

The Madrone Project
Ted Talk by Hunter Lovins on policies and sustainability.

Sustainable Federal Buildings: What's the Law
BuildingGreen.com article on federal buildings and design.