

muse

OCTOBER 2015

MAGAZINE ARTICLES

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| Narrative Nonfiction | 940L |
| The Leftovers | 13 |
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| Gettin' Sweaty | 18 |
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BODIES:

Teachers' Guide for *MUSE: Bodies... The Inside Story*

Using This Guide. **2**

Common Core: Reading, Speaking
& Listening, and Writing **3**

Article Pages. **4**

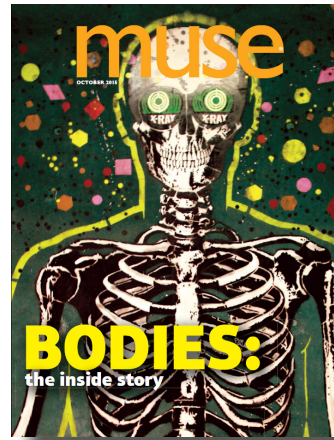
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OVERVIEW

In this magazine, readers will learn how both evolution and incredible medical advancements are altering the life of the human species.

MUSE: Bodies...The Inside Story includes information about the physiology of humans and how nature and medical technology are working in tandem to create a stronger and more resilient human society.

ESSENTIAL QUESTION:

What factors contribute to the development of healthier and more efficient human bodies?

We invite you to use this magazine as a flexible teaching tool, which is ideal for interdisciplinary learning of social studies and science content and core literacy concepts. Find practical advice for teaching articles individually or utilize a mini-unit that helps your students' make cross-text connections as they integrate ideas and information.

READ MULTIPLE ARTICLES PAGES 4 - 8

Each article in this magazine is well-suited for teaching Common Core literacy concepts and content area knowledge. For each individual article page in this guide, you'll find the following:

Essential Question

Content Concepts
Next Generation Science Standards

Key Vocabulary
CCSS.Read.4

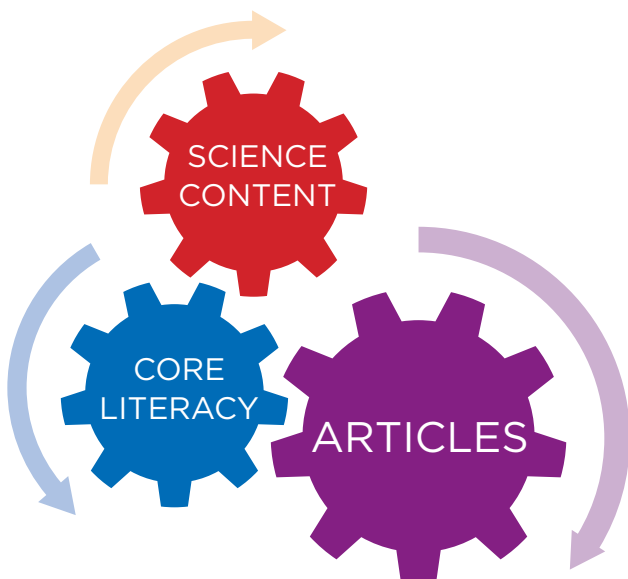
Prepare to Read
CCSS.SpeakListen.1, 2, 4

Close Reading Questions
CCSS.Reading.1-10

Common Core Connections to teach reading and writing standards.
CCSS.Writing.1, 2, 3 & 6

TEACH A MINI-UNIT PAGES 10 - 12

Magazine articles can be easily grouped to make cross text connections and comparisons. Our Common Core mini-unit guides students to read and discuss multiple articles and integrate ideas and information. (CCSS.Reading InfoText.9) Discussing multiple articles (CCSS.SpeakListen.1, 2, 4) prepares students to write informational texts to share and publish in a variety of ways. (CCSS.Writing.2)



READING

Core literacy concepts, such as the ones found in the Common Core State Standards, help students access social studies and science content. Integration of both literacy thinking and content study offers students a great way to become experts in reading informational text and literature for content knowledge. This guide provides questions to cover many core literacy concepts.

Draw Inferences (CCSS.InfoText.1)

Describe Relationships (CCSS.InfoText.3)

Analyze Text Structure (CCSS.InfoText.5)

Interpret Visual Information (CCSS.InfoText.7)

Summarize (CCSS.InfoText.2)

Determine Word Meaning (CCSS.InfoText.4)

Understand Author’s Point of View (CCSS.InfoText.6)

Explain Reasons and Evidence (CCSS.InfoText.8)

FOCUS STANDARD: CCSS. InfoText 9: Integrate Ideas and Information:

Have students read multiple articles from this magazine on the same topic, build knowledge, and make cross-text comparisons.

SPEAKING AND LISTENING

Use the articles in this magazine to spark meaningful discussions in person and online. Encourage deeper discussions where students can become topic experts. (CCSS.SpeakListen.1, 2, 4)

DISCUSSION OPTIONS—IN CLASS OR ONLINE

Article Clubs: Form small reading groups of students reading the *same* article. Have students discuss the content, share ideas, and critically evaluate the text.

Jigsaw Clubs: Form small reading groups of students reading *different* articles. Invite students to share information and resources with each other.

Whole Class: Launch with an essential question. Encourage students to find and share evidence from different articles building a greater understanding of the question.

WRITING

Use the articles in this magazine to prompt **informative/explanatory writing**. (CCSS.Writing.2) Have students use evidence from the texts to share information about social studies, language arts, or science content in the articles. See the **Mini-Unit** section of this guide (pages 10 – 12) as well as the **article pages** (pages 4 - 8) for ways to incorporate writing into your instruction

ARTICLE: What's Mine Is Yours

Magazine pages 9 - 12, Narrative Nonfiction



This article will lure you into the world of medical science by telling true tales about the fascinating practice of transplanting organs. Learn about the various types of transplants currently available and discover what new procedures are projected for the future.

ESSENTIAL QUESTION

What factors contribute to the development of healthier and more efficient human bodies?

SCIENCE CONCEPT

Medical advancements are making it possible to more accurately study and enhance the human form.

CROSS-CURRICULAR EXTENSION

Science and Math

Research the number of organ transplants that were done in your state during the past three years. Construct a graph to display the data.

KEY VOCABULARY

transparent (p. 9) able to be seen through

deteriorate (p. 10) to become worse as time passes

caustic (p. 10) able to destroy or burn something by chemical reaction

neurosurgeon (p. 12) a doctor specializing in surgery on the brain and the nervous system.

PREPARE TO READ

Engage the students in discussion to determine what knowledge they have of organ transplants. Create a K-W-L (know, want to know, learned) chart for this article. Aim for complete class participation.

CLOSE READING QUESTIONS

- Why are organ transplants of such high importance in the medical community? Why are they important for the general public?
- On page 10 of this article, the writer states, "Imagine being able to touch the face of a loved one who passed away months-or years-before." Why do you think that the writer chose to use such a personal opening statement in that paragraph?
- Why do you feel that the genre of science fiction overlaps with these stories of amazing medical transplants?

COMMON CORE CONNECTIONS

Research-Based Writing *CCSS Writing 2 & 6*

Learn more about organ transplants by using the internet or the library. Find out the history of such procedures, as well as the most current procedures.

Opinion Writing *CCSS Writing 1 & 6*

Do you feel there are moral/ethical issues to consider in this branch of medicine? Be specific when presenting your viewpoint and concerns.

Analyze Text Structure *CCSS Info Text 5*

In several instances in this article the writer has you 'imagine a scenario' in the future. Locate these passages and explain why they are effective in engaging the reader.

ARTICLE: The Leftovers

Magazine pages 13 - 17, Expository Nonfiction



This article explores Charles Darwin's theory of evolution and how it has impacted the human body. Learn about what our next vanishing body part may be!

ESSENTIAL QUESTION

What factors contribute to the development of healthier and more efficient human bodies?

SCIENCE CONCEPTS

Evolution is responsible for modifications that have made the human form more efficient.

CROSS-CURRICULAR EXTENSION

Science and Math

Using information from this article, as well as other sources, create a timeline depicting stages of human evolution.

KEY VOCABULARY

natural selection (p. 14) the process by which plants and animals that can adapt to changes in their environment are able to reproduce and survive while those that cannot do not survive.

appendage (p. 15) a body part connected to the main part of the body.

reflex (p. 17) an action or movement of the body that happens automatically.

PREPARE TO READ

Introduce the theory of evolution to the class. Explain that Darwin published this idea in 1859 and was considered quite radical. Allow students to express their viewpoints. Think-pair-share may work well for this pre-reading discussion.

CLOSE READING QUESTIONS

- Using information from the article, describe the process of evolution.
- What transformations do you think Homo sapiens will undergo in the next million years?
- Reread the article and find evidence that show that the writer is excited about the process and results of evolution. Underline the sentences that support this finding.

COMMON CORE CONNECTIONS

Research-Based Writing *CCSS Writing 2 & 6*

Learn more about evolution by using the Internet or the library. Focus on how scientific technological advances have allowed us to gain more knowledge about this process.

Opinion Writing *CCSS Writing 1, 6, 9*

Research to find out how evolutionary theories have conflicted with religious beliefs throughout history. Write an opinion piece about whether or not you think this debate will continue into the future.

Describe Relationships *CCSS Info Text 3*

What is the correlation between humans and animals in relation to evolution? Does it serve the same purpose for all species?

ARTICLE: Gettin' Sweaty

Magazine pages 18 - 21, Expository Nonfiction



This article will take the reader on a descriptive tour of our sweat glands. Learn about the physiology and function of these glands. Not all sweat is smelly!

ESSENTIAL QUESTION

What factors contribute to the development of healthier and more efficient human bodies?

SCIENCE CONCEPTS

Human body systems work together to keep the body functioning.

CROSS-CURRICULAR EXTENSION

Science and Health

Emotional triggers can cause specific body reactions, such as sweating. Research other mind-body connections.

KEY VOCABULARY

gland (p. 18) an organ in the body that makes a substance, which is used, by the body.

secretion (p. 20) the production of a liquid by part of a plant or animal.

liberate (p. 20) to give freedom to.

betray (p. 21) to reveal, or to give information to an enemy.

PREPARE TO READ

Even if we don't want to admit it, we all sweat! Ask: What do we know about sweat? What might be some benefits of sweating? Read to find out more about this natural body function.

CLOSE READING QUESTIONS

- Compare and contrast the eccrine and apocrine glands using information from the article.
- Reread the article and locate the sentences that detail the properties and composition of sweat. Make a list organizing the information you find.
- How were photos and illustrations used to engage the reader in the content of the article?

COMMON CORE CONNECTIONS

Summarize Main Ideas *CCSS Info Text 2*

Talk with a partner about the two biggest ideas in this article. Organize and write a brief summary in such a manner that you would be able to share the information (including key ideas) with students who are a grade level below you.

Opinion Writing *CCSS Writing 1 & 6*

The article states that your apocrine glands can 'betray' you. Explain the meaning of that sentence and write about a time when you personally found this to be true.

Describe Relationships *CCSS Info Text 3*

Describe the relationship between the eccrine and apocrine glands.



Citizen scientists have scoured the skin of humans and other primates to answer some of the big questions about the microscopic creatures that live and thrive on our bodies. Learn some interesting (and gross!) facts about the microscopic parasites that call YOU home!

ESSENTIAL QUESTION

What factors contribute to the development of healthier and more efficient human bodies?

SCIENCE CONCEPT

The human body hosts millions of parasites and microbes, with no harmful effects to the carrier.

CROSS CURRICULAR EXTENSION

Science and Health

How does learning about microscopic mites and microbes help to keep us healthier? Learn more by using the internet or library.

KEY VOCABULARY

parasite (p. 39) an animal or plant that lives in or on another plant or animal and gets food or protection from it.

unsavory (p. 40) unpleasant or offensive.

distinctive (p. 41) having a quality or characteristic that makes a person or thing different from others.

PREPARE TO READ

Introduce the article by viewing the microscopic parasites on pages 39-40. Define the term 'parasite' and discuss whether or not the class thinks that parasites can be harmless or even helpful to the host bodies.

CLOSE READING QUESTIONS

- What are 'citizen scientists' and how are they helpful to the medical community?
- Why do you think that scientists are studying the microscopic parasites found on animals, as well humans?
- What are the author's key points in this article?

COMMON CORE CONNECTIONS

Interpret Visual Information *CCSS Info Text 7*

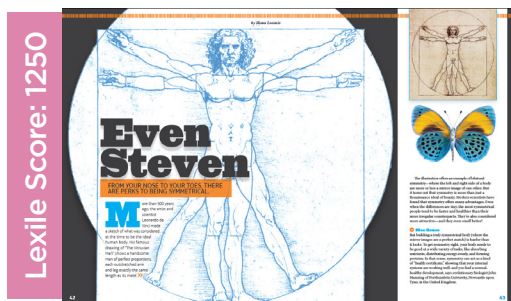
Throughout this article photos of mites and microbes appear. Search images online to determine whether or not you can visually distinguish between harmful and helpful/neutral parasites.

Opinion Writing *CCSS Writing 1 & 6*

On page 41, the writer states that scientists are studying the impact that gender and the use of soaps/deodorants have on the makeup of your skin microbiome. What do you think these findings will conclude? Be sure to have reasons to support your opinion.

Summarize Main Ideas *CCSS Info Text 2*

Summarize the main ideas and create a concept map to display your findings.



This article explores how proportions and symmetry plays a role in the body. Learn about the physical and aesthetic benefits of balanced proportions and how they relate to your health and appearance.

ESSENTIAL QUESTION

What factors contribute to the development of healthier and more efficient human bodies?

SCIENCE CONCEPTS

Modern scientists have found that symmetry offers many advantages in terms of optimum health.

CROSS CURRICULAR EXTENSION

Engineering and Social Studies

Symmetry creates strength in buildings, as it does in humans. Research ancient civilizations to see how they used this knowledge when creating structures and cities.

KEY VOCABULARY

proportion (p. 42) an amount that is part of the whole.

internal (p. 43) existing or located on the inside of something.

fertile (p. 44) able to grow, develop or produce.

PREPARE TO READ

Display several well-known buildings around the world, as well as residential structures. Ask the class how builders use specific plans and designs to ensure the strength of a building. (Review the word 'symmetry') Allow the students to have small group discussions to apply this concept to the human form.

CLOSE READING QUESTIONS

- On page 43, the writer states that symmetry can act as a kind of 'health certificate'. Explain that statement.
- What conclusion did the evolutionary biologists reach when studying symmetry and the abilities of runners? Find evidence from the article.
- Reread the article to find specific examples of better abilities and performances due to symmetry. Locate and document the source of this finding. (Ex, University study, clinical trial, etc.)

COMMON CORE CONNECTIONS

Research-Based Writing *CCSS Writing 2 & 6*

The article explains the many benefits of symmetry in the body. Use library and Internet resources to discover if humans can take steps to enhance these abilities in our bodies for optimal performance.

Opinion Writing *CCSS Writing 1 & 6*

Although symmetry can produce 'perfect' faces, why do think that humans often prefer naturally beautiful 'imperfections'?

Describe Relationships *CCSS Info Text 3*

What is the correlation between physiological symmetry and overall health? How can this correlation be explained?

CROSS-TEXT CONNECTIONS WITH MULTIPLE ARTICLES

COMPARE ARTICLES

SYNTHESIZE: Guide students to compare articles they read. Help students find the connections between pieces of information in multiple texts. Use prompts, such as the following examples, to have students work together to **Integrate Ideas and Information** (*CCSS.Reading.9*):

- Use information from the five feature articles and make a list (T-chart) of changes to the human body that have been evolutionary and changes that have been achieved through medical advancements.
- Refer back to the articles and locate the various types of scientists and citizens who are studying changes in the human form. Determine their specialties and compare their approaches to studying these changes.
- Pretend that you are a being that has lived for many centuries. Use information from the feature articles to discuss the changes you've seen. Use a journal format to record your observations?
- Gather information across texts to generate a list of positive changes that have resulted both from natural evolution and medical advancements. Do you think nature or scientists are creating more beneficial changes?
- Using information from the articles "Gettin' Sweaty" and "Even Steven" to explain how the human body performs more efficiently when all body systems are in alignment and working well. Focus on finding out if there are ways that you can help your body maintain peak performance.

EXPLORATORY LEARNING - FLEXIBLE MINI-UNIT DESIGN

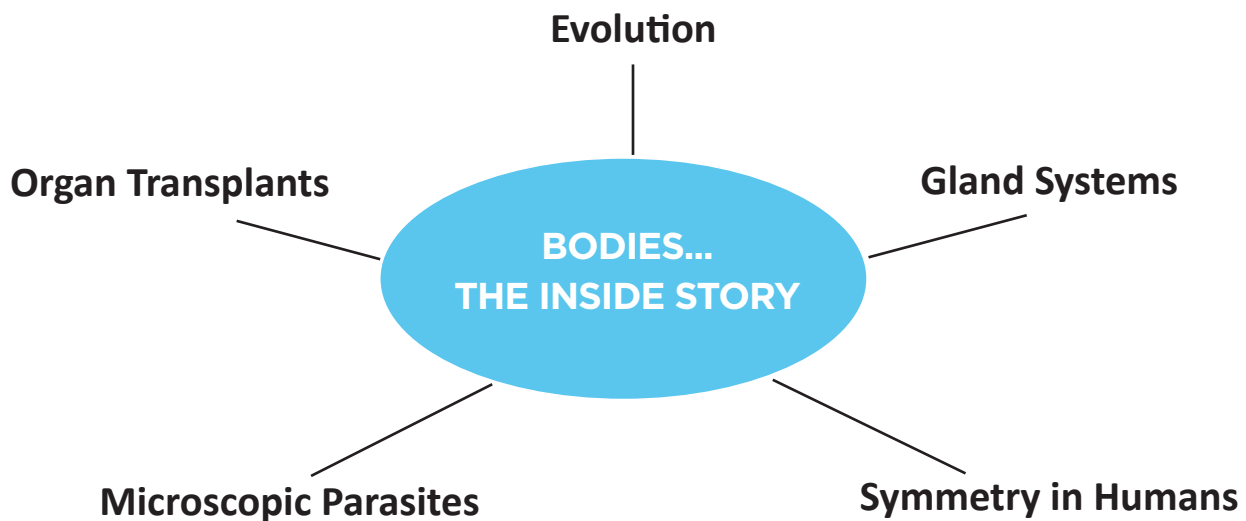
The mini-unit is designed as a flexible teaching tool that can be taught in any order, and with your own selection of articles. You may want to gauge the interest level of the students when determining your focus.

ENGAGE

READ AND COMPARE

APPLY

ENGAGE: Engage students in the topic of the efficiency of the human body. Have students page through the magazine and read article titles and look at the pictures to gain prior knowledge of the material to be read. A simple video demonstrating human evolution and cutting edge scientific procedures can demonstrate how human beings are constantly evolving. Create an idea or concept web to tap into background knowledge.



Share the essential question:

What factors contribute to the development of healthier and more efficient human bodies?

READ AND COMPARE ARTICLES: Begin with a focus article as a base for building content knowledge and model how to work through the text.

1) READ ALOUD: Use “What’s Mine is Yours” pages 9 - 12 as a focus article, or choose a different article that works well for your teaching goals. Share the article summary on page 4 of this guide. Students can read using their own copies of the article and sticky notes to mark places they find interesting or have questions about.

2) DISCUSS THE ARTICLE: After reading, guide students to turn and talk about the article. See the Article Pages for Close Reading Questions.

3) READ NEW ARTICLES: Help students choose additional articles to read based on their inquiry questions or what they wonder. Refer to the Article Pages for summaries of each article within *Bodies...The Inside Story*”.

4) COMPARE ARTICLES: After students have read multiple articles, guide them to make cross-text connections. Refer to page 9 to Compare Articles using prompts that help students integrate ideas and information.

CHOOSE A PURPOSE FOR READING

CLOSE READ: *CCSS.Reading Info Text.1* Mark the text, noting important details and highlighting what interests, surprises, or confuses you.

UNDERSTAND MAIN IDEAS TO DEVELOP EXPERTISE: *CCSS.Reading Info Text.2* Record the main ideas in a second article. Note how these main ideas build on the main ideas from the focus article, or other readings. How is your topic knowledge growing?

REVIEW GRAPHIC FEATURES: *CCSS.Reading Info Text.7* Examine graphic features within this issue and describe how the graphic feature enhances your understanding of the content. (Use Graphic Features printable, p.19)

APPLY: EVOLUTION VS. SCIENTIFIC ADVANCEMENTS

Explore the manner in which scientific advancements are altering the way we live and the way in which we pass away. Remind students of the Essential Question. Divide the class into different groups to discuss and analyze different facets of this question. Ask groups to complete the graphic organizer on p. 13 of this guide.

- **Group One:** Using the articles “Getting’ Sweaty” and “Our Wildlife” discuss how the body’s systems and ‘wildlife’ tend to be extremely efficient. Discuss when it may be necessary for science to get involved in order maintain optimal health. Be prepared to share your information with the class.
- **Group Two:** Reread the articles, “What’s Mine is Yours” and “The Leftovers”. Note the differences that science and nature play on making the body more efficient. Are there ever times when you feel it is inappropriate for the medical community to intervene, and instead allow nature to take its course? In a modern world, where many things tend to be rushed, do you think science will stay ahead of evolution? Discuss these topics with your group and be prepared to share your information with the class.
- **Group Three:** Engage the group in rereading “Even Steven”. Think of examples in nature of symmetry. Do we ever prefer chaos? Surgically, how is science helping to create symmetry? Discuss the differences in creating symmetry for quality of life vs simply aesthetics. Debate the ethical issues and present your arguments to the class

WHOLE CLASS: After groups present their information to the whole class, begin a Socratic Discussion with the Essential Question: What factors contribute to the development of healthier and more efficient human bodies? Socratic discussions involve posing a question and facilitating student-led discussion about that question. Allow students to answer each other and provide guidance when necessary. Throughout the discussion, prompt students to reflect upon and question ideas contained in the texts they read.

NAME: _____

Mini-Unit Graphic Organizer

Comparing Concepts

DIRECTION: Use this compare/contrast organizer to explore analogous as well as non-analogous characteristics of two concepts related to a give topic.

TOPIC: Changes in the Human Body: Evolution vs. Scientific Advancements

CONCEPT 1:

CONCEPT 2:

HOW ARE THEY ALIKE?

HOW ARE THEY DIFFERENT?

NAME: _____

ANALYZE GRAPHIC FEATURES

| GRAPHIC FEATURE | PAGE LOCATION | HOW THIS FEATURE HELPED YOUR UNDERSTANDING |
|-----------------|---------------|--|
| | | |
| | | |
| | | |
| | | |
| | | |

NAME: _____

CONCEPT CHART

Show how reading multiple articles developed your understanding of the essential question or or your own inquiry question.

ESSENTIAL QUESTION OR INQUIRY QUESTION:

| ARTICLE 1: | ARTICLE 2: | ARTICLE 3: |
|------------|------------|------------|
| | | |

appendage a body part connected to the main part of the body.

*By the time these pre-hominins came out of the forests and walked into the African plains, they no longer needed this **appendage**. (p. 15)*

betray to reveal, or to give information to an enemy.

*No doubt, more than one embarrassed tween has wondered why his body's apocrine glands would **betray** his nerves so obviously and stinkily. (p.21)*

caustic able to destroy or burn something by chemical reaction.

*Tarleton sustained serious injuries when an attacker used lye, a **caustic** chemical, as a weapon in 2007. (p.10)*

deteriorate to become worse as time passes

*It must be in the new body within about five hours because the heart begins to **deteriorate** once it's no longer connected to a living system. (p.10)*

distinctive having a quality or characteristic that makes a person or thing different from others.

*In fact, some of these microbes produce odors so **distinctive** that they allow the malaria mosquito to home in on its prey: you. (p.41)*

fertile able to grow, develop or produce.

*Women who were in the **fertile** period of their menstrual cycles often preferred the scent of more symmetrical men. (p.44)*

gland an organ in the body that makes a substance which is used by the body.

*We have sweat **glands** nestled under the surface of our skin - a lot of sweat glands. (p.18)*

internal existing or located on the inside of something.

*Symmetry can act as a kind of 'health certificate', showing that your **internal** systems are working well. (p.43)*

liberate to give freedom to.

*There, they meet with bacteria that **liberate** their smell. (p. 20)*

natural selection the process by which plants and animals that can adapt to changes in their environment are able to reproduce and survive while those that cannot do not survive.

*He described the process of descent with modification where physical parts - even behaviors - of animals may change over multiple generations due to **natural selection**. (p.14)*

neurosurgeon a doctor specializing in surgery on the brain and the nervous system.

*Dr. Sergio Canavero, a **neurosurgeon** in Italy, expects that two years from now he'll be able to perform a human head transplant. (p. 12)*

parasite an animal or plant that lives in or on another plant or animal and gets food or protection from it.

*Microscopic **parasites** are living, breeding, and dying on/in your face right now. (p.39)*

proportion an amount that is part of the whole.

*His famous drawing of "the Vitruvian Man" shows a handsome man of perfect **proportions**, each outstretched arm and leg exactly the same length as its mate. (p.42)*

reflex an action or movement of the body that happens automatically.

*This reflex, known as a palmar grasp **reflex**, is a behavioral vestige held over from our ancestors. (p. 17)*

secretion the production of a liquid by part of a plant or animal.

*But once outside the womb, a baby's own skin **secretions** give him his particular odor. (p. 20)*

transparent able to be seen through.

*Inside a beating human heart with blood flowing in and out through **transparent** tubes. (p. 9)*

unsavory unpleasant or offensive.

*Despite their **unsavory** habits, the mites aren't considered harmful, so don't go reaching for the industrial-strength face wash just yet. (p. 40)*

What's Mine is Yours, Magazine pages 9 - 12

- <http://www.organtransplants.org/resources/goal5-8plan.pdf>

This website investigate organ and tissue transplants and provides activities and resources appropriate for middle school students.

The Leftovers, Magazine pages 13 -17

- <http://www.neok12.com/video/Human-Evolution/zX430f005f400262740c5f73>

This video explains natural selection in simple terms.

- <http://www.neok12.com/video/Human-Evolution/zX5009794f5c4b004e507163.htm>

Interesting video where scientists and computer experts use technology to bring to life the walk of the primeval link between ape and man.

Gettin' Sweaty, Magazine pages 18 -21

- <http://study.com/academy/lesson/the-integumentary-system-accessory-structures-glands.html>

This link will provide information about the gland systems and the effect they have on your body.

Our Wildlife, Magazine pages 38 -41

- <http://www.webmd.com/skin-problems-and-treatments/news/20090528/human-skin-alive-with-bacteria>

This articles describes how the skin is literally crawling with colonies of harmless bacteria.

Even Steven, Magazine pages 42 - 45

- <http://dianelockridge.hubpages.com/hub/Body-Measurements-Symmetry-and-Proportion>

Activities and articles to teach students about the human body, symmetry and proportion.