

BODY SYSTEMS VIRTUAL LAB, POSTER, CHILDREN'S BOOK AND RAFT

INVESTIGATIONS IN SCIENCE 7

Science Anchors

Science anchors are ongoing engaging tasks that students can work on independently. They are curriculum based, clearly defined and differentiated for students. Students can work on science anchors as they complete work at varying rates, when the teacher is working a small groups of students, at the beginning or end of the class period, or when they are waiting for teacher assistance. Sample science anchor tasks include: reading and responding to text, journaling, learning or interest centers, listening or viewing centers, independent research or projects and hands-on minds-on science kit tasks. Provide a variety of anchor tasks at your anchor station to address the di-

Purpose

The science anchors below are designed to enrich student understanding of the various body systems.

Anchor Task	Topics
3-“Getting to the Heart of It” Virtual Lab DE Science http:// search.discoveryeducation.com/	Circulatory System
4-Journey of a Red Blood Cell Poster Project (Also, see Travels of a Red Blood Cell task on p.77 <i>Human Biology and Health</i> Prentice Hall textbook)	Circulatory System
5-Anti-Smoking Campaign Children’s Book	Respiratory System
6-Body Systems RAFT	Body Systems

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Getting to the Heart of It

Discovery Education Virtual Lab

Anchor Task 3

Overview

This anchor task is to be used by students as they explore the circulatory system.

Goals

Students should know

changing eating and exercise habits can lead to a healthful life.

Students should understand

there are different levels (excellent, normal and poor) of physical condition.

Students should be able to

devise an effective health plan (caloric reduction, activity level, duration of activity, frequency of activity) for Uncle George to improve his physical condition.

Resources:

- Access to Discovery Education’s “Getting to the Heart of It” virtual lab at the link below: <http://search.discoveryeducation.com/>
- Hard copies of “Getting to the Heart of It” student resource pages

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Journey of a Red Blood Cell Poster Project

Anchor Task 4

Overview

This anchor task is to be used by students as they are exploring the circulatory system.

Goals

Students should know

the cardiovascular system consists of the heart, blood vessels, and blood.

Students should understand

most substances that need to get from one place in the body to another are carried by blood.

Students should be able to

illustrate and describe a journey that a red blood cell might take through the human body.

Resources:

- One Journey of a Red Blood Cell Poster Project resource per student
- One Researching the Heart and Circulation resource from the Prentice Hall *All in One Teaching Resources Human Biology and Health* p. 176 per student
- Poster paper
- Markers and colored pencils

Scaffold:

Students that need more structure can use The Body's Transport System student resource pp. 37-39 from the Prentice Hall *Science Explorer Human Biology and Health Guided Reading and Study Workbook* to guide their research.

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Journey of a Red Blood Cell Poster Project

Anchor Task 4

Project Overview

You will design and make a poster that shows and describes a complete journey that a red blood cell might take through the human body.

The journey must include:

- one loop that starts at the heart goes to the lungs and back to the heart
- one loop that starts at the heart go to another specific body part and back to the heart

Directions


- Review the Journey of a Red Blood Cell Poster Project Rubric.
- Research the heart and circulation. Refer to Chapter 3 in your Prentice Hall *Science Explorer Human Biology and Health* textbook pages 77-89. Use the Researching the Heart and Circulation Worksheet 1 to guide your research. Use information from your research to complete questions 1-6.
- Make a poster that illustrates the journey of your red blood cell. Be sure to use scientific vocabulary to describe your illustrations.



Journey of a Red Blood Cell Poster Project Rubric

Anchor Task 4

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 <p>Research on the Heart and Circulation</p>	<p>4</p> <ul style="list-style-type: none"> Answers questions 1-6 accurately Question 6 response includes a detailed sketch of poster display described correctly Uses scientific terminology to describe the display 	<p>3</p> <ul style="list-style-type: none"> Answers at least 4 questions including question 6 accurately Question 6 response includes a detailed sketch of poster display described correctly Uses some or no scientific vocabulary to describe the display 	<p>2</p> <ul style="list-style-type: none"> Answers at least 3 questions including question 6 accurately Question 6 response includes a detailed sketch of poster display described with less than three mistakes 	<p>1</p> <ul style="list-style-type: none"> Answers fewer than 3 questions accurately
<p>Poster</p>	<ul style="list-style-type: none"> Displays function of both loops accurately Uses scientific terminology to accurately describe the function of both loops 	<ul style="list-style-type: none"> Displays function of both loops with 1-2 mistakes Uses scientific terminology to describe the function of both loops 	<ul style="list-style-type: none"> Displays function of both loops with 3-4 mistakes Describes the function of both loops 	<ul style="list-style-type: none"> Displays function of both loops with more than 4 mistakes Partially describes the function of both loops

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Anti-Smoking Campaign Children's Picture Book

Anchor Task 5

Overview

This anchor task is to be used by students as they are the respiratory system.

Goals

Students should know

the respiratory system moves oxygen from the environment into the body and removes carbon dioxide and water from the body.

Students should understand

serious respiratory problems can result from long-term smoking.

Students should be able to

create a children's picture book that explains the harmful chemicals in tobacco smoke and how tobacco smoke affects a person's health over time.

Resources:

- One Anti-Smoking Advertisement Campaign Children's Picture Book resource per student
- One Smoking and Your Health resource pp. 54-56 from the Prentice Hall *Science Explorer Human Biology and Health Guided Reading and Study Workbook* per student (Also, see the Smoking and Your Health pp.251-254 and Analyzing Smoking Costs p.256 resources in the Prentice Hall *Science Explorer Human Biology and Health All-in-One Teaching Resources*)
- Blank paper
- Stapler
- Markers and colored pencils

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Anti-Smoking Campaign Children's Picture Book

Anchor Task 5

Project Overview

You will create a children's picture book. The purpose of your book will be to persuade young children not to smoke.

The book must include:

- Names and descriptions of the harmful chemicals found in tobacco smoke
- A description of how tobacco smoke affects a human's health over time
- Illustrations that help the reader understand the text

Directions

Review the Anti-Smoking Campaign Children's Picture Book Rubric.


Research the harms of cigarette smoking. Refer to Chapter 4 in your Prentice Hall *Science Explorer Human Biology and Health* textbook pages 122-126. Use the Smoking and Your Health worksheet to guide your research.

Write a book that explains and illustrates how smoking impacts human health. Be sure to use scientific vocabulary.



Anti-Smoking Campaign Children’s Picture Book Rubric

Anchor Task 5

 <p>Research on the harms of cigarette smoking</p>	<p>4</p> <ul style="list-style-type: none"> • Completes smoking cause and effect graphic organizer and questions 1 -10 and • 0-3 inaccuracies 	<p>3</p> <ul style="list-style-type: none"> • Completes smoking cause and effect graphic organizer and questions 1 -10 and/or • 4-5 inaccuracies 	<p>2</p> <ul style="list-style-type: none"> • Completes smoking cause and effect graphic organizer and at least eight and/or • 6-7 inaccuracies 	<p>1</p> <ul style="list-style-type: none"> • Attempt but does not meet the criteria for a 2
<p>Picture Book</p>	<ul style="list-style-type: none"> • Includes the names and descriptions of at least three harmful chemicals found in tobacco smoke • Describes how tobacco smoke affects a human’s health over time • Illustrations help the reader understand the text 	<ul style="list-style-type: none"> • Includes the names and descriptions of at least two harmful chemicals found in tobacco smoke • Describes how tobacco smoke affects a human’s health over time • All or some of the illustrations help the reader understand the text 	<ul style="list-style-type: none"> • Includes the names and descriptions of one of the harmful chemical found in tobacco smoke • Describes how tobacco smoke affects a human’s health over time • All or some of the illustrations help the reader understand the text 	<ul style="list-style-type: none"> • Attempts but does not meet the criteria for a 2

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Body Systems RAFT

Anchor Task 6

Overview

This RAFT is designed to be used by students in science as they are developing the basic understanding of the form and function of various body systems.

RAFT Format

RAFT is an acronym for Role, Audience, Format, and Topic. In a RAFT, students take on a particular role, develop a product for a specified audience in a particular format and on a topic that gets right at the heart of what matters most in a particular segment of study. At some points, a teacher may want to assign students particular RAFTs and at other points may want the student to make the choice. RAFT assignments are typically of fairly short duration and can be completed at school or at home. RAFTs offer teachers great flexibility to plan for student readiness, interest and learning profile.

For more information: Billmeyer, R. and Barton, M. (1998). *Teaching reading in the content areas, If not me then who? Aurora, CO: MCREL.*

Goals

Students should know

- the levels of organization of living things.
- the structure and function of human body systems.

Students should understand

- how the levels of organization (cells, tissues, organs, systems) interrelate within the human body.
- how body systems are necessary for survival in humans and other living organisms.

Students should be able to

- Collect, organize and communicate scientific information.

Required Resources

- One Body Systems Raft resource per student
- Variety of electronic and print resources on the various body systems
- Variety of paper and cardstock
- Colored pencils and markers

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Body Systems RAFT

Anchor Task 6

Directions: First, select a body system from the list on the board. Next, use research materials on the bookshelf, Internet (<http://www.innerbody.com/htm/body.html>, <http://kidshealth.org/kid/body/>), and in your textbook to find information on your selected body system. Get as much information as you can find. Consider the following questions as you conduct your research.

- What is the purpose of your body system?
- How does the body system help human's survive?
- What types of organs, tissues or cells make up the body system?
- Does this body system interact with other body systems?

Use the next page to write down information you learn about your body system. Then, select one of the following options to help you organize your knowledge. When you finish your research, you'll do two more things. First, you'll have a chance to go over your work with a classmate to find ways to make it stronger. Second, you'll share what you have done with students who researched other body systems.

Role	Audience	Format	Topic
Skeletal System	Younger Children	Children's Book	Health/Safety/Function
Digestive System	Science Teacher	Poster with Narration	Interactions with other Systems
Muscular System	Football Coach	Power Point Presentation	Injuries
Circulatory System	Doctor's Patient	Brochure	Disease/Condition
Respiratory System	Athlete	Magazine Article	Functioning of the System
Immune System	Medical Student	Letter	Human vs. Other Organism
Endocrine System	Peer	Board Game	Bodily Function
Fill in your choice below. Check with The teacher for approval.			

Adapted from Body Systems RAFT by Yvonne Mah Shady Grove MS

Please write each of your facts below.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____
