TEXAS TECH UNIVERSITY
TTU K-12

Science, Grade 7 (SCI) 7A
Syllabus

Course Name

SCI 7A

Science, Grade 7 – Semester A

Course Information

SCI 7A is the first semester of this two-semester course.

Welcome to Science 7A! In this course, you'll work through four units of your textbook. This course is designed to help you carefully observe the world in a way that helps you understand it. You are encouraged to find answers to your questions and develop a better understanding of processes and patterns in nature.

This course structure corresponds to the textbook. Each Unit in the textbook corresponds to a lesson in the course, and each chapter is a segment of the larger lesson. Each chapter has learning activities, which include reading assignments, new vocabulary words, digital lessons, and virtual or hands-on labs. These activities will be followed by a short quiz, and each Lesson will include a variety of Summative Assessments, such as a unit test or hands-on lab activity.

There are many more Grade Level, Unit Level, and Lesson Level resources online to engage learning. Feel free to explore all the different resources that are available.

Course Delivery Method

Online

Contacting Your Instructor

You may contact your instructor through the Blackboard messaging system. Technical support is available 24/7 at www.k12.ttu.edu.

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Course Objectives

After completing this course, you should be able to:

1. plan and implement comparative and descriptive investigations;
2. collect, record, and analyze data;
3. use critical thinking, scientific reasoning, and problem solving;
4. describe the contributions of relevant scientists;
5. use scientific methods to make discoveries;
6. use appropriate tools;
7. recognize the process of photosynthesis;
8. understand that matter has physical and chemical properties and can undergo changes;
9. recognize that all cells have functions and molecules in common;
10. understand that reproduction is a characteristic of living organisms;
11. compare the results of offspring from sexual reproduction or asexual reproduction;
12. identify some changes in genetic traits through natural selection and selective breeding;
13. recognize that all organisms are composed of cells;
14. understand that the cells of plants and animals are made of a variety of structures;
15. recognize that there are different levels of organization for all living things;
16. distinguish between physical and chemical changes in matter in the digestive system;
17. recognize how large molecules are broken down into smaller molecules; and
18. identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems.

SCI 7 addresses the required Texas Essential Knowledge and Skills (TEKS). These can be found at the Texas Education Agency website.

Textbook and Materials

Textbook(s)

The required digital textbook for this course is:

- Dispezio, Frank, Heithaus, & Ogle. (2015). *Science fusion: Interactive Grade 7*, TX student edition. Houghton Mifflin. ISBN: 978-0-544-06780-6.

This digital textbook can only be purchased through the TTU K-12 partner bookstore. You can find the link to the bookstore on the TTU K-12 website. Once you have purchased the digital textbook, you will receive a username and password via email

from MBS Direct after they have set up your account. This may take a few days. **Your teacher does not have access to your login information for ThinkCentral.**

You will log in at ThinkCentral website to access your textbook, virtual lab materials, and other online resources. You may need to enter the following information before you can login:

State: Texas
District: College
School: Texas Tech University, Lubbock 79409

If you would like a printed book, you can purchase the optional printed text:

- Dispezio, Frank, Heithaus, & Ogle. (2015). *Science Fusion, Grade 7*, TX student edition (print). Houghton Mifflin. ISBN: 978-0-544-02553-0.

Students may purchase the paperback workbook, but will also need to have the digital textbook.

Hands-On Lab Materials

For the Hands-On labs, you need the following materials, organized by lesson. They are typical items that can be found in most households. You can also access the *Complete Hands-On Lab Materials List* in the **Resources** section of the course.

Lesson One

(This list includes materials for both Hands-On Labs in Lesson One.)

- computer with spreadsheet or graphing software (or regular graphing paper)
- foam board or poster board
- notecard
- sticky notes (small and large)
- paperclip (a large size is best)
- masking tape
- cubes, blocks, and other rectangular objects
- textbooks
- three different sizes of washers labeled A, B, and C
- toy vehicle
- weights or additional washers
- metric ruler
- metric tape measure
- spring scale
- stopwatch
- safety goggles

Lesson Two

- assorted craft supplies, such as yarn/string, balloons, modeling clay, colored paper, beads, glitter, pipe cleaners, dried pasta and beans, and cardboard
- glue and/or tape
- pencil
- plastic zip-top bag
- scissors
- gloves
- lab apron
- safety goggles

Lesson Three

(This list includes materials for all three Hands-On Labs in Lesson Three.)

- envelopes, standard (2)
- 3 x 5 index cards (12)
- paper, blank (2 sheets)
- marker
- colored pencils
- tape, transparent
- bags, plastic, quart size (2)
- coins (6)
- safety goggles

Lesson Four

(This list includes materials for both Hands-On Labs in Lesson Four.)

- chair
- meter stick
- stopwatch
- safety goggles

Lesson Five

- meter stick
- scale (to optionally weigh your device or liquids used)
- cotton or other fabric
- eggs, soft-boiled with shell
- mineral oil or cooking oil
- prepared gelatin
- resealable plastic bags
- syrup or other thick liquid

- water
- packing tape (to help seal bags if needed)
- gloves
- lab apron
- safety goggles

Technical Requirements

- Internet access – preferably high speed (for accessing Blackboard)
- Email
- Word processing software such as Microsoft Word
- Adobe Reader (download from Adobe.com)
- Audio and video capabilities (for watching/listening to course content)
- Digital camera or scanner
- PDF app (free options available)

Technical Skill Requirements

Be comfortable with the following:

- using a word processor
- Internet search engines and browsers
- creating PDFs (see **Requirements for Creating PDFs** in the Syllabus section of your course)

Course Organization

This course consists of five lessons and a final examination. Each lesson contains the following:

- Introduction and Instructions
- Learning Objectives and Curriculum Standards
- Learning Activities
- Assignments

Each lesson includes several activities that present content knowledge. Each lesson also includes multiple graded assignments to ensure that you learn the content that has been presented in the activities. Some of the assignments are automatically-graded quizzes, and some are written assignments or activities that your instructor will grade. Be sure you read all instructions carefully and ask your instructor for help if something is not clear.

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About the Labs

Lab Overview

There are two types of labs in this course: Virtual Labs and Hands-On Labs. You will need supervision and assistance for both types.

- Both Hands-On and Virtual Labs require the manipulation of tools, whether they are on screen or physical tools like scales. You may need a parent or guardian to help you use them.
- Hands-On labs require the supervision of a parent for both safety and clean up. Make sure your parent or guardian knows what you are doing and can help you select an appropriate place to conduct your investigations.

- Some Hands-On labs require a partner who can start the action of the lab while you take measurements. For example, one lab has you measure how fast a toy car runs down a ramp. One person must release the car while another one starts the stopwatch.

You can preview the lab worksheets in the **Resources** section of the course to help you plan. **Do not try to complete the labs all at once.** Please follow the sequence of course materials that you find in the lesson folders.

Watch the **Video: About the Labs** in the **Syllabus** section of the course; it will give you an idea of what each type of lab looks like and what parts are important for your assignments.

To recap, you'll turn in the following for each type of lab:

- The lesson tracker or lab report in the virtual labs. You can access the report within the virtual lab within the left menu that pops up, or on the last screen of the lab when you're done.

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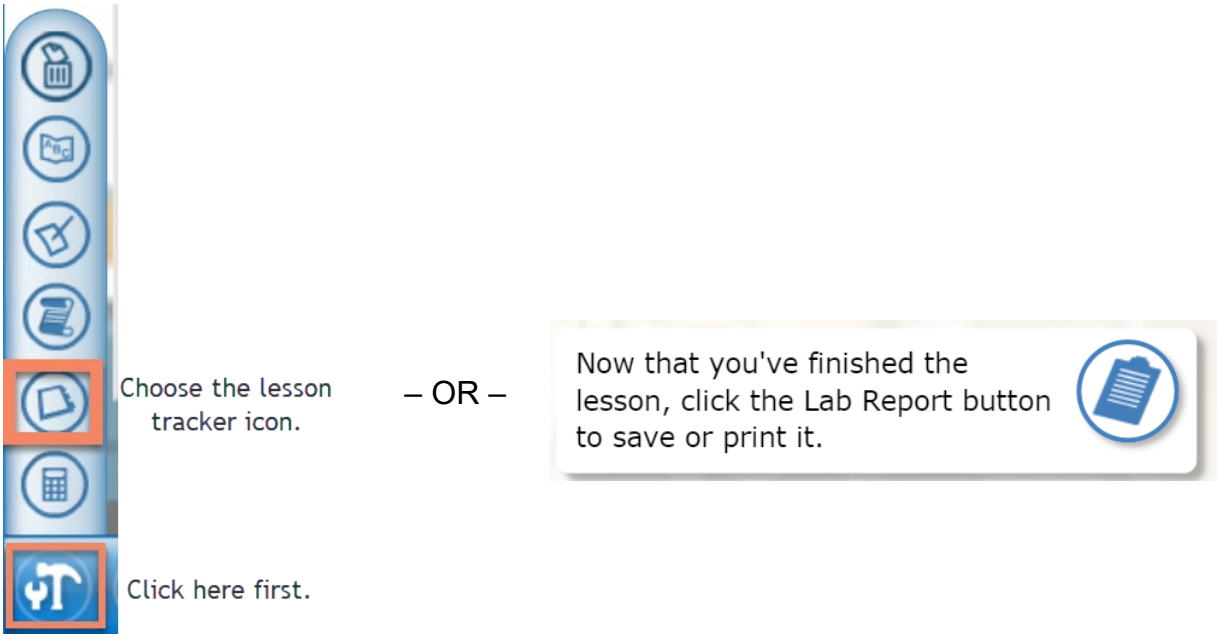

- The reflection quiz for each virtual lab, found in your course lessons.

- The lab worksheet for hands-on labs, available in your course lessons or in the course Resources. Print these worksheets to use them as you conduct your experiments. **Also note that you'll need to take pictures of your hands-on lab work.**

Your lessons will have assignment pages with more detailed instructions on how to submit these items.

Virtual Lab Navigation

For Virtual Labs, you will need to have the digital textbook (see **Textbooks and Materials** in this Syllabus for purchasing information). When you open the virtual labs, you'll see a slideshow with various interactive tools and menus. In the top, right-hand corner is a question mark for the Help Menu, which shows you the features of the virtual labs, as shown in the following screenshot.

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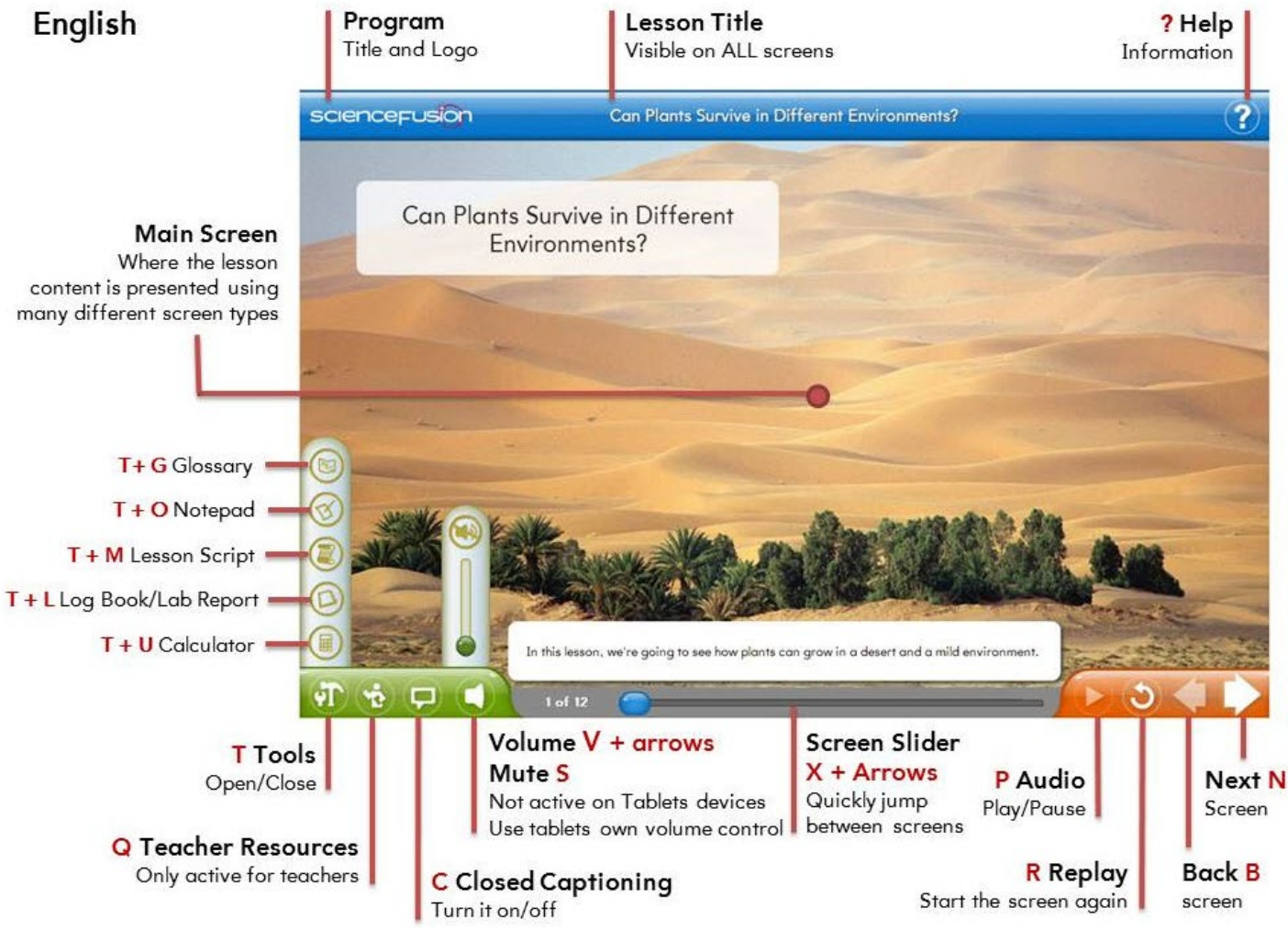

Course Outline

Please note that some assignments will be hidden from you when you start the course. As you move through the lessons and complete assignments, more will unlock for you.

Lesson	Topic	Approximate Time for Completion
Lesson 1	The Nature of Science	Three weeks
Lesson 2	Cells	Three weeks
Lesson 3	Reproduction, Heredity, and Diversity	Three weeks
Lesson 4	Human Body Systems, Part 1	Three weeks
Lesson 5	Human Body Systems, Part 2	Four weeks
Final Exam		

Assignment Schedule

Each of the following must be completed to complete the course. Items with an asterisk (*) indicate that these are summative assessments for the course.

Lesson	Weeks	Assignments
1	1-3	Checkpoint 1 (Non-graded) Lesson 1.1 Quiz Lesson 1.2 Quiz *Lesson 1.3 Virtual Lab: Investigating Waves Lesson 1.3 Virtual Lab Reflection Quiz Lesson 1.3 Quiz Lesson 1.4 Hands-On Lab: Using Tools for Measurement Lesson 1.5 Quiz *Lesson One Lab: Paperclip Catapult Investigation *Lesson One Test
2	4-6	Lesson 2.1 Quiz Lesson 2.2 Virtual Lab: Cell Structure and Function Lesson 2.2 Virtual Lab Reflection Quiz Lesson 2.2 Quiz Lesson 2.3 Quiz Lesson 2.4 Quiz Lesson 2.5 Virtual Lab: Photosynthesis and Cellular Respiration Lesson 2.5 Virtual Lab Reflection Quiz Lesson 2.5 Quiz *Lesson Two Lab: Making a 3D Cell Model *Lesson Two Test
3	7-9	Lesson 3.1 Hands-On Lab: DNA, Chromosomes, and Cell Division Lesson 3.1 Quiz Lesson 3.2 Virtual Lab: Comparing Mitosis and Meiosis Lesson 3.2 Virtual Lab Reflection Quiz Lesson 3.2 Quiz Lesson 3.3 Hands-On Lab: Reproduction and Diversity Lesson 3.3 Quiz *Lesson Three Test Checkpoint 2 (Non-graded)
4	10-12	Lesson 4.1a Virtual Lab: How Do Body Systems Work Together? Lesson 4.1a Virtual Lab Reflection Quiz Lesson 4.1b Hands-On Lab: Balancing Act Lesson 4.1 Quiz

Lesson	Weeks	Assignments
		Lesson 4.2 Quiz Lesson 4.3 Quiz Lesson 4.4 Quiz Lesson 4.5 Hands-On Lab: Measuring Reaction Time Lesson 4.5 Quiz *Lesson Four Test
5	13-16	Lesson 5.1 Quiz (11 pts) Lesson 5.2 Virtual Lab: Disease Investigation-Allergic Reactions Lesson 5.2 Virtual Lab Reflection Quiz Lesson 5.2 Quiz Lesson Five Hands-On Lab: Egg Protection Device *Lesson Five Test Checkpoint 3 (Non-graded)
		Final Exam

Course Credit

The course grade will be calculated as follows:

- 50% coursework average;
- 50% summative assessment average, including the final exam;
- A passing course grade is 70 or higher.

Students must attempt all assignments in the course. The final exam will not be available until all assignments have been accepted and graded by the teacher.

Students who score below 70% on the final exam will be eligible for one re-exam opportunity.

Coursework

The graded assignments within each lesson are formative in nature. This means that they are designed to assist you in applying and demonstrating the lesson concepts, as well as identifying areas in which you need additional review. You may use all the lesson's learning activities to assist you as you complete the graded assignments.

Summative Assessments

Summative assessments are those that allow you to demonstrate mastery of the course objectives. For summative assessments, you will NOT be allowed to use the learning materials. These are opportunities for you to show what you have learned by that point in the course. Summative assessments may be proctored using the online proctoring system Proctorio. Information about Proctorio is provided in **Remote Proctoring** in the

Syllabus section of your course. The summative assessments for this course are as follows:

- Summative Assessments **(20% of Course Grade)**
  - Complete the Lesson 1.3 Virtual Lab: Investigating Waves (25 points)
  - Lesson One Lab: Paperclip Catapult Investigation (30 points)
  - Lesson One Test (41 points)
  - Lesson Two: Making a 3D Cell Model (30 points)
  - Lesson Two Test (51 points)
  - Lesson Three Test (28 points)
  - Lesson Four Test (36 points)
  - Lesson Five Test (20 points)
- Summative Final Exam **(30% of Course Grade)**

Course Completion

- Students may not complete the course in less than 30 days.
- All courses expire six months after the enrollment date.

Academic Integrity

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

Student Expectations

You will be expected to log into the Blackboard course regularly to be aware of possible announcements/reminders and to pace your progress in the course.

Students are expected to maintain an online environment conducive to learning, which includes “netiquette” (Internet etiquette). Please review the basic rules for Online Discussion Netiquette. Ensure that your email messages, discussion board postings, and other electronic communications are thoughtful and respectful. Diverse opinions are welcome in this course, and you are expected to demonstrate an open mind and courtesy when responding to the thoughts and ideas of others.

The following are prohibited:

- making offensive remarks in email or the discussion board;

- using inappropriate language or discussing inappropriate topics online;
- spamming;
- hacking;
- using TTU or Blackboard email or discussion boards for commercial purposes;
- using all caps (considered shouting in online communications); and
- cyber-bullying or online harassment of any type.

Inappropriate behavior shall result in consequences ranging from a request to correct the problem, to removal from the course or even the university, depending on the severity of the behavior. Disciplinary actions will be taken according to the TTU K-12 Student Handbook.

Communication

- You can expect a reply from your instructor within 2 business days.
- Use the Blackboard Course Messages tool for sending messages to your instructor.

Submitting Assignments

You will submit all assignments through the Blackboard Assignment Tool, rather than by mail or email.

Technical Difficulties

Getting Help

For student assistance with Blackboard, visit TTU K-12 Support.

Computer Problems

A working computer is necessary for online coursework. Computer problems will not be accepted as a valid reason for failure to complete course activities within the allotted time frame. Identify a second computer, before the course begins, that you can use if you experience computer problems.

Server Problems

When the Blackboard server needs to be taken down for maintenance, the Blackboard administrator will post an announcement in your course informing you of the time and date. If the server experiences unforeseen problems, your course instructor will notify you.

Lost or Corrupted Files

You must keep/save a copy of every project/assignment on an external disk or personal computer. In the event of any kind of technology failure (e.g., Blackboard server crash or virus infection, students' own computer problems, loss of files in cyberspace, etc.) or any disputes, the instructor may request or require you to resubmit the files. In some

instances, the instructor may need to open another attempt within Blackboard, so communication with your instructor is critical in these circumstances.