



# Science, Grade 6 (SCI) 6B Syllabus

## Course Name

SCI 6B

Science, Grade 6 – Semester B

## Course Information

SCI 6B is the second semester of this two-semester course.

This course is designed to help you see the world in an inquisitive way; you are encouraged to find answers to your questions and develop a better understanding of your surroundings. The goal is for you to become a creative thinker and problem solver!

The course is based on information you will find online, through laboratory experimentation, and within the textbook. It is an activity-based course, which means that you will be learning by using inexpensive materials to do experiments at home, as well as participating in online lab activities. To get started, you need a curious mind, a thirst for knowledge, and a desire for insight into things you may have always taken for granted. You will be required to hypothesize, perform experiments, write experimental data in scientific form, chart and graph your results, and investigate various problems. You will have assignments at the end of each lesson. In addition, you will take a final exam.

## 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](http://www.k12.ttu.edu).

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## Course Objectives

After completing this course, you should be able to:

1. demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards;
2. analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations;
3. use models to represent aspects of the natural world such as a model of Earth's layers;
4. identify advantages and limitations of models such as size, scale, properties, and materials;
5. relate the impact of research on scientific thought and society, including the history of science and contributions of scientists;
6. use a variety of tools and safety equipment to conduct science inquiry;
7. understand that matter has physical properties that can be used for classification;
8. compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability;
9. test the physical properties of minerals, including hardness, color, luster, and streak;
10. understand and model the structure of Earth, the rock cycle, and plate tectonics;
11. classify rocks as metamorphic, igneous, or sedimentary by the processes of their formation;
12. identify the major tectonic plates and describe how plate tectonics causes major geological events such as ocean basins, earthquakes, volcanic eruptions, and mountain building;
13. understand the organization of our solar system and the relationships among the various bodies that comprise it;
14. describe the physical properties, locations, and movements of the Sun, planets, Galilean moons, meteors, asteroids, and comets;
15. describe the history and future of space exploration, including the types of equipment and transportation needed for space travel;
16. understand that all organisms are classified into Domains and Kingdoms, and that organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem;
17. identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms;
18. describe biotic and abiotic parts of an ecosystem in which organisms interact; and

19. diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem.

SCI 6 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:

- *Texas Science Fusion, Student Edition*. Houghton Mifflin.  
ISBN: 978-0-544-06779-0.

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. You will log in at [ThinkCentral website](#) to access your textbook. 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:

- *Texas Science Fusion, Write-in Student Edition*. Houghton Mifflin.  
ISBN: 978-0-544-02552-3.

Please note that you will not be able to access any of the digital resources if you purchase only the printed textbook.

The textbook was chosen because it is a current, TEA-approved science text. The textbook Units are formatted for easy access to information and contain experiments and activities to accompany the lessons.

The textbook also includes a slew of digital resources, some of which you will be required to access and others that are available for supplementation of learning.

### **Materials**

You will need a pair of **safety glasses** to protect your eyes when conducting some experiments. You may also want to invest in a spiral notebook and a folder to keep notes, returned assignments, and activities so they will be handy when you are preparing for the final exam.

Other materials you will need for this course are:

- scissors
- glue/tape
- scanner or digital camera
- pencil
- penny
- steel nail
- two mineral samples A and B (**Parent/guardian:** Find any two rocks/minerals that are able to be identified before being given to the student. You may find these anywhere — around the house, at the beach, for purchase at a hobby store, etc. Please make contact with the instructor if you are unable to locate this particular supply.)

## Technical Requirements

- Internet access – preferably high speed (for accessing Blackboard)
- Email
- Word processing software such as Microsoft Word
- Adobe Reader (download from [Adobe.com](http://Adobe.com))
- Audio and video capabilities (for watching/listening to course content)
- PDF app (to scan hand-written documentation for graded assignments)

## 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 eight 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.

The lessons consist of an Introduction and Lesson Objectives that will tell you what you should learn by the end of the lesson. They will give you an idea of what is covered in the lesson assignment and final exam. Each lesson's "How to Proceed" section tells you how to approach the lesson and what pages to read in the textbook. You will submit assignment answers and activities as required.

Your assignments are representative of the types of questions you will see on the final. The final exam will be proctored, and **you may not use your notes or textbook when taking the final.**

## Lab Reports and Other Uploads

### *Activity Lab Reports*

Many of the lessons will ask you to conduct your own scientific research or experiments and then write about your experiences. When instructed, you will be filling out the Lab Report form on a computer. Begin by downloading the **Lab Report Form** (MS Word document) provided in the **Resources** section of this course. Then, while you follow the procedure for each lab, complete the form and submit it according to the directions in the assignment. There is an example of a **Completed Lab Report Form** in the Resources section for your reference. As you fill in the form for each activity, be sure to use your own words; do not copy from the textbook or this course. Use the following format to complete the form.

- **Title:** Write the name of the activity on the top line of your paper.
- **Hypothesis:** Before you complete the experiment, explain what you think will happen. The experiment instructions will guide you. Do not worry about writing an incorrect hypothesis; write what you honestly think will happen in the experiment.
- **Materials:** Make a list of all materials used in the experiment.
- **Procedure:** Read the whole experiment before you begin, to get an idea of what you will be doing. Write down the procedure you follow to perform the experiment, and be sure you are reporting what you did ("I stretched the Slinky across the table") rather than instructing someone how to perform the experiment ("Stretch the Slinky across the table").

- **Results:** Explain in your own words what happens when you perform the activity (what you are actually observing).
- **Conclusion:** Determine why the experiment happens the way it does and describe what you learned.

When you are finished filling out the form, save your work as either a Word document or a PDF (see **Requirements for Creating PDFs** in the Syllabus section of your course), then upload the completed form for grading.

### ***Other Uploads***

You will notice, as you get into the course, that there are several assignments that require you to draw or create tables, graphs, models, etc., that may not be simple to *upload* for grading. In these cases, there are several options for submitting your work. One option is to take a photograph of your work and then either submit the photo as a JPG file or paste it into a Word document for submission. Another option is to scan your hand-written page, save it as a PDF, and submit that for grading.

## **Netiquette and Grading**

### ***Discussion Forums and Netiquette***

There will be several assignments during this course which require you to post in a discussion forum and interact with other students, sharing work and ideas. You should have good “netiquette” — Internet etiquette — when you post on the forums. Here are some basic guidelines to follow.

- Use your best grammar, spelling, and punctuation in the post. It is a good idea to type your post in a word processor document first as this will help with spell checking, etc., then copy and paste your response into the forum.
- Be kind and courteous to others. The forum is similar to a classroom discussion. Only appropriate language and comments will be permitted on the forums.

## **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.

<b>Lesson</b>	<b>Topic</b>	<b>Approximate Time for Completion</b>
<b>Lesson 1</b>	Rocks and Minerals	Two weeks
<b>Lesson 2</b>	Forces Shaping the Earth	Two weeks
<b>Lesson 3</b>	The Solar System	Two weeks

<b>Lesson</b>	<b>Topic</b>	<b>Approximate Time for Completion</b>
<b>Lesson 4</b>	Stars and Planets	Two weeks
<b>Lesson 5</b>	Space Exploration	Two weeks
<b>Lesson 6</b>	Characteristics of Life	Two weeks
<b>Lesson 7</b>	Classification of Life	Two weeks
<b>Lesson 8</b>	Ecology	Two weeks
<b>Final Exam</b>		

## 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.

<b>Lesson</b>	<b>Weeks</b>	<b>Assignments</b>
<b>1</b>	1-2	Checkpoint 1 (Non-graded) Assignment 1.1: Introductions Assignment 1.2: Scratch Test Quick Lab Assignment 1.3: The Rock Walk Assignment 1.4: Rock Cycle: Virtual Lab Activity *Lesson One Summative Questions
<b>2</b>	3-4	Assignment 2.1: Tectonic Plates Assignment 2.2: Modeling the Earth's Layers Assignment 2.3: Show Off Your Work *Lesson Two Summative Questions
<b>3</b>	5-6	Assignment 3.1: Timeline: All About Our Solar System Assignment 3.2: The Sun: Virtual Lab Activity *Lesson Three Summative Questions Checkpoint 2 (Non-graded)
<b>4</b>	7-8	Assignment 4.1: Planets Assignment 4.2: The Others: Small Bodies and Objects in the Solar System Assignment 4.3: Planet Double Bubble Map Assignment 4.4: Galaxies Explained *Lesson Four Summative Questions

<b>Lesson</b>	<b>Weeks</b>	<b>Assignments</b>
<b>5</b>	9-10	Assignment 5.1: Space Exploration Timeline Assignment 5.2: Design a Spacecraft Assignment 5.3: Satellite Report *Lesson Five Summative Questions
<b>6</b>	11-12	Assignment 6.1: Cell Characteristics: Virtual Lab Activity Assignment 6.2: Cell Drawing with Cell Theory Assignment 6.3: Cell Theory Poster *Lesson Six Summative Questions
<b>7</b>	13-14	Assignment 7.1: Classifying Patterns Assignment 7.2: Understanding Through Classification Assignment 7.3: Life All Around: What's in Your Neighborhood? *Summative Project: Characteristics of Six Kingdoms
<b>8</b>	15-16	*Summative Project: Field Lab: What's in an Ecosystem? Assignment 8.2: Populations and Resources Lab Activity *Lesson Eight Summative Questions Checkpoint 3 (Non-graded)
		<b>Final Exam</b>

## 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)**
  - Lesson One Summative Questions (39 points)
  - Lesson Two Summative Questions (33 points)
  - Lesson Three Summative Questions (30 points)
  - Lesson Four Summative Questions (60 points)
  - Lesson Five Summative Questions (47 points)
  - Lesson Six Summative Questions (20 points)
  - Summative Project: Characteristics of Six Kingdoms (90 points)
  - Summative Project, Field Lab: What's in an Ecosystem? (100 points)
  - Lesson Eight Summative Questions (16 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.