

**Grace Christian Academy  
Course Description**

**Course Title:** Science 4<sup>th</sup> Grade  
**Course Length:** Full Year

**Class Meetings (per week):** Daily, 20-30 min.  
**Textbooks:** Science 4 for Christian Schools and  
Science 4 Notebook Packet; BJU Press

**General Course Description:** This course is a developmental program designed to teach scientific information as well as knowledge of God's wisdom and sovereignty. While learning to function as a scientifically literate person (one who uses scientific knowledge, skills, and attitudes to identify and solve science related problems), the student is enabled to understand the studied areas from a Christian perspective.

**Bible Principles:**

**God desires that we study the details of His creation. (Job 12:7-8, Genesis 1:28)**

**God controls every part of the natural world. (Job 9:5-7, Psalm 104:6-7)**

**The universe is an illustration of God's omniscience, omnipotence, and omnipresence. (Psalm 19:1-4)**

**General Course Description:**

**1<sup>st</sup> Quarter**

History of the moon  
Insects, Arachnids, and Myriapods  
Electricity

**2<sup>nd</sup> Quarter**

Plants  
Length, Area, and Volume  
Digestion

**3<sup>rd</sup> Quarter**

The moon's Structure and Motions  
Animal Defenses  
Light

**4<sup>th</sup> Quarter**

Machines  
Trees  
How the Earth's Crust Wears Down

**Related Student Objectives/Learner Objectives:**

Students will learn:

1. To describe an object by using their five senses
2. To discriminate between things that can and cannot be observed
3. To describe the difference between the Creation Model and the Evolution Model
4. To describe and demonstrate the fallacies of the Capture Theory
5. To describe the Condensation Theory
6. To explain the three evidences of the moon's young age
7. To explain the source of the moon's light as reflected light from the sun

8. To explain why the moon appears to move across the sky as a result of the earth's rotation
9. To list the common characteristics of insects
10. To describe the stages of incomplete and complete metamorphosis
11. To identify the characteristics and give examples of the Order Arthropoda (grasshopper, cricket, praying mantis, & cockroach)
12. To differentiate between a butterfly and moth
13. To list characteristics used in identifying moths and butterflies
14. To list comparisons and contrasting items in the body structure of bees and ants
15. To list comparisons and contrasting items in the social activities of bees and ants
16. To distinguish between spiders and insects
17. To name the 3 main parts of an atom
18. To explain how electricity is caused by an imbalance of electrons in atoms
19. To determine whether two objects will cause a shock or spark
20. To determine an atom's charge
21. To determine whether two atoms will repel or attract each other
22. To explain the difference between a conductor and an insulator
23. To explain an open and closed circuit
24. To explain how out-of-balance electrons tend to get back in balance
25. To explain why electricity needs a complete circuit in order to work
26. To describe how an electromagnet works
27. To describe how a magnet can produce electricity
28. To accurately measure the length of an object in English standard measurements
29. To determine a logical estimate of the length of an object in English standard measurements
30. To be able to accurately measure the length of an object in English standard measurements
31. To determine a logical estimate of the length of an object in English standard measurements
32. To classify measuring units into the metric or English standard system
33. To perform measurements using the metric system
34. To perform measurements using the English standard system
35. To demonstrate how an object immersed in water will displace a volume of water equal to its own volume
36. To determine the volume of regular polygons
37. To express the volume of an object in cubic units
38. To identify the tongue as the part of the mouth that moves food around in the digestion process
39. To identify teeth as part of the mouth that breaks food into pieces in the digestion process
40. To identify saliva as a liquid in the mouth that softens, moistens food and changes some starches into sugars
41. To explain how food mixed with digestive juices in the stomach chemically break down
42. To explain how food is mixed and broken down by the movement of the wall of the stomach to mechanically break down the food
43. To define and locate on a diagram the following items: pharynx, trachea, esophagus, epiglottis
44. To define "peristalsis"
45. To measure the approximate length of the small intestines
46. To explain the functions of the small intestine, pancreas, large intestine, and liver
47. To explain how the moon's lower level of gravitational pull affects the weight of an object
48. To accurately compute the weight various objects would have on the moon
49. To define perigee and apogee and label them on a diagram

50. To explain how the moon's lack of atmosphere causes the moon's temperature to vary
51. To identify the four features of the moon's surface: plains, mountains, craters, and rills
52. To explain why the mountains of the moon are more jagged than those on earth
53. To explain and demonstrate the synchronous rotation-revolution pattern of the moon
54. To explain and demonstrate the effects of gravity & inertia, how it keeps the moon in orbit
55. To identify the phases of the moon
56. To differentiate between waxing and waning
57. To match mimics with the animals they imitate
58. To match camouflaged animals with their surroundings
59. To name animals whose bright colors signal danger
60. To name animals and their predators
61. To tell the type of defense an animal uses
62. To identify the built-in defense or tactic given animals will use when in danger
63. To explain the parts of the eye and the functions they perform
64. To explain the role of light in producing color
65. To list the primary colors of light and tell which colors in the spectrum are complementary
66. To define concave and convex
67. To list inclined planes that they see at home and school
68. To identify examples of pulleys
69. To identify examples of wheel-and-axle machines
70. To identify the fulcrum, load, and force of a lever
71. To describe a wedge as two inclined planes put together
72. To explain a screw as a spiraled inclined plane
73. To identify types of fungi
74. To explain how fungi reproduce by spores
75. To differentiate between algae, mosses, and liverworts
76. To classify terms associated with plants into major plant divisions
77. To differentiate between types of conifers by their leaves
78. To distinguish between simple and compound leaves
79. To distinguish between palmate compound and pinnately compound leaves
80. To find and bring to class a labeled sample of a simple leaf, a palmate compound leaf, and a pinnately compound leaf
81. To distinguish between lobed and unlobed leaves
82. To identify trees using a classification key
83. To identify methods of mechanical and chemical weathering
84. To identify the different parts of soil
85. To predict the effects of water on a flat field and a sloped field
86. To find evidences of mass wasting and erosion
87. To describe the problem of mass-wasting or erosion

**Presentation Methods:**

- Hands on Instruction
- Educational Videos
- Observations/Demonstrations
- Experiments and Workbooks

**Evaluation and Grading Methods:**

- Written tests
- Study Guides
- Group Interaction
- Models
- Reports

**Enrichment and/or Supplemental Activities:**

- Group experiments
- Special activities
- Creating models
- Visit Science fair