



SCIENCE

Teacher's Guide

▶ **5th Grade**

SCIENCE 500

Teacher's Guide

LIFEPAC® Overview **5**

SCIENCE SCOPE & SEQUENCE | 6

STRUCTURE OF THE LIFEPAC CURRICULUM | 10

TEACHING SUPPLEMENTS | 16

Unit 1: Cells **23**

ANSWER KEYS | 26

ALTERNATE LIFEPAC TEST | 33

Unit 2: Plants: Life Cycles **37**

ANSWER KEYS | 40

ALTERNATE LIFEPAC TEST | 47

Unit 3: Animals: Life Cycles **51**

ANSWER KEYS | 53

ALTERNATE LIFEPAC TEST | 59

Unit 4: Balance in Nature **63**

ANSWER KEYS | 66

ALTERNATE LIFEPAC TEST | 71

Unit 5: Transformation of Energy **75**

ANSWER KEYS | 78

ALTERNATE LIFEPAC TEST | 85

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Unit 6: Records in Rock: The Flood **89**

ANSWER KEYS | **91**

ALTERNATE LIFEPAC TEST | **97**

Unit 7: Records in Rock: Fossils **101**

ANSWER KEYS | **104**

ALTERNATE LIFEPAC TEST | **109**

Unit 8: Records in Rock: Geology **113**

ANSWER KEYS | **115**

ALTERNATE LIFEPAC TEST | **121**

Unit 9: Cycles in Nature **125**

ANSWER KEYS | **128**

ALTERNATE LIFEPAC TEST | **135**

Unit 10: Look Ahead **139**

ANSWER KEYS | **141**

ALTERNATE LIFEPAC TEST | **149**

STRUCTURE OF THE LIFEPAC CURRICULUM

The LIFEPAC curriculum is conveniently structured to provide one teacher handbook containing teacher support material with answer keys and ten student worktexts for each subject at grade levels two through twelve. The work-text format of the LIFEPACs allows the student to read the textual information and complete workbook activities all in the same booklet. The easy to follow LIFEPAC numbering system lists the grade as the first number(s) and the last two digits as the number of the series. For example, the Language Arts LIFEPAC at the 6th grade level, 5th book in the series would be LAN0605.

Each LIFEPAC is divided into 3 to 5 sections and begins with an introduction or overview of the booklet as well as a series of specific learning objectives to give a purpose to the study of the LIFEPAC. The introduction and objectives are followed by a vocabulary section which may be found at the beginning of each section at the lower levels or in the glossary at the high school level. Vocabulary words are used to develop word recognition and should not be confused with the spelling words introduced later in the LIFEPAC. The student should learn all vocabulary words before working the LIFEPAC sections to improve comprehension, retention, and reading skills.

Each activity or written assignment has a number for easy identification, such as 1.1. The first number corresponds to the LIFEPAC section and the number to the right of the decimal is the number of the activity.

Teacher checkpoints, which are essential to maintain quality learning, are found at various

locations throughout the LIFEPAC. The teacher should check 1) neatness of work and penmanship, 2) quality of understanding (tested with a short oral quiz), 3) thoroughness of answers (complete sentences and paragraphs, correct spelling, etc.), 4) completion of activities (no blank spaces), and 5) accuracy of answers as compared to the answer key (all answers correct).

The self test questions are also number coded for easy reference. For example, 2.015 means that this is the 15th question in the self test of Section 2. The first number corresponds to the LIFEPAC section, the zero indicates that it is a self test question, and the number to the right of the zero is the question number.

The LIFEPAC test is packaged at the centerfold of each LIFEPAC. It should be removed and put aside before giving the booklet to the student for study.

Answer and test keys have the same numbering system as the LIFEPACs and appear throughout this handbook. The student may be given access to the answer keys (not the test keys) under teacher supervision so that he can score his own work.

A thorough study of the Curriculum Overview by the teacher before instruction begins is essential to the success of the student. The teacher should become familiar with expected skill mastery and understand how these grade-level skills fit into the overall skill development of the curriculum. The teacher should also preview the objectives that appear at the beginning of each LIFEPAC for additional preparation and planning.

TEST SCORING AND GRADING

Answer keys and test keys give examples of correct answers. They convey the idea, but the student may use many ways to express a correct answer. The teacher should check for the essence of the answer, not for the exact wording. Many questions are high level and require thinking and creativity on the part of the student. Each answer should be scored based on whether or not the main idea written by the student matches the model example. "Any Order" or "Either Order" in a key indicates that no particular order is necessary to be correct.

Most self tests and LIFEPAC tests at the lower elementary levels are scored at 1 point per answer; however, the upper levels may have a point system awarding 2 to 5 points for various answers or questions. Further, the total test points will vary; they may not always equal 100 points. They may be 78, 85, 100, 105, etc.

Example 1

58 72	SCORE _____	TEACHER _____	initials	date
----------	--------------------	----------------------	----------	------

Example 2

84 105	SCORE _____	TEACHER _____	initials	date
-----------	--------------------	----------------------	----------	------

A score box similar to ex. 1 above is located at the end of each self test and on the front of the LIFEPAC test. The bottom score, 72, represents the total number of points possible on the test. The upper score, 58, represents the number of points your student will need to receive an 80% or passing grade. If you wish to establish the exact percentage that your student has achieved, find the total points of his correct answers and divide it by the bottom number (in this case 72). For example, if your student has a point total of 65, divide 65 by 72 for a grade of 90%. Referring to ex. 2, on a test with a total of 105 possible points, the student would have to receive a minimum of 84 correct points for an 80% or passing grade. If your student has received 93 points, simply divide the 93 by 105 for a percentage grade of 89%. Students who receive a score below 80% should review the LIFEPAC and retest using the appropriate Alternate Test found in the Teacher's Guide.

The following is a guideline to assign letter grades for completed LIFEPACs based on a maximum total score of 100 points.

Example:

LIFEPAC Test	=	60% of the Total Score (or percent grade)
Self Test	=	25% of the Total Score (average percent of self tests)
Reports	=	10% or 10* points per LIFEPAC
Oral Work	=	5% or 5* points per LIFEPAC

*Determined by the teacher's subjective evaluation of the student's daily work.

Example:

LIFEPAC Test Score	=	92%	$92 \times .60 = 55$ points
Self Test Average	=	90%	$90 \times .25 = 23$ points
Reports			= 8 points
Oral Work			= 4 points

TOTAL POINTS = 90 points

Grade Scale based on point system:

100 – 94	=	A
93 – 86	=	B
85 – 77	=	C
76 – 70	=	D
Below 70	=	F

TEACHER HINTS AND STUDYING TECHNIQUES

LIFEPAC activities are written to check the level of understanding of the preceding text. The student may look back to the text as necessary to complete these activities; however, a student should never attempt to do the activities without reading (studying) the text first. Self tests and LIFEPAC tests are never open book tests.

Language arts activities (skill integration) often appear within other subject curriculum. The purpose is to give the student an opportunity to test his skill mastery outside of the context in which it was presented.

Writing complete answers (paragraphs) to some questions is an integral part of the LIFEPAC curriculum in all subjects. This builds communication and organization skills, increases understanding and retention of ideas, and helps enforce good penmanship. Complete sentences should be encouraged for this type of activity. Obviously, single words or phrases do not meet the intent of the activity, since multiple lines are given for the response.

Review is essential to student success. Time invested in review where review is suggested will be time saved in correcting errors later. Self tests, unlike the section activities, are closed book. This procedure helps to identify weaknesses before they become too great to overcome. Certain objectives from self tests are cumulative and test previous sections; therefore, good preparation for a self test must include all material studied up to that testing point.

The following procedure checklist has been found to be successful in developing good study habits in the LIFEPAC curriculum.

1. Read the introduction and Table of Contents.
2. Read the objectives.
3. Recite and study the entire vocabulary (glossary) list.
4. Study each section as follows:
 - a. Read the introduction and study the section objectives.
 - b. Read all the text for the entire section, but answer none of the activities.
 - c. Return to the beginning of the section and memorize each vocabulary word and definition.
 - d. Reread the section, complete the activities, check the answers with the answer key, correct all errors, and have the teacher check.
 - e. Read the self test but do not answer the questions.
 - f. Go to the beginning of the first section and reread the text and answers to the activities up to the self test you have not yet done.
 - g. Answer the questions to the self test without looking back.
 - h. Have the self test checked by the teacher.
 - i. Correct the self test and have the teacher check the corrections.
 - j. Repeat steps a-i for each section.
5. Use the SQ3R method to prepare for the LIFEPAC test.
 - Scan the whole LIFEPAC.
 - Question yourself on the objectives.
 - Read the whole LIFEPAC again.
 - Recite through an oral examination.
 - Review weak areas.
6. Take the LIFEPAC test as a closed book test.
7. LIFEPAC tests are administered and scored under direct teacher supervision. Students who receive scores below 80% should review the LIFEPAC using the SQ3R study method and take the Alternate Test located in the Teacher Handbook. The final test grade may be the grade on the Alternate Test or an average of the grades from the original LIFEPAC test and the Alternate Test.

GOAL SETTING AND SCHEDULES

Each school must develop its own schedule, because no single set of procedures will fit every situation. The following is an example of a daily schedule that includes the five LIFEPAC subjects as well as time slotted for special activities.

Possible Daily Schedule

8:15	-	8:25	Pledges, prayer, songs, devotions, etc.
8:25	-	9:10	Bible
9:10	-	9:55	Language Arts
9:55	-	10:15	Recess (juice break)
10:15	-	11:00	Math
11:00	-	11:45	History & Geography
11:45	-	12:30	Lunch, recess, quiet time
12:30	-	1:15	Science
1:15	-		Drill, remedial work, enrichment*

***Enrichment:** *Computer time, physical education, field trips, fun reading, games and puzzles, family business, hobbies, resource persons, guests, crafts, creative work, electives, music appreciation, projects.*

Basically, two factors need to be considered when assigning work to a student in the LIFEPAC curriculum.

The first is time. An average of 45 minutes should be devoted to each subject, each day. Remember, this is only an average. Because of extenuating circumstances a student may spend only 15 minutes on a subject one day and the next day spend 90 minutes on the same subject.

The second factor is the number of pages to be worked in each subject. A single LIFEPAC is designed to take 3 to 4 weeks to complete. Allowing about 3 to 4 days for LIFEPAC introduction, review, and tests, the student has approximately 15 days to complete the LIFEPAC pages. Simply take the number of pages in the LIFEPAC, divide it by 15 and you will have the number of pages that must be completed on a daily basis to keep the student on schedule. For example, a LIFEPAC containing 45 pages will require 3 completed pages per day. Again, this is only an average. While working a 45 page LIFEPAC, the student may complete only 1 page the first day if the text has a lot of activities or reports, but go on to complete 5 pages the next day.

Long-range planning requires some organization. Because the traditional school year originates in the early fall of one year and continues to late spring of the following year, a calendar should be devised that covers this period of time. Approximate beginning and completion dates can be noted on the calendar as well as special occasions such as holidays, vacations and birthdays. Since each LIFEPAC takes 3 to 4 weeks or eighteen days to complete, it should take about 180 school days to finish a set of ten LIFEPACs. Starting at the beginning school date, mark off eighteen school days on the calendar and that will become the targeted completion date for the first LIFEPAC. Continue marking the calendar until you have established dates for the remaining nine LIFEPACs making adjustments for previously noted holidays and vacations. If all five subjects are being used, the ten established target dates should be the same for the LIFEPACs in each subject.

SCIENCE PROJECTS LIST

Key

- (1) = Those essential to perform for basic understanding of scientific principles.
- (2) = Those which should be performed as time permits.
- (3) = Those not essential for mastery of LIFEPACs.

S = Equipment needed for homeschool or Christian school lab.

E = Explanation or demonstration by instructor may replace student or class lab work.

H = Suitable for homework or for homeschool students. (No lab equipment needed.)

V = This experiment is available on the Science Experiments Video.

Science 501

- 501.A** (1) S & V
501.B (1) S & V
501.C (1) S & V
501.D (1) S & V
501.E (1) S & V

Science 502

- 502.A** (1) S & V
502.B (2) H
Seed
Hunt (1) H & V
Cones (2) H
502.C (1) S & V

Science 503

- 503.A** (1) S & V
503.B (1) S

Science 504

- 504** (2) H

Science 505

- 505.A** (1) S
505.B (3) H
505.C (1) S & V
505.D (3) S

Science 506

None

Science 507

- 507.A** (1) S & V
507.B (1) S

Science 508

- 508.A** (2) H or S
508.B (1) S
Rock
Hunt (1) H
508.C (2) H & V

Science 509

- 509.A** (2) H & V
509.B (3) H
509.C (1) H
509.D (1) H & V
509.E (2) S & V
509.F (1) S & V
509.G (3) E

Science 510

- Rocks** (1) S

INSTRUCTIONS FOR SCIENCE

The LIFEPAC curriculum from grades two through twelve is structured so that the daily instructional material is written directly into the LIFEPACs. The student is encouraged to read and follow this instructional material in order to develop independent study habits. The teacher should introduce the LIFEPAC to the student, set a required completion schedule, complete teacher checks, be available for questions regarding both content and procedures, administer and grade tests, and develop additional learning activities as desired. Teachers working with several students may schedule their time so that students are assigned to a quiet work activity when it is necessary to spend instructional time with one particular student.

The Teaching Notes section of the Teacher's Guide lists the required or suggested materials for the LIFEPACs and provides additional learning activities for the students. The materials section refers only to LIFEPAC materials and does not include materials which may be needed for the additional activities. Additional learning activities provide a change from the daily school routine, encourage the student's interest in learning and may be used as a reward for good study habits.

If you have limited facilities and are not able to perform all the experiments contained in the LIFEPAC curriculum, the Science Project List may be a useful tool for you. This list prioritizes experiments into three categories: those essential to perform, those which should be performed as time and facilities permit, and those not essential for mastery of LIFEPACs. Of course, for complete understanding of concepts and student participation in the curriculum, all experiments should be performed whenever practical. Materials for the experiments are shown in Teaching Notes—Materials Needed.

A suggested support item for this course is the 5th Grade Science Experiments Video, SD0501. The video includes presentations of many of the experiments in this course. Several of the experiments that require special equipment or materials are demonstrated on these videos. They can either be used for answering the questions of the lab report or as a demonstration of the procedure prior to performing the experiment. A notice is included with each experiment in the LIFEPAC where the video is available.

SCIENCE 501

Unit 1: Cells

TEACHING NOTES

MATERIALS NEEDED FOR LIFE PAC

Required

- optical microscope
- slides
- slide covers
- toothpicks
- diluted iodine solution
- 3 small jars half-full of water
- onion bulb
- knife or scalpel
- tweezers
- small eyedropper
- sterile needle
- ink stain
- pond water
- cotton ball
- rubbing alcohol

Suggested

- 5th Grade Science Experiments Video

ADDITIONAL LEARNING ACTIVITIES

Section 1: The Basic Unit of Living Things: A Cell

1. Introduce students to the use of a microscope. Show them how to magnify and focus. Have students look at a drop of water, hair, paper, thread, and so forth for practice.
2. Students: Make drawings of a cell and label the nucleus, membrane, and cytoplasm. Under the drawing list the three parts and write a one-sentence description for each.
3. Prepare slides of several different fruits and vegetables. Observe and discuss your slides.
4. Look up information on Robert Hooke and write a short report.
5. Be creative! Write a few paragraphs and illustrate a story titled: "A Cell Named _____ (your name) _____." Include your parts and functions.

Section 2: The Life and Activity of Cells

1. Have two green stalks of celery, one firm and one wilted. Discuss their color and rigidity. Encourage students to study Section 2 to find out why stalk #2 is weak and wilted.
2. Divide the class into pairs. Instruct each student to draw five different kinds of cells that they studied in Section 2. Have students exchange papers and label their partner's drawing.
3. Instruct the students to make a word find puzzle using the vocabulary words in this section of the LIFE PAC. Students can exchange puzzles and write the meanings of the words they unscrambled.

4. Students: Take two stalks of celery. Put each stalk in a glass of water. Add red or blue food coloring to one glass of water. Observe the glasses the next day. Write a report on what you observed. See if you can explain the results.
5. Draw pictures of the two kinds of blood cells and explain their functions.

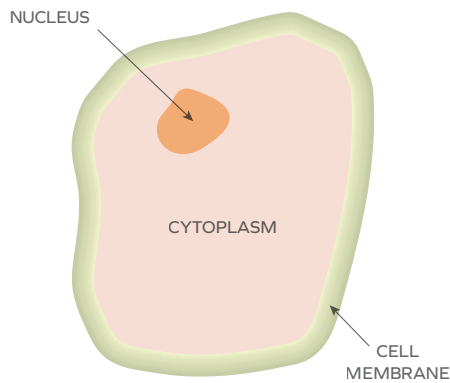
Section 3: Energy and Growth of Cells

1. Students: Take two plants. Put one in the sunlight and one in the dark. Check the plants after one week. What happened? Why?
2. Cut out felt shapes for the sun, a few animals, and a few plants. Use the felt pieces to explain the carbon cycle in your own words. Do the same for photosynthesis.
3. Make your own drawings to explain mitosis. Show your drawings to a friend or the class and explain the process.
4. Observe or read about a sunflower. Write a few sentences explaining why you think the sunflower follows the sun.

ANSWER KEYS

SECTION 1

- 1.1 cells
- 1.2 cork
- 1.3 basic unit
- 1.4 unicellular
- 1.5 multicellular
- 1.6 b
- 1.7 f
- 1.8 a
- 1.9 d
- 1.10 g
- 1.11 c
- 1.12 Typical 3-part cell

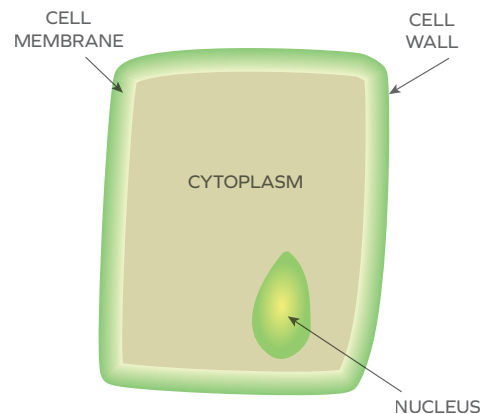


- 1.13 true
- 1.14 false
- 1.15 true
- 1.16 true
- 1.17 false
- 1.18 Microscopes help us to view cells. (Two types of microscopes are optical microscopes and electron microscopes.) It is also helpful to use dyes to view cells.
- 1.19 Compare to the cell illustrations shown in the LIFEPAK.
- 1.20 The student's additional observations should be noted.

SELF TEST 1

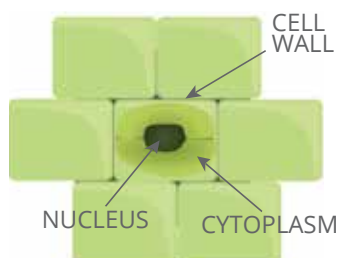
- 1.01 e
- 1.02 k
- 1.03 c
- 1.04 a
- 1.05 i
- 1.06 d
- 1.07 g
- 1.08 b
- 1.09 f
- 1.010 m
- 1.011 c. cells
- 1.012 c. discoveries
- 1.013 b. unicellular
- 1.014 a. a nucleus
- 1.015 d. optical microscope
- 1.016 d. all of these
- 1.017 b. yolk of an ostrich egg
- 1.018 The answer should contain some of the following: A cell is the basic unit of all living things. It is the unit of life. All living things that God has created contain cells. A cell contains at least two basic parts: a cell membrane and protoplasm. Three-part cells contain a cell membrane, cytoplasm, and a nucleus.
- 1.019 The dyes stain certain parts of the cell—such as the cell membrane and the nucleus—so that they stand out more clearly when the cells are viewed under the microscope.

1.020



SECTION 2

- 2.1 cell membrane
 2.2 a. phospholipid
 b. proteins
 2.3 organelles
 2.4 nuclear membrane
 2.5 Either answer is acceptable: chromatin or chromosomes
 2.6 DNA
 2.7 chromosomes
 2.8 nucleolus
 2.9 Any order:
 a. those that produce proteins
 b. those that produce energy
 c. specialty organelles
 2.10 DNA and genes contain the molecular information to make the cells and groups of cells within a living thing what they are to be. The DNA is what makes the offspring of a living thing like the parent.
 2.11 false
 2.12 true
 2.13 true
 2.14 true
 2.15 false
 2.16 true
 2.17 Onion bulb cell



- 2.18 Any other information the student found interesting is acceptable.
 2.19 Pond water first slide:
 Compare with drawings of the unicellular animals in the LIFEPAC.
 2.20 Pond water second slide:
 Compare with drawings of the unicellular animals in the LIFEPAC.
 2.21 Pond water third slide:
 Compare with drawings of the unicellular animals in the LIFEPAC
 2.22 For a., b., and c., compare with drawings of the unicellular animals in the LIFEPAC. Some answers may be “unknown.”
- 2.23 Any other information the student found interesting is acceptable.
 2.24 a. membrane
 b. protein
 c. chromosomes
 d. chlorophyll
 e. unicellular
 f. phospholipid
 g. nucleolus
 h. cellulose
 i. photosynthesis
 j. protozoa
 2.25 Cheek cells: refer to epithelial cells on page 25.
 2.26 Any other information the student found interesting is acceptable.
 2.27 They should appear to be alike in structure. Their compositions are alike.
 2.28 There should not be basic differences. Perhaps size differences would appear because of the drawing size.
 2.29 The functions of the cells are similar. The functions of the cells are to cover and protect.
 2.30 Blood cells: refer to red blood cells on page 24.
 2.31 Any other information the student found interesting is acceptable.
 2.32 unicellular
 2.33 multicellular
 2.34 White
 2.35 Red
 2.36 Nerve
 2.37 Epithelial
 2.38 Muscle
 2.39 Any order:
 a. epidermal
 b. connective
 c. storage
 d. support
 2.40 Any order:
 a. epithelial
 b. muscular
 c. nervous
 d. connective
 2.41 A tissue is a group of cells in a multicellular plant or animal that is similar in structure and performs similar functions.
 2.42 Some of the functions are similar—epithelial tissue covering in both. Connective tissue helps move needed nutrients in both plants and animals.

- 2.43** Some of the following should be covered: The nerve cells in the nervous tissue are close together and can send signals, or impulses, from one to another very quickly. Nervous tissue is located all through the body. It forms the communication network to and from the brain. Sensory nervous tissue is responsible for sending information to the brain. This sensory information comes from nerve cells and nerve tissues located in the eyes, ear, nose, mouth, and skin. The brain then receives and processes these messages and information. Then, information is sent out from the brain through motor nervous tissues in order to move muscles, activate certain glands, or perform other body functions.
- 2.44** Some of these thoughts could be shared: The body is made up of complex cells and tissues. They are wonderful in the way they are structured and function. Even the tiny cells are very complex. God has made us wonderfully.

SELF TEST 2

- 2.01** true
2.02 true
2.03 false
2.04 true
2.05 true
2.06 false
2.07 true
2.08 true
2.09 false
2.010 true
2.011 false
2.012 basic unit
2.013 nucleolus
2.014 Bone
2.015 microscope
2.016 leaves
2.017 multicellular
2.018 l
2.019 k
2.020 j
2.021 i
2.022 h
2.023 g
2.024 f
2.025 e
2.026 d
2.027 c
2.028 There are no muscle, nerve and bone cells in plants. Functions of cells are different. Plant cells have a cell wall, chloroplasts, and chlorophyll. Animal cells do not.
- 2.029** Movement is caused by muscle cells contracting. Small movements happen when only a few muscle cells contract. Large movements result when many muscle cells contract.
- 2.030** DNA and genes contain the molecular information to make the cells and groups of cells within a living thing what they are to be. The DNA is what makes the offspring of a living thing like the parent.
- 2.031** Tissues are groups of cells in a multicellular plant or animal that are similar in structure and perform similar functions. The four types of animal tissues are epithelial, muscular, nervous, and connective.

SECTION 3

- 3.1** Plants take in carbon dioxide through their leaves and water from their roots. In photosynthesis, the chlorophyll in the plant receives the energy needed from the sun to cause a chemical reaction with the carbon dioxide and water. As a result, oxygen gas is produced, along with sugars and other materials that the plant can use as food. The oxygen produced by photosynthesis is given off through the leaves.
- 3.2** No.
- 3.3** Respiration is the opposite of photosynthesis. Oxygen is used up, and water and carbon dioxide are given off.
- 3.4** c. oxygen and sugars
- 3.5** b. both plants and animals
- 3.6** d. red blood cells
- 3.7** c. energy
- 3.8** a. each other
- 3.9** Food is brought into the body through eating and the body's digestive system. Oxygen is brought into the body through breathing. Respiration occurs when the food is combined with the oxygen in the body, giving off energy the body needs to perform life and work.
- 3.10** Plants and animals depend on each other to carry on life. Plants must have adequate carbon dioxide given off by animals and human beings in order for the process of photosynthesis to take place. In turn, animals and human beings rely on plants for the oxygen and much of the food they receive. God has arranged this important cycle of energy in the world.
- 3.11** false
- 3.12** true
- 3.13** true
- 3.14** false
- 3.15** true
- 3.16** true
- 3.17** two
- 3.18** mitosis
- 3.19** cell division
- 3.20** red blood
- 3.21** Nerve
- 3.22** Teacher check

SELF TEST 3

- 3.01** true
- 3.02** false
- 3.03** true
- 3.04** false
- 3.05** true
- 3.06** true
- 3.07** true
- 3.08** true
- 3.09** true
- 3.010** false
- 3.011** true
- 3.012** c. discoveries
- 3.013** d. all of these
- 3.014** a. organelles
- 3.015** a. oxygen
- 3.016** c. White blood
- 3.017** a. cell division
- 3.018** Nerve
- 3.019** Muscle
- 3.020** Phospholipids
- 3.021** Any order:
a. DNA
b. RNA
c. other proteins
- 3.022** Mitosis brings about cell division and two new cells from one original cell. Mitosis starts when the chromatin within the cell begins to rearrange and condense into orderly strands called *chromosomes*. The chromosomes then move into pairs. After that, the chromosome pairs begin to pull apart from each other. Eventually, the chromosome pairs split apart. When they split apart, cell division occurs. Then there are two new cells instead of the original single cell.
- 3.023** Most of the multicellular plants and animals reproduce themselves by the process known as *male-female reproduction*. A cell from a male parent and a cell from a female parent join together to form a new cell. This process begins a new living thing that has characteristics of both parents. The newly formed cell then begins to reproduce itself through mitosis.
- 3.024** In photosynthesis, green plants containing chlorophyll absorb energy from the sun to cause a chemical reaction between carbon dioxide and water to produce oxygen and sugars. Respiration is the opposite of photosynthesis. In respiration, oxygen and food combine to produce energy and carbon dioxide and water are given off.

3.025 Microscopes are helpful in viewing cells. There are two basic types of microscopes: optical and electron. Dyes are also helpful in viewing cells so that parts of the cells stand out more clearly.

LIFEPAC TEST

1. d
2. e
3. f
4. b
5. c
6. g
7. h
8. i
9. j
10. k
11. true
12. true
13. true
14. true
15. false
16. true
17. false
18. false
19. true
20. true
21. c. cells
22. a. a nucleus
23. c. oxygen and sugars
24. d. red blood cells
25. b. nuclear membrane
26. Any order:
 - a. optical
 - b. electron
27. Any order:
 - a. nuclear membrane
 - b. chromatin
 - c. nucleolus
28. Any order and any four of the following six:
white blood cells
red blood cells
nerve cells
bone cells
epithelial cells
muscle cells
29. The answer should contain some of the following: A cell is the basic unit of all living things. It is the unit of life. All living things that God has created contain cells. A cell contains at least two basic parts: a cell membrane and protoplasm. Three-part cells contain a cell membrane, cytoplasm, and a nucleus.
30. Food is brought into the body through eating and the body's digestive system. Oxygen is brought into the body through breathing. Respiration occurs when the food is combined with the oxygen in the body, giving off energy the body needs to perform life and work.

ALTERNATE LIFE PAC TEST

1. true
2. false
3. true
4. true
5. true
6. true
7. false
8. false
9. false
10. true
11. Any order:
 - a. carbon dioxide
 - b. water
 - c. sunlight
12. a. - b. Either order:
 - a. oxygen
 - b. food
 - c. carbon dioxide
13. a. oxygen
b. carbon dioxide
14. a. fearfully
b. wonderfully
15. need drawing and label
16. c. microscope
17. b. male-female reproduction
18. a. organelles
19. a. cell division
20. b. DNA
21. Examples; any order:
 - a. epithelial
 - b. connective
 - c. muscle or nervous
22. Either order:
 - a. oxygen
 - b. sugars or food
23. e
24. f
25. a
26. g
27. b
28. h
29. c
30. i
31. d
32. l

SCIENCE 501

ALTERNATE LIFEPAC TEST

NAME _____
DATE _____
SCORE _____



Write true or false (each answer, 2 points).

1. _____ Cells are the basic unit of life.
2. _____ All cells have a cell wall.
3. _____ Prokaryote cells have only two parts—an outer membrane and inner protoplasm.
4. _____ Almost all cells are microscopic.
5. _____ Scientists are still making new discoveries today about cells.
6. _____ The cell membrane consists of a phospholipid double layer and proteins.
7. _____ The cell wall is usually made up mostly of water.
8. _____ Photosynthesis in plants produces carbon dioxide and water.
9. _____ Protozoa are an example of a multicellular organism.
10. _____ Budding is a process of cell reproduction.

Complete these statements (each answer, 3 points).

11. Photosynthesis works when a. _____, b. _____ and c. _____ are present in the plant.
12. The carbon cycle needs a. _____ and b. _____ from plants and c. _____ from animals.
13. Red blood cells take a. _____ to the cells and b. _____ away from them.
14. Psalms 139:14 says that we are a. _____ and b. _____ made.

Draw and label an animal cell (this answer, 5 points).

15.



Write the correct answer on each line (each answer, 2 points).

16. A _____ is needed to see most cells.
a. flashlight b. telescope c. microscope
17. Most multicelled plants and animals reproduce through _____.
a. budding
b. male-female reproduction
c. fusion
18. Chloroplasts are a category of _____ found in the cells of green plants.
a. organelles b. bacteria c. tissues
19. The splitting apart of cells is know as _____.
a. cell division b. kenosis c. oxidation
20. The _____ in your body determines your hair and eye color.
a. red blood cell b. DNA c. nitrogen

Answer these questions (each answer, 3 points).

21. What are three types of animal tissues?
a. _____
b. _____
c. _____
22. What are the two substances produced by photosynthesis in plants?
a. _____
b. _____

Match these items (each answer, 2 points).

23. _____ cells that fight disease
24. _____ nucleolus
25. _____ energy
26. _____ mitosis
27. _____ xylem
28. _____ respiration
29. _____ cytoplasm
30. _____ God
31. _____ Robert Hooke
32. _____ cell wall
- a. the capacity to do work
- b. connective tissue in plants
- c. fluid material within cell membrane and outside the nucleus
- d. discovered cells while looking at cork
- e. white blood cells
- f. contained within the nucleus of a cell
- g. a single cell splits to form two new cells
- h. carbon dioxide and energy given off
- i. created all living things
- j. invented the telescope
- k. made of chloroplasts
- l. usually made of cellulose



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