

Diagnostic Test

Language Arts and Reading

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| 1 | A | B | C | D |
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| 22 | A | B | C | D |
| 23 | A | B | C | D |

Social Science

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| 21 | A | B | C | D |

Music, Visual Arts, Physical Education, and Health

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Science and
Technology

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Mathematics

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| 21 | A | B | C | D |
| 22 | A | B | C | D |
| 23 | A | B | C | D |

The test that follows is approximately half the length of the regular FTCE: Elementary Education (K–6) Subject Area Examination. Allow yourself 1 hour and 15 minutes to complete the diagnostic test. Record your answers on the Diagnostic Test Answer Sheet. When you are finished, check your answers. The answer key will give you the competency number to which the question is related.

Language Arts and Reading

- Which of the following is a transition word a student should use when writing about cause and effect?
 - because
 - and
 - but
 - or
- At the beginning of the school year, Leila, a first-grade student, made approximations while reading. However, by the middle of the year, she was pointing to each word on the page as she read each book. What concept of print is Leila exhibiting?
 - directionality
 - voice-to-print match
 - return sweep
 - sight word recognition
- Which of the following would be considered a primary source?
 - first hand testimony
 - a model created to depict a historical event
 - a timeline of events in a textbook
 - a website
- A hyperbole is an exaggerated statement used for effect and is not meant to be taken literally. Which of the following is a hyperbole?
 - She must have weighed 1,000 pounds!
 - The bar of chocolate was humongous!
 - She ran as fast as a cheetah.
 - Her nose was red like a cherry.
- Where can you easily access a wide array of multicultural literature, free of charge, for use in your elementary classroom?
 - school library
 - college library
 - Library of Congress
 - the Internet
- Knowledge of individual words in sentences, syllables, onset-rime segments and the awareness of individual phonemes in words is known as
 - phonics.
 - phonological awareness.
 - phoneme segmentation.
 - phoneme manipulation.
- During what stage of the writing process do students typically correct their writing for mechanical and spelling errors?
 - brainstorm
 - revision
 - edit
 - pre-write
- During what stage of reading have students mastered basic concepts of print and are beginning to use various strategies for problem solving in reading?
 - pre-reading
 - fluent
 - early
 - emergent
- What cueing system focuses on meaning that is associated with language through prior knowledge and experience?
 - graphophonemic
 - semantic
 - visual
 - auditory
- A fable, a category of folklore, is defined as
 - a story with a moral.
 - a story with historical references.
 - a story that is realistic and could happen.
 - a poem.
- What question might you ask to assist a student in using the semantic cueing system?
 - Does that look right?
 - Does that sound right?
 - Does that make sense?
 - What were you thinking?

12. When a student attempts to synthesize what has been read, they are
- making generalizations.
 - using old ideas to create new ones.
 - predicting and drawing conclusions.
 - all of the above.
13. The peak of a story is known as the
- resolution.
 - conclusion.
 - climax.
 - plot.
14. In the classic folklore story, *The Three Billy Goats Gruff*, the goats trip-trap, trip-trap over the bridge. What literary device describes the use of the words, trip-trap?
- irony
 - metaphor
 - onomatopoeia
 - simile
15. The purpose of anecdotal notes is
- to make note of everything a student is doing wrong.
 - to observe students while they work and record the observations for later study.
 - to make notes of student work and stick strictly to your lesson plan regardless of these notes.
 - none of the above.
16. The National Reading Panel identified five critical areas for success in reading. Which of the following is NOT one of the five critical areas?
- comprehension
 - fluency
 - motivation
 - phonics
17. A kindergarten teacher is modeling how words on a page are read from left to right and top to bottom, using a pointer and a big book. What is the focus of this lesson?
- fluency
 - concepts of print
 - the advantages of using quality children's literature
 - how to use a pointer
18. In order to communicate in writing, penmanship must be legible. Which of the following contributes to legible handwriting?
- spacing
 - letter formation
 - letter alignment
 - all of the above
19. What stage of the writing process could be enhanced by six trait writing lessons?
- brainstorm
 - revision
 - edit
 - all of the above
20. The Florida Comprehensive Assessment Test (FCAT) is a(n)
- norm-referenced test.
 - informal reading inventory.
 - performance based assessment.
 - criterion-referenced test.
21. An example of visual media is
- an online article.
 - a journal.
 - the newspaper.
 - an atlas.
22. Questioning and retelling enhance communication skills among students in the classroom. What critical reading skill is most enhanced by these strategies?
- fluency
 - comprehension
 - word recognition
 - phonics
23. Which of the following is a web-based activity that could take place in the classroom?
- blog
 - online newsletter
 - Wiki page
 - all of the above

Social Science

- Which war was an extension of the European Seven Years War and was a battle over colonial territory and wealth by the French and the English?
 - The French and Native American War
 - The French and Indian War
 - The French and English War
 - The War of the Roses
- Human systems refers to what essential element of teaching geography?
 - location
 - regions
 - people
 - processes that shape the Earth
- How many voyages did Columbus make in an effort to find a route to the East?
 - 1
 - 2
 - 3
 - 4
- The Civil War was the conflict that ended slavery in this country. What document abolished slavery when it was signed by President Lincoln in 1862?
 - Louisiana Purchase
 - Magna Carta
 - Emancipation Proclamation
 - Treaty of Paris
- The use of what teaching strategy can assist students in synthesizing and summarizing informational text?
 - graphic organizers
 - fill-in-the-blank tests
 - independent worksheets
 - silent reading with no group discussion
- An absolute location is defined as
 - a formal location where street names or coordinates are used to describe the locality.
 - an informal location.
 - a location where local landmarks are used to describe the place.
 - a difficult location to access.
- What is the name of the revolution that is defined as the transition from manual labor to machine?
 - American Revolution
 - European Revolution
 - Colonial Revolution
 - Industrial Revolution
- Human beings tend to live in environments that meet their needs. Which essential element of geography refers to the interaction between people and their surroundings?
 - Human Systems
 - Processes that shape the Earth
 - World in Spatial terms
 - Environment and Society
- What historic document was approved by the Second Continental Congress and laid the foundation for a new government in America?
 - Poor Richard's Almanac
 - Preamble to the Constitution
 - Declaration of Independence
 - Emancipation Proclamation
- What representation of the Earth is said to be most accurate?
 - relief map
 - globe
 - thematic map
 - political map

11. The three branches of government in the United States provide for a system of checks and balances. The three branches are:
- A. congress, president, and supreme court.
 - B. legislative, judicial, and executive.
 - C. first, second, and third.
 - D. electorate, electoral college, and state representatives.
12. Small representations, usually shapes and pictures, of real things on a map are known as
- A. symbols.
 - B. a legend.
 - C. cartographers.
 - D. keys.
13. When one company or institution has exclusive control of a particular good or service in a market, this is known as
- A. oligopoly.
 - B. monopoly.
 - C. roly-poly.
 - D. capitalism.
14. How many electoral votes are required to win the presidency?
- A. 250
 - B. 260
 - C. 270
 - D. 240
15. Electors are representatives of the people that actually elect the president and vice president. As of 2009, how many electors are there in the United States of America?
- A. 535
 - B. 536
 - C. 537
 - D. 538
16. Policies that aid in governmental control of the economy are known as
- A. financial policy.
 - B. fiscal policy.
 - C. inflation policy.
 - D. trade policy.
17. What article of the Constitution established the judicial branch of government in the United States of America?
- A. I
 - B. II
 - C. III
 - D. V
18. Which of the following people advises the President on matters of foreign policy?
- A. Secretary of State
 - B. Secretary of the Treasury
 - C. Press Secretary
 - D. First Lady
19. The Supreme Court is the highest court of appeals in the United States. One of its most important powers is the power of
- A. legislative review.
 - B. judicial review.
 - C. executive review.
 - D. legal review.
20. What financial institution is owned, controlled, and operated by its members?
- A. federal reserve banks
 - B. credit unions
 - C. stock market
 - D. Wall Street
21. Consumer decision making has a large effect on the supply and demand of products in this country and all over the world, therefore teaching our youth _____ skills is vital.
- A. fiscal policy
 - B. economic reasoning
 - C. global responsibility
 - D. home economics

Music, Visual Arts, Physical Education, and Health

- The color red orange is considered a
 - saturated color.
 - secondary color.
 - primary color.
 - tertiary color.
- You require your students to acquire information from the Internet in your classroom. Some of your students will gather some information at home. Which of the following guidelines would NOT be appropriate to suggest to parents for Internet safety at home?
 - Setting time limits
 - Placing the computer in the child's bedroom
 - Being aware of the child's login name and password
 - Encouraging children to not give out personal information.
- The music teacher is planning a lesson reinforcing melodic intervals by using Curwen hand signs. What type of skill is she most likely emphasizing?
 - ability to match pitch
 - development of vocal range
 - development of rhythm
 - use of good posture
- The Centers for Disease Control recommends that children engage in how many minutes of physical activity each day?
 - 30 minutes
 - 45 minutes
 - 60 minutes
 - 90 minutes
- Which of the following involves the volume of a sound or note?
 - timbre
 - dynamics
 - tune
 - form
- Which of the following is NOT a category of social and emotional growth and development?
 - Self-concept
 - Character development
 - Fair Play
 - Physical growth
- Which of the following is involved when larger periods of time are constructed from smaller rhythmic units added at the end of the previous unit?
 - additive rhythm
 - divisive rhythm
 - harmonic rhythm
 - dynamic rhythm
- A music teacher used the following assessment activity during a recorder unit.

The students evaluated a peer's performance of a particular song on accuracy of notes, rhythms, and fingering. The student evaluating others had a form to fill out during the performance and then wrote a short paragraph about the student's performance, including two strengths, two weaknesses, and two suggestions of how to improve. The teacher assessed the written paragraph.

This is an example of

 - rubric assessment.
 - traditional assessment.
 - authentic assessment.
 - portfolio assessment.
- Which of the following is NOT an example of bone strengthening activity?
 - Running
 - Lifting weights
 - Swimming
 - Jumping Rope
- Musical, dance, and dramatic presentation are examples of
 - teacher-centered tasks.
 - performance-based tasks.
 - selected-response tasks.
 - constructed-response tasks.

11. Fill in the blank: _____ refers to how a person feels about him/herself.
- Self-worth
 - Self-esteem
 - Self-reliance
 - Self-concept
12. The changes in music style during this era were not uniform across the board.
- Eighteenth century
 - Medieval
 - Renaissance
 - Baroque
13. This Renaissance period music genre generally refers to unaccompanied religious texts set to music.
- madrigal
 - chorale
 - motet
 - cantata
14. In art, the relative darkness or lightness of a color is
- value.
 - texture.
 - line.
 - shape.
15. The nutritional category of Milk includes which of the following foods?
- Yogurt
 - Beans
 - Asparagus
 - Beef
16. Complete the following sentence: The _____ domain deals with how one deals with emotions.
- Cognitive
 - Psychomotor
 - Affective
 - Reactive
17. Which of the following is a nonlocomotor skill?
- Walking
 - Spinning around
 - Gallop
 - Running
18. Which of the following is NOT a symptom of marijuana abuse?
- Rapid talking
 - Dilated pupils
 - Sleepiness
 - Nose bleeds
19. This period was known for its intricate ornamentation.
- Baroque
 - Medieval
 - Renaissance
 - Classical
20. A teacher had the students consider a work of art using the following areas: communication of a unique voice, appropriate use of style to express the purpose of the work of art, efforts to make the piece memorable and distinctive, and demonstration of appropriate use of technical elements. Which of the following areas is the teacher most likely emphasizing?
- knowledge of the principles presented in a work of art
 - analytical skills to judge a work of art
 - understanding of the principles presented in a work of art
 - planning skills to generate a work of art
21. Fill in the blank: _____ is the impact of a continually changing environment on the body.
- Physical fitness
 - Self-esteem
 - Stress
 - Conflict resolution
22. Separating material into component parts is which level of Bloom's Taxonomy?
- Analysis
 - Evaluation
 - Synthesis
 - Application

Science and Technology

1. What are the names for the parts of the atom located inside the nucleus?
 - A. molecules and protons
 - B. electrons and protons
 - C. electrons and neutrons
 - D. protons and neutrons
2. Cells in which a nucleus exists are called _____.
 - A. Prokaryotic cells
 - B. Eukaryotic cells
 - C. Nucleolus
 - D. Ribosomes
3. A computer-based application used to facilitate the preparation, manipulation, modification, and arrangement of electronically developed text, tables, and images for reports and documents is called a
 - A. social network.
 - B. word processor.
 - C. spreadsheet.
 - D. data base.
4. What is the Earth's pull of gravity on an object called?
 - A. mass
 - B. weight
 - C. volume
 - D. density
5. Complete the sentence: The _____ is the innermost part of the earth and is solid.
 - A. Outer core
 - B. Mantle
 - C. Crust
 - D. Inner core
6. Which is the most specific level of taxonomy?
 - A. Species
 - B. Genus
 - C. Domain
 - D. Kingdom
7. Which of the following is NOT a good laboratory procedure?
 - A. Washing hands frequently
 - B. Eating in the laboratory
 - C. Disposing of chemicals properly
 - D. Wearing gloves
8. Who was the first American to be launched into space?
 - A. John Glenn
 - B. Neil Armstrong
 - C. Alan Shepard
 - D. Yuri Gagarin
9. What is the most effective method of controlling viruses?
 - A. Antibiotics
 - B. Radiation
 - C. Balanced diet
 - D. Vaccination
10. Which of the following is not considered a geologic formation?
 - A. Volcanoes
 - B. Earthquakes
 - C. Canyons
 - D. Mountains
11. A sound wave is produced by
 - A. sonar.
 - B. pitch.
 - C. acoustic.
 - D. vibrations.
12. Complete the sentence: _____ reproduction requires only one parent.
 - A. Asexual
 - B. Nonsexual
 - C. Conjugation
 - D. Sexual

13. A measure related to the average kinetic energy of the molecules of a substance is called
- mechanical force.
 - contact force.
 - temperature.
 - heat.
14. Instruments that can be used to measure absorbance spectrum of a liquid are called
- pressure sensors.
 - temperature probes.
 - spectrometers.
 - barometers.
15. Complete the sentence: _____ is/are the horizontal movement of air.
- Hurricanes
 - Clouds
 - Wind
 - Tornadoes
16. This type of force requires physical contact and interaction between objects.
- at-a-distance forces
 - contact forces
 - electrical forces
 - magnetic forces
17. Complete the sentence: _____ are the ways in which scientists answer questions and solve problems systematically.
- Laboratories
 - Scientific methods
 - Controlled experiments
 - Hypotheses
18. Which of the following occurs when two plates intersect and force each other upward?
- Earthquakes
 - Canyons
 - Mountains
 - Volcanoes
19. In an experiment, students are starting to write statements about the relationships among the variables that they intend to study. They are most likely involved with developing their
- hypotheses.
 - theory.
 - laws.
 - identification of variables.
20. Which of the following forces is not considered an at-a-distance force?
- frictional force
 - gravitational force
 - electrical force
 - nuclear force
21. Which one of the following is the correct order of methodology for an experiment?
- Plan a controlled experiment
 - Revisit the hypothesis to answer question
 - Analyze data and draw conclusions
 - Identify a research question
 - Formulate a hypothesis
 - Collect data
- 5, 4, 1, 6, 2, 3
 - 4, 5, 1, 6, 2, 3
 - 5, 4, 1, 6, 3, 2
 - 4, 5, 1, 6, 3, 2
22. Animals that live in water or on land in different stages of their lives are called:
- Reptiles
 - Birds
 - Amphibians
 - Worms
23. Complete the sentence: _____ rock is formed from the cooling of magma.
- Metamorphic
 - Sedimentary
 - Igneous
 - Compressed

Mathematics

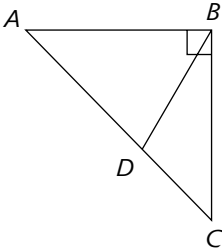
- A student used five blocks as part of an activity dealing with numeration. What type of representation model is the student using?
 - word name
 - standard numeral
 - concrete model
 - pictorial model
- Find the next term in the pattern 2, 6, 18, 54, ...
 - 58
 - 72
 - 108
 - 162
- A garden is triangular and has side lengths of 3 feet, 5 feet, and 6 feet. Each side of the triangle is doubled. The perimeter of the garden has increased by how many times?
 - 2 times
 - 3 times
 - 4 times
 - 8 times
- A bar graph using horizontal rectangular bars to show the frequency of each value involves the following representation model or models.
 - pictorial and abstract
 - concrete and abstract
 - pictorial only
 - abstract only

Use the data set that follows to answer questions 5–8.

The students in a class received the following scores in a test worth 100 points:

80, 23, 55, 58, 45, 32, 40, 55, 50

- Find the mean of the data set (if necessary, round to the nearest whole number).
 - 49
 - 50
 - 44
 - 57

- Find the median of the data set.
 - 55
 - 50
 - 49
 - 57
- Find the range of the data set (round to the nearest one).
 - 57
 - 49
 - 50
 - 55
- Find the mode of the data set.
 - 50
 - 49
 - 1
 - 55
- Which angle in the following figure is complementary to angle ABD ?
 

- Angle ABC
- Angle DAB
- Angle CBD
- Angle ACB

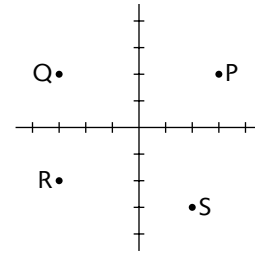
- The number 3^{-2} is equal to
 - 9
 - $\frac{2}{3}$
 - 9
 - $\frac{1}{9}$

11. A farmer sells his crop for \$5 a bushel at the farmer's market. There is a fee of \$50 to have a booth at the market. How much profit will the farmer make if he sells b bushels at the market?
- $5b$ dollars
 - $5b - 50$ dollars
 - $5b + 50$ dollars
 - 50 dollars
12. Cheyenne is 40 inches tall. She has a shadow that is 36 inches long. A tree in Cheyenne's backyard is 10 feet tall. How long will the tree's shadow be?
- 6 feet
 - 9 feet
 - 14 feet
 - 16 feet
13. The number 465^0 is equal to
- 465
 - 1
 - 0
 - 465
14. How many edges does a cube have?
- 4
 - 6
 - 8
 - 12
15. Which one of the following is most appropriate to help students develop classification skills?
- Cuisenaire rods
 - Algebra tiles
 - Pattern blocks
 - Fraction tiles
16. Which of the following statements is true?
- An acute triangle can be an isosceles triangle.
 - An obtuse triangle can be an equilateral triangle.
 - A right triangle can be an obtuse triangle.
 - An equilateral triangle can be a scalene triangle.

17. What is the value of $2^{-6} \cdot -8$?

- 8
- $\frac{1}{8}$
- 8
- $-\frac{1}{8}$

18. Identify the coordinates of point R in the figure shown.



- (3, 2)
- (2, 3)
- (-3, -2)
- (-2, -3)

19. Which one of the following is least appropriate to help students develop area ideas?

- Geoboard
- Two-color chips
- Color tiles
- Pattern blocks

20. Simplify the following expression:
 $30^2 - 60 \div 12 \cdot \left(\frac{1}{5} - 5^{-2}\right) \cdot 15 + 78$.

- 16,875.25
- 132
- 978.0375
- 139.875

21. Select the unit of measure that is most appropriate for the length of a pencil.

- Inches
- Feet
- Yards
- Meters

22. Solve for x : $3x - 4 + x = x + 8 + 3x - 2x$

- A. $x = 2$
- B. $x = 4$
- C. $x = 6$
- D. $x = 7$

23. Find the area of a circle with a diameter of 12 inches.

- A. $12\pi \text{ in}^2$
- B. $6\pi \text{ in}^2$
- C. $36\pi \text{ in}^2$
- D. $144\pi \text{ in}^2$

Diagnostic Test Answers

Language Arts and Reading

1. A. Competency 3.
2. B. Competency 1.
3. A. Competency 6.
4. A. Competency 2.
5. A. Competency 2.
6. B. Competency 1.
7. C. Competency 3.
8. C. Competency 1.
9. B. Competency 1.
10. A. Competency 2.
11. C. Competency 4.
12. D. Competency 1.
13. C. Competency 2.
14. C. Competency 2.
15. B. Competency 4.
16. C. Competency 1.
17. B. Competency 4.
18. D. Competency 5.
19. D. Competency 2.
20. D. Competency 4.
21. A. Competency 6.
22. B. Competency 5.
23. D. Competency 6.

Social Science

1. B. Competency 7.
2. C. Competency 8.
3. D. Competency 7.
4. C. Competency 7.
5. A. Competency 11.
6. A. Competency 8.
7. D. Competency 7.
8. D. Competency 8.
9. C. Competency 7.
10. B. Competency 8.
11. B. Competency 9.
12. A. Competency 8.
13. B. Competency 10.
14. C. Competency 9.
15. D. Competency 9.
16. B. Competency 10.
17. C. Competency 9.
18. A. Competency 9.
19. B. Competency 10.
20. B. Competency 10.
21. B. Competency 10.

Music, Visual Arts, Physical Education, and Health

1. **D.** Competency 13.
2. **B.** Competency 19.
3. **A.** Competency 12.
4. **C.** Competency 17.
5. **B.** Competency 13.
6. **D.** Competency 18.
7. **A.** Competency 12.
8. **C.** Competency 16.
9. **C.** Competency 17.
10. **B.** Competency 16.
11. **B.** Competency 18.
12. **C.** Competency 14.
13. **C.** Competency 12.
14. **A.** Competency 13.
15. **A.** Competency 17.
16. **C.** Competency 20.
17. **B.** Competency 18.
18. **D.** Competency 19.
19. **A.** Competency 14.
20. **B.** Competency 15.
21. **C.** Competency 18.
22. **A.** Competency 20.

Science and Technology

1. **D.** Competency 21.
2. **B.** Competency 24.
3. **B.** Competency 26.
4. **B.** Competency 21.
5. **D.** Competency 23.
6. **A.** Competency 24.
7. **B.** Competency 25.
8. **C.** Competency 23.
9. **D.** Competency 24.
10. **B.** Competency 23.
11. **D.** Competency 22.
12. **A.** Competency 24.
13. **C.** Competency 22.
14. **C.** Competency 26.
15. **C.** Competency 23.
16. **B.** Competency 22.
17. **B.** Competency 25.
18. **C.** Competency 23.
19. **A.** Competency 27.
20. **A.** Competency 22.
21. **D.** Competency 27.
22. **C.** Competency 24.
23. **C.** Competency 23.

Mathematics

1. C. Competency 28.
2. D. Competency 30.
3. A. Competency 29.
4. A. Competency 28.
5. A. Competency 31.
6. B. Competency 31.
7. A. Competency 31.
8. D. Competency 31.
9. C. Competency 29.
10. D. Competency 28.
11. B. Competency 30.
12. B. Competency 29.
13. B. Competency 28.
14. D. Competency 29.
15. C. Competency 32.
16. A. Competency 29.
17. D. Competency 28.
18. C. Competency 29.
19. B. Competency 32.
20. C. Competency 28.
21. A. Competency 29.
22. C. Competency 30.
23. C. Competency 29.

Diagnostic Test Solutions

Language Arts and Reading

1. **A.** Competency 3. A transition word a student should use when writing about cause and effect is *because*.
2. **B.** Competency 1. Voice-to-print match also known as one-to-one correspondence shows that Sheila now understands the concept of a word and word boundaries.
3. **A.** Competency 6. A primary source is a document or piece of work, which was actually written, recorded, or created during the specific time under study.
4. **A.** Competency 2. A hyperbole is an exaggerated statement used for effect and is not meant to be taken literally.
5. **A.** Competency 2. School libraries should contain a wide variety of multicultural children's literature, nonfiction resources, and various genres.
6. **B.** Competency 1. Knowledge of individual words in sentences, syllables, onset-rime segments and the awareness of individual phonemes in words is known as phonological awareness.
7. **C.** Competency 3. The teacher, if truly focusing on the content, is encouraging her students to revise and improve upon what has been written and is not yet concerned with editing for errors.
8. **C.** Competency 1. During the early stage of reading students have typically mastered basic concepts of print and are beginning to use various strategies for problem solving in reading.
9. **B.** Competency 1. The semantic cueing system focuses on meaning that is associated with language through prior knowledge and experience.
10. **A.** Competency 2. A fable is a story with a moral.
11. **C.** Competency 4. The semantic cueing system focuses on meaning (making sense) that is associated with language through prior knowledge and experience.
12. **D.** Competency 1. When students attempt to synthesize what has been read, they are making generalizations, using old ideas to create new ones, and predicting and drawing conclusions.
13. **C.** Competency 2. The climax is the highest point of interest or suspense in a story.
14. **C.** Competency 2. Onomatopoeia are words whose sound is imitative of the sound of the noise and/or action designated.
15. **B.** Competency 4. The purposes of anecdotal notes are to observe students while they work and record the observations for later study.
16. **C.** Competency 1. Phonological awareness, phonics, vocabulary, fluency, and comprehension are the five critical components to reading success.
17. **B.** Competency 4. Concepts of print includes that print conveys meaning, directionality (left to right progression, top to bottom), concept of a word (word boundaries), one-to-one correspondence, letter knowledge, phonemic awareness, and literacy language (author, illustrations, title, and so on).
18. **D.** Competency 5. Line quality (consistency of pencil strokes), spacing, letter formation, and letter alignment are all factors that impact legible handwriting.
19. **D.** Competency 2. The six trait writing lessons can enhance brainstorming, revision, and editing.
20. **D.** Competency 4. Criterion-referenced tests are assessment instruments that assess the point at which the student has achieved mastery. These tests (FCAT) enable educators in determining whether or not a student has met a predetermined goal.

21. **A.** Competency 6. Visual media is non-print media.
22. **B.** Competency 5. Comprehension, listening, and speaking skills are all enhanced by questioning and retelling.
23. **D.** Competency 6. Blogs are user-friendly web pages that allow students to post and comment on their work. Wiki pages are “mini web pages” that provide collaborative opportunities to post, add, and edit a variety of content related to a specific topic of study or group project. Online newsletters (created by teachers and/or students) could be links on a teacher’s classroom web pages used to inform parents of the learning taking place in the classroom.

Social Science

1. **B.** Competency 7. The French and Indian War (1754–1763), which was an extension of the European Seven Years War, was a battle over colonial territory and wealth by the French and the English. This war resulted in effectively ending French cultural and political influence in North America. In their victory, England gained massive amounts of land but also weakened their rapport with the Native Americans. In sum, although the war strengthened England’s hold on the colonies, it also worsened their relationship, which inevitably led to the Revolutionary War.
2. **C.** Competency 8. Human systems are people or inhabitants.
3. **D.** Competency 7. Columbus made four voyages in an effort to find a route to the East. During his expeditions he discovered the Bahamas, Hispaniola, Cuba, Dominica, Guadeloupe, Jamaica, Central America, and South America. As illustrations and historical accounts depict, he was greeted by Native Americans who had settled the land prior to his arrival. The Vikings also had explored the area as well.
4. **C.** Competency 7. Abraham Lincoln implemented and signed the Emancipation Proclamation in 1862.
5. **A.** Competency 11. Using graphic organizers can assist students in synthesizing and summarizing informational text.
6. **A.** Competency 8. An absolute location is defined as a formal location where street names or coordinates are used to describe the locality.
7. **D.** Competency 7. The Industrial Revolution is defined as the transition from manual labor to machine.
8. **D.** Competency 8. Environment and Society is the essential element of geography that refers to the interaction between people and their surroundings.
9. **C.** Competency 7. The Declaration of Independence was the historical document approved by the Second Continental Congress, which laid the foundation for the foundation for a new government in America.
10. **B.** Competency 8. A globe, which is a small-scale model, is said to be the most accurate representation of the Earth.
11. **B.** Competency 9. The three branches of government are legislative, judicial, and executive.
12. **A.** Competency 8. Symbols are small representations, usually shapes and pictures, of real things on a map.
13. **B.** Competency 10. A monopoly is when one company or institution has exclusive control of a particular good or service in a market.
14. **C.** Competency 9. As of 2009, there are 538 total electoral votes. In order for a candidate to receive the majority and win the presidency, they must have 270 electoral votes.
15. **D.** Competency 9. Electors are a body of elected representatives chosen by the voters in each state. While they are human beings who have their own views on whom they would prefer to become the leader of this country, they pledge in advance to vote according to the wishes of the general public.
16. **B.** Competency 10. Fiscal policies aid in governmental control of the economy.
17. **C.** Competency 9. Article III established the judicial branch of government.
18. **A.** Competency 9. The Secretary of State advises the President on matters of foreign policy.
19. **B.** Competency 10. The Supreme Court’s most important power is the power of judicial review.
20. **B.** Competency 10. A credit union is a financial institution that is owned, controlled, and operated by its members.
21. **B.** Competency 10. Economic reasoning is making decisions by comparing costs and benefits. This skill is used daily by American citizens.

Music, Visual Arts, Physical Education, and Health

1. **D.** Competency 13. Primary colors are red, yellow, and blue. Secondary colors are green, orange, and purple. Tertiary colors fall between primary and secondary colors. Compound colors contain a mixture of primary colors. Complementary colors are opposite of each other on the color wheel. Saturated colors are the ones around the color wheel. Red orange falls between primary and secondary colors, which makes it a tertiary color.
2. **B.** Competency 19. Internet safety is an important aspect of safety. Children should be monitored when they are using the Internet. They should have limited time, focused tasks, and parents should be aware of children's login names and passwords. The computer should be placed in a central location, and children should be encouraged not to give out private information through the Internet.
3. **A.** Competency 12. Some effective methods to aid children in developing the ability to match pitch: songs should be sung in appropriate range; simple songs utilizing the childhood chant (so, mi, la) are easy for children to imitate; sing a melodic phrase and ask for the child to follow you; and reinforce melodic intervals by using Curwen hand signs or other indications of high and low.
4. **C.** Competency 17. The CDC recommends children engage in at least 60 minutes of physical activity daily.
5. **B.** Competency 13. Dynamics involves the volume (loudness or softness) of the sound or note.
6. **D.** Competency 18. Social and emotional growth and development can be categorized into six areas, namely communication skills, self-concept, fair play, conflict resolution, character development, and stress management. Physical growth is not an aspect of social and emotional growth and development.
7. **A.** Competency 12. Rhythm is the variation of the length and accentuation of a series of sounds or other events; for example, variations in the length of musical tones indicated by using musical notation involving various types of notes and rests. For instance, a series of strikes on a percussion instrument called rhythmic pattern or drum beat. Divisive rhythms involve dividing a larger period of time into smaller rhythmic units. Additive rhythms are involved when larger periods of time are constructed from smaller rhythmic units added at the end of the previous unit.
8. **C.** Competency 16. Authentic assessment is a form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of important concepts and skills.
9. **C.** Competency 17. Bone-strengthening activities generally include impact activities. Running, lifting weights, and jumping rope are all types of bone strengthening activities. Swimming is an aerobic activity.
10. **B.** Competency 16. Performance-based tasks require the actual student performance such as a completed project; musical, dance, or dramatic presentation; or work that demonstrates levels of achievement.
11. **B.** Competency 18. Self-concept is a cognitive aspect of self and generally refers to the system of beliefs, attitudes, and opinions learned and that each person determines to be true. Self-esteem is an emotional aspect of self and generally refers to how one feels about him/herself.
12. **C.** Competency 14. Renaissance period (1450–1600) included a gradual change from a feudal system to the modern state and a change in people's view of the Earth and cosmos. It had an increase in secular music (madrigals and art songs), but also had sacred music (liturgical forms like mass and motets). This gradual change was not uniform.
13. **C.** Competency 12. Motet is applied to a number of highly varied choral musical compositions, which uses a polyphonic approach (a texture consisting of two or more independent melodic voices). Motet is French for "word." This style of music appeared in the thirteenth century with motet written for three voices. It combined secular and sacred text, fifteenth and sixteenth centuries (Renaissance) with contrapuntal work for four or five voices a cappella and sacred text, and Baroque and Romantic periods with a cappella and orchestral variations.
14. **A.** Competency 13. Value is a relative darkness or lightness of a color.
15. **A.** Competency 17. Yogurt is in the milk category. Beans and beef are in the meat and beans category. Asparagus is in the vegetable category.

16. **C.** Competency 20. Cognitive domain is how one deals with knowledge. Affective domain is how one deals with emotions. Psychomotor domain is how one deals with physical movement and skills.
17. **B.** Competency 18. Locomotor skills involve walking, running, and galloping. Nonlocomotor skills involve twisting and turning. Spinning around is a nonlocomotor skill.
18. **D.** Competency 19. Symptoms of marijuana use include rapid talking, outbursts of laughter, forgetfulness in conversation, sleepiness, and dilated pupils. Nose bleeds are not a symptom of marijuana use.
19. **A.** Competency 14. Baroque period (1600–1760) was known for its intricate ornamentation. The word “baroque” was derived from the Portuguese word *barroco*, which means “misshapen pearl” (irregular in shape).
20. **B.** Competency 15. In order to help students’ development of analytical skills to evaluate musical performance, the students need opportunities to perform and evaluate their own musical performances and the musical performance of other students and professional musicians or singers. They can also accomplish this by analyzing the use of instruments or voices in a recording or performance.
21. **C.** Competency 18. Stress is defined as the impact of a continually changing environment on the body.
22. **A.** Competency 20. Separating material into its component parts is *analysis*.

Science and Technology

- D.** Competency 21. There are several fundamental physical properties of matter: mass, volume, density, and chemical change. Matter is what makes up everything in the world: rocks, people, chairs, buildings, water, oxygen, animals, and chemical substances, among others. It takes up space (volume) and has mass. It not only involves its molecules and atoms, but also subatomic particles such as protons and electrons. Protons and neutrons are the subatomic particles that are located inside the nucleus.
- B.** Competency 24. Prokaryotic cells have no nucleus. Eukaryotic cells contain a nucleus.
- B.** Competency 26. Spreadsheets allow tabulation and performance of simple and complicated calculations, mathematical manipulations, and plots and graphs on various types of data, such as numbers, names, alphabetical information, scientific measurements, statistical information, and budget information. Database software allows easy collection, access, organization, and retrieval of data, such as inventories, experiments, and records. Word processors facilitate the preparation, manipulation, modification, and arrangement of electronically developed text, tables, and images for reports and documents. Internet allows access to online resources, and faster communication and sharing of information, including social networking and online communities, such as e-mail, instant messaging, YouTube, TeacherTube, Facebook, MySpace, Twitter, LinkedIn, and Wiki, which is a Web site that uses Wiki software.
- B.** Competency 21. Gravity does not change the mass of the rocks. Weight is often confused with mass. The measure of the Earth's pull of gravity on an object is called weight. It is the force of gravity on objects. It is measured in pounds (English or traditional system) or grams (metric system).
- D.** Competency 23. The layers of the Earth are the inner core, outer core, mantle, and crust. The inner most part of the Earth is the inner core.
- A.** Competency 24. The levels of taxonomy are domain, kingdom, phylum, class, order, family, genus, and species. The most specific level is species.
- B.** Competency 25. Good laboratory procedures include washing hands frequently, disposing of chemicals properly, and wearing gloves. Eating in the laboratory is not good laboratory procedure.
- C.** Competency 23. John Glenn was the first American to orbit the Earth. Neil Armstrong was the first American to walk on the moon. Alan Shepard was the first American to be launched into space. Yuri Gagarin was the first human being in space.
- D.** Competency 24. Vaccination is the most effective method for controlling the spread of viruses.
- B.** Competency 23. Volcanoes, canyons, and mountains are geological formations. Earthquakes are not geological formations.
- D.** Competency 22. Sonar is a measuring instrument, which is used to send out an acoustic pulse in water and measures distances in terms of the time it takes the echo of the pulse to return.

Pitch represents the perceived fundamental frequency of a sound. It is one of the three major auditory attributes of sounds along with loudness and timbre. Acoustic relates to the study of sound, ultrasound, and infrasound (all mechanical waves in gases, liquids, and solids). It is also used to describe some instruments, like classical guitars. It refers to the energy in the form of mechanical waves that is transmitted through materials (like plastic or air). The best selection is that a sound wave is produced by vibration. It is a type of mechanical energy that propagates through matter as a wave. If something vibrates at a reasonable high frequency, then it will make sound. When a vibrating object is large enough and next to air, the air will vibrate as well and produce sound.

- A.** Competency 24. Asexual reproduction requires one parent. Sexual reproduction requires two parents.
- C.** Competency 22. A mechanical force is a type of contact force. It is the application of force to bend, dent, scratch, compress, or break something; for example, machines in general multiply force or change the direction of force. Contact forces require physical contact and interaction between objects (that is, pushes and pulls, and friction). Temperature is one of the physical properties of solids, liquids, and gases. Temperature is a measure related to the average kinetic energy of the molecules of a substance. It has to do with the degree of hotness or

coldness of the substance. This is how hot or cold an object is with respect to a standard unit of measurement. This is the best selection for this item. Heat is a measurement of the total energy in a substance. That total energy is made up of the kinetic, and the potential energies of the molecules of the substance. Temperature does not tell you anything about the potential energy.

14. **C.** Competency 26. A pressure sensor measures pressure of gases or liquids, among others. Tools like spectrometers and sensors facilitate the collection of data, which might also be used with computer software to manage data. Spectrometers are instruments that can be used to measure absorbance spectrum of a liquid, conduct kinetic studies of absorbance versus time, conduct equilibrium studies of absorbance versus time and/or absorbance versus concentration, and measure emissions of gas discharge tubes or other light sources, and other experiments. Barometers are used for either weather studies or for lab experiments involving pressures close to normal atmospheric pressure. Temperature probes are used for data-collection during temperature-related experiments.
15. **C.** Competency 23. Wind is the horizontal movement of air.
16. **B.** Competency 22. Two main types of forces are contact forces (for example, frictional, tension, air resistant, applied, and mechanical forces) and at-a-distance forces (for example, magnetic, gravitational, and electrostatic forces). Contact forces require physical contact and interaction between objects. At-a-distance forces result even when the interacting objects are not in physical contact, but they exert a push or pull despite their physical separation. Electrical forces are action-at-a-distance forces. They are involved when the protons in the nucleus of an atom and the electrons outside the nucleus exert an electrical pull towards each other despite the spatial separation. Nuclear forces are also at-a-distance forces and are present in the nucleus of atoms. Nuclear force is released by fission (the breaking of a heavy nucleus into two lighter nuclei), fusion (two atomic nuclei fuse together to form a heavier nucleus), or radioactive decay (a neutron or proton in the radioactive nucleus decays spontaneously by emitting particles, electromagnetic radiation, gamma rays, or all three of them).
17. **B.** Competency 25. Scientific methods are the ways scientists answer questions and solve problems systematically.
18. **C.** Competency 23. Volcanoes occur when magma erupts above the Earth. Canyons occur when rivers erode soil away. Mountains occur when two plates intersect and force each other upward. Earthquakes occur when two continental plates shift horizontally.
19. **A.** Competency 27. The first step is to ask a question. In order to answer the question, observations are needed. Observations may include collecting observed data such as the number of a specific species of frogs in an area. Once the question is formulated and observations are conducted, a hypothesis is created. A hypothesis is a possible answer to the question. They are based on what was observed and are testable. Answers are predicted and an experiment is formulated to test the hypothesis.
20. **A.** Competency 22. At-a-distance forces result even when the interacting objects are not in physical contact, but they exert a push or pull despite their physical separation; for examples, gravitational, magnetic, electrical and nuclear forces. Frictional forces are a type of contact forces.
21. **D.** Competency 27. The correct order of the methodology for an experiment is the following:
 4. Identify a research question.
 5. Formulate a hypothesis.
 1. Plan a controlled experiment.
 6. Collect data.
 3. Analyze data and draw conclusions.
 2. Revisit the hypothesis to answer question.
22. **C.** Competency 24. Amphibians are animals that live part of their lives on land and part of their lives in water.
23. **C.** Competency 23. Metamorphic rock transforms through change in environment like burial. Sedimentary rock is formed by the accumulation of rocks that fuse together to make a new rock. Igneous rock is formed when magma cools.

Mathematics

1. C. Competency 28. The use of five blocks as part of an activity dealing with numeration involves the concrete representation model. A word name and standard models involve the abstract level. The pictorial model involves pictures or drawings.
2. D. Competency 30. Each term is 3 times the term before. The next term is $54 \times 3 = 162$.
3. A. Competency 29. Perimeter is the distance around a shape. The original perimeter is $3 + 5 + 6 = 14$ feet. If each side of the triangle is doubled, the sides would be 6, 10, and 12. The new perimeter is $6 + 10 + 12 = 28$ feet. This is double the original perimeter.
4. A. Competency 28. A bar graph using horizontal rectangular bars to show the frequency of each value involves the pictorial and abstract representation models. The horizontal rectangular bars are pictorial representations, and the numerals used for the frequency values are abstract representations.
5. A. Competency 31. To find the mean of this set of data, find the sum of the scores (out of 100 points), and divide by the number of score (9 in this case): $(23 + 32 + 40 + 45 + 50 + 55 + 55 + 58 + 80) \div 9 = 438 \div 9 = 48.666 \dots$ or approximately 49 (rounded to the nearest whole number).
6. B. Competency 31. Order data from least to greatest: 23, 32, 40, 45, 50, 55, 55, 58, 80. The median is the middle score the data. Because we have an odd number of scores (9), the middle of the data is 5th score. Counting from left to right 50 is the 5th value, or counting from right to left 50 is still the 5th value. The median is 50.
7. A. Competency 31. The range is the difference between the greatest score and the least score: $80 - 23 = 57$. The range of this data set is 57.
8. D. Competency 31. The mode is 55, which is the one with the highest frequency (2).
9. C. Competency 29. Complementary angles add to 90 degrees. $\angle ABC$ is a right angle. $\angle CBD$ is complementary to $\angle ABD$.
10. D. Competency 28. The number 3^{-2} is equal to $\frac{1}{3^2} = \frac{1}{9}$.
11. B. Competency 30. The farmer sells his bushels for \$5 each. If he sells b bushels at the market, he would obtain $5b$ dollars. It cost him \$50 to have the booth. This should be subtracted from the income of the booth to find the profit. The profit is $5b - 50$.
12. B. Competency 29. The shadow and the height are sides of similar triangles. Set up a proportion.

$$\frac{40 \text{ inches}}{36 \text{ inches}} = \frac{10 \text{ feet}}{x \text{ feet}}$$
 Cross multiply, so $40x = 360$. Divide both sides by 40. $x = 9$ feet.
13. B. Competency 28. The number 465^0 is equal to 1 because any number with a exponent of zero is equal to one. It not equal to itself, negative, or zero.
14. D. Competency 29. Edges are where faces intersect. A cube has six faces. A cube has 12 edges.
15. C. Competency 32. The most appropriate alternative to help students develop classification skills is the Pattern blocks. Cuisenaire rods are more appropriate for modeling numeration and operation activities, including whole number, fractions, decimals, addition, subtraction, multiplication and division ideas. Algebra tiles are more appropriate for representing equations and functions involving variables. Fraction tiles are more appropriate for modeling fraction concepts and operations.
16. A. Competency 29. Consider each choice:
 Acute triangles have all angles less than 90 degrees. Isosceles triangles have at least two sides of equal length. A triangle can be acute and isosceles.

 An obtuse triangle has one angle that is greater than 90 degrees. An equilateral triangle has all equal sides. Since all the sides of an equilateral triangle are the same, all the angles will be the same as well. Since the angles of a triangle add to 180 degrees, each angle in an equilateral triangle is 60 degrees. An equilateral triangle cannot be obtuse.

A right triangle has one angle equal to 90 degrees. The other two angles must be less than 90 degrees for the total of all three angles to be 180 degrees. An obtuse triangle has one angle that is greater than 90 degrees. A right triangle cannot be obtuse.

An equilateral triangle has all equal sides. A scalene triangle has all different side lengths. A triangle cannot be equilateral and scalene.

The only choice that is true is A.

17. **D.** Competency 28. The value of $2^{-6} \cdot -8$ is $\frac{1}{2^6} \cdot -8 = \frac{1}{64} \cdot -8 = \frac{-8}{64} = \frac{-1}{8}$.
18. **C.** Competency 29. Point R is three units to the left and two units down from the origin $(0,0)$. This makes the coordinates of point R $(-3, -2)$.
19. **B.** Competency 32. Two-color chips are least appropriate manipulative to help students develop area ideas. Fraction tiles are more appropriate for developing fraction concepts and operations. Geoboard, Color tiles, and Pattern blocks are more appropriate for developing area ideas.
20. **C.** Competency 28.

$$\begin{aligned} 30^2 - 60 \div 12 \cdot \left(\frac{1}{5} - 5^{-2}\right) \cdot 15 + 78 \\ = 900 - 60 \div 12 \cdot \left(\frac{1}{5} - \frac{1}{25}\right) \cdot 15 + 78 \\ = 900 - 60 \div 12 \cdot \left(\frac{5}{25} - \frac{1}{25}\right) \cdot 15 + 78 \\ = 900 - 60 \div 12 \cdot \left(\frac{4}{25}\right) \cdot 15 + 78 \\ = 900 - 5 \cdot \left(\frac{4}{25}\right) \cdot 15 + 78 \\ = 900 - \left(\frac{4}{5}\right) \cdot 15 + 78 \\ = 900 - (4) \cdot 3 + 78 \\ = 900 - 12 + 78 = 966 \end{aligned}$$

21. **A.** Competency 29. A pencil is less than 1 foot long. The appropriate unit for measuring a pencil is an inch.
22. **C.** Competency 30.

$$3x - 4 + x = x + 8 + 3x - 2x$$

$$4x - 4 = 2x + 8 \text{ (Combine like terms.)}$$

$$2x - 4 = 8 \text{ (Subtract } 2x \text{ from both sides.)}$$

$$2x = 12 \text{ (Add 4 to both sides.)}$$

$$x = 6 \text{ (Divide both sides by 2.)}$$

23. **C.** Competency 29. The area of a circle is πr^2 . If the diameter is 12 inches, the radius is 6 inches. Therefore, the area is $\pi(6)^2 = 36\pi \text{ in}^2$.

