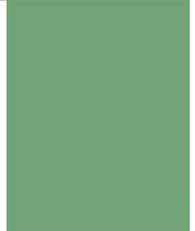


HOMESCHOOL ACADEMY

2015-2016
INFORMATION PACKET



LEARN



CREATE



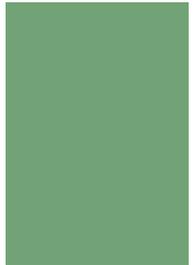
EXPLORE



GROW



EXPERIMENT



DISCOVER



EXPERIENCE



INSPIRE



Phone: 205.397.3877
Email:
education@birminghamzoo.com

INFORMATION AND PRICING

Register online at www.birminghamzoo.com/education

- Questions? Call 205.397.3877 or email education@birminghamzoo.com

-Please register for classes by 12PM the day before the scheduled class.

If a class has less than 3 students registered, you will be notified that it is cancelled.



Homeschool Classes 2015-2016

4 K - K Class

New This Year! This class will include a variety of topics related to animals and how they survive. Classes will explore topics such as animal groups, animal homes, lifecycles and food chains. Students will have opportunities to work together and independently in these classes.

***Students attending these classes must be age four by August 31, 2015.**

1st - 2nd
Grade Class

This class will include a variety of topics related to conservation. Classes will explore topics centered around land and marine animals, examining traits, adaptations and conservation related to those animals.

3rd - 4th
Grade Class

This class will include a variety of topics related to conservation. Classes will explore topics centered around plants and animals, and how they are connected. Students will also learn how conservation plays a role in survival.



5th - 6th
Grade Class

This class will include a variety of topics related to conservation. Classes will explore topics centered around plants and animals, ecosystems, biodiversity, and human impact. Students will also learn how conservation plays an important role in ensuring survival.

7th - 9th
Grade Class

This class will include a variety of topics related to conservation. Classes will explore topics centered around plants and animals, their roles in the ecosystems and how they are impacted by each other and humans. Students will also learn how conservation plays an important role in ensuring survival and how they can help to make a difference.

Homeschool Pricing

Individual Class Prices: \$12 for Members; \$16 for Non-Members.

Semester Prices: \$70 for Members; \$98 for Non-Members.

***Purchase a whole semester of classes at one discounted rate.**



Homeschool classes may include animal visits, class discussions, in-class work, labs and guided tours of the Zoo. Classes will provide each student with a one of a kind learning experience to enhance his or her love of nature and animals. Classes are intended to build on one another, but students are not required to attend all classes.

All classes will learn grade appropriate information based upon the Alabama Course of Study Standards for Science, English and Language Arts, Math, and Social Studies.



4K-K Homeschool

Tuesdays 9:30 –11:00 AM



2015—2016 Academic Year

September 22	Living and Non-Living Things—What do living things need for survival that non-living things don't need?
October 6	Animal Groups—How can animals be grouped and categorized?
October 20	Wild and Domestic Animals—How are my pets different from the animals at the zoo?
November 3	Animal Coverings—Why do zebras have strips and giraffes have spots?
December 1	Animal Homes—Where do animals live and sleep?
December 15	Animal Senses—Can animals taste, hear, and smell just like me?
January 19	Animal Sounds—What are all those sounds that I hear at the Zoo?
February 2	Animals on the Move—Can you swing like a monkey and splay like a giraffe?
February 16	Animal Diets—Do animals like to eat pizza like me?
March 1	Diurnal and Nocturnal Animals—When are animals awake to play and when are they asleep?
March 15	Lifecycles—How do those tadpoles become frogs and how do other baby animals grow up?
April 5	Food Chains—Who eats who in the animal world? Can I do anything to make sure the food chains aren't destroyed?

***Please note, students attending this class must be age four by August 31, 2015 and must be bathroom trained.**



1st—2nd Grade Homeschool

Wednesdays 9:30 –11:30 AM



2015—2016 Academic Year

September 23	Introduction to Conservation—Begin to understand what conservation is and why it is important.
October 7	In Our Own Backyard—Learn about some of the plants and animals we see around us and how we can be good neighbors to them.
October 21	Amphibians and Reptiles—Take a closer look at animals like frogs, snakes and turtles.
November 4	Birds and Butterflies—Learn about the different characteristics of birds and butterflies.
December 2	Insects, Spiders, and Invertebrates—Learn about some of the creepy crawlers and other animals that don't have a backbone.
December 16	Mammals—Discover some other animals that call themselves mammals.
January 20	Fish—Find out what makes fish different from other animals.
February 3	Marine Wildlife—Take a dive into the watery world and discover other plants and animals that share this home with fish.
February 17	Plants—Take a closer look at plants, their parts and why they are important.
March 2	Links in the Food Chain—Find out who eats who in the animal world.
March 16	Humans and Animals—Explore how humans and animals are connected and how we can be good neighbors to them.
April 6	Reduce, Reuse, Recycle—Discover the ways we can help the living things around us and get other people involved too.



3rd—4th Grade Homeschool



Wednesdays 1:00 –3:00 PM



2015—2016 Academic Year

September 23	Introduction to Conservation—Learn about conservation and why it is important.
October 7	Alabama Wildlife—Explore plants and animals that are native to our state and learn how we can take care of them.
October 21	Habitats—Look at the different homes of animals and learn why they live there.
November 4	Survival—Investigate the ways animals adapt and learn to survive in the wild.
December 2	Plants—Take a closer look at plant structures, how they survive and why they’re important to us.
December 16	Plants and Animals—Learn how plants are connected to animals in ecosystems.
January 20	Food Chains and Food Webs—Discover how animals in the wild are connected to each other and which ones are predators or prey.
February 3	Keystone Species—Find out which animals are integral to their ecosystems.
February 17	Endangered and At Risk Species—Investigate the animals who need our help the most.
March 2	Extinction—Dig in to learning about animals that used to roam the Earth.
March 16	Human Impact—Learn about the ways our actions impact the animals around us.
April 6	Reduce, Reuse, Recycle—Discover how we can make good choices about the ways we live in and interact with our world.



5th—6th Grade Homeschool



Wednesdays 1:00 –3:00 PM



2015—2016 Academic Year

September 16	Animal Ambassadors—Discover why animals are important and how our actions can impact them.
September 30	Ecosystems—Explore the places plants and animals call home and how they are all connected.
October 14	Alabama Ecosystems and Conservation—Take a closer look at the many ecosystems found in Alabama and how to protect them.
October 28	Food Webs—Investigate further the connections between plants and animals and distinguish between predators and prey.
November 18	Plants—Zoom in on the world of plants to learn how they survive and why we need to take care of them.
December 9	Water—Take a dive under the surface to learn about the plants and animals that call the wet world home.
January 13	Keystone Species—Reveal the ways certain animals are vital to the survival of their ecosystem.
January 27	Endangered and At Risk Species—Find out about the animals whose survival is threatened and what we can do to help.
February 10	Extinction—Travel back in time to discover animals that used to roam the Earth.
February 24	Biodiversity and Interdependence—Discover the many ways plants and animals are different, yet reliant on each other.
March 9	Human Impact—Investigate how our actions impact plants and animals around us positively and negatively.
March 23	Making a Difference—Learn about the ways we can help to ensure the survival of other living things in our world.



7th—9th Grade Homeschool

Wednesdays 9:30 –11:30 AM



2015—2016 Academic Year

September 16	Introduction to Conservation—Learn about conservation and why it is important to the survival of our planet.
September 30	Biomes and Ecosystems—Examine the parts of biomes and ecosystems and differentiate between the two.
October 14	Alabama Ecosystems and Conservation—Look specifically at ecosystems found in our state and how to protect them.
October 28	Native Plants—Explore the plant world, particularly the plants we can find here in Alabama, and learn the ways that plants survive and impact the other parts of their ecosystems.
November 18	Water Cycle—Trace the flow of water, and learn about water’s impact on our world.
December 9	Keystone Species—Take a look at animals that play a unique and crucial role in their ecosystems and the impacts they have.
January 13	Endangered and At Risk Species—Discover animals whose populations are severely threatened and how that impacts them.
January 27	Extinction—Explore the world of living things that can no longer be found on our planet.
February 10	Human Impact—Examine how our actions benefit or damage the ecosystems around us.
February 24	Biodiversity—Explore the variety of life found in ecosystems and biomes around the world.
March 9	Interdependence—Learn about the special relationships that some plants and animals share and how that contributes to their survival.
March 23	Making a Difference—Communicate the ways in which we can have a positive impact on our world and how we can get others involved.



POLICIES AND PROCEDURES



- Attending Class** Parents/caregivers and their students should check-in for class in the Membership Office before the scheduled class time, and then proceed to the Education Building. Students may arrive up to five minutes before the scheduled start time for class. Students who arrive 15 minutes after the scheduled start time will not be allowed to attend class unless proper notification has been made.
- Weather Policy** Part of each class will be spent outdoors, and classes are held rain or shine. Please dress appropriately for each day. In the case of extreme weather, the Birmingham Zoo follows the Mountain Brook City Schools cancellation policy.
- Child Pick-up** Students will be available for pick-up in the front of the Zoo at the end of class. Students must be picked up within five minutes of the end of class. If you believe you may be late, please contact the Zoo at 205.397.3877 or 205.879.0409.
- Rescheduling or Refunding** All sales are considered final. Individuals who cannot attend a class must call 205.397.3877 no less than **24 hours** in advance of the date of the class (call on Friday for Monday classes) to be eligible for a transfer. All class reservations that are transferred are subject to space availability. Refunds are only issued under exceptional circumstances. Please note that these are subject to a \$5 processing fee and must be requested no less than **24 hours** in advance. Refunds are not available for individuals purchasing semester classes once the semester has begun.
- Snacks** Snacks will not be provided in class, and we ask that you please do not send a snack with your student. All Birmingham Zoo classes are nut free, and due to allergens, we ask that you please not bring any foods containing nut products into the classroom.
- Discounts** To receive a member discount, all children that you wish to enroll in class must be covered by the Birmingham Zoo Membership.

MAP OF THE BIRMINGHAM ZOO

FIND IT HERE!

Stroller/Wheelchair Rental & ATM Available in the Gift Shop just inside the entrance.

Handicapped Access We recommend that visitors with physical challenges pick up an Accessibility Guide from Guest Services on how best to enjoy a day at the Zoo.

Lost Parents, First Aid, Lost and Found Located at Guest Services, next to the front entrance Gift Shop.

Baby Changing Areas Available in all restrooms. A private room for nursing mothers is available at the Primate Building and at the Trails of Africa Family Restroom.

Ride Tickets Ride tickets or wristbands are required to ride the train, carousel, Wild Slide, and play in the Foam Zone. Ride tickets can be purchased at the front gate, the train carousel locations. All rides must be dry.

Camel Ride Tickets Tickets can be purchased at the Camel Ride location. Camel rides are available (weather permitting) through August 9.



Want UNLIMITED Zoo admission for one full year?

Apply your admission ticket for today towards a Zoo membership!

See the membership office for details

(offer good only on day of visit).



Restrooms



Baby Changing Area



First Aid



Food



Gift Shop

HOMESCHOOL ACADEMY RELEASE AND CODE OF CONDUCT

WAIVER AND GENERAL RELEASE

For and in consideration of the approval of the participant by Birmingham Zoo, Inc. for Education Classes the participant, for himself or herself, his or her minor child, his or her attorneys, agents and their respective heirs and assigns, hereby GENERALLY AND COMPLETELY RELEASES, REMISES, ACQUITS and FOREVER DISCHARGES the Birmingham Zoo, Inc., its successors and assigns, affiliates, officers, directors, servants, employees, attorneys, and agents, forever from all injuries, illnesses, death, claims, actions, causes of action, demands, rights, damages, costs, attorneys' fees, expenses, debts, liabilities and compensation of any and every kind, known or unknown, that result or may result from the above-named individual's participation in Education Classes. The participant and/or parent/guardian acknowledge that this activity may expose the participant to risks and hazards that may result in an injury, illness, personal injury or death. The participant and/or parent/guardian accepts such risks and voluntarily chooses to participate in the Education Classes as a participant and not as an employee after having been advised of such risks. The participant and/or parent/guardian acknowledge that he or she has carefully read this release and has been advised about the opportunity to seek legal counsel prior to execution. Each participant and/or parent/guardian understands that this is a release of all claims for any illness, injury, or death that may result that occurs during this program.

PHOTO/MEDIA RELEASE

The participant, for himself or herself, his or her minor child hereby authorizes Birmingham Zoo, Inc. and their agents to use the following described photographs of himself, herself or his or her minor child for the specific purpose of publication in both print and electronic media (to include use as a still photograph or transparency or use in a motion picture, video, or on television, or any other similar media). In giving consent, the participant and/or parent/guardian hereby releases and hold harmless Birmingham Zoo, Inc. and their agents from any and all responsibility or liability, to include any claim for libel, slander, invasions of privacy, or any other claim. The participant and/or parent/guardian understand that compensation will not be given, should the photograph be used.

CODE OF CONDUCT

Birmingham Zoo's Camps and Classes uphold a high standard of respect for animals and people. It is expected that all children respect themselves, other people, the Zoo and nature. Respectful behavior will ensure a safe and enjoyable experience for everyone at Education Classes. At the beginning of class, the teacher will further discuss the group's expectations as well as ways to be respectful during class. These expectations will be appropriate for each class, based on their age.

As a parent or legal guardian, I further understand that:

1. I am financially responsible for any damages my child causes while at the Birmingham Zoo.
2. If my child disrupts the program or harms another attendee/volunteer/staff member, he/she will be dismissed immediately from the Education Class and no refund will be issued.
3. If my child is dismissed from the Education Class or becomes ill and cannot participate in the activities, I will receive no refund. It will be my responsibility to pick up my child from the Zoo immediately.
4. My child is of the appropriate age for the program in which he/she has been registered. I understand that if my child's age does not meet minimum age requirements that he/she will be dismissed from the class.

Birmingham Zoo, Inc. Education Class Sign In/Sign Out Form 2015-2016

STUDENT NAME:	CLASS NAME: (to be filled out by Zoo staff)
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Please Read: Print out this form, complete it, and bring it with you on the first day of class. You will need one completed form per student for class. This speeds up check-in times. Thanks!

Parent/Guardian Information:

Student's Parent or Legal Guardian's Name: _____

Relationship to Student: _____ Cell Phone: (_____) _____

Work Phone: (_____) _____

Additional Information:

Please let us know anything else we may need to know about your child: _____

Emergency Contact Information:

In case of emergency, please list the name and phone number of whom you would like us to contact:

Primary Name: _____ Phone: _____ Relationship: _____

Secondary Name: _____ Phone: _____ Relationship: _____

Releases and Code of Conduct

I hereby agree to the "Wavier and General Release," "Photo/Media Release," "Refund Policy," and "Code of Conduct" listed in the Homeschool Academy Information Packet and listed digitally when registering for camp.

Parent or Legal Guardian Signature: _____ **Date** _____

Pickup Authorization:

The following people may pick up my child when class is finished each day:

(If any changes need to be made to this form, they must be completed by the parent or legal guardian listed above.)

1. _____ 2. _____

3. _____ 4. _____

DO NOT fill out this section until the student is picked up from class.

Signature of person picking up the student:

Date:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



Bring Photo ID
We will check each day.

ALABAMA COURSE OF STUDY

4K-K

The standards listed below will be used to guide the 4K-K classes for the 2015-2016 school year.

SCIENCE

Ecosystems: Interactions, Energy, and Dynamics

3. Distinguish between living and nonliving things, and verify what living things need to survive.
4. Gather evidence to support how plants and animals provide for their needs by altering their environment.
5. Construct a model of a natural habitat conducive to meeting the needs of plants and animals in Alabama.
6. Identify and plan possible solutions to lessen the human impact on the local environment.

ENGLISH AND LANGUAGE ARTS

Reading Standards for Literature and Informational Text

1. With prompting and support, ask and answer questions about key details in a text. [RL. K. 1] and [RI.K.1]
11. With prompting and support, identify the main topic and retell key details of a text. [RI.K.1]
19. Actively engage in group reading activities with purpose and understanding. [RI.K.10]

Writing Standards

26. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely related events, tell about the events in the order in which they occurred, and provide a reaction to what happened. [W.K.3]

Speaking and Listening Standards

31. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
 - a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). [SL.K.1a]
 - b. Continue a conversation through multiple exchanges. [SL.K.1b]
36. Speak audibly and express thoughts, feelings, and ideas clearly.

MATH

Counting and Cardinality

6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.) [K-CC6]

Measurement and Data

14. Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object. [K-MD1]
15. Directly compare two objects, with a measurable attribute in common, to see which object has “more of” “less of” the attribute, and describe the difference. [K-MD2]

Example: Directly compare the heights of two children, and describe one child as taller or shorter.

Geometry

17. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. [K-G1]

SOCIAL STUDIES

4. Differentiate between needs and wants of family, school, and community.
8. Recognize maps, globes, and satellite images.



ALABAMA COURSE OF STUDY



4K-K CONTINUED

9. Differentiate between land forms and bodies of water on maps and globes.

1ST—2ND GRADE

The standards listed below will be used to guide the 1st—2nd grade classes for the 2015-2016 school year.

SCIENCE

1st Grade

Heredity: Inheritance and Variation of Traits

5. Obtain information to determine that parents and their offspring engage in types of behavior that help the offspring survive.
6. Make observations to identify the similarities of offspring to their parents and to other members of the same species.

2nd Grade

Ecosystems: Interactions, Energy, and Dynamics

5. Plan and carry out an investigation using one variable at a time (e.g. water, light, soil, air) to determine the growth needs of plants.
6. Construct models to simulate how animals disperse seeds or pollinate plants.

Earth and Human Activity

11. Examine and test solutions that address changes caused by Earth events.

ENGLISH AND LANGUAGE ARTS

1st and 2nd Grade

Reading Standards for Literature and Informational Text

1. Ask and answer questions about key details in a text. [RL.1.1] and [RI.1.1]

Writing Standards

30. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. [W.1.8]

Speaking and Listening Standards

31. Participate in collaborative conversations with diverse partners about Grade 1 and Grade 2 topics and texts with peers and adults in small and larger groups. [SL.1.1]
 - a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). [SL.1.1a]
 - b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. [SL.1.1b]
 - c. Ask questions to clear up any confusion about the topics and texts under discussion. [SL.1.1c]

MATH

1st Grade

Measurement and Data

15. Order three objects by length; compare the lengths of two objects indirectly by using a third object. [1-MD1]



ALABAMA COURSE OF STUDY

1st –2nd Grade CONTINUED

18. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. [1-MD4]

2nd Grade

Measurement and Data

14. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. [2-MD1]

16. Estimate lengths using units of inches, feet, centimeters, and meters. [2-MD3]

17. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. [2-MD4]

23. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. [2-MD10]

SOCIAL STUDIES

1st Grade

8. Identify land masses, bodies of water, and other physical features on maps and globes.

9. Differentiate between natural resources and human-made products.

2nd Grade

6. Identify states, continents, oceans, and the equator using maps, globes, and technology.

8. Describe how scarcity affects supply and demand of natural resources and human-made products.

10. Identify ways people throughout the country are affected by their human and physical environments.

3rd—4th Grade

The standards listed below will be used to guide the 3rd—4th grade classes for the 2015-2016 school year.

SCIENCE

3rd Grade

From Molecules to Organisms: Structures and Processes

5. Obtain and combine information to describe how organisms are classified as living things based on their ability to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing environment.

6. Create representations to explain the unique and diverse lifecycles of organisms other than humans, including commonalities such as birth, growth, reproduction, and death.

Heredity: Inheritance and Variation of Traits

7. Examine data to provide evidence that plants and animals, excluding humans, have traits inherited from parents and that variations of these traits exist in groups of similar organisms.

8. Engage in argument from evidence to justify that traits can be influenced by the environment.

Unity and Diversity

10. Investigate how variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.



ALABAMA COURSE OF STUDY

3rd—4th Grade CONTINUED

11. Construct an argument from evidence to explain the likelihood of an organism’s ability to survive when compared to the resources in a certain habitat.

a. Construct explanations that forming groups helps some organisms survive.

b. Create illustrations that organisms and their habitats make up a system in which the parts depend on each other.

c. Categorize resources in various habitats as basic materials (e.g. sunlight, air, freshwater, soil), produced materials (e.g. food, fuel, shelter), or nonmaterial (e.g. safety, instinct, learned behaviors).

12. Evaluate solutions to a problem created by environmental changes and any resulting impacts on the types and density of plant and animal populations living in the environment.

4th Grade

From Molecules to Organisms: Structures and Processes

9. Compare and contrast the internal and external structures of plants and animals that function to support survival, growth, behavior, and reproduction.

11. Investigate different ways animals receive, process, and respond to information.

ENGLISH AND LANGUAGE ARTS

3rd and 4th Grade

Reading Standards for Literature and Informational Text

10. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. [RI.3.1]

Writing Standards

29. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. [W.3.8]

Speaking and Listening Standards

31. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on Grade 3 [and Grade 4] topics and texts, building on others’ ideas and expressing their own clearly. [SL.3.1]

a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. [SL.3.1a]

b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). [SL.3.1b]

c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. [SL.3.1c]

d. Explain their own ideas and understanding in light of the discussion. [SL.3.1d]



ALABAMA COURSE OF STUDY

3rd—4th Grade CONTINUED

MATH

3rd Grade

Measurement and Data

19. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters. [3-MD4]

4th Grade

Measurement and Data

19. Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; l, ml; and hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

[4-MD1]

Geometry

28. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. [4-G3]

SOCIAL STUDIES

3rd Grade

1. Locate the prime meridian, equator, Tropic of Capricorn, Tropic of Cancer, International Date Line, and lines of latitude and longitude on maps and globes.

2. Locate the continents on a map or globe.

3. Describe ways the environment is affected by humans in Alabama and the world.

4. Relate population dispersion to geographic, economic, and historic changes in Alabama and the world.

7. Describe the relationship between locations of resources and patterns of population distribution.

4th Grade

1. Compare historical and current economic, political, and geographic information about Alabama on thematic maps, including weather and climate, physical-relief, waterway, transportation, political, economic development, land-use, and population maps.

16. Determine the impact of population growth on cities, major road systems, demographics, natural resources, and the natural environment of Alabama during the late twentieth and early twenty-first centuries.

5th—6th Grade

The standards listed below will be used to guide the 5th—6th grade classes for the 2015-2016 school year.

SCIENCE

5th Grade

Ecosystems: Interactions, Energy, and Dynamics

8. Defend the position that plants obtain materials needed for growth primarily from air and water and not from soil.

ALABAMA COURSE OF STUDY

5th—6th Grade CONTINUED

9. Construct an illustration to explain how plants use light energy to convert carbon dioxide and water into carbohydrates, a fuel the organism can store for energy; and oxygen, a waste product; during the process of photosynthesis.

10. Interpret models to explain that the energy contained in animals' food and used for body repair, growth, motion, and maintenance of body warmth was once energy from the sun.

11. Create an illustration to describe the movement of matter among producers; varying levels of consumers, including scavengers and decomposers; and the environment.

Earth's Systems

14. Use a model to represent how any two systems, specifically the atmosphere, biosphere, geosphere, and/or hydrosphere, interact and support life. (e.g. influence of the ocean on ecosystems, landform shape, climate)

15. Identify the distribution of freshwater and saltwater on Earth and construct a graphical representation depicting the amounts and percentages found in different reservoirs.

Earth and Human Activity

16. Collect and organize scientific ideas that individuals and communities use to protect Earth's natural resources and its environment.

6th Grade

Earth's Systems

7. Use models to construct explanations of the various biogeochemical cycles of Earth (e.g. water, carbon, nitrogen) and the flow of energy that drives these processes.

14. Analyze and interpret data to describe how various human activities and natural processes may cause change in local and global temperatures over time.

Earth and Human Activity

15. Analyze evidence to explain how changes in human population, per capita consumption of natural resources, and other human activities affect the Earth's systems.

ENGLISH AND LANGUAGE ARTS

5th and 6th Grade

Reading Standards for Literature and Information Text

10. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. [RI.5.1]

11. Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. [RI.5.2]

Writing Standards

29. Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. [W.5.8]

ALABAMA COURSE OF STUDY

5th—6th Grade CONTINUED

Speaking and Listening Standards

32. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on Grade 5 [and Grade 6] topics and texts, building on others' ideas and expressing their own clearly. [SL.5.1]

- a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. [SL.5.1a]
- b. Follow agreed-upon rules for discussions and carry out assigned roles. [SL.5.1b]
- c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. [SL.5.1c]
- d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions. [SL.5.1d]

MATH

5th Grade

Measurement and Data

18. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multistep, real-world problems. [5-MD1]

Geometry

24. Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. [5-G2]

6th Grade

Ratios and Proportional Relationships

1. Understand the concept of a ratio, and use ratio language to describe a ratio relationship between two quantities. [6-RP1]

3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. [6-RP3]

Statistics and Probability

28. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. [6-SP4]

29. Summarize numerical data sets in relation to their context, such as by: [6-SP5]

- a. Reporting the number of observations. [6-SP5a]
- b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. [6-SP5b]
- c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation) as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. [6-SP5c]
- d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. [6-SP5d]



ALABAMA COURSE OF STUDY

5th—6th Grade CONTINUED

SOCIAL STUDIES

5th and 6th Grade

1. Locate on a map physical features that impacted the exploration and settlement of the Americas, including ocean currents, prevailing winds, large forests, major rivers, and significant mountain ranges.

7th—9th Grade

The standards listed below will be used to guide the 7th—9th grade classes for the 2015-2016 school year.

SCIENCE

7th Grade

From Molecules to Organisms: Structures and Processes

4. Construct models and representations of organ systems to demonstrate how multiple interacting organs and systems work together to accomplish specific functions.
5. Examine the cycling of matter between abiotic and biotic parts of ecosystems to explain the flow of energy and the conservation of matter.
 - a. Obtain, evaluate, and communicate about how food is broken down through chemical reactions to create new molecules that support growth and/or release energy as it moves through an organism.
 - b. Generate a scientific explanation based on evidence for the role of photosynthesis and cellular respiration in the cycling of matter and flow of energy into and out of organisms.
6. Analyze and interpret data to provide evidence regarding how resource availability impacts individual organisms as well as populations of organisms within an ecosystem.
7. Use empirical evidence from patterns and data to demonstrate how changes to physical or biological components of an ecosystem can lead to shifts in populations.
8. Construct an explanation to predict consistent patterns of interactions in different ecosystems in terms of relationships between and among organisms.
9. Engage in argument to defend the effectiveness of a design solution that maintains biodiversity and ecosystem services.
10. Use evidence and scientific reasoning to explain how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of both animals and plants.
11. Analyze and interpret data to predict how environmental conditions and genetic factors influence the growth of organisms.
18. Construct an explanation from evidence that natural selection may lead to the predominance of certain traits that support successful survival and reproduction of a population and to the suppression of other traits.



ALABAMA COURSE OF STUDY

7th—9th Grade CONTINUED

8th Grade

Physical Science: Matter and Its Interactions

3. Construct explanations based on evidence from investigation to differentiate among compounds, mixtures, and solutions.

a. Collect and analyze information to illustrate that synthetic materials (e.g. medicine, food additives, alternative fuels, plastics) are derived from natural resources, and that they impact society.

9th Grade (High School Standards)

Biology – Ecosystems: Interactions, Energy, and Dynamics

8. Develop and use models to illustrate examples of ecological hierarchy levels, including biosphere, biome, ecosystem, community, population, and species.

9. Develop and use models to describe the cycling of matter and flow of energy between abiotic and biotic factors in ecosystems.

11. Analyze and interpret data to illustrate how density-independent factors (climate change, natural disasters) and density-dependent factors (disease, predation) can cause changing conditions and ecological succession that result in a new ecosystem.

Unity and Diversity

14. Obtain, evaluate, and communicate information to explain how organisms are classified by physical characteristics, organize into levels of taxonomy, and identified by binomial nomenclature (e.g. taxonomic classification, dichotomous keys).

16. Analyze and interpret data to evaluate adaptations that may result from natural selection and may cause changes in populations over time.

17. Construct an evidence-based explanation to illustrate how the diversity of organisms is affected by overpopulation of species, variations due to genetic mutations, and competition for limited resources.

Environment Science: Earth and Human Activity

2. Investigate and analyze effective and clean energy sources as alternatives to fossil fuels.

5. Use mathematics and graphic models to support and compare explanations based on evidence about factors affecting biodiversity and populations in ecosystems.

6. Engage in argument from evidence to evaluate how biological or physical changes within ecosystems affect the number and types of organisms, and that changing conditions may result in a new or more resilient ecosystem.

7. Engage in argument from evidence to defend how individual and group behavior may affect individual species' chances to survive and reproduce.

8. Obtain, evaluate, and communicate information to describe how human activity may affect biodiversity and genetic variation of organisms, including threatened and endangered species.

9. Engage in argument from evidence to defend claims that changes in environmental conditions may cause changes in species and populations.

10. Analyze and interpret data to investigate how a single change in Earth's surface may cause changes to other Earth systems.

12. Develop and use models to trace the flow of water, nitrogen, and phosphorus through the ocean, atmosphere, soil, and biosphere.

ALABAMA COURSE OF STUDY

7th—9th Grade CONTINUED

14. Engage in argument from evidence to defend how coastal, marine, and freshwater sources support biodiversity, economic stability, and human recreation.

15. Analyze and interpret data and climate models to predict how global or regional climate change may affect Earth’s systems.

16. Obtain, evaluate, and communicate information based on evidence to explain how key natural resources, natural hazards, and climate changes influence human activity.

20. Analyze and interpret data collected through geographic research and field investigations to determine types of organisms that live in a specific biome.

a. Obtain, evaluate, and communicate geological and biological information describing the biodiversity by region for the state of Alabama.

ENGLISH AND LANGUAGE ARTS

7th—9th Grade

Reading Standards for Informational Text

10. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. [RI.7.1]

11. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text. [RI.7.2]

Writing Standards

23. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. [W.7.4]

Speaking and Listening Standards

30. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on Grade 7 [and Grades 8&9] topics, texts, and issues, building on others’ ideas and expressing their own clearly. [SL.7.1]

a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. [SL.7.1a]

b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. [SL.7.1b]

c. Pose questions that elicit elaboration and respond to others’ questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. [SL.7.1c]

d. Acknowledge new information expressed by others and, when warranted, modify their own views. [SL.7.1d]

MATH

7th—9th Grade

Statistics and Probability

17. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. [7-SP1]



ALABAMA COURSE OF STUDY

7th—9th Grade CONTINUED

18. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. [7-SP2]

Example: Estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. Draw informal comparative inferences about two populations.

19. Informally assess the degree of visual overlap of two numerical data distributions with similar variability measuring the difference between the centers by expressing it as a multiple of a measure of variability. [7-SP3]

Example: The mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.

20. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. [7-SP4]

Example: Decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.

SOCIAL STUDIES

7th—9th Grade

1. Describe the world in spatial terms using maps and other geographic representations, tools, and technologies.

2. Determine how regions are used to describe the organization of Earth's surface.

3. Compare geographic patterns in the environment that result from processes within the atmosphere, biosphere, lithosphere, and hydrosphere of Earth's physical systems.

11. Explain the cultural concept of natural resources and changes in spatial distribution, quantity, and quality through time and by location.