

ALABAMA SCIENCE IN MOTION 2000-2001 CD
Biology Contents with Description

Though care has been taken in the preparation of this CD, no single file format is appropriately displayed by all computers. Most files on the CD are rich text formatted (rtf) files that should be compatible with most operating systems and word processors. Users may occasionally encounter some of the following situations in accessing the files.

- Margins and fonts may need to be changed to retain original formatting.
- Graphics may not display on the screen, but may appear on the printed version.
- Some operating systems/word processors may not open files.
- Opening pdf files will require the use of Adobe Acrobat Reader, which can be downloaded free of charge at the following address: <http://www.adobe.com/products/acrobat/readstep.html>

Folders	Level	File Names	Title-Description
A-Safety			Safety Information
	1	A01Rule.rtf	ASIM Biology Safety Rules
	1	A01Cont.rtf	ASIM Biology Safety Contract (student and parent)
B-Skills			Laboratory Skills
	1	B01aTPS.rtf	Toilet Paper Strength - use a scientific approach to determine which brand has the greatest strength when wet
	1	B01bObsc.rtf	Ob-Scertainers -use indirect observation to predict and describe
	1	B02MePip.rtf	Measuring & Pipetting - become proficient with the correct and safe use of pipettes, micropipettes, top-loading balances and centrifuges.
	1	B03MeHum.rtf	Measuring Human Differences - measure and identify some physical characteristics used in anthropometry
	1	B04ScpIn.rtf	Introduction to the Microscope - demonstrate proper microscope technique using the ATC 2000 microscope
	1	B05ScpUs.rtf	Using the Microscope - develop skills in using the ATC 2000 microscope
	1	B06EquUs.rtf	Equipment Usage – equipment operation and maintenance procedures
C-Cells			Cell Structure and Function
	1	C01Mitos.rtf	The Cell Cycle – use prepared onion root tip slides to identify the stages of the cell cycle and calculate the length of time of each phase of the cell cycle
	1	C02DifOs.rtf	Osmosis in Onion Cells - observe the process of osmosis in purple onion cells
	1	C03RepDe.rtf	Reproduction, Development, and Cellular Division - observe, identify, and draw reproductive cells and tissues, stages of starfish development, and mitosis
	1	C04DNAmo.rtf	DNA Model - construct to better understand a model of DNA
D-Gene			Genetics
	1	D01aHela.rtf	Preparation of Human Chromosome Spread - affix, stain and visualize human chromosomes mounted on microscope slides
	1	D01bKary.rtf	Karyotyping – construct and use a simple karyotype to identify a chromosomal disease
	1	D02aKiwi.rtf	DNA Extraction (Kiwi) – use common household materials to extract DNA from kiwi fruit
	1	D02bWhea.rtf	DNA Extraction (Wheat Germ) – use common household materials to extract DNA from wheat germ
	1	D02cBery.rtf	DNA Extraction (Strawberry) – use “low-tech” procedures to extract DNA from strawberries.
	1	D02dChek.rtf	DNA Extraction From Cheek Cells - isolate DNA from human cheek cells using common household chemicals
	1	D03aAlca.rtf	Alcaptonuria - simulation that traces the inheritance of Alcaptonuria through three generations in families, permitting the genotypes of past and present family members to be determined
	1	D03bSong.rtf	The Pedigree Song – construct a pedigree of the family described in a song
	1	D03cGas.rtf	The Asparagus Gas Test - use a trait to make note of a family phenotype and construct a pedigree chart and propose genotypes of the family
	2	D04aPDNA.rtf	Paternity Testing - become familiar with procedures used in DNA fingerprinting.

Folders	Level	File Names	Title-Description
	2	D04bFDNA.rtf	DNA Fingerprinting - analyze DNA fragment patterns generated by gel electrophoresis to determine if the evidence collected supports the innocence or guilt of two suspects
	1	D04cMixU.rtf	Mix-up at the Hospital - use DNA profiles to determine whether a couple are the parents of a particular child.
	1	D04dPtCa.rtf	A Paternity Case - analyzing DNA data to determine whether a particular man is the father of a child
	1	D04eMani.rtf	Manipulating DNA - become familiar with role of restriction enzymes in DNA fingerprinting and with the electrophoretic analysis of DNA fragments sizes generated by restriction enzymes
	2	D05CatLa.rtf	Catlab (computer simulation) – perform cross tests to predict dominance of alleles
	2	D06CatPh.rtf	Cat Phenotypes – determine cat genotypes from given phenotypes
	1	D07Corn.rtf	Corn Lab – express traits of a di-hybrid cross and compare values to theoretical ratios
	1	D08XSim.rtf	Chromosome Simulation – simulate events of mitosis and meiosis with pop-bead chromosomes
	1	D10PopSt.rtf	Popsicle Stick Genetics – determine the genotype and phenotype of a zygote using popsicle sticks
E-Evolve			Evolution
	1	E1Stones.rtf	Stones and Bones – using hominid skulls to calculate a bio-index
	1	E2MolEvo.rtf	Molecular Evolution – identifying organisms which are more closely related by comparing amino acid sequences
	1	E3BedBug.rtf	Bead Bug Lab – using beads to demonstrate natural selection
F-Micro			Microbiology (Virus, Monera, Protista) lab folder
	1	F1Epidem.rtf	Epidemiology – model how an infectious disease like AIDS can be spread, and the factors affecting its spread
	1	F2Aseptc.rtf	Aseptic Technique - learn how to handle bacteria safely
	1	F3SStain.rtf	Simple Stains – learn techniques for making prepared slides of bacteria
	1	F4BInhib.rtf	Bacteria Inhibition - determine the effectiveness of common antibiotics and antiseptics against the growth of bacteria found in the human mouth.
	1	F5GStain.rtf	Gram Stain – transfer and staining of microorganisms with Gram stain technique
	1	F6Termit.rtf	Termite Lab – observe symbiotic relationships and identify protozoa in the termite gut
	1	F7Survey.rtf	Survey of Microorganisms – overview of Kingdom Protista
	1	F8Protis.rtf	Observing Protists – microscopic examination of living protists to compare structure and activity
G-Fungi			Fungi
	1	G1Lichen.rtf	Lichen Lab – identify three forms of lichens and their use as indicators for air pollution
H-Animal			Animal
	1	H1Arthro.rtf	Classifying Arthropods – using a dichotomous key to classify arthropods
I-HumnAP			Human Anatomy and Physiology
	1	I01Tissu.rtf	Vertebrate Tissues – identify and draw cells of various body tissues
	1	I03aGrip.rtf	Grip Strength – use a grip test to measure grip strength
	1	I03bReac.rtf	Reaction Time – determine reaction times by various methods
	1	I03cFat.rtf	Percent Body Fat – determining percent body fat and calculating ideal body weight
	2	I04EKG.rtf	EKG – conduct, record and identify individual EKGs
	1	I05Vison.rtf	Vision – conduct various tests to examine characteristics of the sense of vision
	1	I06BP.rtf	Blood pressure – using digital and manual sphygmomanometers to measure blood pressure
	1	I07Lung.rtf	Respiratory Volumes – using a dry spirometer to determine lung volumes
	1	I08aBlod.rtf	Blood Typing – determine ABO and Rh blood types using simulated blood
	1	I08bMatc.rtf	The Match Game – using simulated blood to identify blood type compatibilities
	2	I09aEzCn.rtf	Enzymes (Substrate Concentration) – determining the effects of substrate concentration on enzyme action
	2	I09bEzpH.rtf	Enzymes (pH) – determining the effects of pH on enzyme action
	2	I09cEzTp.rtf	Enzymes (Temperature) – determining the effects of temperature on enzyme action
	1	I09dPApp.rtf	Enzymes (Practical Applications) – become acquainted with practical applications of enzymes
	2	I10Urine.rtf	Urinalysis – using simulated urine to perform urinalysis
	2	I11Muscl.rtf	Manikens – using clay to study various muscle groups

Folders	Level	File Names	Title-Description
	1	I12aArti.rtf	Skeletal System Articulations – List the three classes of joints giving characteristics, naming joint types, and describing joint movements
	1	I12bSkel.rtf	Whose Skeleton is in Your Closet? – skeletal differences according to sex, race and age
	1	I12cPrac.rtf	Skeletal System Practical – identify the name of selected bones of the pelvic girdle and lower extremities of the skeleton
	1	I12dBone.rtf	(DEM) Bones – identify the name and location of the major bones of the skeletal system, classify bones according to their shape
J-Enviro			Environment
	2	J1Water.rtf	Water Quality – conduct various chemical tests on water samples
	1	J2Bioas.rtf	Bio-assessment – using a game to determine stream quality
	2	J3Stream.rtf	Stream In a Bucket – field tests to determine stream quality
	2	J4Soil.rtf	Soil Testing – determining soil quality of soil samples
	1	J5OwlPel.rtf	Owl Pellets – using owl pellets to study food chains and webs
K-Botany			Botany
	1	K01Fluor.rtf	Fluorescence of Chlorophyll – observe the fluorescence of chlorophyll
	1	K02Pigmn.rtf	Photosynthetic Pigments – using collected data to construct an absorption spectrum of spinach leaf pigments
	2	K03aPlnt.rtf	Plant Collection – collecting plants for identification and preservation
	2	K04LeafD.rtf	Leaf Disk Photosynthesis – determining the rate of photosynthesis at various wavelengths of light
	1	K05TreeI.rtf	Dichotomous Key Identifying Alabama Trees – using a dichotomous key to identify collected leaf specimens
	1	K06Chrom.rtf	Chromatography – learn the scientific technique of paper chromatography
	2	K07Factr.rtf	Factors Affecting Photosynthesis – examining factors affecting the rate of photosynthesis
	2	K08Stoma.rtf	Estimating Leaf Stomata – estimating the number of stomata in a lettuce leaf
L-Other Labs			Other Labs
	2	L01Tardi.rtf	Tardigrade Lab - isolate and identify organisms that are classified within Phylum Tardigrada
	1	L02Acids.rtf	Acids and Bases and Measuring pH – prepare a natural pH indicator from red cabbage; classify common household substances as either acids or bases based on a change in color.
	1	L03GnGen.rtf	Generating Genetic Variation: The Meiosis Game – use paper models to demonstrate the relationship between independent assortment, segregation, and the production of genetically variable gametes
	1	L04GAK.rtf	GAK: Using The Scientific Method – using the Scientific Method, the students will produce a polymer
	1	L05WhoD.rtf	DNA Whodunit Game – using a game to simulate gel electrophoresis
	1	L06Candy.rtf	Candy Genetics – become familiar with alleles and their variations using candy
	1	L07Button.rtf	Button Genetics – become familiar with alleles and their variations using candy
	2	L08CTran.rtf	Colony Transformation – genetically alter bacteria culture and identify phenotypic changes resulting from transformation
	2	L09Insect.rtf	Insect Collection – develop skills in collecting, identification, and habitats of insects
	2	L10Frog.rtf	Frog Lab – classifying animals based on family characteristics
	1	L11Animal.rtf	Classifying Animals – using a dichotomous key to classify animals
	2	L12Other.rtf	Other Tissues and Organs – observe, identify and differentiate between layers of skin
	2	L13Stans.rtf	Allergy Testing – study a basic technique of immunology
	2	L14Azoll.rtf	Azolla – observe symbiotic mutualistic associations between two different species
	1	L15ComPA.rtf	Comparing Plant and Animal Cells -use of prepared slides and living specimens for comparison between plant and animal cells
	1	L16Clean.rtf	How Clean Are You? – demonstrating aseptic technique
	2	L17Smell.rtf	Smell Lab –review four characteristics of the olfactory sense
	2	L18Sound.rtf	Sound Lab – students explore how sound is acquired and interpreted
	2	L19WBCD.rtf	White Blood Cell Differential – distinguish between the five types of white blood cells
	2	L20CroMat.rtf	Blood Cross Matching – determine the compatibility of a patient's blood with four donors
	2	L21CraNer.rtf	Nerve Lab – test physiology of cranial nerves

Folders	Level	File Names	Title-Description
	2	L22Fprint.rtf	Fingerprinting Lab – identify and lift fingerprints
	1	L23CelSz.rtf	Cell Size – determine the effect of cell size on the rate of diffusion
	2	L24BrdID.rtf	Bird Identification Lab – identify birds using field guides and bird song software
	1	L25BrdAd.rtf	Bird Adaptation – compare beak adaptations for feeding
	1	L26Osdif.rtf	Osmosis and diffusion –using dialysis tubing to demonstrate osmosis and diffusion
	2	L27RoStm.rtf	Root and Stem Structure – using prepared slides and models to compare differences between roots and stems of monocots and dicots
	1	L28MakFl.rtf	Make a Flower – constructing monocot and dicot flowers using live and artificial specimens
	1	L29Class.rtf	Classification Lab – using dichotomous keys to classify organisms (paper lab)
	1	L30MicMe.rtf	Microscopic Measurements – techniques for estimating the size of microscopic organisms
	2	L31Cfern.rtf	C-Fern Lab – grow and study the life cycle of a fern
	1	L32EdAlg.rtf	Edible Algae – using red and brown algae for food
	1	L33Rebop.rtf	Rebop – Studying heritable traits using marshmallows
	1	L34EleDy.rtf	Gel Electrophoresis Using Dyes – simulate DNA fingerprinting using Kool-aid
M-Resorc			Resources (books, games, hardware, software, videos, and other multimedia material) (NOTE: This section will be individualized for each SIM site.)
		M06AAMU.rtf	Alabama A &M University
		M03ASU.rtf	Alabama State University Resource List
		M02ASC.rtf	Athens State University Resource List
		M04JSU.rtf	Jacksonville State University Resource List
		M01TSU.rtf	Troy State University Resource List
		M07UA.rtf	University of Alabama Resource List
		M05UM.rtf	University of Montevallo Resource List
		M08UNA.rtf	University of North Alabama Resource List
N-Equip			Equipment
		N01EquipB.rtf	Equipment List
Bio-TOC.rtf			Biology Table of Contents – organization of ASIM biology labs with folder names, file names, and descriptions. This file contains the information you are currently reading.