Table 1: Kingdom Worksheet

Kingdom	Eubacteria	Archaebacteria	Protista	Fungi	Plantae	Animalia
Cell Type	prokaryotic	prokaryotic	eukaryotic	eukaryotic	eukaryotic	eukaryotic
Cell Wall	often present, contains peptidoglycan	present, does not contain peptidoglycan	exists in some, composition will vary	usually composed of chitin	composed of cellulose	none
Body Form	unicellular, some are colonial	unicellular, some are colonial	unicellular, colonial, and some simple multicellular	most are multicellular	multicellular	multicellular
Nutrition	photosynthesis, chemosynthesis and absorption (heterotrophs)	heterotrophs (absorption)	some autotrophs, some heterotrophs (ingestion and absorption) and some both	heterotrophs (absorption or secrete enzymes that digest food outside of itself)	photosynthesis	ingestion
Nervous System	absent	absent	absent	absent	absent	absent
Reproduction	asexual	asexual	asexual and sexual	asexual and sexual	asexual and sexual	sexual
Locomotion	present in some	present in some	present in some	none	none	distinct at some point in the life cycle
Examples	bacteria, cyanobacteria	methanogens, extreme thermophiles, extreme halophiles (organisms that live in harsh environments such as salt lakes, hot springs and animal guts)	algae, protozoa	mushrooms, yeast, bread molds	mosses, ferns, conifers, flowering plants	sponges, jellyfish, starfish, lobsters, worms, birds, mammals

Table 1: Kingdom Worksheet

Kingdom	Eubacteria	Archaebacteria	Protista	Fungi	Plantae	Animalia
Cell Type						
Cell Wall						
Body Form						
Nutrition						
Nervous System						
Reproduction						
Locomotion						
Examples						

Table 2: Plants Worksheet

Characteristics	Bryophyta	Tracheophyta		
		Ferns and fern allies	Gymnosperms	Angiosperms
Vascular vs nonvascular	*nonvascular* *lack true roots, stems and leaves* *small in size* *transport through diffusion* *no internal support*	*vascular tissue provides support and aids in transport* *possess true roots, stems and leaves*	*vascular tissue provides support and aids in transport* *possess true roots, stems and leaves*	*vascular tissue provides support and aids in transport* *possess true roots, stems and leaves*
Dependency on water	*yes, for movement of sperm*	*yes, for movement of sperm*	*no*	*no*
Dominant generation	*gametophyte*	*sporophyte*	*sporophyte*	*sporophyte*
Reproduction	*depends on water for movement of sperm to egg* *no protection of egg*	*depends on water for movement of sperm to egg* *no protection of egg*	*wind and insects are used to move sperm to egg* *seed is produced in a cone that is not covered by a fruit*	*wind and insects are used to move sperm to egg* *seed is produced in a flower that is covered by a fruit*
Examples	*mosses, liverworts and hornworts*	*ferns, whisk ferns, club mosses, horsetails*	*evergreens/conifers*	*deciduous trees, heaths, roses, peas, magnolias, dandelions*

Table 2: Plants Worksheet

Characteristics	Bryophyta	Tracheophyta		
		Ferns and fern allies	Gymnosperms	Angiosperms
Vascular vs nonvascular				
Dependency on water				
Dominant generation				
Reproduction				
Examples				

Table 3: Invertebrate Worksheet

Characteristic		Porifera	Cnidarians (coelenterata)	Platyhelminthes	Nematoda	Annelida	Mollusca	Arthropoda	Echinodermata
Symmetry		asymmetric	radial	bilateral	bilateral	bilateral	bilateral	bilateral	pentamorous radial
Body Cavity (Coelom)		none	none	none	present	present	present	present	present
Digestion		none	two way one opening	two way one opening	one way two openings	one way two openings	one way two openings	one way two openings	one way two openings
Reproduction		asexual and sexual	asexual and sexual	asexual and sexual	sexual	sexual	sexual	sexual	sexual (some asexual)
		external fertilization	external fertilization	internal fertilization	internal fertilization	internal fertilization	external and internal fertilization	internal fertilization	external fertilization
		hermaphrodites	hermaphrodites and separate sexes	hermaphrodites and separate sexes	separate sexes and few hermaphrodites	hermaphrodites and separate sexes	hermaphrodites and separate sexes	separate sexes and few hermaphrodites	separate sexes and few hermaphrodites
Examples		sponges	jellyfish, hydra, coral	planaria, tapeworm, blood flukes	hookworm, pinworm	earthworm, leech	clams, squid, snails	spiders, insects, lobster	starfish, sea urchin, sand dollar

Table 3: Invertebrate Worksheet

Characteristic	Porifera	Cnidarians (coelenterata)	Platyhelminthes	Nematoda	Annelida	Mollusca	Arthropoda	Echinodermata
Symmetry								
Body Cavity (Coelom)								
Digestion								
Reproduction								
Examples								

Table 4: Vertebrate Worksheet

Characteristic	Agnatha (Jawless Fish)	Chondrichthyes (Cartilagenous Fish)	Osteichthyes (Bony Fish)	Amphibia (Amphibians)	Reptilia (Reptiles)	Aves (Birds)	Mammalia (Mammals)
Endoskeleton	cartilage (no jaw)	cartilage	cartilage and bone	cartilage and bone	cartilage and bone	cartilage and bone	cartilage and bone
Respiratory	multiple gill openings no operculum	multiple gill openings no operculum	one gill opening covered by operculum	gills, skin, lungs (low surface area)	lungs (moderate surface area)	lungs (air sacs, high surface area)	lungs (high surface area)
Circulatory	two chambered heart	two chambered heart	two chambered heart	three chambered heart	three chambered heart (incomplete septum for fourth chamber)	four chambered heart	four chambered heart
Reproduction	external fertilization and development	external fertilization (internal for sharks) and development	external fertilization and development	external fertilization and development	internal fertilization and external development	internal fertilization and external development	internal fertilization and internal development
Examples	lamprey, hagfish	sharks, skates, rays	trout, cod, salmon	frogs, salamanders	snakes, turtles	birds	humans, whales

Table 4: Vertebrate Worksheet

Characteristic	Agnatha (Jawless Fish)	Chondrichthyes (Cartilagenous Fish)	Osteichthyes (Bony Fish)	Amphibia (Amphibians)	Reptilia (Reptiles)	Aves (Birds)	Mammalia (Mammals)
Endoskeleton							
Respiratory							
Circulatory							
Reproduction							
Examples							

Table 5: Digestion Worksheet

Organ	Associated Glands	Enzyme Action	Mechanical Digestion	Other Secretions
Mouth	*salivary glands*	*salivary amylase breaks starch into maltose*	*teeth and tongue*	*sodium bicarbonate, mucin and water*
Stomach	*gastric glands and pyloric glands*	*pepsin breaks proteins into shorter polypeptides*	*peristalsis 3 times a minute*	*HCI kills bacteria, breaks down cellulose, lowers pH for pepsin* *water* *mucus protects stomach* *gastrin is a hormone that controls the release of gastric juice*
Small Intestine	*liver and gall bladder*	*none*	*peristalsis occurs regularly to mix food and enzymes and so push food against the intestinal wall for absorption*	*bile emulsifes lipids and neutralizes chyme* *sodium bicarbonate neutralizes chyme* *mucus lubricates food mass and protects the digestive tube from enzymes*
	pancreas	*proteases (trypsin and chymotrypsin) further break down polypeptides from the stomach into shorter polypeptides* *erepsins break down simple polypeptides into amino acids* *lipase breaks down fats into fatty acid and glycerol* *pancreatic amylase breaks down starch into maltose*		
	intestinal glands	*peptidases break simpler polypeptides into amino acids* *lipase breaks down fats into fatty acids and glycerol* *maltase breaks maltose into simple sugars, sucrase breaks* *sucrose into simple sugars and lactase breaks lactose into simple sugars*		
Large Intestine	*mucus glands*	*none*	*none, any muscular action is for the movement of food* *water is reabsorbed*	*mucus to lubricate passageway*

Table 5: Digestion Worksheet

Organ	Associated Glands	Enzyme Action	Mechanical Digestion	Other Secretions
Mouth				
Stomach				
Small Intestine				
Large Intestine				