Ward's Digital Slides: Advanced Placement Biology Sets

Image Listing Included:

AP BIO Big Idea: 1. The process of evolution drives the diversity and unity of life.

Enduring Understandings: 1A

1B. Organisms are linked by lines of descent from common ancestry.

Description (group or slide): Up to 8 kingdoms/domains are represented (Bacteria, Achaebacteria, Archaezoans, Protists, Chromista, Plants, Fungi, and Animals). These display characteristics of their classifications.

900152	Bacteria mixed smear
900526	Mixed Archaebacteria
910501	Volvox-Sexual Stage
910560	Mixed Green Algae
911202	Ectocarpus/Chromista
912501	Budding yeast/Fungi
918125	Arabidopsis wm
920005	Mixed protist/protista
923013	Amphioxus
923133	ls zebrafish female
924233	Giardia lamblia-Trophozoites/Archaezoa

Enduring Understandings: 1c. Life continues to evolve within a changing environment.

Description (group or slide): Examples of the main plant structures (root, stem, leaf, seed) of three monocot plants display adaptations to the amount of environmental water at the cellular level.

917122	Elodea stem tip
917128	Elodea-Submerged Leaf
917415	Yucca root
917418	Yucca stem
917421	Yucca leaf
917424	Yucca seed
917444	Zea, Mature Root/monocot
917448	Zea Stem/monocot
917454	Corn leaf/monocot
917456	Corn kernel/monocot

Enduring Understandings: 1d

AP BIO Big Idea: 2. Biological systems utilize energy and molecular building blocks to grow, to reproduce, and to maintain homeostasis.

Enduring Understandings: 2a

2b. Growth, reproduction, and homeostasis require that cells create and maintain internal environments that are different from their external environments. Cellular structure and organelles that maintain cellular homeostasis are well displayed in the cells from this group of slides. General bacteria, animal and plant cells can be compared and contrasted and lead to discussions of energy cycling and the organelles required in the different cell types.

902042	Escherichia coli/bacteria
932200	Generalized Animal Cell
932134	Generalized Plant Cell
917126	Chloroplasts
920411	Paramecium caudatum/cilia
923664	Frog, Skeletal Muscle actin and myosin
932210	Centrioles
932215	Mitochondria
932221	Golgi Apparatus
932230	Nissl Bodies/RNA
932238	Phagocytosis
933021	Intercellular Bridges
935505	Rat Sperm/flagella
936003	Cheek cells
973679	Anti-Neurofilament (cytoskeleton), Spinal Cord/Protein

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Enduring Understandings: 2c
2d. Growth and homeostasis of a biological system are influenced by changes in the system's environment

Description (group or slide): Cells display subcellular specializations as well as cellular organizations that are related to their functions in maintaining both cellular homeostasis and in the organism as a whole (including water levels and nutrition/energy). This collection contains examples of plant cells specialized for particular functions as well as specialized animal cells of the digestive system.

917040	Allium Mitosis
917206	Lilium Leaf Epidermis
917450	Zea ls stem/monocot
917833	Coleus Stem Tip
917882	Dianthus leaf
917914	Helianthus stem
918090	Plasmodesmata
918307	Tilia 2-Year Old Stem
931152	Sclerids in Pear
931158	Idioblasts
931210	Trichomes
931212	Starch Grains/parenchyma
931214	Wood Fibers
931218	Casparian Strip
931220	Collenchyma
931226	Sclerenchyma in a Stem
931228	Sieve Plates
931230	Tracheids in Herbaceous Stem
920632	Hydra-General Structure
920630	Hydra Plain
921800	Earthworm Intestinal Region
923811	Bird intestine
923812	Bird crop gizzard
934523	Mamal digestive system composite
934501	Cow rumen
934502	Cow reticulum
934503	Cow Omasum
934504	Cow abomasum

Enduring Understandings: 2e

AP BIO Big Idea: 3. Living systems store, retrieve, transmit, and respond to information essential to life processes.
Enduring Understandings: 3a. Heritable information provides for continuity of life

Description (group or slide): DNA is visible as chromosomes in many of these slides that display cells undergoing either mitosis or meiosis. Stages of mitosis are displayed in both plant and animal cells. Particular stages of meiosis can be visualized in the formation of mature pollen in the lily. Condensed chromation of chromosomes can be seen in from human cells as well as the polytene chromosomes of drosophila whose banding patterns suggest the organization of genes in the chomosomes.

917044	Plant Mitosis-Polar View
917210	Lilium Flower Bud
917212	Lily sporogenous
917213	Lily synizesis
917214	Lily anther early prophase
917216	Lily anther late pro
917217	Lily anther first meiotic
917218	Lily anther second meiotic
917219	Lily anther pollen tetrads
917220	Lily mature anther
917221	Lilium Anther-1-Celled Microspores

	932240	Fish Blasto-disc/DNA
	935441	Meiosis
	938015	Drosophila Chromosomes
	938101	Chromosomes-Human Male 46 XY
	938110	Barr Bodies

Enduring Understandings: 3b
3c. Transfer of genetic information may produce variation.

Description (group or slide): Different organisms have adopted different strategies to generate genetic variation. A variety of life cycles and methods of sexual reproduction are represented in this group of slides.

912471	Penicillium sp.
913211	Mushroom Anatomy-Coprinus
914818	Equisetum Mature Strobilus
914862	Fern Prothallium-Monoecious
916503	Pinus strobus 5-needle Type
916544	Pine Ovule, Mature Archegonium
917002	Mixed Pollen (20 types)
918056	Tobacco Flower
920568	Leucosolenia (Sponge)
920651	Hydra Adult With Bud
920730	Obelia Hydroids
920779	Jellyfish Medusa
920820	Planaria Plain

Enduring Understandings: 3d
3e

AP BIO Big Idea: 4. Biological systems interact, and these interactions possess complex properties.

Enduring Understandings: 4a. Interactions within biological systems lead to complex properties.

Description (group or slide): Symbiotic and parasitic interactions between organisms are displayed in this group of slides. Common interactions with plants are displayed as well as the single celled organisms that live in the gut of termites that enable them to obtain nutrition from wood. The complex life cycle of malaria is displayed along with it's different hosts/host tissues.

919810	Ectotrophic Mycorrhiza
913950	Lichen-Mycobiont
924260	Termite Flagellates
926521	Anopheles mosquito/malaria
924630	Plasmodium malariae in human blood
924701	Plasmodium in liver
924621	Plasmodium schizonts
924622	Plasmodium falciparum-Gametocyes

Enduring Understandings: 4b
4c. Variation within biological systems affects interactions with the environment.

Description (group or slide): Cells have specialized to perform functions of tissues. This group displays examples from the main tissue types: Epithelium, connective tissue, muscle tissue and nervous tissue.

923640	Frog Blood/connective tissue
923644	Pigmented Epithelium
923664	Frog, Skeletal Muscle actin and myosin
923668	Frog Heart/muscle tissue
923671	Frog Artery, Vein, Nerve (epithelium tissue in circulatory system, nerve tissue in nervous system)
933219	Chondroid Tissue/connective
933321	Mouse Tail (all tissue types)
973679	Anti-Neurofilament (cytoskeleton), Spinal Cord/ Protein