General Biology II

Lab Practical 2 Student Presentation



"Class, who can tell me what I have preserved in this jar? No, it's not a pig or a baby cow...it's the last student who got caught cheating on one of my tests!"

Kingdoms Animalia & Fungi

The Academic Support Center @ Daytona State College (Science 49 Page 1 of 95)



Domain: Eukarya

Kingdoms: Fungi and Animalia



The Academic Support Center @ Daytona State College (Science 49 Page 2 of 95)



- Phyla:
- - Zygomycota
- - Basidiomycota
- - Ascomycota
- - Deuteromycota
- - Chytridiomycota

Domain: Eukarya Kingdom: Fungi



The Academic Support Center @ Daytona State College (Science 49 Page 3 of 95)

Phylum: Zygomycota



Zygomycetes - Bread Molds Zygomycetes Have Sporangia Hyphae Zygosporangia Mycelia Sexual and Asexual Reproduction





The Academic Support Center @ Daytona State College (Science 49 Page 4 of 95)



Phylum Basidiomycota

Coprinus

Basidiomycetes Have Hyphae Mycelia Mushrooms Gills Basidia Basidiospores







The Academic Support Center @ Daytona State College (Science 49 Page 5 of 95)



Phylum: Ascomycota

Aspergillus & Peziza





Ascomycetes – Sac Fungi Ascomycetes Have Hyphae Mycelium Antheridium Ascogonium Ascocarp Ascus Ascospores



The Academic Support Center @ Daytona State College (Science 49 Page 6 of 95)

Phylum: Deuteromycota ____"Imperfect Fungi" ____



Penicillium

Fungi Imperfecta Asexual Reproduction Example: Penicillin Note: All Fungi have been moved to other Phyla due to all fungi being found to do sexual reproduction.







The Academic Support Center @ Daytona State College (Science 49 Page 7 of 95)

Phylum: Chytridiomycota "water mold"

- Chytridiomycetes
- Unicellular Molds
- Sexual and Asexual
- Reproduction
- Zoospores



The Academic Support Center @ Daytona State College (Science 49 Page 8 of 95)

Kingdom Animalia

- Animals are:
- Heterotrophic: They are able to eat things
- Motile (they move)
- Diploid (Which means 2 sets of chromosomes)
- Sexual reproduction: Sexual/asexual

Kingdom: Animalia





The Academic Support Center @ Daytona State College (Science 49 Page 10 of 95)

Deuterstomes VS. Protostomes



© 1999 Addison Wesley Longman, Inc.

| 11 1 1 | - States | |
|--|---|----------------|
| Kingdom Animalia | Phylum Portora | Phylum Genetry |
| Categorized by: Acodomatas | class Calcarea (colon-an) | (comb jellia) |
| -Pseudocoelomates True Coelomates | Harotinellich (glass) | |
| Blastopore formettion' protostamates deuterostomates | Demosporgia (but sponge) | |
| | Phylum Chielania Class: Hydrozoa (Hydro) | |
| | Sayphorea (the july) | |
| | (100702 | |
| | Anthorsa (flower) | |
| | | |
| | | |

Phylum: Porifera

- Sponges
- They are asymmetrical
- Collar cells bring in nutrients
- Amoebocytes bring in nutrients
- Spicules made of CaCo₃ or silica
- Classes:
- 1. Calcarea CaCo₃ (Bony Sponges)
- 2. Hexactinellida- (Silica sponges "Glass")
- 3. Demospongia (Bath Sponges "protein")



- The Bony Sponge
 - Class: Calcarea
- Made out of CaCo₃

3.Demospongia



Bath sponges

These are made out of proteins!



The Academic Support Center @ Daytona State College (Science 49 Page 15 of 95)

Hexactinellida- (Silica sponges "Glass")



The Academic Support Center @ Daytona State College (Science 49 Page 16 of 95)

Phylum Cnidaria

- Radial Symmetry
- They begin as polyps and mature into Medusa.
- Ectoderm tissues on the outside
- Endoderm tissue on the inside
- Mesoglia in the middle.
- INCOMPLETE digestive system
- Acoelomates
- Cnidocytes- stinging cells
- Classes:
- 1. Hydrozoa Portuguese Man of War
- 2. Anthozoa- Polyps ONLY Corals
- 3. Scyphozoa- True Jellies
- 4. Cubozoa- Cube shaped jellies

Hydrozoa – Portuguese Man of War



The Academic Support Center @ Daytona State College (Science 49 Page 18 of 95)

Anthozoa- Polyps and Corals



The Academic Support Center @ Daytona State College (Science 49 Page 19 of 95)

Scyphozoa- True Jellies



The Academic Support Center @ Daytona State College (Science 49 Page 20 of 95)

Cubozoa- Cube shaped jellies



- This is a Box jelly fish. Notice
 - The box like structure of the
 - "medusa".

The Academic Support Center @ Daytona State College (Science 49 Page 21 of 95)

Phylum: Ctenophora

• Comb jellies



The Academic Support Center @ Daytona State College (Science 49 Page 22 of 95)



Phylum Platyhelminthes

Bi-lateral Symmetry

INCOMPLETE digestive system

Acoelomate

Cerebral Ganglion with 2 ventral nerve cords Classes:

- 1. Turbellana- Flatworms
- 2. Cestoda- tapeworms
- 3. Tranatoda- Flukes
- 4. Monogenea- Ectoparasites (Outside parasites)

Turbellana- Flatworms







The Academic Support Center @ Daytona State College (Science 49 Page 25 of 95)

Cestoda- Tapeworms



The Academic Support Center @ Daytona State College (Science 49 Page 26 of 95)

Tranatoda- Flukes





The Academic Support Center @ Daytona State College (Science 49 Page 27 of 95)

Monogenea- Ectoparasites (Outside parasites)

• Monogeneans are usually ectoparasites on the skin and gills of fish



The Academic Support Center @ Daytona State College (Science 49 Page 28 of 95)

Phylum: Rotifera

- Bi-later Symmetry
- Complete digestive system
- Pseudocoelomate
- NO CLASSES

Rotifers



The Academic Support Center @ Daytona State College (Science 49 Page 30 of 95)

Phylum: Nematoda

- "Round worms"
- Non-segmented bodies
- Lateral nerve cords
- Pseudocoelomates 1st
- NO CLASSES
- Ex. Ascaris

Picture



The Academic Support Center @ Daytona State College (Science 49 Page 32 of 95)

Phylum: Nematomorpha

- The horsehair worm
- Has a vestigial digestive system and occurs during absorption.

Phylum: Nematomorpha



The Academic Support Center @ Daytona State College (Science 49 Page 34 of 95)

Phylum: Tardigrada

• Water Bears



The Academic Support Center @ Daytona State College (Science 49 Page 35 of 95)

Phylum Annelida

- They have segmented bodies
- COMPLETE digestive tract
- Closed circulatory system
- True coelomates
- They are male and female
- They do gas exchange through the skin
- Classes:
- 1. Polychaeta- marine worms
- 2. Oligochaeta- Earth worms
- 3. Hirudinea- Leeches
Polychaeta- marine worms

The Polychaeta or polychaetes are a class of annelid worms, generally marine. Each body segment has a pair of fleshy protrusions called parapodia that bear many bristles, called chaetae, which are made of chitin



The Academic Support Center @ Daytona State College (Science 49 Page 37 of 95)

Oligochaeta- Earth worms





The Academic Support Center @ Daytona State College (Science 49 Page 39 of 95)

Hirudinea-Leeches





The Academic Support Center @ Daytona State College (Science 49 Page 40 of 95)

Phylum: Mollusca

- Bi-lateral symmetry
- Complete digestive system
- Open circulatory system
- True Coelomates
- CaCo₃ (shells)
- They have a muscular foot
- Visceral mass
- Classes
- 1. Polypochaphora (Chiton)
- 2. Gastropoda (snails and slugs)
- 3. Bivalvia (Clams)
- 4. Cephalophora (squids and octopuses) (!!Closed Circulatory System!!)

Polypochaphora (Chiton)



The Academic Support Center @ Daytona State College (Science 49 Page 42 of 95)

Gastropoda (snails and slugs)



The Academic Support Center @ Daytona State College (Science 49 Page 43 of 95)

Gastropoda





The Academic Support Center @ Daytona State College (Science 49 Page 44 of 95)



Bivalvia (Clams)





The Academic Support Center @ Daytona State College (Science 49 Page 45 of 95)



The Academic Support Center @ Daytona State College (Science 49 Page 46 of 95)

Cephalophora (squids and octopuses)





The Academic Support Center @ Daytona State College (Science 49 Page 47 of 95)

Phylum: Bryozoa (Barnacles) – Part of ARTHROPODA



The Academic Support Center @ Daytona State College (Science 49 Page 48 of 95)

Phylum Arthropoda

- Exoskeletons are made of chitin
- Bi-lateral symmetry
- Open circulatory system
- Complete digestive system
- 3 Segmented bodies
- Jointed legs

král-rop*oda* – order Acar (+ deposited orger a) 153 Diplopalis (millipede i) HO SANDAK Jum Tribaha Phylum Echinodermota Class Branchiopada (onne shimmp) chis Ostracada (ostracil/stal sunne) Class Askrades (staffor) Discol starfish Class Maxilopada (burnades, ten lice) Class Malaustraca (Idosers, chalms, shring) isopas, più age Dissect crayfish Subphylom Hexapoda class Insecta Orders (in brack p 643) class Entergravista Gran wond

The Academic Support Center @ Daytona State College (Science 49 Page 50 of 95)

Phylum: Arthropoda Sub Phylum: Crustacea

- Classes
- 1. Branchiopoda (Shrimps)
- 2. Ostracoda (Seed Shrimps)
- 3. Maxillopoda (fish lice)
- 4. Malacostraca- Lobster and crabs

Branchiopoda (Shrimps)



The Academic Support Center @ Daytona State College (Science 49 Page 52 of 95)

Ostracoda (Seed Shrimps)



The Academic Support Center @ Daytona State College (Science 49 Page 53 of 95)

Maxillopoda (fish lice)



The Academic Support Center @ Daytona State College (Science 49 Page 54 of 95)

Malacostraca-Lobster and crabs



The Academic Support Center @ Daytona State College (Science 49 Page 55 of 95)

Phylum: Arthropoda Sub-Phylum: Chelicerata

- Classes
- 1. Merostomata (Horseshoe Crabs)
- 2. Arachnida (Spiders)
 - Order
 - Scorpians
 - Acari (ticks)
 - Opiliones (Daddy Long Legs)

Phylum: Arthropoda Sub-Phylum: Chelicerata

• Merostomata (Horseshoe Crabs)





The Academic Support Center @ Daytona State College (Science 49 Page 57 of 95)

Arachnida (Spiders)

- Order
- Scorpions
- Acari (ticks)
- Opiliones (Daddy Long Legs)



The Academic Support Center @ Daytona State College (Science 49 Page 58 of 95)

Phylum Arthropoda Sub-Phylum Myripoda

- Classes:
- 1. Diplopoda (millipedes)



• 2. Chilopoda (Centipedes)



The Academic Support Center @ Daytona State College (Science 49 Page 59 of 95)

Phylum: Arthropoda Subphylums

- Subphylum: Trilobites (extinct)
- Subphylum: Hexapoda
- - Class- Insecta
- See page 643 in lab manual. Just think about 6 legged critters!

Subphylum: Hexapoda - Class- Insecta

 Insects are a class of invertebrates within the arthropod phylum that have a chitinous exoskeleton, a three-part body, three pairs of jointed legs, compound eyes and one pair of antennae.





The Academic Support Center @ Daytona State College (Science 49 Page 61 of 95)

Phylum Echinodermata

- Bilateral Symmetry as larvae, radial symmetry as adults
- Endoskeleton made of calcium carbonate
- Closed Circulatory System
- Water Vascular System
- Madreporite (entry/exit to water vascular system)

Phylum Echinodermata

- Class
- Crinoidea Sea Lilies (have holdfasts)
- Asteroidea- sea stars, starfish
- Ophuroidea- brittle/basket stars
- Echinoidea- sea urchins, sand dollars
- Holothuroidea- sea cucumbers

Crinoidea – Sea Lilies (have holdfasts)

 Crinoidea comes from the Greek word krinon, "a lily", and eidos, "form". They live both in shallow water and in depths as great as 6,000 meters



The Academic Support Center @ Daytona State College (Science 49 Page 64 of 95)

Asteroidea- sea stars, starfish



The Academic Support Center @ Daytona State College (Science 49 Page 65 of 95)

Ophuroidea- brittle/basket stars





The Academic Support Center @ Daytona State College (Science 49 Page 66 of 95)

Echinoidea- sea urchins, sand dollars



The Academic Support Center @ Daytona State College (Science 49 Page 67 of 95)

Holothuroidea- sea cucumbers

• They are marine animals with a leathery skin and an elongated body containing a single, branched gonad. Sea cucumbers are found on the sea floor worldwide.





The Academic Support Center @ Daytona State College (Science 49 Page 68 of 95)

- Bilateral Symmetry
- Closed circulatory system
- Complete digestive tract
- Coelomates
- Major Characteristics
 - -Single, hollow, dorsal nerve cord
 - -Notochord
 - -Pharyngeal gill slit
 - -Post anal tail

- Sub-Phylum
 - Cephalochordata
 - Lancelets (First Chordates)



The Academic Support Center @ Daytona State College (Science 49 Page 70 of 95)

- Sub-Phylum Urochordata
 - Tunicates (true chordate in larval stage)





The Academic Support Center @ Daytona State College (Science 49 Page 71 of 95)

- Sub-phylum Vertebrae
- Super Class
- 1. Agnatha (jawless)
- First Class
- Myxini (Hagfish)
- Cephalaspidomorphi (Lamphae)
- Super Class
- Gnathostomata (everything that's not a jawless fish)
 - Class in a class
 - Chondrichthyes (sharks, scates, rays)
 - Osteichthyes (bony fish)
 - Amphibia (frogs, toads, salamander)
 - Reptilia (crocodiles, snakes, lizards, birds)
 - Mammalia (monkeys, cats, dogs, cows, humans, etc)
Pictures

• Sub-phylum Vertebrata



The Academic Support Center @ Daytona State College (Science 49 Page 73 of 95)

Note Myxini is a craniate but not a vertebrate.

Pictures

• Superclass Agnatha

-Class Myxini (Hagifsh)



The Academic Support Center @ Daytona State College (Science 49 Page 74 of 95)

Pictures

- Superclass Agnatha
 - Class Cephalospidamorphi (lamprey)



The Academic Support Center @ Daytona State College (Science 49 Page 75 of 95)



The Academic Support Center @ Daytona State College (Science 49 Page 76 of 95)

Phylum Chordata (mammals) System Circulation (heart)

 Know the different areas of the body where the veins and arteries. Know the difference of oxygenated blood verse nonoxygenated blood.



The Academic Support Center @ Daytona State College (Science 49 Page 77 of 95)

Picture



The Academic Support Center @ Daytona State College (Science 49 Page 78 of 95)

Epithelium and Skin



The Academic Support Center @ Daytona State College (Science 49 Page 79 of 95)

System Muscle

- Skeletal Muscle
- Cardiac Muscle
- Smooth Muscle

Picture

• Skeletal Muscle



The Academic Support Center @ Daytona State College (Science 49 Page 81 of 95)

Cardiac Muscle



The Academic Support Center @ Daytona State College (Science 49 Page 82 of 95)

Smooth Muscle



The Academic Support Center @ Daytona State College (Science 49 Page 83 of 95)

System Endocrine

- Thymus
- Hypothalamus
- Thyroid
- Adrenal gland
- Testis
- Pineal gland
- Ovary
- Pancreas
- Pituitary Gland

Bone Tissue



The Academic Support Center @ Daytona State College (Science 49 Page 85 of 95)



The Academic Support Center @ Daytona State College (Science 49 Page 86 of 95)

Nervous System



The Academic Support Center @ Daytona State College (Science 49 Page 87 of 95)

Reproductive system





The Academic Support Center @ Daytona State College (Science 49 Page 88 of 95)

Lymphatic System

• You need to understand that the Lymphatic system is your immune system! This fights off disease and pathogens.



The Academic Support Center @ Daytona State College (Science 49 Page 89 of 95)

Respiratory System



The Academic Support Center @ Daytona State College (Science 49 Page 90 of 95)

Digestive System



The Academic Support Center @ Daytona State College (Science 49 Page 91 of 95)

Urinary System



The Academic Support Center @ Daytona State College (Science 49 Page 92 of 95)



The Academic Support Center @ Daytona State College (Science 49 Page 93 of 95)



The Academic Support Center @ Daytona State College (Science 49 Page 94 of 95)



Questions



Prepared by

S. Jenkins & C. Funk – Biology II Students

Edited by

D. Leonard - Learning Specialist & K. Martin – Peer Tutor The Academic Support Center @ Daytona State College http://www.daytonastate.edu/asc/ascsciencehandouts.html

The Academic Support Center @ Daytona State College (Science 49 Page 95 of 95)