

# Bio 112 Handout for Plants 1

This handout contains:

- Today's iClicker Questions
- Handout for today's lecture
- Suggestions for the Phylogenetic Collection Lab

## iClicker Question #11A - before lecture

Which of the following is(are) true?

- (A) Gametes are always made by meiosis.
- (B) All cells in eukaryotes are diploid with the exception of eggs and sperm.
- (C) Only fungi have spores.
- (D) All of the above.
- (E) None of the above.

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## iClicker Question #10B - after lecture

Which of the following is(are) true?

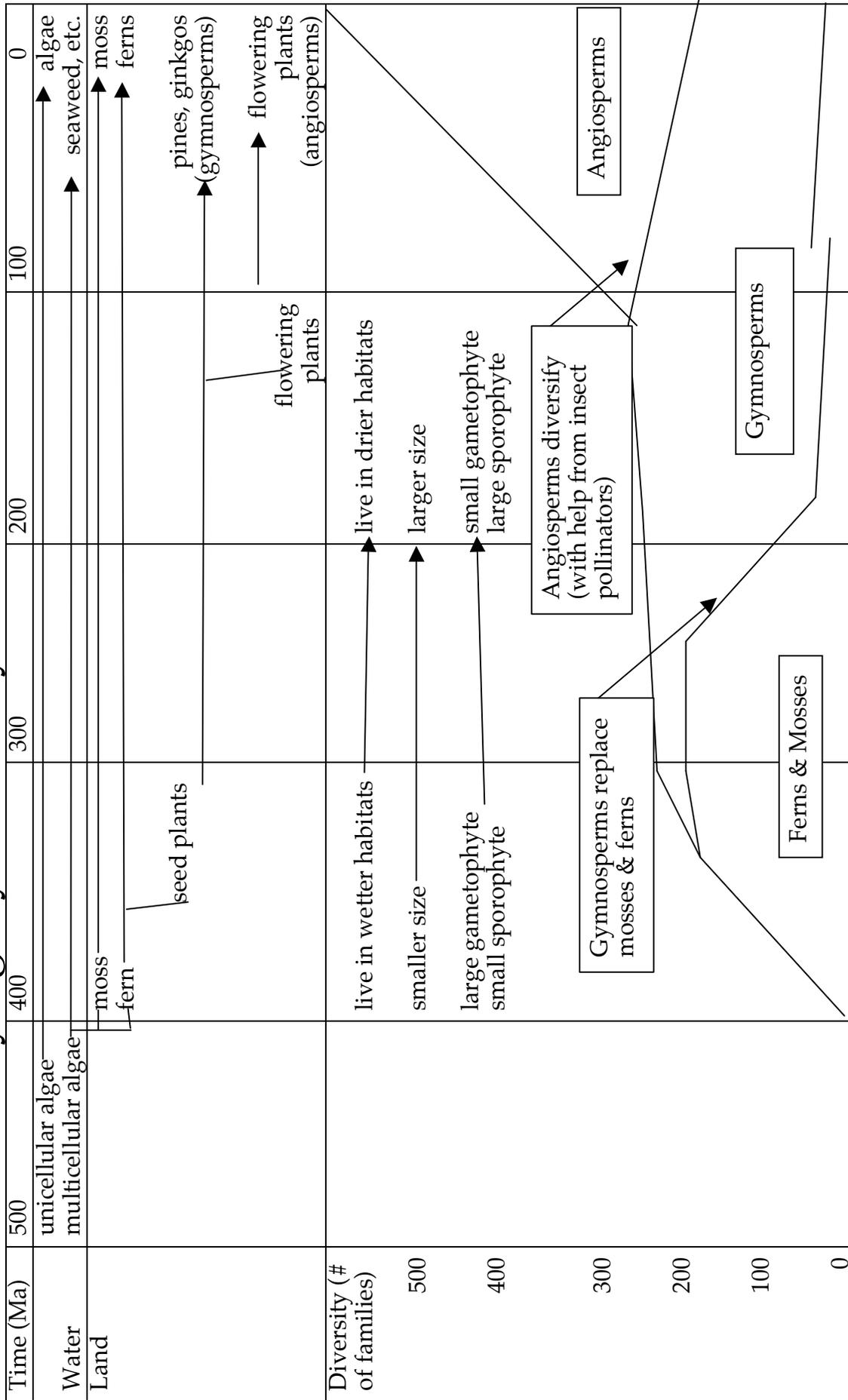
- (A) In plants, gametes are haploid.
- (B) Spores are produced by meiosis.
- (C) In plants, gametes are produced by mitosis.
- (D) All of the above.
- (E) None of the above.

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### **Beaming in your answers**

1. Figure out your answer and select the appropriate letter (A-E).
2. Turn on your iClicker by pressing the "ON/OFF" button; the blue "POWER" light should come on. If the red "LOW BATTERY" light comes on, you should replace your batteries soon.
3. Transmit your answer as follows:
  - a. Press the button corresponding to the answer you've selected (A thru E).
  - b. The "STATUS" light will flash green to indicate that your answer has been received. If the "STATUS" light flashed red, your answer was not received; you should re-send it until you get a green "STATUS" light.

# Bio 112 Plant Phylogeny & History



# Bio 112: Hints for the Phylogenetic Collection Lab

Now that you have started working on your collections, I want to give you some useful hints and reminders.

**Why is getting 16 phyla so hard?** This is not easy, but the difficulties help to illustrate some important issues in biology.

- *Finding different phyla.* Most of the organisms that people notice are members of phylum chordata or angiosperms. It is important to know that the world is more diverse than just these two groups.
- *Finding out which phylum an organism belongs to.* This involves looking closely and thinking carefully about the characteristics of living organisms - another important scientific skill.
- *Dealing with the complexities of classification.* Classification, like many parts of science, is "messy" - there are several different classification schemes out there each with similarities and differences both in terminology (eg. some call flowering plants "angiospermae" and others call them "anthophyta") and organization (eg. some call crustaceans a sub-phylum and others call it a phylum). It is important to know that science is not always completely clear-cut.

**Where do I get a list of "official" phyla?** Since there is disagreement in the literature and on the web, we will use only one list - the only "official Bio 112" lists can be found at either:

- **Campbell** - this lists almost all the phyla and has a good description of each.
- **The course website** - see picture at right, it was taken from the On-Line Lab Manual for the Phylogenetic Collection Lab. Each of the phylum and genus names on these pages is a link to Google that term so you can search more easily for organisms in that group. These names are the same as in Campbell and have page references to Campbell; some phyla are included here that are not found in Campbell.

<b>Lab 04:</b> <ul style="list-style-type: none"><li>• Phylogenetic Collection</li><li>• Diversity Survey II</li></ul>	<ul style="list-style-type: none"><li>• <b>Diversity Survey II</b></li><li>• <b>Links to help you find organisms:</b><ul style="list-style-type: none"><li>◦ <a href="#">A list of Animal Phyla with links.</a></li><li>◦ <a href="#">A list of Bacterial Phyla with links.</a></li><li>◦ <a href="#">A list of Fungal Phyla with links.</a></li><li>◦ <a href="#">A list of Plant Phyla with links.</a></li><li>◦ <a href="#">A list of Protist Phyla with links.</a></li></ul></li></ul>
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*No other source is "official" - you may only use phyla named in the sources above.*

## Important mistakes people often make:

- *Classification terms that are not phyla.* You may only use terms from the lists described above. There are many examples of this kind of confusion:
  - Seed plants are called "embryophytes"; this group includes several different phyla of plants.
  - "Mammalia" is a group, but it is not a phylum. All mammals are members of the phylum chordata. Similarly, all members of the group crustacea are part of phylum arthropoda.
- *Mis-named organisms.* The common names of organisms can be misleading.
  - There are two kinds of "kiwi": the bird (chordata) and the fruit (angiosperm); don't mix them up.
  - There are three kinds of "sponge": cellulose sponges (not really an organism), loofah sponges - about the same size and shape as your forearm (angiosperm), and natural sponges (porifera); be careful about which one you have.
  - A starfish is not a fish (chordata), it is a member of phylum echinodermata.

Plants 1 - 4

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