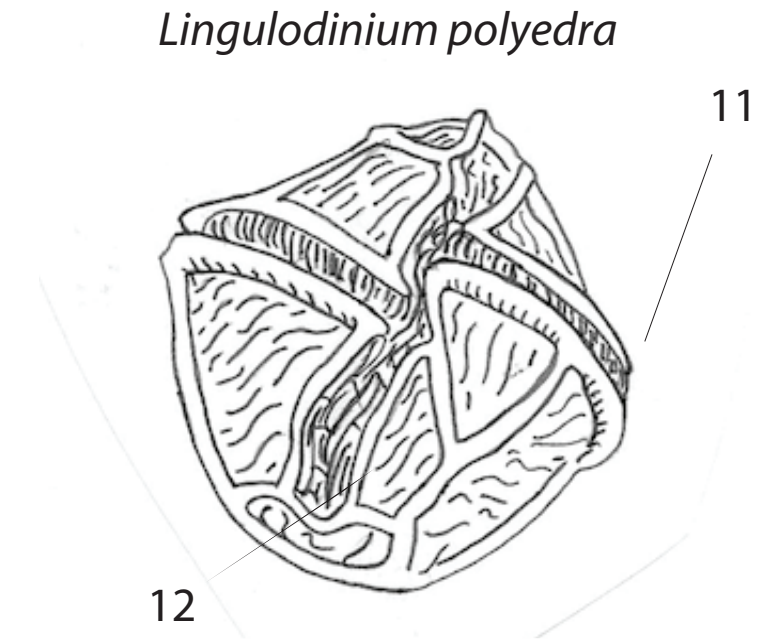
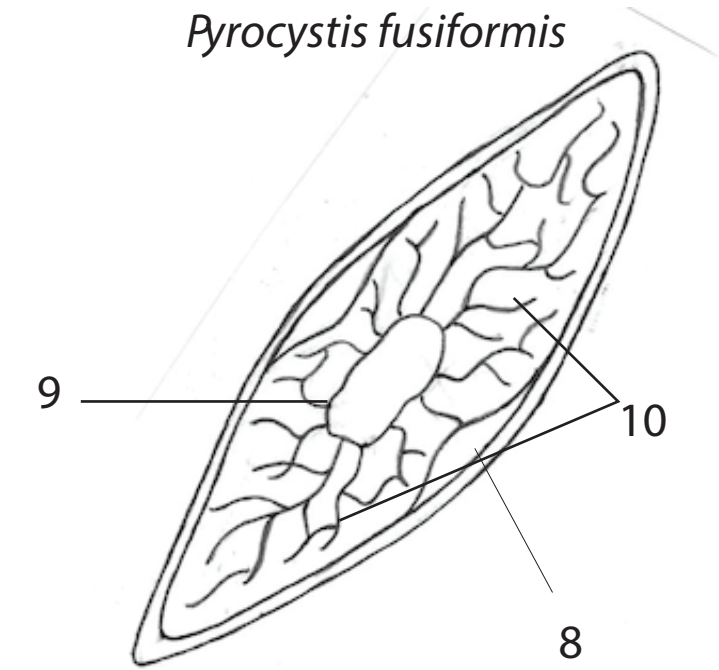
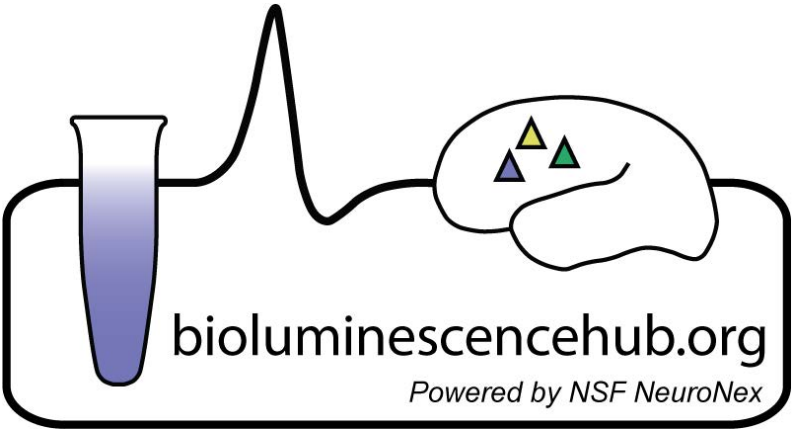
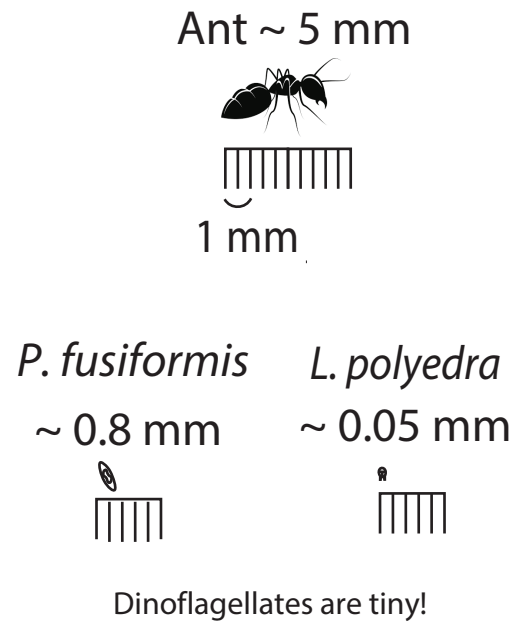


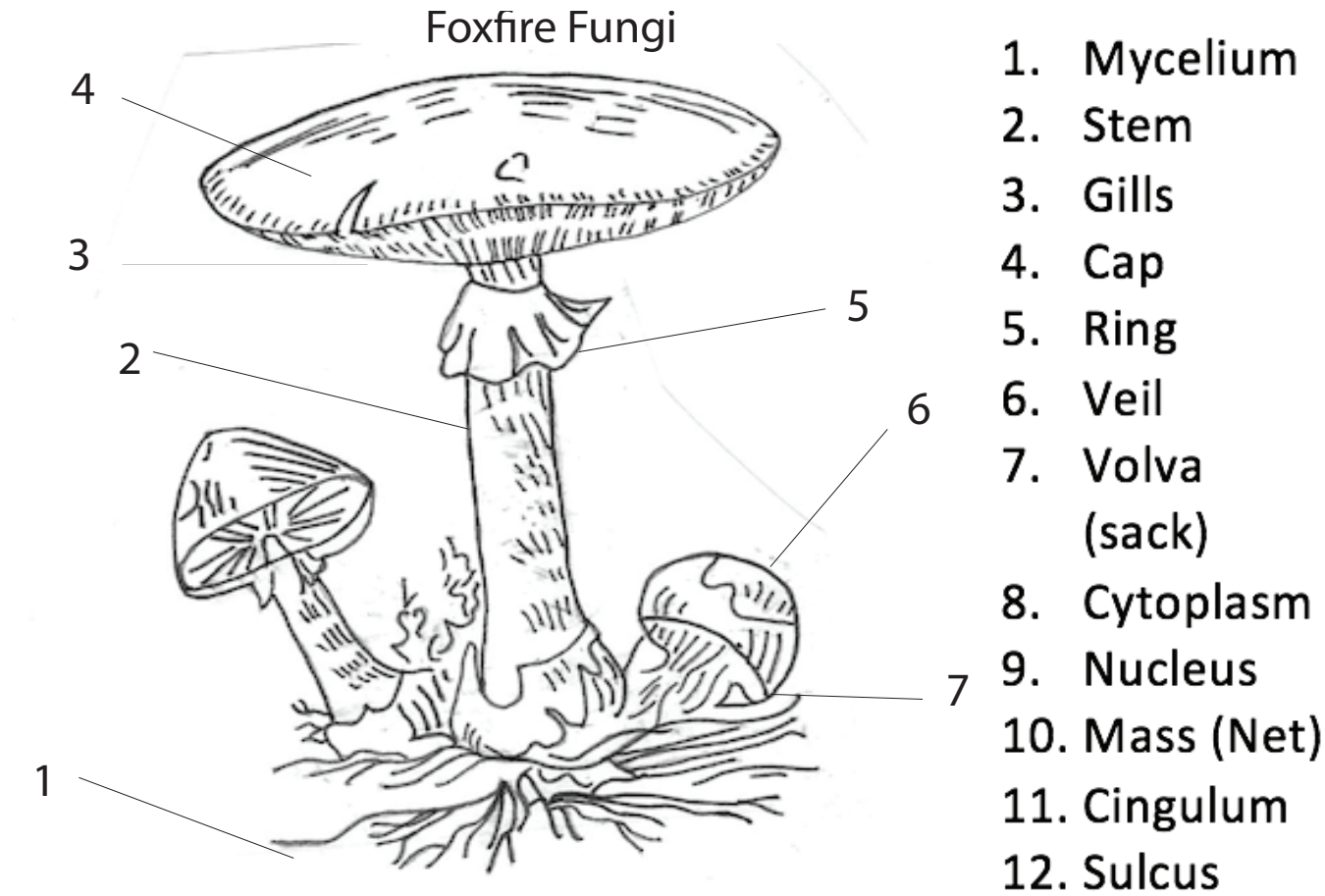


W B I J N E Y S G V F X K Q N W A O V I
Z U W F R D W D E L D F S Z A V G G P Z
F H D T Z D L N H I O W C S O R I N U D
T H G I L S I S U D L W Z X T F E M T I
L F K C L P I E E F L F W F P U P O I E
P C H Y W F H I M S L Q E O C F H P Z O
N K N K Y U I W A Y D X T R R M R D V F
U D K L H K Z U H A J A U I I M J N Z Z
Z F L Q X O T L O T A S G P O F Y V X O
L E A N Q U P E S Z C D U V R D Q O A S
J C H E M I S T R Y E O L D E P Z L U L
O M K N X B J Z N F W C U S D D H L N L
D V X W K R T N A F P A B B K I A I I U
F H B W Q K T B L V R R C K P H G P N W
A W K C X R D W X W E T A B Z E H Y Z R
A T O R T L A C M W D S L C T O G X C W
E S A R E F I C U L A O U S T R G J Y H
A U D T U X J K D K T N C O Q M W U S Y
P G L R D Z S Z E H O Q N P H B E U T D
A L K K S Y B A E V R Z W C W P E C L N

CHEMISTRY
FIREFLIES
GLOWWORM
JELLYFISH
LIGHT
LUCIFERASE
OSTRACODS
PHOTON
PREDATOR



The professor _____ walked into the lab. His _____ called _____, _____, and _____
_____ Adverb _____ Plural noun _____ Name 1 _____ Name 2 _____ Name 3
scurried about their _____ cage upon his arrival. He _____ed over to them smiling. "Today is
_____ Adjective _____ Verb
the day we make your _____ brains glow _____! You won't _____ a _____!" The construct
_____ Adjective _____ Color _____ Verb _____ Noun
prepared beforehand was _____ ready for injection. "I'm ready," _____ said, "I want to _____ my
_____ Adverb _____ Name 1 _____ Verb
brain glow _____!" Professor Moore held _____ in his hand, and gently injected the luciferin. "Now we
_____ Color _____ Name 1
wait!" the professor said to _____ and _____, watching in _____. " _____!" said
_____ Name 3 _____ Name 2 _____ Emotion _____ Exclamation
_____ while chewing on a piece of _____. "I hope it works!" _____ said while
_____ Name 2 _____ Noun _____ Name 3
_____ing his cheese. The professor _____ed the electrode. " _____!" The luciferin seems to
_____ Verb _____ Verb _____ Exclamation
have found the target luciferase! The _____ brain, it glows _____!" Next, using electrophysiology,
_____ Adjective _____ Color
the _____ professor noticed a particular neuron was _____ing more than usual. "This is
_____ Adjective _____ Verb
_____! This construct might cause excitation in your _____ brains!" the professor said to his
_____ Adjective _____ Adjective
_____. "Eureka!"
Plural Noun



WBIJNEYSGVFXKQNMWAOVI

ZUWFRDWDDELDFSZAVGGPZ

FHDTZDLNHIOWCSONIUND

THGILSISUDLMWZXTFEMTI

LFKCLPIEEFLFWFPUPOIE

PCHYWFHIMSLQEOCFHPZO

NKNKYUIWAVDXTRMRDV

UDKHLHKZUHAAJAUIMJNZZ

ZFLQXOTLOTASGPOFYVXO

LEAÑQUPESZCDUVRDQOAS

JCHEMISTRYEOLDEPZLUL

OMKNXBJZNFWCUSDDHLNL

DVXWKRTNAFPABKIAIUI

FHBWQKTBLVRRC KPHGPNM

AWK CXRDW XWETABZEHYZR

ATORTLACMWDSLCTOGXCW

ESAREFICULAOSTR GJYH

AUDTU XJKDKTNCOQ MWUSY

PGLRDZSZEHOONPHBEUTD

ALKKS YBAEV RZWCWP ECLN

WBIJNEYSGVFXKQNMWAOVI

ZUWFRDWDDELDFSZAVGGPZ

FHDTZDLNHIOWCSONIUND

THGILSISUDLMWZXTFEMTI

LFKCLPIEEFLFWFPUPOIE

PCHYWFHIMSLQEOCFHPZO

NKNKYUIWAVDXTRMRDV

UDKHLHKZUHAAJAUIMJNZZ

ZFLQXOTLOTASGPOFYVXO

LEAÑQUPESZCDUVRDQOAS

JCHEMISTRYEOLDEPZLUL

OMKNXBJZNFWCUSDDHLNL

DVXWKRTNAFPABKIAIUI

FHBWQKTBLVRRC KPHGPNM

AWK CXRDW XWETABZEHYZR

ATORTLACMWDSLCTOGXCW

ESAREFICULAOSTR GJYH

AUDTU XJKDKTNCOQ MWUSY

PGLRDZSZEHOONPHBEUTD

ALKKS YBAEV RZWCWP ECLN

The professor happily walked into the lab. The mice called Max, Michelle, and Michael scurried about their cozy cage upon his arrival. The professor walked over to them smiling. "Today is the day we make your little brains glow blue! You won't feel a thing!" The substrate prepared beforehand was finally ready for injection. "I'm ready," Max said, "I want to see my brain glow blue!" Professor Moore held Max in his hand, and gently injected the luciferin. "Now we wait!" the professor said to Michael and Michelle, watching in disbelief. "Oh boy!" said Michael while chewing on a piece of wire. "I hope it works!" Michelle said while eating some cheese. The professor grabbed the charge-coupled device camera. "Wonderful!" The luciferin seems to have found the target luciferase! The little brain, it glows blue!" Next, using electrophysiology, the thrilled professor noticed a particular neuron was firing more than usual. "This is amazing!" This construct might cause excitation in your tiny brains!" the professor said to his mice. "Eureka!"

Which Part Glows?!

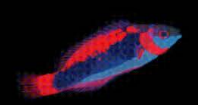


Mad Lib Key

The Professor's Glowing Brains

In the fungus you saw at our booth, the mycelium is the bioluminescent tissue (1). In some species, the fruiting body is bioluminescent (below).

Dinoflagellates produce bioluminescence in small structures called scintillions in their cytoplasm.



FLUORESCENCE

- Incoming light of one wavelength excites electrons in the material
- Light of a different wavelength (or color) is released
- Sometimes found in living creatures



PHOSPHORESCENCE

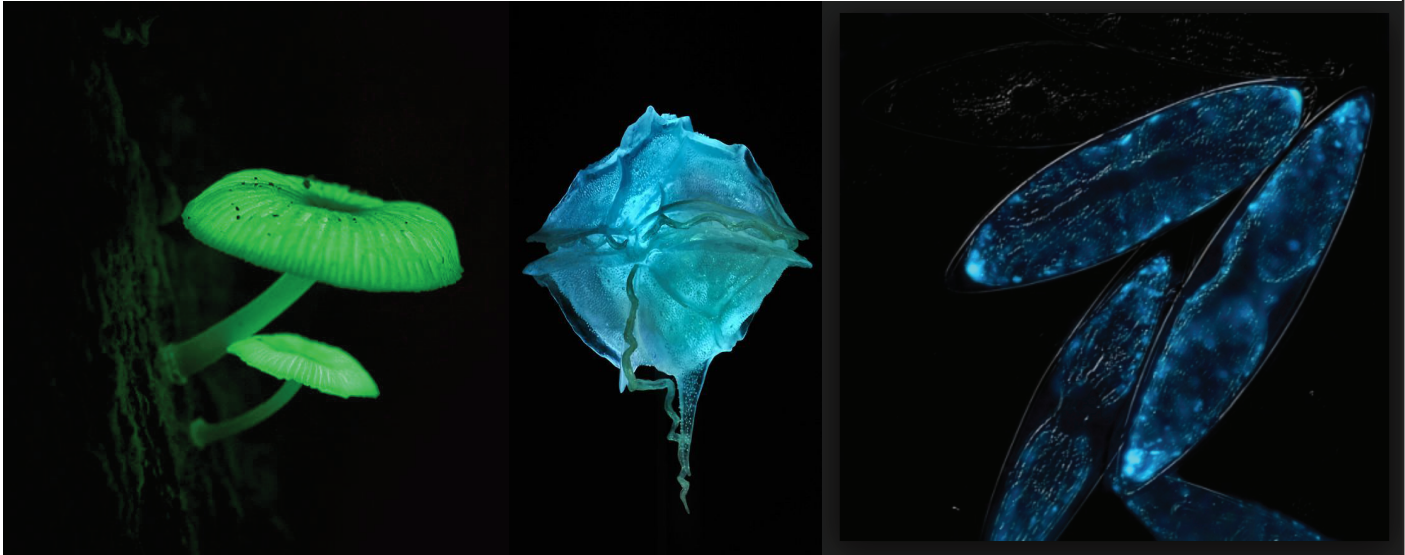
- Like fluorescence, a color of light excites electron
- Light of a different color is released but lasts much longer than fluorescence
- Highly toxic: Only found in minerals (and sometimes stars on your ceiling!)



BIOLUMINESCENCE

- Does not need incoming light
- A chemical reaction where an enzyme releases a photon from another small molecule
- Extremely common in living creatures, over half of all marine life glows this way, as do many land-dwellers

Figure created by Raisa Khan



Adverb _____

Plural Noun _____

Name 1 _____

Name 2 _____

Name 3 _____

Adjective _____

Verb _____

Adjective _____

Color _____

Verb _____

Noun _____

Adverb _____

Verb _____

Color _____

Noun _____

Exclamation _____

Noun _____

Verb _____

Verb _____

Exclamation _____

Adjective _____

Color _____

Adjective _____

Verb _____

Adjective _____

Adjective _____

Image sources:
<https://goo.gl/images/JWpXyZ>
<https://goo.gl/images/buajwx>
<https://goo.gl/images/6Dwu5n>