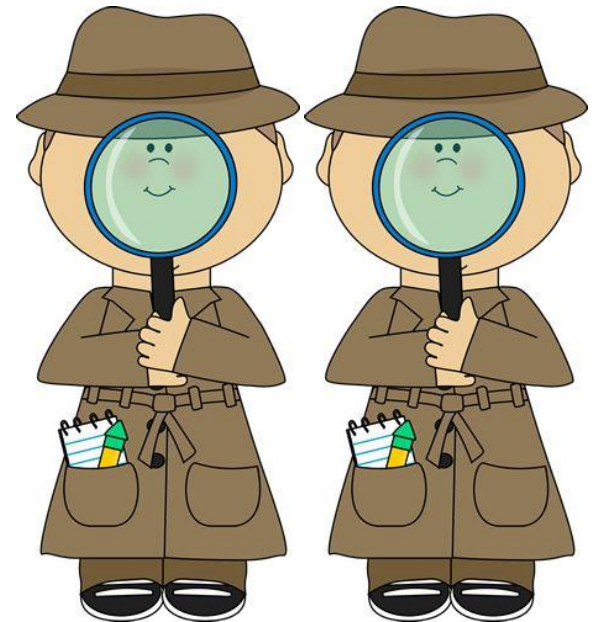


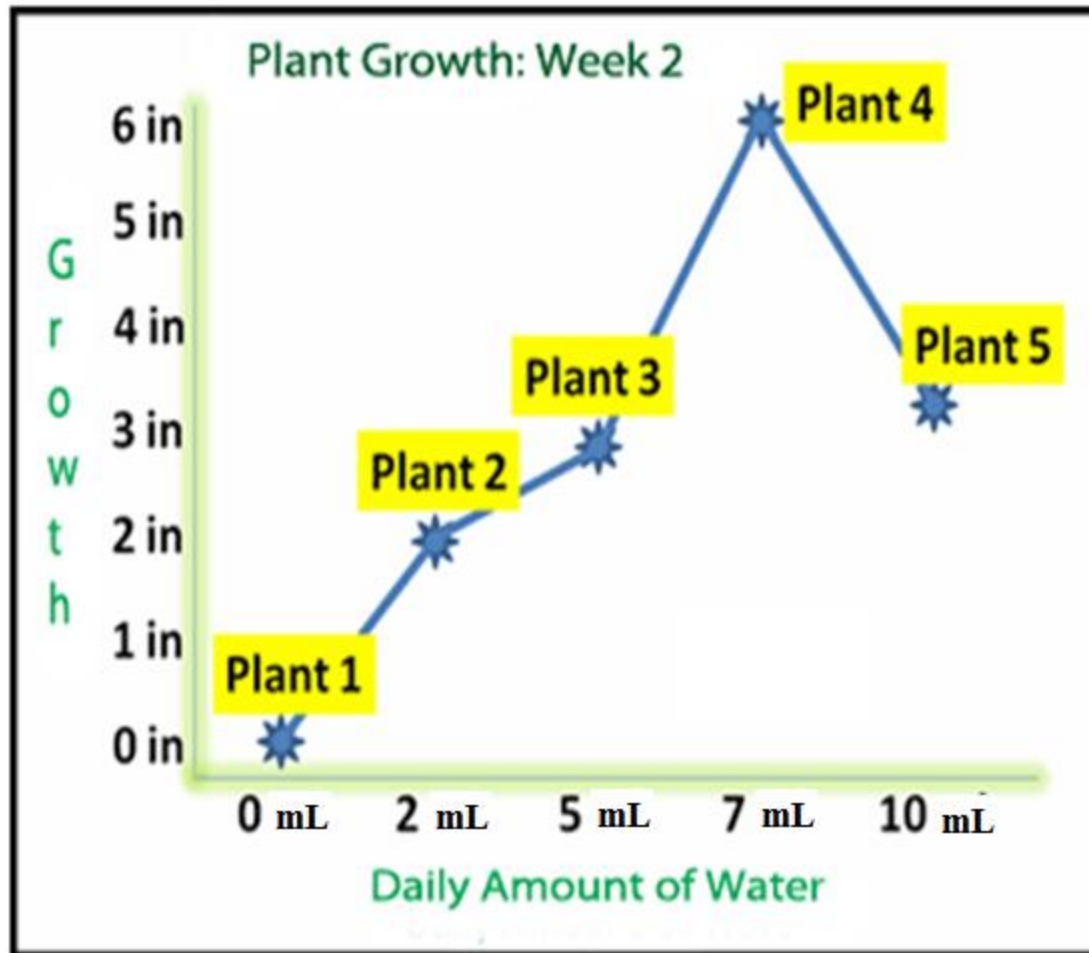
Plants Week 2 Booklet

- Living vs. Non-Living
- Classification & Taxonomy
- Foss Investigation What is Life?
- Part 2: Is Anything Alive in Here?



Scientific Argument: Claim, Evidence, Reasoning

6.E.2A.2



Using the graph, use your scientific argument skills to make a claim, find evidence and reasoning about the concept of living, nonliving, dead, and or dormant.

Claim: _____

Evidence: _____

Reasoning: _____

Find a fact: Which plant grew the tallest according to this graph?

Answer: _____

Classification & Taxonomy Vocabulary

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Word	Definition
1. Taxonomy	The study of classifying organisms.
2. Taxonomist	Scientist who group organisms.
3. Levels of Classification	Kingdom, phylum, class, order, family, genus, species.
4. Trick to remember	King Phillip Came Over For Great Spaghetti
5. The 5 Kingdoms	Plant, Animal, Fungi, Protist, Moneran (My Pink Friend Prefers Apples)
6. Divisions (plant)	Within the plant kingdom, phyla are referred to as this. There are two groups: vascular and non-vascular.
7. Divisions (animal)	In the animal kingdom, there are 35 different phyla split into two groups: vertebrates and invertebrates.
8. Scientific Name	The first and last name of an organism (genus/species) for example: <i>Pinus taeda</i> (Latin) or the Loblolly Pine (English)
9. Genus	First name of an organism (written in Latin) always CAPITALIZED!
10. Species	Last name of an organism (written in Latin)-NEVER Capitalized!

LAB: Is Anything Alive in Here?

Easy Lab Directions

1. Students use page 6 in their booklet entitled, “Five Materials Observation” and they will draw and describe a 2-D model of what they see in each dry material before any liquids are added to the vials.
2. One student will pull the cotton ball into two halves and put one piece into Vial A and one piece in Vial D.
3. Add the LIQUID that the teacher assigned to YOUR group to the following vials:

Vial A: 3 full droppers of liquid (not 3 drops) with the piece of cotton ball

Vial B: 30 ml of liquid

Vial C: 30 ml of liquid

Vial D: 3 full droppers of liquid (not 3 drops) with the piece of cotton ball

Vial E: 30 ml of liquid

4. Add the UNKNOWN MATERIALS to each vial and then cap and swirl the vials, DO NOT SHAKE THEM!

**Be careful NOT TO TOUCH the unknown materials with your fingers! This could affect their survival if they are living organisms!*

Vial A: Measure 1 blue mini-spoon of material A onto the damp cotton in the vial.

Vial B: Measure 1 blue mini-spoon of material B.

Vial C: Measure 1 blue mini-spoon of material C.

Vial D: Measure 1 blue mini-spoon of material D onto the damp cotton in the vial.

Vial E: Measure 1 blue mini-spoon of material E.

5. The teacher will set the timer for 10 minutes and you will do your booklet during that time. After 10 minutes, the teacher will call time. The students use page 6 in their booklet entitled, “Five Materials Observation” and they draw and describe what they see in each vial. You will do this again after 24 hours then again after 48 hours.

6. After you have all data filled out on page 6, students use page 7 in their booklets entitled, “Life in Different Environments” and will record in words the evidence of life that they see for the liquid that their own group tested (Liquid 1, Liquid 2, & Liquid 3) for each vials A-E. Next the teacher will have them record other class data from other groups and the liquid they tested.

LAB: Is Anything Alive in Here?



Vials
B, C,
& E

- Add 30 mL of Liquid 3.

Five Materials Observation

Liquid number _____

	First observations (dry) (include drawings)	Changes observed after 10 minutes (include drawings)	Changes observed after 24 hours (include drawings)	Changes observed after _____ (include drawings)
A				
B				
C				
D				
E				

Life in Different Environments

LAB: Is Anything Alive in Here?

Liquid 1 _____	
Material	What evidence of life do you observe?
A	
B	
C	
D	
E	

Liquid 2 _____	
Material	What evidence of life do you observe?
A	
B	
C	
D	
E	

Liquid 3 _____	
Material	What evidence of life do you observe?
A	
B	
C	
D	
E	

Classification & Taxonomy

(including the kingdoms of protists, plants, fungi, & animals)

Performance Indicator

6.L.4A.2 Develop and use models to classify organisms based on the current hierarchical taxonomic structure (including the kingdoms of protists, plants, fungi, and animals).

Essential Knowledge

It is essential for students to know that through studying all of the organisms on Earth, biologists have devised ways of naming and classifying them according to similarities in their structures.

- The study of how scientists classify organisms is known as taxonomy.
- The modern classification system uses a series of levels to group organisms.
- An organism is placed into a broad group and is then placed into more specific groups based on its structures.
- The levels of classification, from broadest to most specific, include: kingdom, phylum, class, order, family, genus, and species.
- The more classification levels an organism shares with another, the more characteristics they have in common.

Classification & Taxonomy

Protists

- Protists are mostly single celled organisms (unicellular) but some protists are multicellular.
- Protists cells are eukaryotic (have nuclei).
- Some protists are animal-like (heterotrophs - need to eat other organisms) and some are plant-like (autotrophs - use sunlight to produce food).

Plants:

- All plants are made of many eukaryotic cells.
- Plants are autotrophs - they use sunlight to make their food.

Fungi:

- Almost all fungi are multicellular organisms.
- Fungi cells have nuclei (eukaryotic).
- Fungi do not move to get food, but they do need to absorb nutrients from other organisms (either living or dead).

Animals

- Animals are multi-cellular organisms.
- Animal cells have nuclei (eukaryotic).
- Almost all animals move to get food. Animals are heterotrophs - they eat other organisms to get energy.

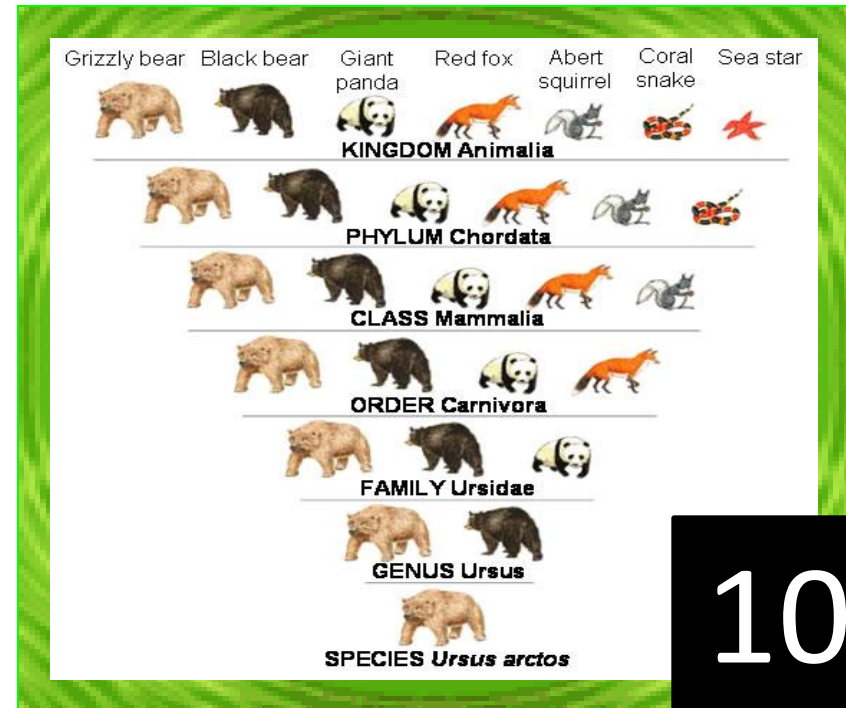
Classification & Taxonomy

The study of classifying organisms is known as _____.

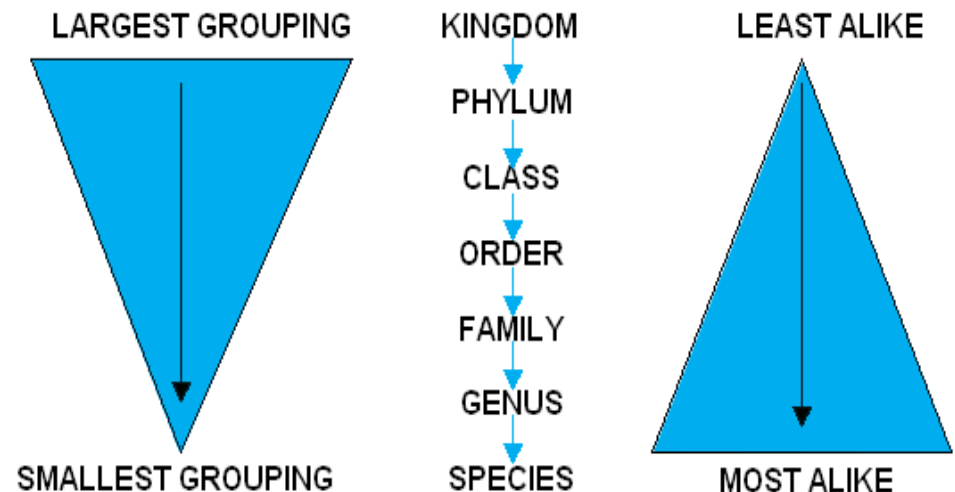
- An organism is placed into a _____ group and is then placed into more _____ groups based on its structures.

- The levels of _____, from broadest to most specific, include: _____, phylum, class, _____, family, _____, and species.

- The more classification levels an organism shares, the more _____ they have in common.



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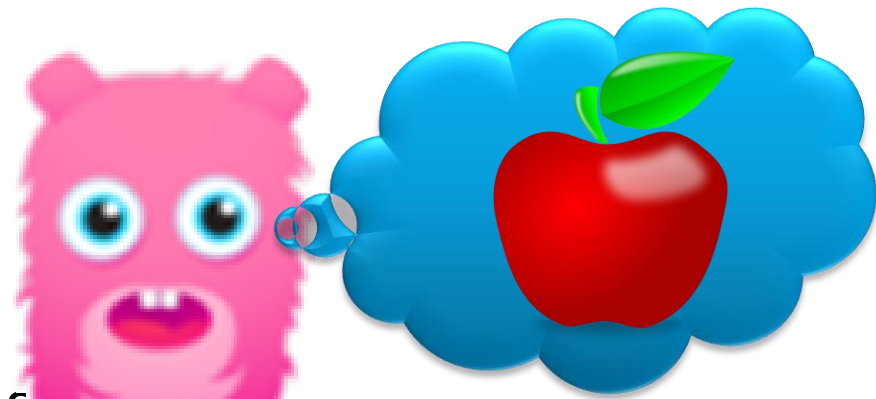
Classification & Taxonomy

KINGDOM

- While scientists currently disagree as to how many kingdoms there are, most support _____.

(**P**lants, **A**nimals, **F**ungi, **P**rotists, **M**onerans-(Archea/bacteria)

- _____ are placed into kingdoms based on their ability to make _____ and the number of _____ in their body.



**MY PINK FRIEND
PREFERS APPLES!**

Monerans (Archea/bacteria)

Plants

F _____

Protists

A _____

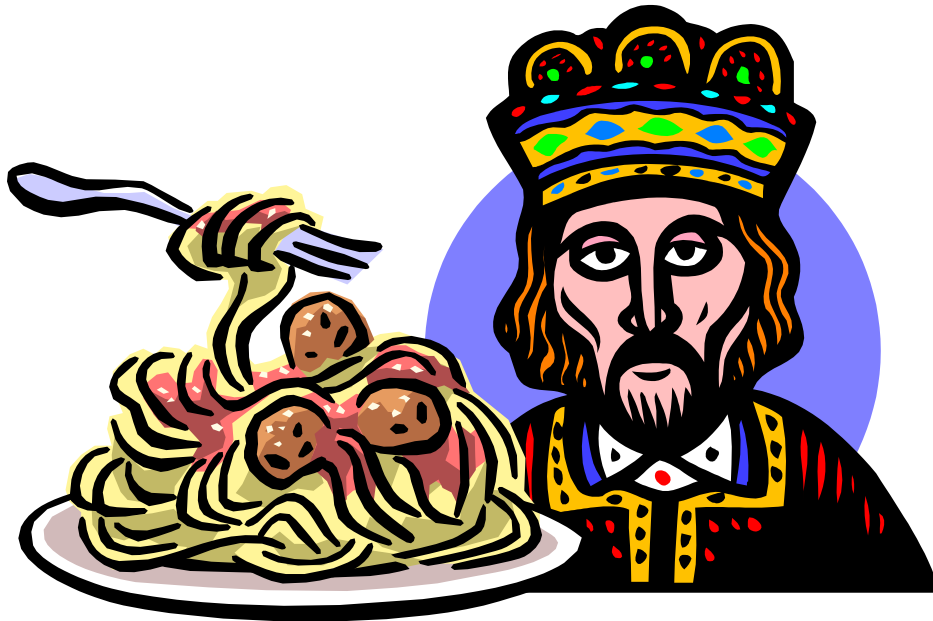
Classification & Taxonomy

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_____ -scientists who group organisms.

King _____ Came
For

Great _____



K _____

P _____

C _____

O _____

F _____

G _____

S _____

SCIENTIFIC NAME

- The _____ name of an organism is made up of its _____ and _____.
- It is written in _____ (*Genus species*) with the genus capitalized.
- For example, ***Canis lupus*** is the scientific name for the wolf and ***Pinus taeda*** is the scientific name for a loblolly pine.
- example: ***Felix catus, Homo sapiens***

Classification & Taxonomy

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Kingdom

While scientists currently disagree as to how many kingdoms there are, most support a five-kingdom (Plants, Animals, Fungi, Protists, Monerans) system.

Organisms are placed into kingdoms based on their _____ and the number of cells in their body.

Phylum (pl. phyla)

In the Plant Kingdom, phyla are sometimes referred to as _____.

Plants are normally divided into two groups: _____.

In the Animal Kingdom, there are 35 different phyla. These phyla can be divided into two groups: vertebrates and invertebrates.

Class, Order, Family

These _____ become even _____ and will include fewer organisms that have more in common with each other as they move down the levels.

Write the correct order of the levels of classification in the space provided. Broadest group-top, smallest group (bottom).

PHYLUM

ORDER

CLASS

SPECIES

FAMILY

GENUS

KINGDOM

Genus (pl. Genera)

Contains closely related organisms.

The genus is used as the _____ in an organism's scientific name.

Species

Consists of all the _____ of the same type which are able to breed and produce young of the _____.

The species is used as the _____ in an organism's scientific name.

Scientific name

The scientific name of an organism is made up of its _____. It is written in italics (Genus species) with the genus capitalized.

For example, *Canis lupus* is the scientific name

for the _____ and *Pinus taeda* is the scientific name for a _____.

Classification & Taxonomy

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Scientific Classification of a Pea

<u>Kingdom</u>	<u><i>Plantae</i></u>
<u>Phylum</u>	<u><i>Magnoliophyta</i></u>
<u>Class</u>	<u><i>Magnoliopsida</i></u>
<u>Order</u>	<u><i>Fabales</i></u>
<u>Family</u>	<u><i>Fabaceae</i></u>
<u>Genus</u>	<u><i>Pisum</i></u>
<u>Species</u>	<u><i>Sativum</i></u>

Looking to the left at the Scientific Classification of a Pea Chart, what can you conclude? Write a T for true and an F for false next to the statement.

_____ A “pea” is in the animal kingdom.

_____ A “pea’s” species is the most specific category.

_____ If a “pea” is in the same species, it also is in the same phylum.

_____ A “pea” is in the same kingdom as fungi.

Circle the correct scientific name for a green pea out of the four choices.

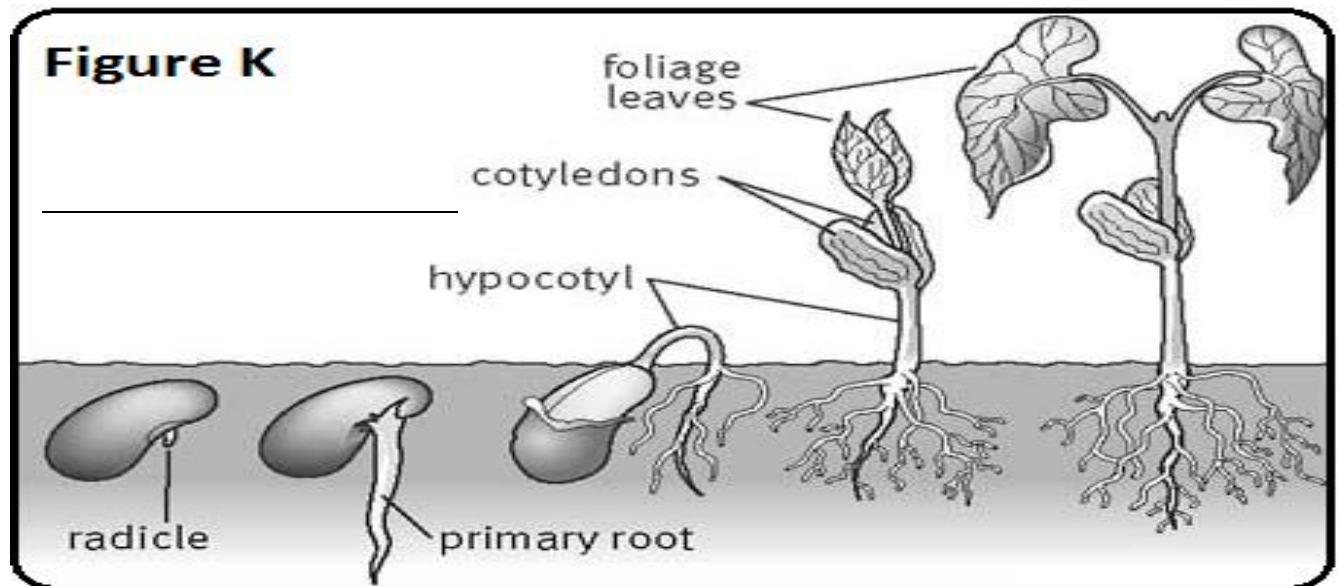
- A. Pisum Sativum
- B. Pisum sativum
- C. *Pisum Sativum*
- D. *Pisum sativum*

GROWTH & DEVELOPMENT

- _____ is the process whereby the organism becomes larger.
- _____ is the process that occurs in the life of the organism that results in the organism becoming more complex structurally.
- Organisms require _____ to grow and develop.

What is the process going on in the picture?

Write it on the line.



Dormancy

- Under certain conditions, when a mature plant or seed becomes or remains inactive, it is said to be _____.
- Dormancy is a period of time when the growth or activity of a plant or seed _____ due to changes in _____ or amount of water.
- Dormancy allows various species to survive in particular environments.
- It helps to ensure that seeds will germinate when _____ for survival of the small seedlings.
- For example, leaves fall from trees prior to the conditions of winter and the leaf buds do not open again until conditions are favorable in the spring.

Review

Name _____ Block ____

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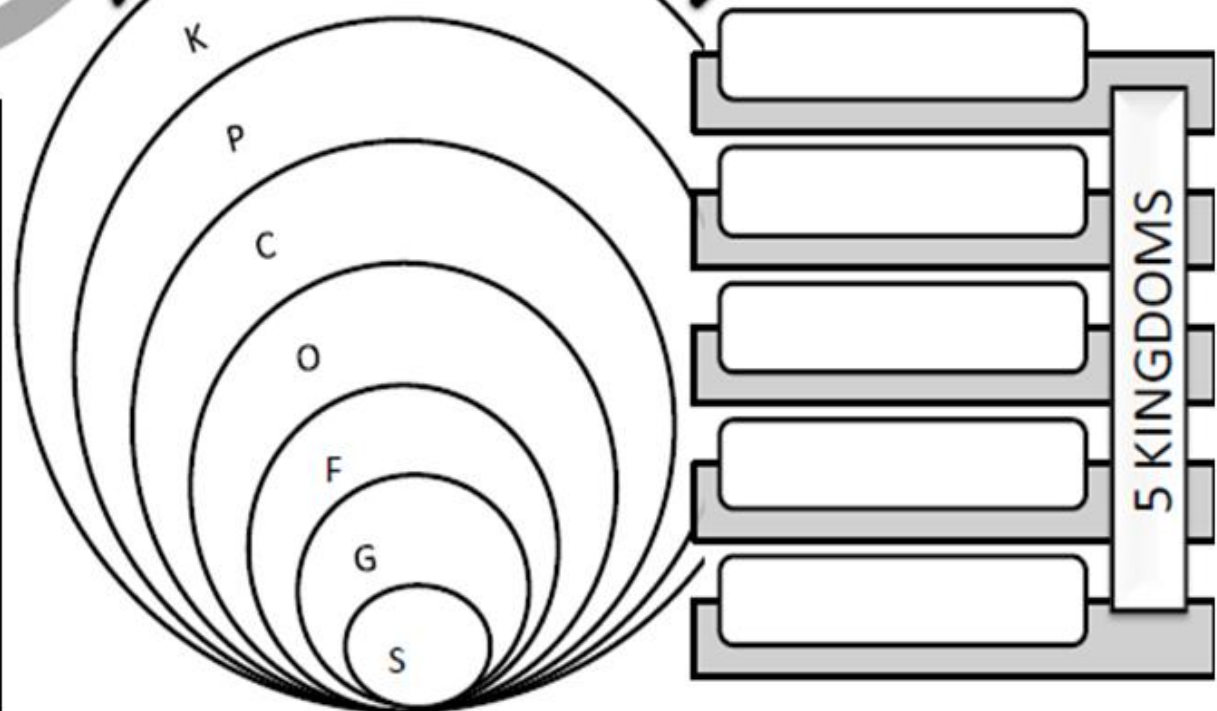
What 2 parts of the levels of classification are used as part of a scientific name?

Give one example of a scientific name:

4 Characteristics of
All Living Things

7 Levels of Classification

Autotroph	Heterotroph



Taxonomy Rap

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(Cho x2)

We talking 'bout... taxonomy

How we classify... living things

Oh you don't know... Just remember please

King Phillip Crossed... Over Five Great Seas

K? This my kingdom... Animalia

P? That's my phylum... plural phyla

Let's break it down... a little bit further

C? That's my class... O? That's my order

F-A-M... I-L-Y

WE have more in common as we go down

G? That's my genus... first word in my name

S? That's my species... Yep we're all the same...

So you wanna know my name? Oh it's scientific...

Capital G in genus... lower case s in species

Put those together... and there you have it

Oh and one last thing... it's in italics!!

Thank you to
Danielle
Watson for
the great rap!
😊



Click Play

Cho (x2)

Use the Taxonomy Rap to complete the questions below.

1. Taxonomy is the study of how scientists _____? a. plant flowers
b. classify living things
c. classify non-living things
d. classify animals
2. Which of the following is the correct order for the levels of classification? a. Kingdom, phylum, class, order, genus, family, species
b. kingdom, class, order, phylum, species, family, genus
c. kingdom, phylum, class, order, family, genus, species
d. Kingdom, order, family, class, species, genus, phylum
3. Which of the following does not represent a Kingdom in the classification of living things?
a. Plant
b. Animal
c. Fungi
d. *Homo sapien*
4. In the animal kingdom, the phyla are divided into 2 groups; vertebrates and invertebrates. In plants, the phyla are divided into:
a. genus and species
b. vascular and nonvascular
c. tubers and bulbs
d. plants and animals
5. In which of the following levels of classification would the organisms have more in common?
a. phylum
b. class
c. order
d. family

Taxonomy Rap

6. The first word in an organism's scientific name depends on which level of classification?
a. phylum
b. class
c. genus
d. species
7. All organism of the same type which are able to breed and reproduce young of the same kind, must belong to the same _____.
a. phylum
b. class
c. genus
d. species
8. All of the following are true about an organism's scientific name EXCEPT:
a. It is written in italics
b. genus is capitalized
c. species is capitalized
d. species is in lower case
9. Which of the following is a relative of the *Panthera tigris*?
a. *Corvus corax*
b. *Panthera leo*
c. *Ursus arctos*
d. *Ostrea edulis*
10. *Ursos arctos* and *Ursos maritimus* both belong to the same _____, but different _____.
a. kingdom, family
b. genus, species
c. species, genus
d. genus, family