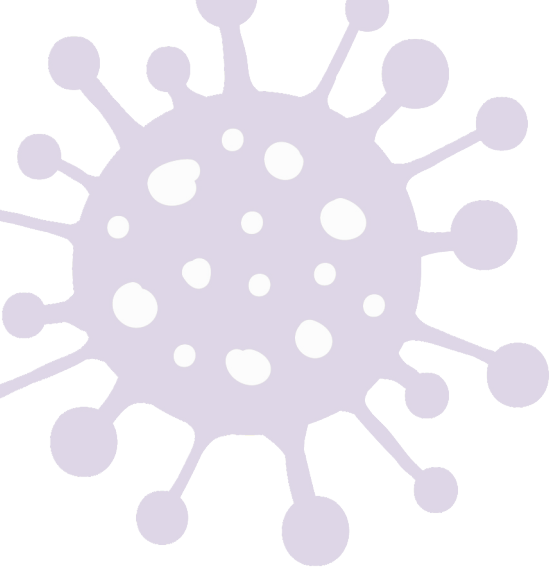




EXPERIENCE
BIOLOGY

elementary

STUDENT
ADVENTURE GUIDE



Experience Biology Elementary: Student Adventure Guide

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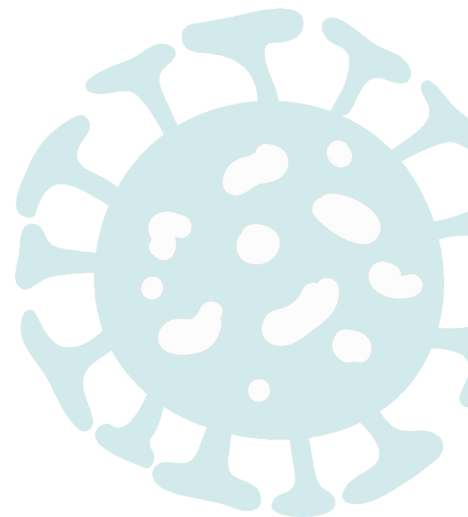
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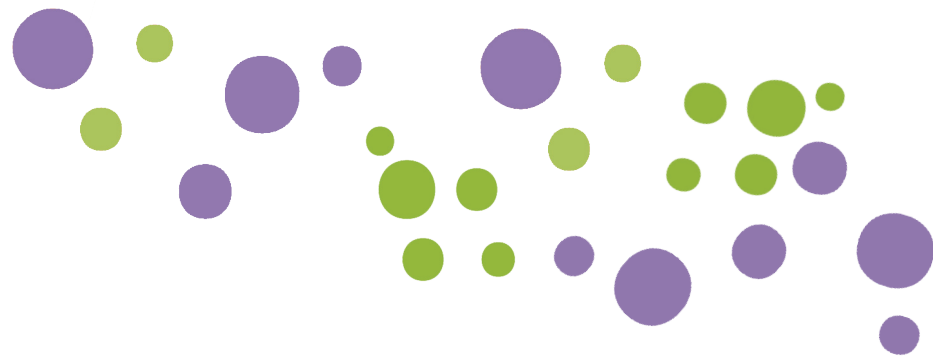
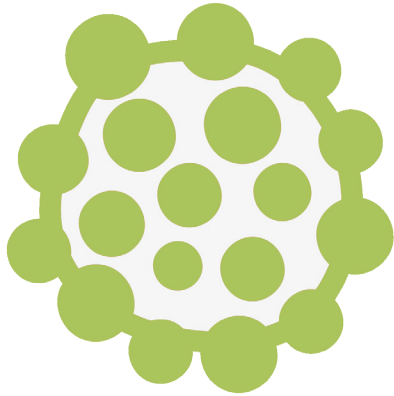
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Introduction

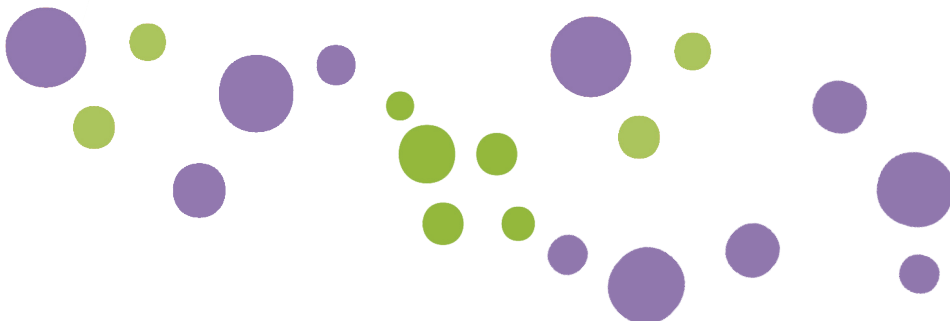
Man has been fascinated by the study of living things since the world began in the Garden of Eden. The study of biology began with the discipline of natural history. Naturalists study the world through observation — they're focused on learning about life through the use of the 5 senses.

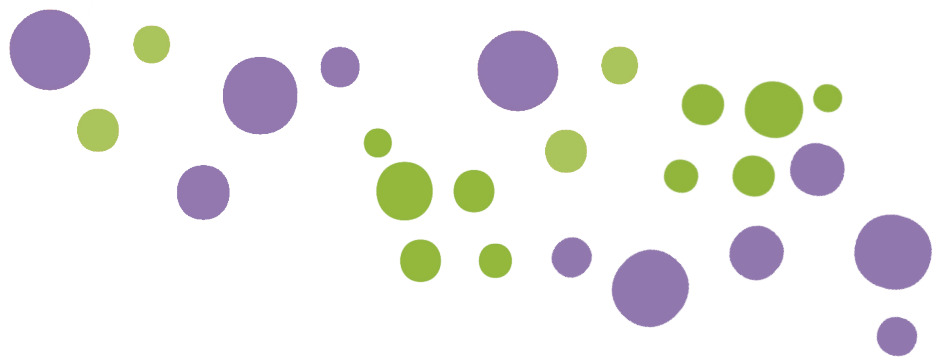
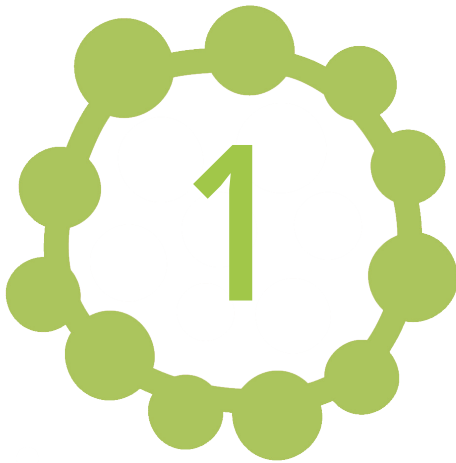
One of the primary focuses of *Experience Biology Elementary* is giving students a taste of what naturalists have been doing for centuries. They'll have the opportunity to explore the world of plants, animals, fungi, bacteria, and protists through observation.

In addition to the online video course, this companion volume guides students through their own exploration of the study of living things. Parents can choose which activities they want to incorporate. After watching each video lesson, parents can...

- Choose books from the reading lists (either to read aloud or assign as independent reading)
- Assign copywork to practice handwriting skills — and learn interesting quotes about biology from the Bible and famous scientists.
- Help their child with hands-on learning activities that will make the lesson come to life!
- Give their kids a short quiz to test what they learned from the lesson.

The lesson cards, used to assist your child in memorizing important biology facts, are sold separately or you may download them as a pdf, included as part of the course.






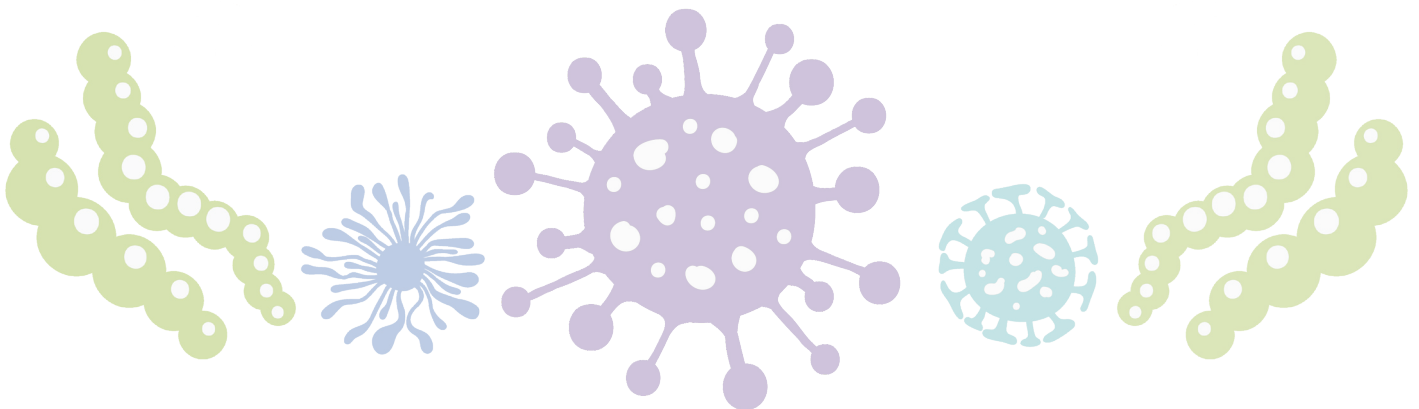


What is Life?

Scientists love the idea of searching for life on other planets, but we haven't even finished finding all the life on our own planet—not even close! There are millions of different kinds of living things on Earth, and probably millions more we have yet to discover.

Recommended Reading

-  *What's Smaller than a Pygmy Shrew?* by Robert Wells
-  *The Biosphere*, by Gregory L. Vogt, Introduction & Chapter 1
-  Genesis 1:1-2:3





ACTIVITY

Is it Alive?

How do you know if something is living? You have to examine its characteristics, of course! In class we talked about 5 characteristics of living organisms. In this activity, you'll examine several items to determine if they're living or not.

SUPPLY LIST

- Rock
- Candle flame
- Potted plant
- Yeast in warm water
- Mold growing on bread
- Apple
- Book

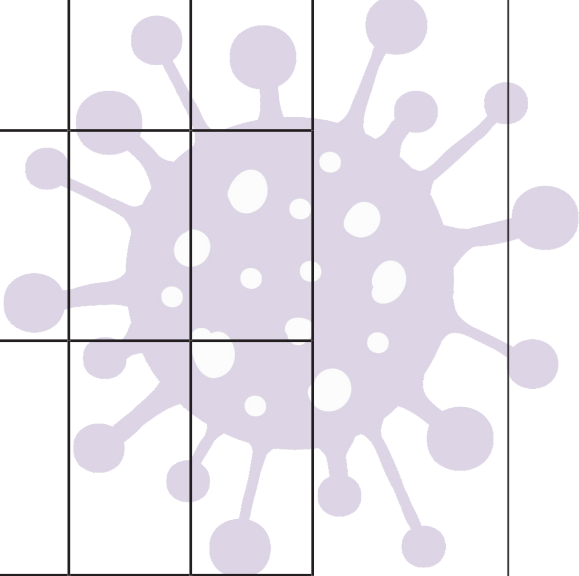
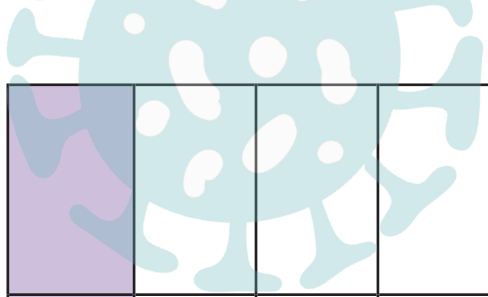
INSTRUCTIONS

1. Choose at least 5 items from the supply list above to examine. If you choose the candle, be sure to have a parent help you light the wick.
 2. Look at the chart on the next page. Spend time filling in the 5 characteristics of life you learned about from this week's lesson on the left hand side of the table.
 3. Across the top, list the items you've chosen to examine.
 4. Carefully examine each item and consider whether it has each of the characteristics. If it does, put an x in the box; if it doesn't, leave it blank. If you're unsure, ask your parents to help you look for the answer online or in a book.
 5. At the bottom of the page, list the items that you determined are living and those that are not.
-



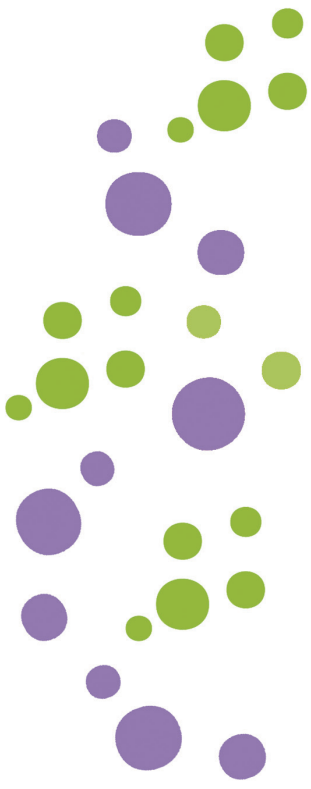
Items you're examining

Characteristics of Life					
1.					
2.					
3.					
4.					
5.					



What items are living?

What items are not alive?

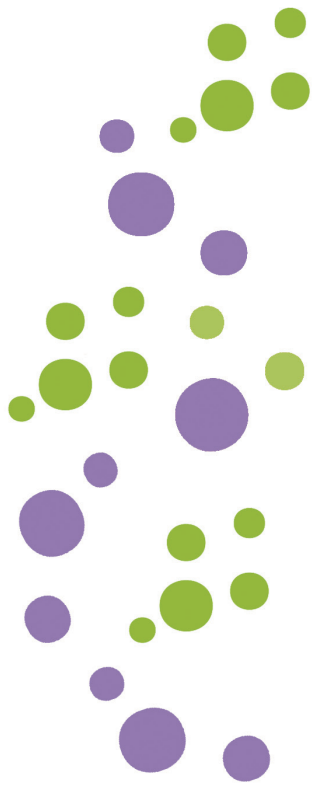


LESSON 1: GENESIS 1:1

In the beginning, God created the

heavens and the earth.

Handwriting practice lines consisting of 10 sets of three horizontal lines (top solid, middle dashed, bottom solid).

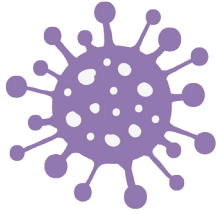


LESSON 1: GENESIS 1:1

In the beginning, God created the heavens and

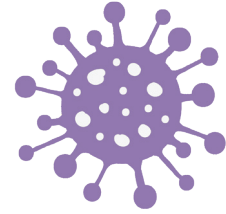
the earth.

Handwriting practice lines consisting of four sets of three horizontal lines (top solid, middle dashed, bottom solid) for tracing and writing.



What is Life?

Lesson 1 Quiz



1. **Biology is the study of:**

- A) water
- B) sun
- C) life

2. **In Genesis 1, it says God created the earth in:**

- A) 7 days
- B) 6 days
- C) 1 year

3. **Living things grow by:**

- A) getting bigger
- B) worn out cells being replaced with new cells
- C) both

4. **Responding to the environment is not a characteristic of life.**

- True
- False

5. **Living things creating new living things is called:**

- A) reproduction
- B) growth
- C) reorganization

6. **All living things need energy to grow and reproduce.**

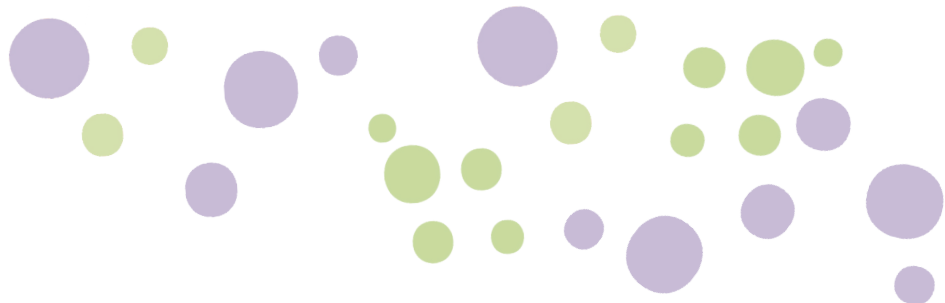
- True
- False

7. **Living things contain cells that are:**

- A) organized
- B) unorganized
- C) divided into rooms

8. **The smallest unit of living things is:**

- A) energy
- B) cell
- C) blood








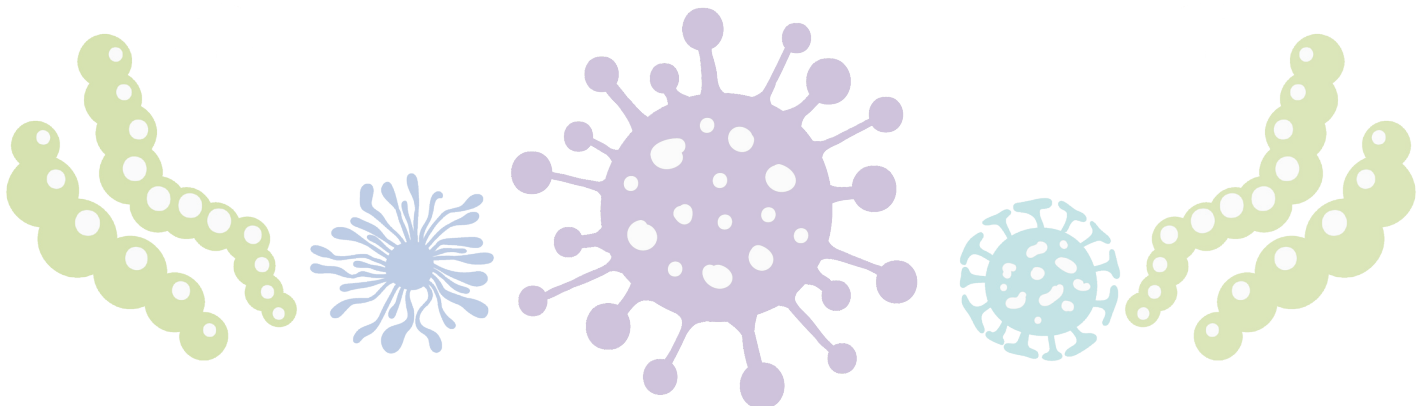


Meddlesome Mollusks

From the tiny Borneo snail to the enormous Colossal Squid, mollusks come in all shapes and sizes, but with their powerful muscular feet and beautiful shells, they are the largest group of aquatic animals on earth!

Recommended Reading

-  *Next Time You See a Seashell*, by Emily Morgan
-  *Giant Squid: Mystery of the Deep*, by Jennifer Dussling
-  *Gentle Giant Octopus*, by Karen Wallace
-  *Seashells, Crabs, and Sea Stars*, by Christine Kump Tibbitts, p.6-21
-  *Marvels of Creation: Sensational Sea Creatures*, by Buddy and Kay Davis, p.41, 43, 59



ACTIVITY Garden Snail Observation

Snails are a mollusk in the class gastropoda. They're relatively easy to find mollusks that live on land, so we have a chance to observe and learn more about this magnificent class of animals!

SUPPLY LIST

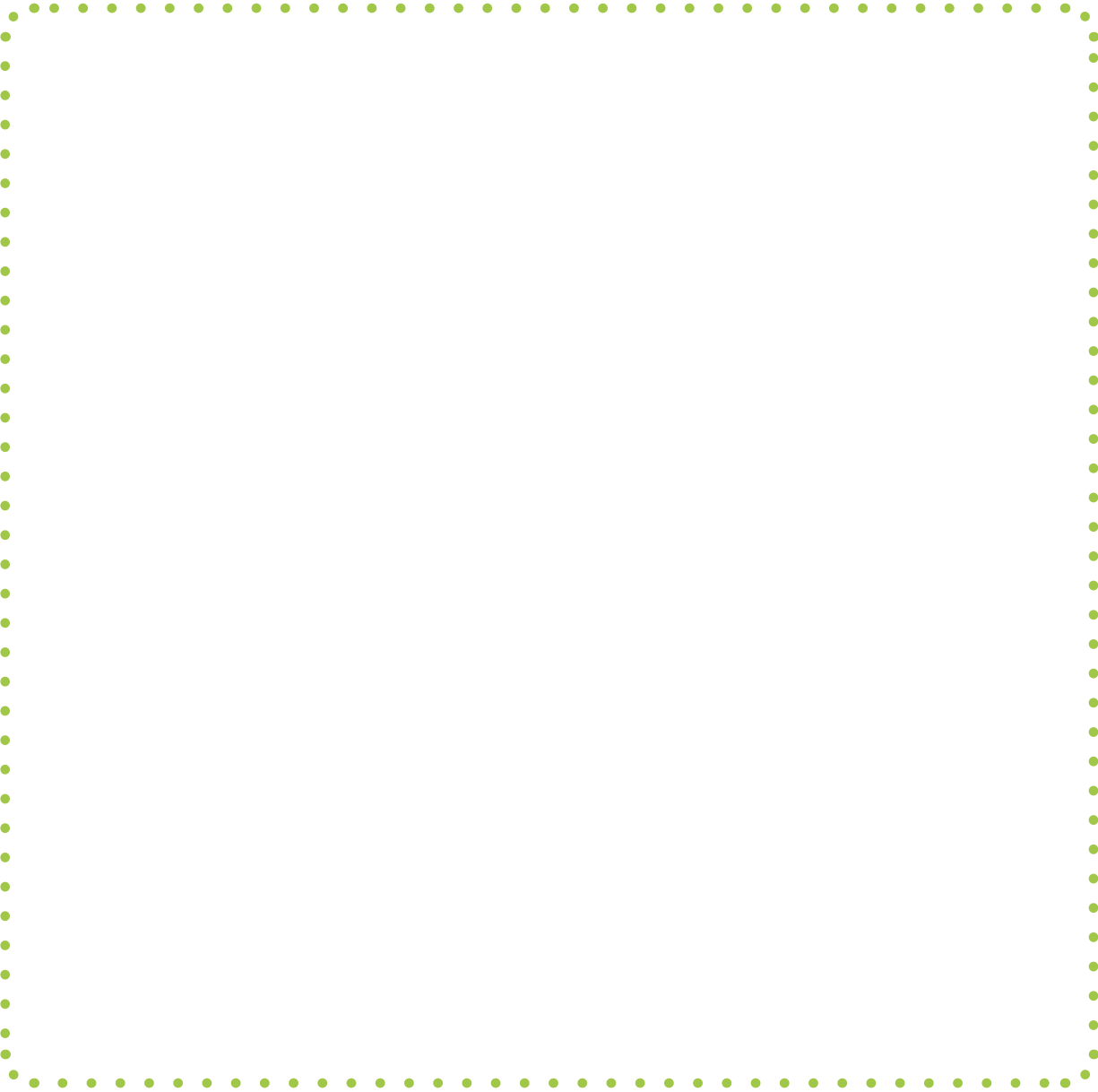
- Garden snail*
- Large jar or aquarium with lid
- Ruler
- Small kitchen scale (optional)
- Magnifying glass
- Various types of food

INSTRUCTIONS

1. After you've found your snail, create a home for it. This can be a large jar or a small aquarium. Snails are able to climb well, so be sure whatever you use has a lid you can attach securely with plenty of holes to allow air in so your snail can breathe.
2. Collect some soil and leaves from where you found your snail to place on the bottom of your snail's home. Snails like plenty of moisture, so be sure to keep the soil moist each day by spraying it or adding a bit of water.
3. On your Snail Observation Journal page, draw a picture of your snail and be sure to label the parts listed below that you're able to find. Use a magnifying glass to look more closely at different parts of your snail.
 - 🌿 **Shell:** The shell is used to protect the soft body of the snail.
 - 🌿 **Mouth:** Snails have a special type of tongue in their mouth called a radula that has a sandpaper-like texture they use to grind up the food they eat.
 - 🌿 **Foot:** The large soft foot on the bottom of the snail is used for movement.
 - 🌿 **Top tentacles:** The top tentacles have eyespots, allowing snails to see light and dark shapes.
 - 🌿 **Bottom tentacles:** The bottom tentacles are used by the snail for feeling around its environment and smelling for food.
4. Use a ruler to measure different parts of your snail and a small kitchen scale to weigh your snail. Add the measurements to your Observation Journal page.

***Note:** You can often find snails in gardens or wooded areas after it's rained. They often come out at night. If you can't find any in your own yard, see if you can visit a local nursery where they might be able to help you find one!

GARDEN SNAIL OBSERVATION JOURNAL



Measurements

Shell length (front to back) _____

Body length (front to back) _____

Top tentacles length (top to bottom) _____

Bottom tentacles length (top to bottom) _____

Weight _____

Animal Fact File

Phylum Mollusca

Choose an animal in this phylum to research, and then compile all you've learned on this page!

Common Name

Scientific Name

Habitat

Diet

Vertebrate

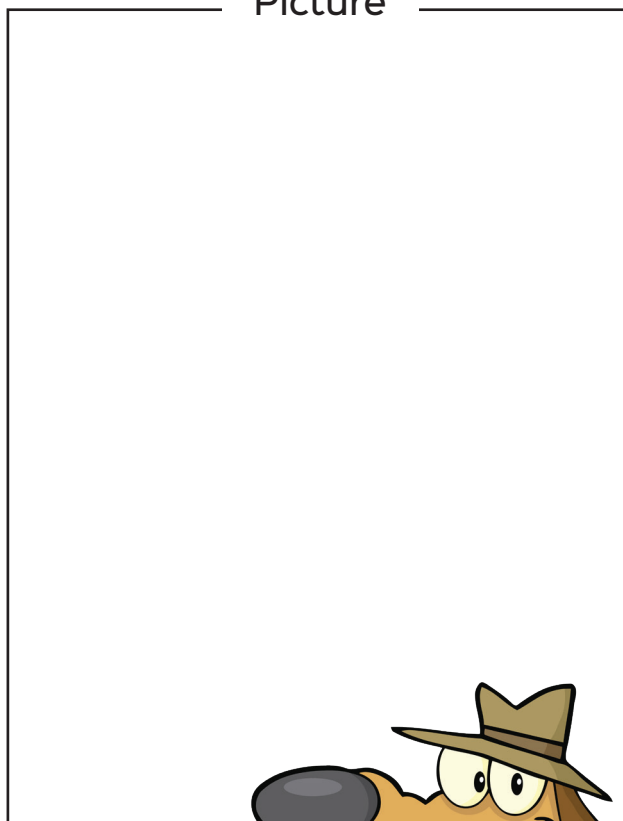
Invertebrate

Herbivore

Carnivore

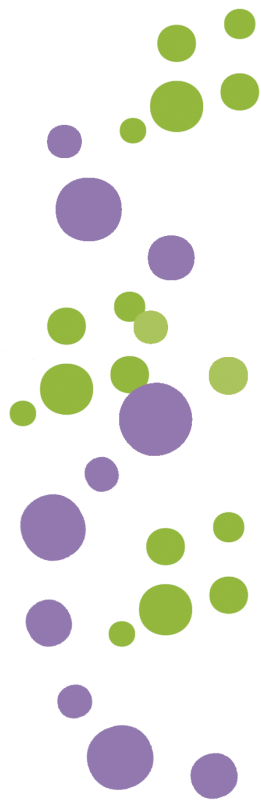
Omnivore

Picture



Fun Facts

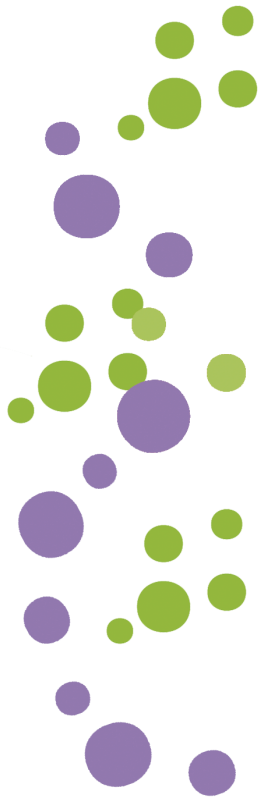




LESSON 21: CHARLES SPURGEON

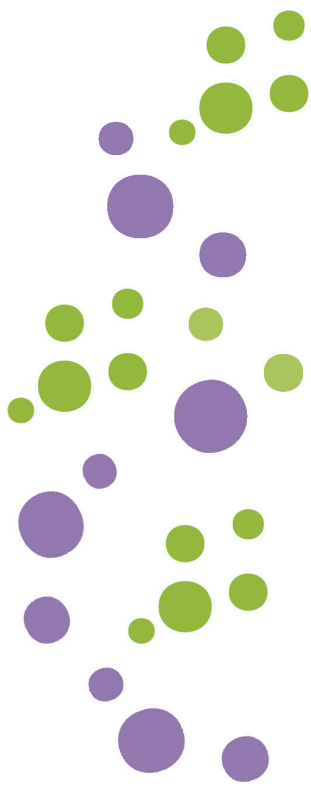
By perseverance the snail
reached the ark. A mouse
may find a hole, be the room
ever so full of cats."

Four sets of handwriting practice lines, each consisting of a solid top line, a dashed middle line, and a solid bottom line.



LESSON 21: CHARLES SPURGEON

Handwriting practice lines consisting of ten sets of three horizontal lines (top solid, middle dashed, bottom solid).

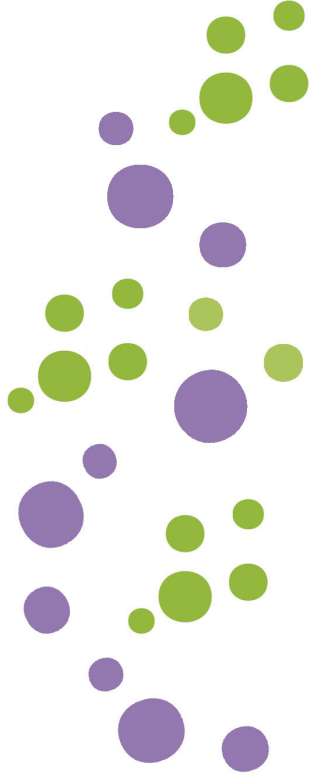


LESSON 21: CHARLES SPURGEON

“By perseverance the snail reached the ark. A

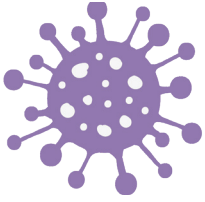
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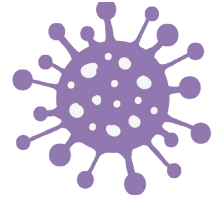


LESSON 21: CHARLES SPURGEON

Handwriting practice lines consisting of six sets of three horizontal lines (top solid, middle dashed, bottom solid).



Meddlesome Mollusks



Lesson 21 Quiz

- All mollusks have bilateral symmetry, are invertebrates, have a muscular foot, and have a soft body with a visceral mass.**
 - True
 - False
- A visceral mass:**
 - contains many vital organs
 - helps the animal move and anchors it in one place
 - is how much the entire body of the animal weighs
- Most mollusks have:**
 - a backbone
 - a shell
 - tentacles
- Class Bivalvia, which includes clams, oysters, mussels, scallops, and geoducks, are animals with:**
 - two shells
 - coiled shells
 - multiple muscular feet
- Class Gastropoda, which includes snails, slugs, conchs, abalones, nudibranchs, whelks, dowries, and murexes, have a foot located:**
 - on the shell
 - on the visceral mass
 - on the underside or belly of the animal
- Gastropods usually have:**
 - two shells
 - coiled shells
 - multiple muscular feet
- Class Cephalopoda, which includes squid, octopus, nautilus, and cuttlefish, are animals with:**
 - two shells
 - coiled shells
 - multiple muscular feet
- A mollusk's muscular foot:**
 - contains many vital organs
 - helps the animal move and anchors it in one place
 - are always found in pairs

