

SOIL FORMATION AND COMPOSITION

- 7.2.6 Describe physical and chemical characteristics of soil layers and how they are influenced by the process of **soil formation**, including the action of bacteria, fungi, insects, and other organisms.

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Many of you asked questions about

- how soil forms,
- what the materials in soil,
- names of the soil layers.

As you carefully read the text book (pages 49 to 55), take notes about each topic to help you answer the focus questions. DON'T FORGET TO LOOK AT THE FIGURES AND INFORMATION THAT GOES WITH EACH ONE.

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FOCUS QUESTIONS:

- A. How does soil form?
- B. How does weathering play a role in soil formation?
- C. What are the different types of materials that make up soil?
- D. What are the different layers of soil called and how are they different from one another?

DATA:

You will research and collect data in the form of **Cornell notes**.

- ✓ On the left side are the main ideas, topics, and/or headings of a piece of text. I have provided these for you.
- ✓ As you read **ONE PARAGRAPH AT A TIME**, on the right, you will
 - Stop at the end of the paragraph and summarize the information about each heading/topic
 - include important vocab and definitions
 - draw pictures if helpful

TOPIC/HEADING	
(no heading, paragraph 1)	<ul style="list-style-type: none"> • Over many years, mechanical and chemical _____ slowly enlarge the crack [in a rock]. • Rain and wind will bring bits of _____ rock, dust and _____.

SOIL FORMATION

- Soil is what the _____ rock and other materials in the crack have started to become.
- _____ is the loose, _____ material on Earth's surface in which plants can grow.
- Soil forms as _____ is _____ down by _____ and mixes with other _____ on the surface.
- Soil is formed where _____ is exposed.
- _____ is the solid layer of rock beneath the soil – exposed at the surface, it gradually _____ into smaller and smaller _____ that the _____ material of soil.

SOIL COMPOSITION

*This is what soil is made up of...

- Soil is a mixture of _____ particles, _____, _____ material, _____ and water.
- The types of rock particles and minerals depends on the _____ and type of _____.
- _____, _____, and _____ make up the portion of soil that comes from _____ rock.
- The _____ material in soil is _____.
- _____ is a dark-colored substance that forms as _____ and _____ remains _____.
- It creates spaces for _____ and _____ that plants need.
- It is rich in _____, _____, _____ and _____ that plants need to grow.

SOIL TEXTURE

*Be sure to examine FIGURE 6.

- Sand feels _____ and _____. Clay feels _____ and _____. These are differences in _____.
- _____ depends of the _____ of individual soil _____.
- The particles of _____ are classified by _____.
- The largest soil particles are _____.
- Next in size are particles of _____ followed by _____. The smallest soil particles are _____.
- Soil _____ is important for _____. _____ soils hold a lot of _____, so plants may _____ for lack of _____. _____ soil has a _____ texture. _____ quickly drains, so plants may _____ for lack of _____.
- Soil that is made up of about _____ parts of _____, _____, and _____ is called _____. It has a _____ texture that holds both _____ and _____.

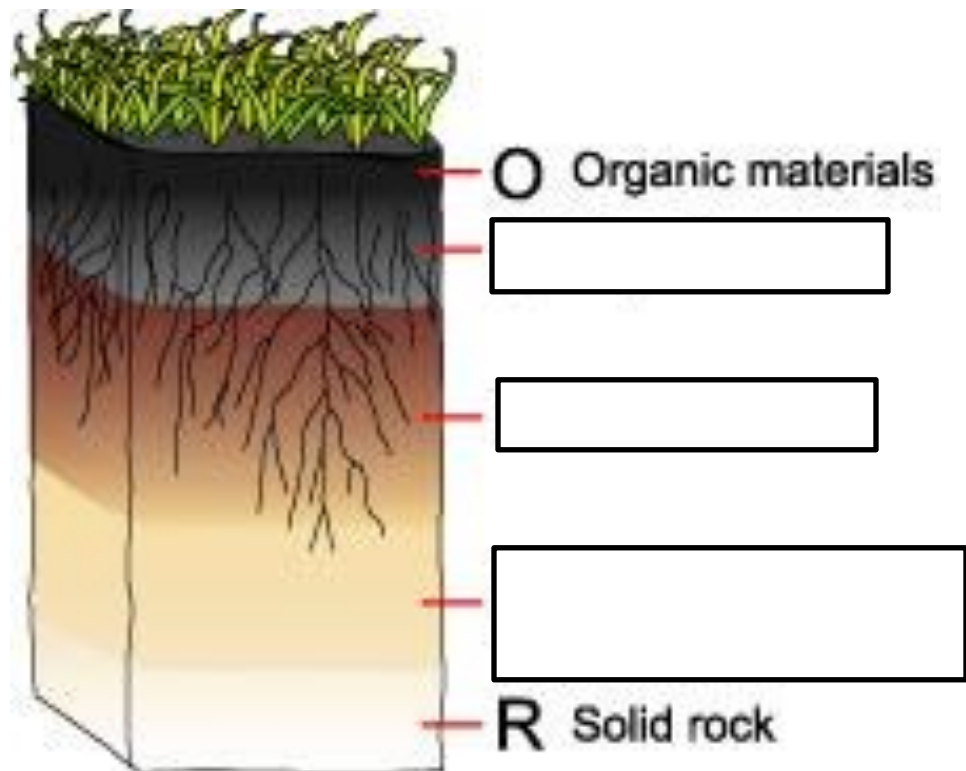
**DRAW A DIAGRAM LIKE FIGURE 6 BELOW.
INCLUDE THE PARTICLE NAMES AND SIZES.**

SOIL HORIZONS (LAYERS)

* Be sure to examine FIGURE 7.

- Soil develops _____ called _____.
- A _____ is a layer of soil that differs in _____ and _____ from the layers _____ or _____ it.
- Scientists classify the soil into _____ horizons.
- The _____ horizon is made up of _____, a crumbly, _____ soil that is a mixture of, _____ and other minerals.
- The _____ horizon, often called _____, usually consists of _____ and other _____ washed down from the _____ horizon, but little _____.
- The _____ horizon contains only partly _____ rock.

LABEL THE DIAGRAM WITH THE CORRECT HORIZONS.



*The solid rock (horizon R) described above is also called _____ (see Figure 7.)

http://www.westone.wa.gov.au/toolbox6/hort6/html/resources/visitor_centre/fact_sheets/images/soil_profile2.jpg

SKIP – RATE OF SOIL FORMATION

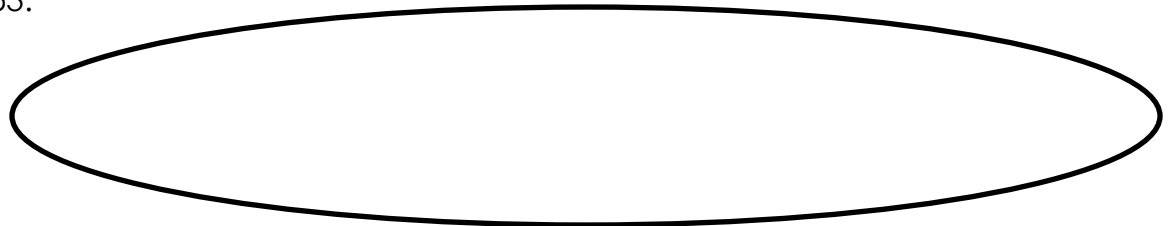
LIFE IN SOIL

*Be sure to examine the LARGE picture on pages 52-53 called "EXPLORING Living Organisms in Soil."

- Soil is more than just _____ of _____.
- Some soil _____ the soil and make _____ in it for _____ and _____.
- Other soil _____ make _____, the material that makes soil _____.
- Fertile soil is _____ in _____ that plants need, such as _____ and _____.
- Plants contribute most of the _____ remains that form _____.
- _____ forms in a process called _____.
Organisms that live in soil turn _____ into _____.
- _____ are the organism that _____ the _____ of _____ organisms into _____ pieces and _____ them with _____.

BEFORE YOU TURN THE PAGE, EXAMINE THE PICTURE ACROSS THE BOTTOM OF THE TWO PAGES.

*List the types of organisms that are found in the soil example on pages 52 - 53.



- _____, _____, _____, and _____ are the main soil _____. Other very small animals such as _____ and _____ _____ dead organic material with the _____.
- _____ do most of the work mixing _____ with other materials in soil.

LIFE IN SOIL

(continued)

- Many burrowing animals, such as _____, _____, _____, and _____ break up hard, _____ soil and mix _____ through it. They add _____ to the soil when they excrete _____ and _____ _____ when they die and _____.
- Burrowing animals also help _____ or mix _____ into the soil

CONCLUSION:

Use the data you collected to answer the focus questions. Be sure to fully answer each question and **include details**.

1. How does soil form?

2. How does weathering play a role in soil formation?

3. What are the different types of materials that make up soil?

4. What are the different layers of soil called and how are they different from one another?