3.2.1 Life Cycles

3.2.1 **Develop and use models** to describe changes that organisms go through during their life cycles. Emphasize that organisms have unique and diverse life cycles but follow a pattern of birth, growth, reproduction, and death. Examples of changes in life cycles could include how some plants and animals look different at different stages of life or how other plants and animals only appear to change size in their life. (LS1.B)

As you read this section think about how living things change throughout their lives. Focus on the similarities and differences in the way that different plants and animals change.

Life Cycles

All living things grow and change throughout their lives. This is called a life cycle. The word cycle means it repeats itself. The cycle includes birth, growth, reproduction, and death. Plants and animals both follow this pattern. It is important for plants and animals to reproduce or they will not be able to survive and could go extinct.

Animal Life Cycles

Earth has many kinds of animals. Each follows the same life cycle, but the way they grow is not the same. Horses begin as small animals that grow larger in size. Baby horses look similar to adult horses. Other animals, like insects, go through changes that make them look completely different from the time they are born until they become adults. An example of one insect that goes through many changes during the growth cycle is the butterfly.

Birth

Butterflies began as eggs on a leaf. They are very tiny. When butterflies are born they are called larva. At this stage the larva is commonly called a caterpillar.

Eggs by A. Poulos, https://flic.kr/p/4zWXcp, CC-BY

Image by Jan Haerer, pixabay.com, CC0

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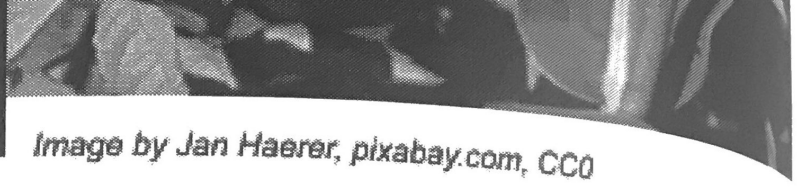

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Growth

During this time of life the larva eats. It grows bigger and bigger until it is ready for a big change called metamorphosis. During this part of its growth cycle the larva is called a pupa. The pupa builds a chrysalis around itself. It does not move or eat in the chrysalis, but it does change into an adult butterfly. The butterfly is now finished with the growth stage of life. The pictures show a chrysalis and a Monarch butterfly.

Reproduction

The butterfly is now ready to reproduce. The female butterfly searches for a male mate. Then, they look for a good place to lay the eggs. The female butterfly lays many eggs close together on a leaf.

Death

All butterflies die. It can happen at any time for many different reasons. Some might be eaten. Others might not have enough food to eat. They can also be knocked off a leaf and will not be able to complete the pupa stage. Others will complete all phases of their life and die because they are old.
https://www.monarch-butterfly.com/life-span.html

Plant Life Cycles

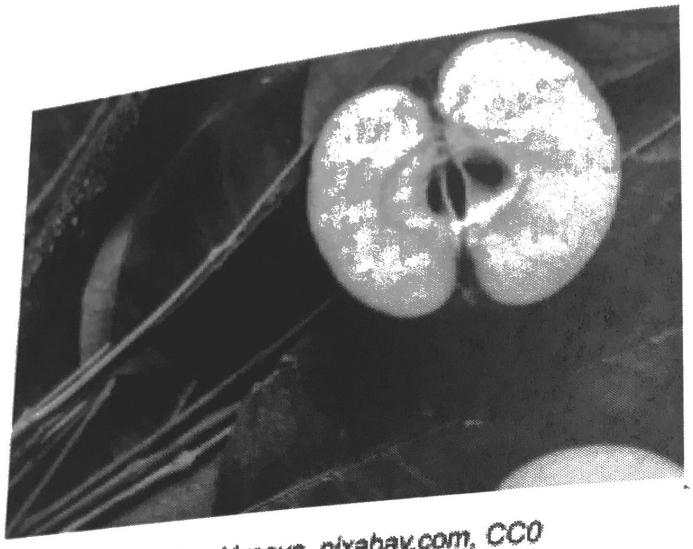
Another growth cycle seen in nature is from plants. Plants do not all grow the same way, but they follow the same pattern of animals through birth, growth, reproduction, and death. We are going to follow the growth cycle of an apple tree.

Birth

We do not think of plants being born because it is a cycle. An apple tree's life cycle begins with a seed. The seed does not look anything like a tree when it starts growing. Look at the pictures, you can see that the tree has a lot of growing to do between birth and the end of the tree's life.

Growth

A tree begins as a seed sprouts and starts to grow. It develops roots, stems, and leaves. It starts to spread by growing branches, which spread out and grow more leaves.



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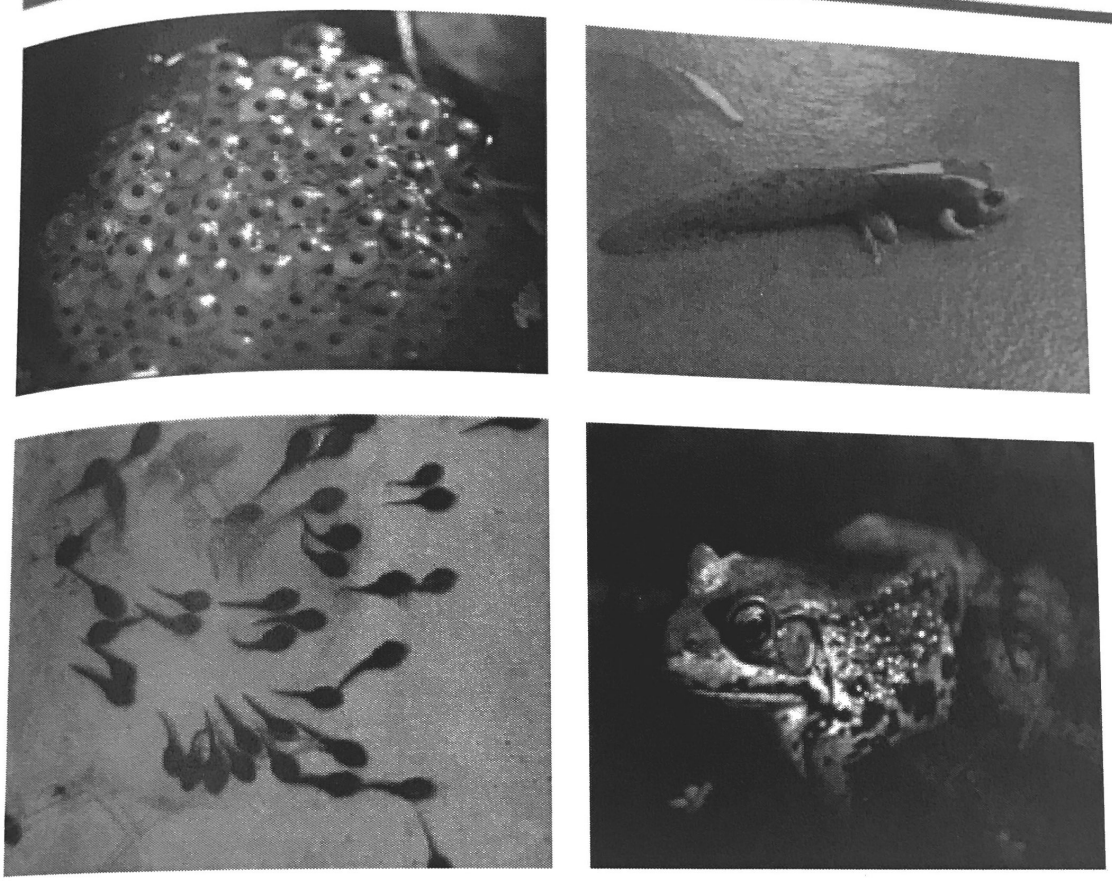
Reproduction

Apple trees reproduce by producing fruit (apples). The reproduction cycle begins when the tree produces blossoms in the spring. The blossoms grow into apples with seeds inside. The seeds will someday become a new apple tree.

Death

Apple trees can die at any time during their life cycle. The tree might be eaten by harmful insects. It might get sick from bacteria. It could fall in a storm. Some trees are cut down. If they get too much sun, not enough sun, too much water, or not enough water the apple tree can die.

Putting It Together



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After learning about the life cycle of organisms, what do these four pictures have in common?

How are they related to the other animals and plants you learned about?

Draw a model that shows the life cycle of a frog.